PneuVUE®

Adult **Pneu**monia **V**accine **U**nderstanding in **E**urope

A New View into Pneumonia Among Older Adults

Foreword

Longevity is one of the greatest achievements of the modern era. Thanks to key advances in science and medicine, we are now living longer than ever before,[1] but living longer is a shallow achievement when quality of life and functional abilities are compromised. In 2010, an estimated 524 million people were aged 65 or older.[1] By 2050, this number is expected to nearly triple to about 1.5 billion – representing over 1 in 10 people worldwide.[1] With ageing comes higher rates of long-term conditions, such as diabetes and chronic obstructive pulmonary disease (COPD), and increased risk of pneumonia.[2]

It is estimated that every year across Europe alone, there are 3 million cases of pneumonia, of which an estimated one million are hospitalised.[3] Community-acquired pneumonia is one of Europe's most frequent causes of death due to infection.[3] It places a significant burden on those affected and their families, along with costing approximately €10 billion per year to society.[4] There are many forms of pneumonia, some of which are commonly spread from person to person.[5] Bacteria carried in the nose and throat remains one of the most common causes of community-acquired pneumonia, with most cases resulting from the bacterium *Streptococcus pneumoniae*.[6] This is referred to as pneumococcal pneumonia, and it can be prevented through vaccination, yet only 10% of adults over 50 years of age in Europe are currently vaccinated.[7] One of the barriers preventing pneumococcal pneumonia vaccination is low awareness of the disease and its consequences.[7]

The PneuVUE® (Adult **Pneu**monia **V**accine **U**nderstanding in **E**urope) study, carried out by Ipsos MORI on behalf of Pfizer is one of the largest pneumonia awareness consumer surveys ever conducted in Europe. Over 9,000 adults aged 50 years and older have been surveyed across nine countries to examine adult awareness of pneumonia, and attitudes to preventative measures, including vaccination. The survey has highlighted that although people are aware of pneumonia, many have a poor understanding of how to effectively prevent it and generally do not feel concerned about catching the disease. It is clear from the survey that family doctors and other allied healthcare professionals have an important part to play in supporting adults to protect themselves against pneumonia. There is however, a role for adults to address pneumonia prevention as part of a healthy approach to ageing.

Prevention of pneumonia and its consequences is a critical element of healthy ageing whereby older people contribute socially and economically to their community and society. Join the International Federation on Ageing, Professor Antoni Torres and Professor Tobias Welte in calling for urgent prioritisation of improved awareness and vaccination against pneumonia in Europe among governments, public health bodies, healthcare professionals and older adults. Future generations will thank us for this pioneering initiative.

Professor Tobias Welte

Dr Jane Barratt

Professor Antoni Torres

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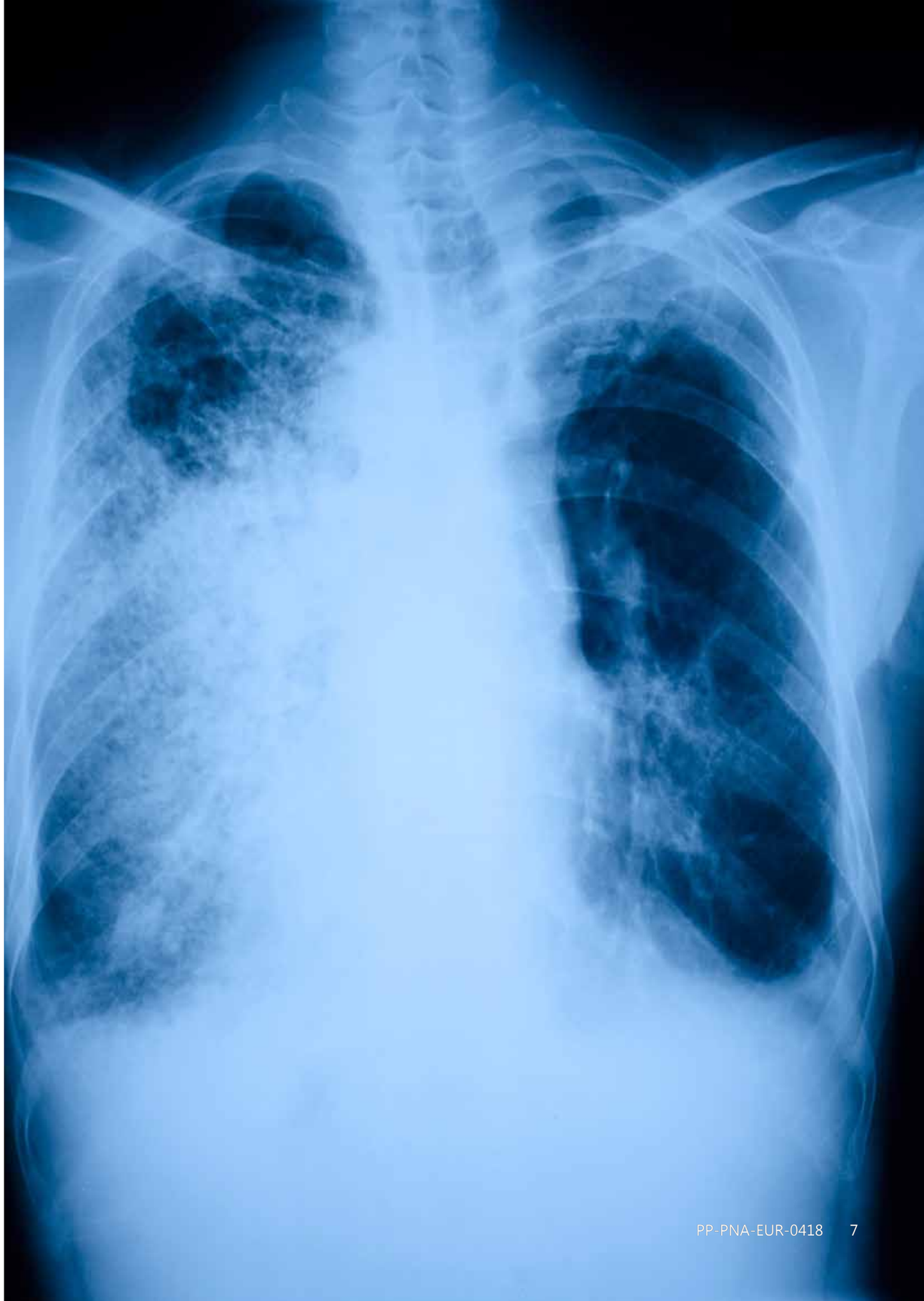
Introduction

As the population ages, the concept of healthy ageing becomes more relevant and health strategies are moving increasingly towards prevention rather than treatment. In order to support this within the context of pneumonia, there is a need to better understand what is known about the disease and how perceptions may be impacting on uptake of pneumonia vaccination.

Between November 2015 and February 2016 Ipsos MORI's healthcare team carried out a study on behalf of Pfizer to explore perceptions of pneumonia and pneumonia prevention among older adults in nine European countries.

The research examines what people know about pneumonia, as well as their own risk, and how this ultimately impacts their attitudes towards taking preventative measures. The study highlights varying levels of knowledge and particularly low awareness of pneumonia prevention.

Results were shared with an expert panel consisting of Dr Jane Barratt (Secretary General of the International Federation on Ageing), Professor Antoni Torres (Professor of Medicine, Hospital Clinic Barcelona), and Professor Tobias Welte (Professor of Pulmonary Medicine Hannover University School of Medicine). Biographies for the three experts can be found in the appendix and their views are interspersed throughout this report. This commentary reflects their opinions and interpretation rather than a direct representation of the data from the study.



Background & methodology

Questionnaire design

Materials were designed by the Ipsos MORI healthcare team in conjunction with Pfizer. Members of the expert panel (Dr Jane Barratt, Professor Antoni Torres and Professor Tobias Welte) were also given the opportunity to review and input into the questionnaire. All materials were approved by Pfizer EU regional Review Committee (RC) prior to use.

Interviews were conducted in the local language. Translations were carried out by a professional medical market research translation agency and approved by Pfizer local country offices.

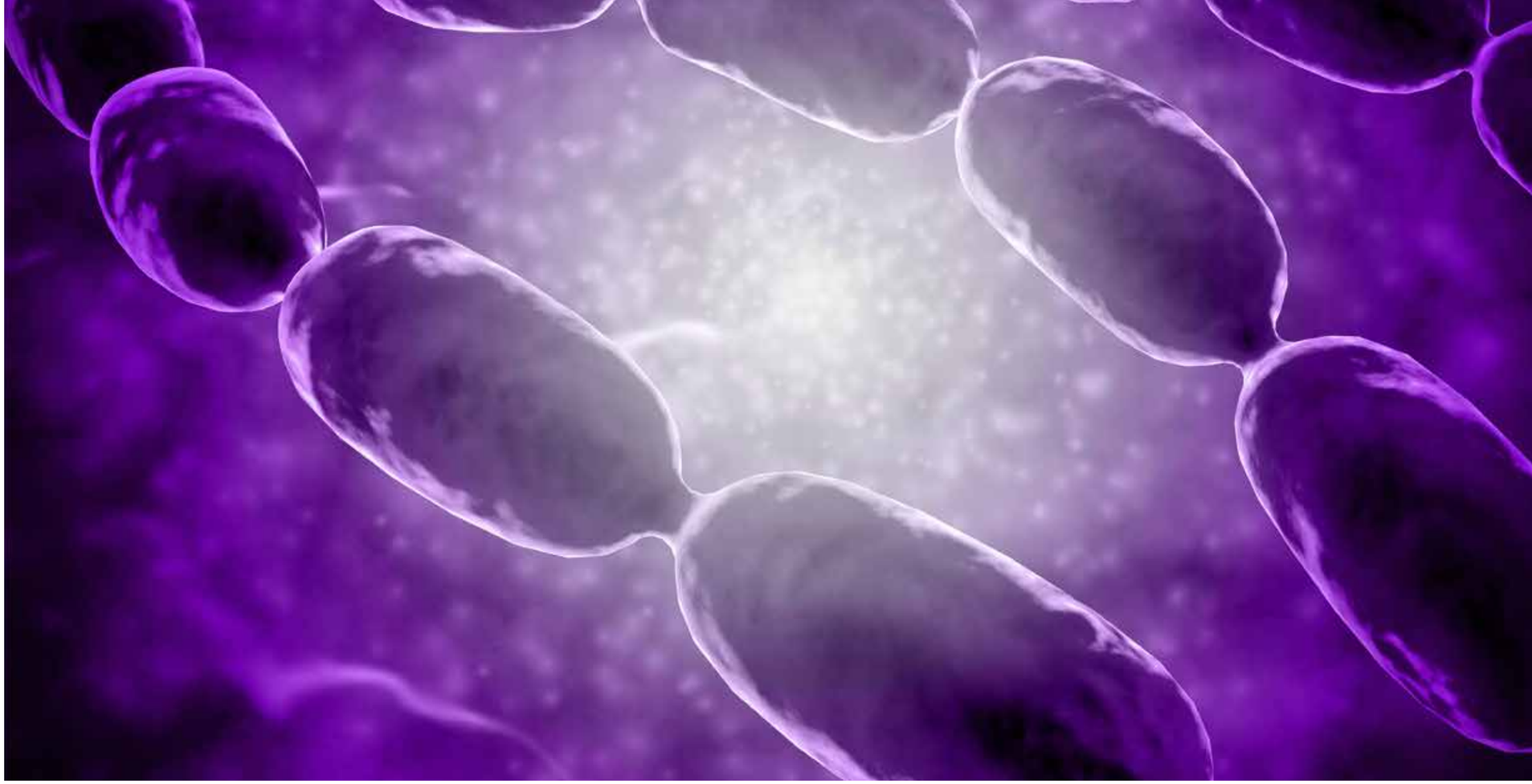
Sample

The research focused on the general population aged 50 years and over in each of the nine countries. Quotas* were imposed to ensure national representation based on age, gender, region and employment status. Information was collected on health conditions, as well as age, and this was used to define pneumonia risk status. No quotas were applied for medical conditions or health status.

Corrective weights have been applied to bring the sample in line with the population profile per country and population size in each of the nine countries. Further details of the weighted and unweighted sample can be found in the appendix.

Sample size

Austria	Czech Republic	France	Germany	
1000	1002	1001	1001	
Greece	**Italy**	**Portugal**	**Spain**	**UK**
1000	1008	1001	1016	1000



Three respondent types are commonly referred to throughout this report:

- ***Older adults*** – population of adults aged 50 years and above
- ***Higher risk (of pneumonia)*** – respondents aged 65 and over or 50-64 years with at least one of the following risk factors:[5,8,9] diabetes, heart disease, a lung condition like COPD or asthma, HIV, weakened immune system, liver disease, organ transplant, cancer, asplenia, smoker
- ***Lower risk (of pneumonia)*** – respondents aged 50-64 years with none of the above listed risk factors

All comparisons made between different groups are statistically significant unless otherwise stated.

Interviewing

The survey lasted 20 minutes and was conducted by telephone. All fieldwork was conducted by Kudos Research on behalf of Ipsos MORI. Screening was limited to the above quotas and being aged 50 years or older.

Interviews were carried out between 23rd November 2015 and 15th February 2016. Participants were not paid for taking part in the survey.

Additional considerations

Pneumonia awareness campaigns sponsored by Pfizer were running in seven out of the nine markets either during the interviewing period or in the three months prior to it. Full details can be found in the appendix.

A question was included, asking whether respondents had seen any material promoting or raising awareness of pneumonia or the pneumonia vaccine in the past 3 months. In total 8% answered yes to this question.

No distinction was made between the Pfizer sponsored campaign, and those run by other companies, local public health authorities or healthcare providers.

Quotas are based on 2011 Eurostat census data

PneuVUE® Total findings

Key findings - Total sample

Older adults think they know more about pneumonia than they actually do.

88%
claim to know what it is

20%
do not identify it as a lung infection

Only
44%
think it's *true* that some forms of pneumonia may be contagious

Pneumonia is said to be serious disease, but there is an apparent failure to link this to a risk to their own personal health

92%
think pneumonia is serious

Only
21%
are concerned about the risk of catching pneumonia

Only
16%
of those at higher risk of pneumonia[5,8,9] recognise themselves as 'very much at risk'

24%
think car accidents cause the highest number of deaths in their country compared with

4%
for pneumonia – in reality, pneumonia is responsible for almost 4 x as many deaths*[10]

There is a lot of uncertainty about whether pneumonia is a preventable disease, and how to prevent it.

Only
39%
think it is *false* that "pneumonia can only be treated and not prevented"

A higher proportion think the following are effective at protecting against pneumonia.

keeping fit and healthy	**92%**
not smoking	**87%**
wearing warm clothes	**69%**
avoiding long periods in air conditioned rooms	**64%**
compared to "being vaccinated"	**58%**

Awareness of a preventative pneumonia vaccine is low with uptake even lower

Only
29%
are aware it is possible to be vaccinated against pneumonia

Only
16%
of those at higher risk of pneumonia have been vaccinated

Doctors, and other allied health professionals such as nurses and pharmacists have a key role to play in widening awareness and raising vaccination rates.

75%
of those who have been vaccinated against pneumonia say it was prompted by their doctor

Most common reason for not being vaccinated is

55% My doctor has never offered it to me

** In 2013, pneumonia was responsible for 126,484 deaths in the EU compared with 30,100 for car accidents. Taken from Eurostat causes of death data and based on all age groups (see references at end of chapter)*

The PreuVUE® study interviewed 9029 adults aged 50+ above across Austria, Czech Republic, Greece, Germany, Italy, France, Spain, Portugal and UK. Fieldwork was conducted November 2015 - February 2016.

Pneumonia awareness

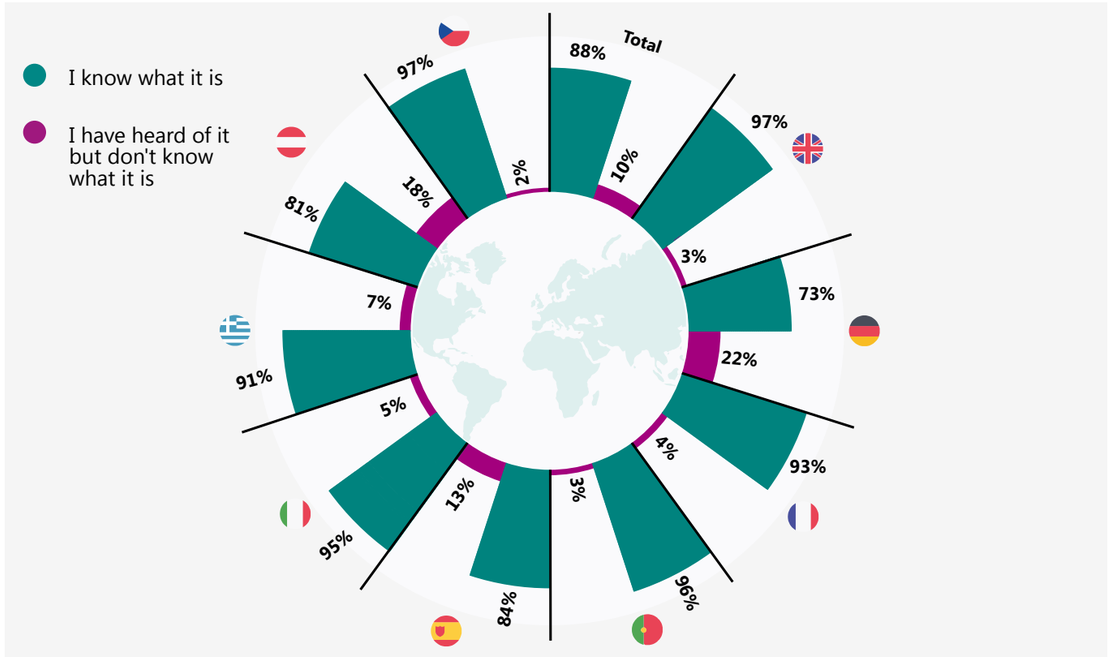
When it comes to pneumonia, awareness does not appear to be the problem as much as understanding.

Across the European markets surveyed, almost all (98%) have heard of pneumonia. However, although 88% also claim to "know what pneumonia is", survey results show that they do not always know as much as they think they do about the disease. In particular, there is less knowledge of disease transmission and risk factors, as well as the true spectrum of symptoms and number dying from pneumonia.

Most older adults (80%) correctly identify pneumonia as a lung infection, although variation is seen across countries and sub-groups. Looking beyond this to explore what is actually known about the condition reveals far lower levels of accurate understanding. In line with its recognition as a lung infection, pneumonia is typically associated with trouble breathing (94%) and coughing (88%) as well as a high fever (87%) and tiredness/ fatigue (86%)but much less so with dizziness (33%), sneezing (29%) and nausea (26%).

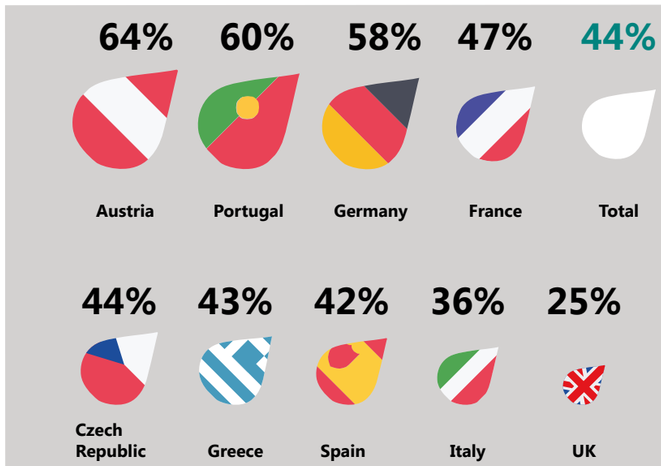
Furthermore, only 44% think it is *true* that "some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another". There are wide variations across countries.

Awareness of pneumonia in different countries



% believing it is *true* that

Some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another



Commentary

As well as highlighting the lack of clarity around pneumonia, the question of contagion is also important when considering a preventative strategy for pneumonia. It is important to communicate that pneumonia can be contagious in order to support prevention. People are concerned about how to protect loved ones. Therefore a focus of prevention should be the safety of others.

"Fighting pneumonia involves combatting the common misconception that pneumonia is not contagious. We need to urgently raise awareness of the fact that some forms of pneumonia are contagious, so that people know when they are at risk and how to better protect themselves." **Dr Jane Barratt, Secretary General of the International Federation on Ageing**

Interestingly, despite being at higher risk of pneumonia,[5,8,9] those aged 65 and above have the least understanding of pneumonia. A significantly smaller proportion of those aged 65 and above state that they know what pneumonia is (85% compared with 90% of under 65s) or correctly identify it as a lung infection (77% compared with 84% of those under 65).

Across countries, while we see differences in response to individual questions, there is a lot of inconsistency in knowledge and therefore there is a need to tailor pneumonia education in all markets:

- For example, Germany and Austria have the lowest proportion claiming to "know what pneumonia is" (73% and 81% respectively) and associating it with a lung infection (both 61%). However they also have the highest proportion stating it is *true* that "some forms of pneumonia are contagious" (58% and 64%).
- Compare this to the UK and Italy which have amongst the highest proportion claiming to "know what pneumonia is" (97% and 95% respectively) and recognising it as a lung infection (88% and 90%) and yet the lowest proportion stating it is *true* that "some forms of pneumonia are contagious…" (25% and 36%).

Pneumonia is however almost universally recognised as a serious illness with 92% rating it as extremely serious or rather serious. In the context of other conditions tested, this places pneumonia just behind meningitis (97%) and HIV (95%) and far above influenza (55%). The majority (85%) also agree it is *true* that it can take months to recover from pneumonia.

In line with the higher proportion viewing pneumonia as serious compared to flu, 70% agree it is *true* that "pneumonia is more deadly than flu". Yet under half (47%) believe it is true that "up to 20% of adults who catch pneumonia will die from it" and pneumonia is felt to cause fewer deaths than other causes presented.

When asked which out of pneumonia, car accidents, heart disease and influenza results in the most adult deaths in their country, pneumonia is generally the least chosen option. 63% correctly select heart disease as the biggest killer. This is followed by car accidents at 24% and then a large drop to influenza (5%) and finally pneumonia (4%). In reality however, pneumonia is responsible for over four times as many deaths as transport accidents[†] and over 40 times as many deaths as influenza[‡] in the European Union.[10]

Commentary

When it comes to pneumonia, the concept of seriousness appears to be quite an abstract one. While it is dutifully described as serious, in practice there seems to be little connection made between pneumonia as a serious disease and the impact it could have on their own life.

"We need to ensure that people understand that pneumonia is a serious and potentially deadly disease with long-term consequences that can affect anyone - even those who exercise, eat healthily and generally take care of themselves. Unless people understand this, it is unlikely that they will ever take pneumonia seriously or even consider it to be a threat" **Prof Antoni Torres, Professor of Medicine, Hospital Clinic of Barcelona**

[†]In 2013, pneumonia was responsible for 126,484 deaths in the EU compared with 30,100 for transport accidents. Taken from Eurostat causes of death data and based on all age groups (see references at end of chapter)
[‡]In 2013, pneumonia was responsible for 126,484 deaths in the EU compared with 3,154 for influenza. Taken from Eurostat causes of death data and based on all age groups (see references at end of chapter)

Risk groups & risk factors

There is a tendency to project risk of pneumonia onto other people rather than acknowledge their own personal vulnerability.

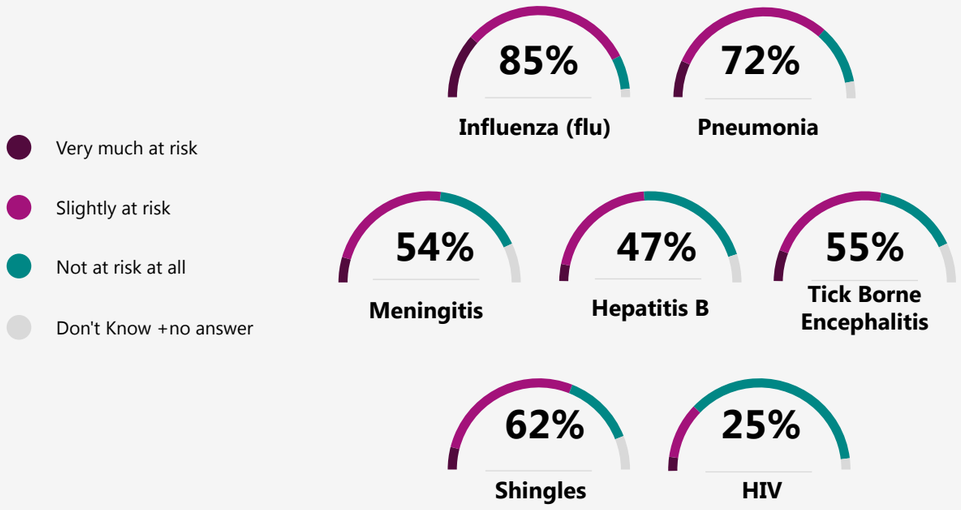
This is reflected in an underestimation of the risk of catching pneumonia. Amongst those who have heard of pneumonia, the majority (59%) of older adults feel only slightly at risk of catching pneumonia and 21% state that they are not at risk at all. While this perceived risk of catching pneumonia is lower than that of catching influenza, it is greater than the perceived risk of catching meningitis and yet self-reported vaccination levels for the two conditions are similar (12% for pneumonia compared with 10% for meningitis).

Just 13% of those aware of pneumonia consider themselves "very much at risk" despite 70% of the sample meeting one or more clinical criteria[5,8,9] for being at risk for pneumonia. Amongst this clinically defined higher risk group, just 16% believe themselves to be very much at risk. While significantly higher than among the lower risk population, it still represents just one in six of those most at risk of the disease.

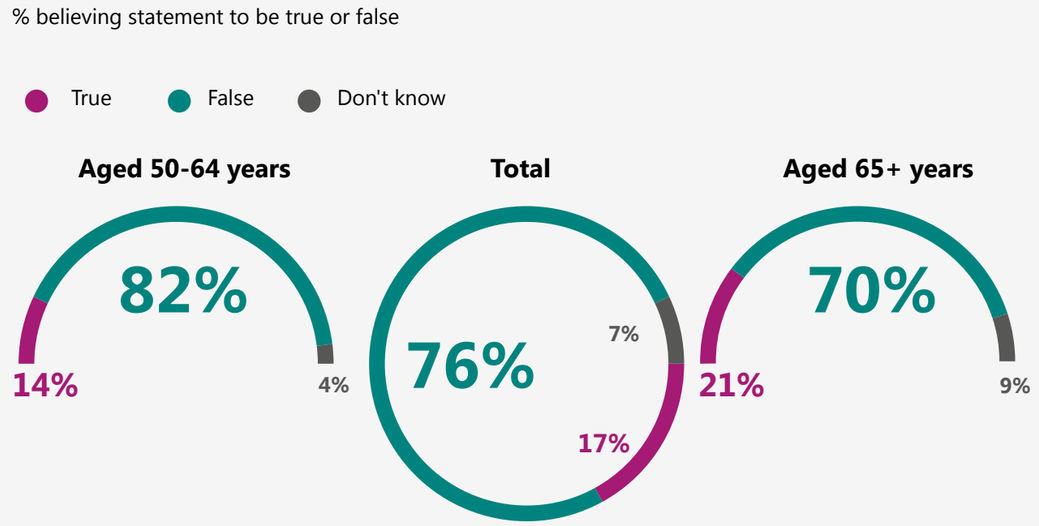
Only two in five (41%) feel either very or fairly well informed about risk factors for catching pneumonia but the majority recognise that pneumonia is not confined to unfit or unhealthy people. Three quarters (76%) acknowledge it is *false* that "pneumonia does not affect fit and healthy people".

At the same time however, one in six (17%) do think that "pneumonia does not affect fit and healthy people" is a *true* statement. There is wide variation across markets, ranging from 9% in the UK to 28% in Greece regarding it as *true*. This number is also significantly higher among the 65 and above age group (21% compared with 14% for those under 65) and those at higher risk (18% vs 14% for those at lower risk). Later in this report we will see again how many consider staying fit and healthy to be effective protection against pneumonia.

Perceptions of risk of catching different illnesses/ viruses



Pneumonia does not affect fit and healthy people

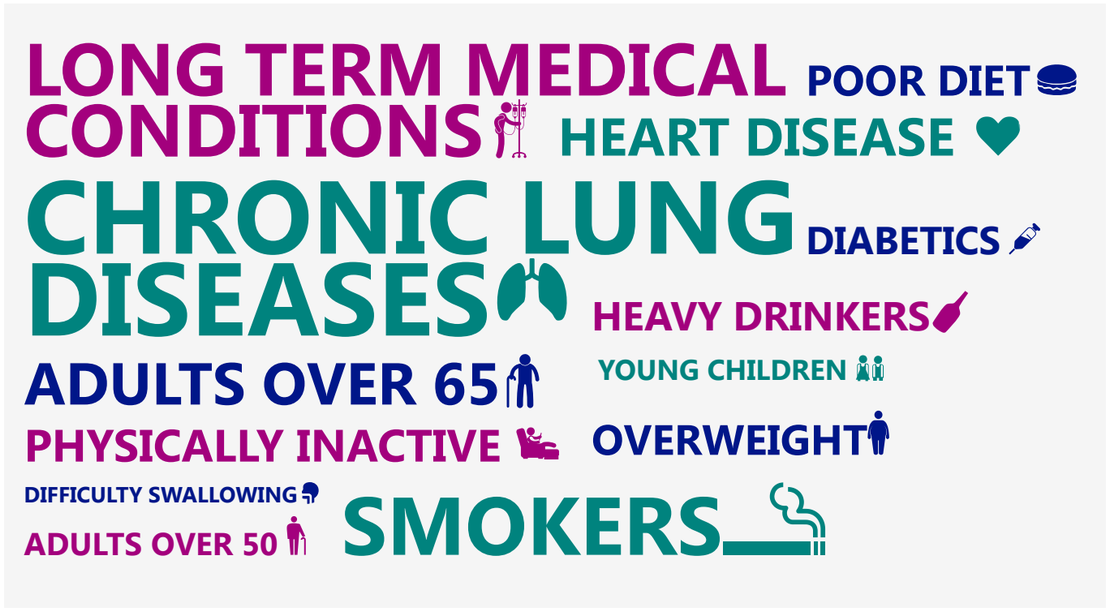


The state of a person's health is more commonly associated with a higher than average risk of catching pneumonia than simply old age.

Overall, people with chronic lung conditions (92%) or long term medical conditions (75%) and smokers (83%) are most commonly identified as being at a higher than average risk of catching pneumonia. At the other end of the scale, "people who have difficulty swallowing" receives very little recognition (22%) despite being strongly associated with community acquired pneumonia in the elderly.[11]

Looking at age, just 3% believe it is *true* that pneumonia *only* affects old people. This is not to say that age isn't recognised as a factor. When thinking more generally, 60% think adults over 65 (or adults over 60 in Germany) are at higher than average risk of catching the disease, compared with 32% for adults over 50. However age is not given the same prominence as other health conditions.

Groups felt to be at a higher than average risk of catching pneumonia



Commentary

A lack of clarity around risk factors for pneumonia could be an important contributing factor in the failure of many older adults, and those at higher risk in particular, to see themselves as vulnerable to pneumonia or recognise the danger it can pose to loved ones.

"We need to raise awareness of pneumonia so that people who are at risk take action to be vaccinated. People who have a lung disease or smoke are more likely to catch pneumonia, and many of us don't realise that older age is a critical risk factor." **Dr Jane Barratt, Secretary General of the International Federation on Ageing**

Taking difficulty swallowing (or dysphagia) as an example, **Professor Antoni Torres, Professor of Medicine, Hospital Clinic of Barcelona** comments, "*Not many people know that some forms of pneumonia can also develop when food or saliva containing germs accidentally goes down the windpipe and into the lungs, where it starts an infection. People who have difficulty swallowing, for example the elderly and patients with lung diseases, are at increased risk of this type of pneumonia. We need to raise awareness of this significant risk factor in order to help improve prevention.*"

Pneumonia is more likely to be seen as an illness that affects other people rather than themselves.

- 56% of adults aged 65 years and older identify "adults over 65" as being at a higher than average risk of catching pneumonia. However, when thinking about their own risk, Just 15% consider themselves "very much at risk"
- 74% of smokers identify "smokers" as being at a higher than average risk of catching pneumonia. However, just 16% consider themselves to be "very much at risk"

This sentiment is followed through to level of concern over the risk of catching pneumonia, with a greater proportion expressing concern for older friends and family (41%) compared to concern for themselves (21%).

On the whole, people are not overly worried about the risk of catching pneumonia (78% are not very or not at all concerned compared to 7% who are very concerned and 13% who are fairly concerned).

Commentary

The expert panel attribute a lack of concern for pneumonia to a failure to understand the true consequences of pneumonia.

"People need to know that if you catch pneumonia, it will not quickly go away. Recovery from pneumonia can take months after hospitalisation, even in healthy people and pneumonia can have a serious long-term impact on work, social life and independence." **Prof Tobias Welte, Professor of Pulmonary Medicine, Hannover University School of Medicine**

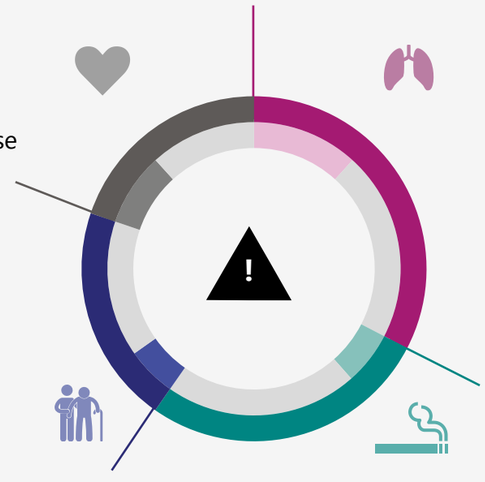
Disparity between those identifying group as being at a higher risk of pneumonia and considering them selves to be at a high risk

54%
of those suffering from heart disease think those that have heart disease are at higher risk

but only **22%** of those suffering with heart disease consider themselves very much at risk

89%
of those with lung conditions think those with lung conditions are at higher risk

but only **32%** of those with lung conditions consider themselves very much at risk



56%
of those aged 65+ think those that are aged 65+ are at higher risk

but only **15%** of those aged 65+ consider themselves very much at risk

74%
of smokers think smokers are at higher risk

but only **16%** of smokers consider themselves very much at risk

The impact of pneumonia

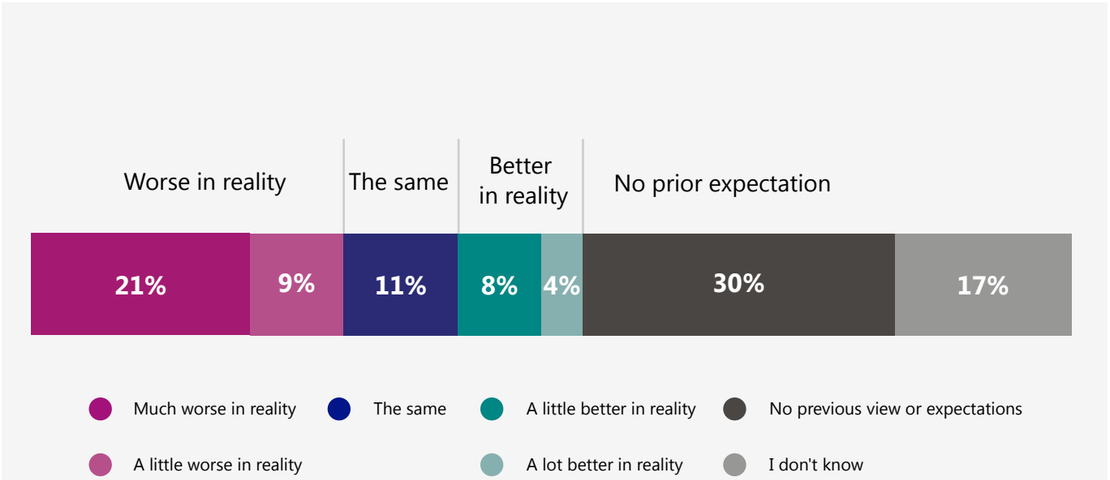
If pneumonia does strike, it tends to be worse than anticipated.

Pneumonia does touch people's lives. 12% claim to have personally suffered from the disease and 36% have a close friend or close family member who they believe has had pneumonia. When thinking back to that time when they had pneumonia, one in two (52%) sufferers claimed to have felt "surprised", reinforcing the misconception that pneumonia is very much seen as an illness that happens to other people.

Continuing to reflect an "it will never happen to me" mentality, one in three had no preconceptions of what pneumonia would be like. However, amongst those who did, it often turned out to be much worse in reality.

The most common areas where pneumonia has a *big* negative impact are "mobility/ ability to get out and about" (30%) followed by "social life" (21%). From an economic perspective, 17% see a *big* negative impact on their "work life" and 7% on their "finances". Interestingly, a greater proportion of those under 65 report a *big* negative impact of pneumonia compared to older sufferers.

How the reality of having pneumonia compared to preconceptions



Commentary

Our expert panel believe that a renewed focus on the detrimental impact that pneumonia can have is key to raising the profile of pneumonia and encouraging people to take preventative action. There is a need to talk more about what having pneumonia will actually mean for people's daily lives.

"Pneumonia can have a devastating impact on the lives of people of all ages. Patients as well as older people are most vulnerable. It can diminish their mobility and general functioning, which in turns affects their work, social life and family duties. It often leads to people feeling helpless, and not being able to complete the most basic personal tasks." **Dr Jane Barratt, Secretary General of the International Federation on Ageing**

Thinking back to the time they were suffering from pneumonia, the most commonly selected negative emotion is "surprised" (52%), followed by "powerless" (45%), "poorly informed" (36%), "scared" (35%), and "anxious" (32%). On the positive side, older adults report feeling "supported" (73%) and "confident it would pass soon" (62%). This indicates that while appropriate care may be in place for sufferers, less success has been had with educating and informing people about the disease, particularly in terms of enabling them to feel more in control and prepared.

Personal experience of pneumonia has an understandable impact on attitudes towards the disease. While views of its seriousness are similar to those who have not had pneumonia, the sense of one's own risk is heightened (29% feel very much at risk compared with 11% of those who have not had pneumonia). In line with this, past sufferers' level of concern about the risk of catching pneumonia is also higher (15% are very concerned compared with 6% of those with no personal experience of pneumonia).

Emotions felt by sufferers of pneumonia

Pneumonia prevention

Vaccination is less commonly felt to be an effective means of preventing pneumonia, compared to other simple lifestyle measures.

When thinking *generally* about steps personally taken to stay healthy, a smaller proportion of adults selected "having all recommended vaccinations" (68%) compared to 91% for "eat a healthy diet", 81% for "seek regular check-ups with their doctor" and 77% for "exercise regularly".
This seems to reflect less proactive attitude to vaccination. While 85% agree that they "trust vaccines to help prevent infectious diseases", 92% say they agree that they "follow their doctor's advice". Furthermore, looking at those who have been vaccinated against pneumonia, only 8% claimed it was their own idea. The implication is that people tend to wait to be offered a vaccination rather than actively requesting it.

While almost everyone claims to be doing something to stay fit and healthy, when it comes to pneumonia, less than half believe it is *true* that it can be prevented. Older adults are divided as to whether "pneumonia can only be treated and not prevented". At a total level 46% think this statement is *true* compared to 39% believing it to be *false*. By extension, the responses indicate that at least 54% could be unaware that pneumonia can be prevented. Without this fundamental understanding, any talk of preventative strategies, let alone vaccination, would be premature.

Commentary

While our expert panel acknowledge that it is human nature to focus on treatment rather than prevention, when thinking about public health in general, the rise in antibiotic resistance makes it even more important to move the focus towards prevention.

"Overreliance on antibiotics has led to antimicrobial resistance, whereby standard treatments become ineffective and infections persist. This has become a very real threat to people's health. Rather than treating people once they've become ill with pneumonia, vaccination should be used to prevent the disease in the first place. This 'prevention is better than cure' message needs to reach everyone in society – healthcare professionals and patients alike." " **Prof Tobias Welte, Professor of Pulmonary Medicine, Hannover University School of Medicine**

Attitude towards vaccination in general

Total agreeing...

85%
"I trust vaccines to help prevent infectious diseases"

68%
% saying they "ensure I have all recommended vaccinations"

27%
"I try to avoid vaccines because I think they are not safe"

It is clear that for many, lifestyle measures can be seen as effective at protecting against pneumonia. Almost all (92%) believe that "keeping fit and healthy" is effective, followed by "not smoking" (87%), "wearing warm clothes" (69%) and "avoiding long periods in air conditioned rooms" (64%). This reflects the 75% believing it is *true* that "being cold and wet for a long period puts you at high risk of pneumonia".

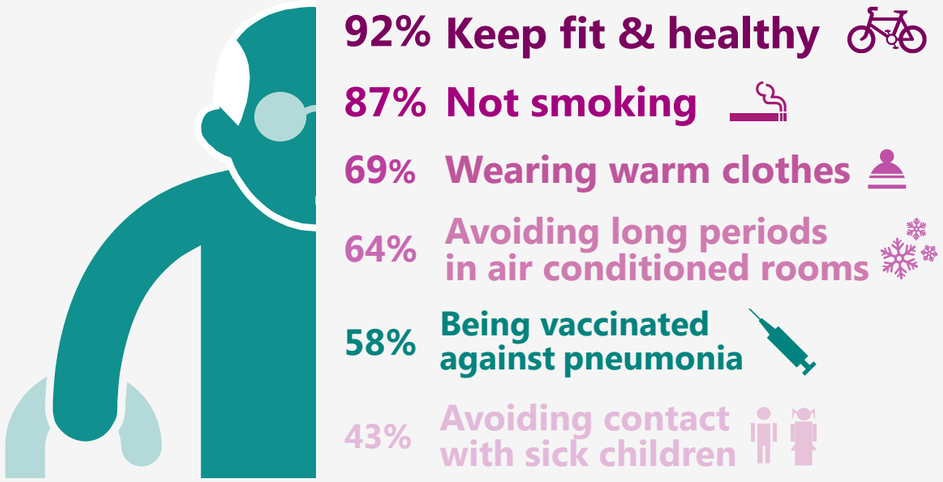
In the context of the above lifestyle measures, a relatively low number of older adults (58%) state that "being vaccinated against pneumonia" is effective . Even lower is the 43% selecting "avoiding contact with sick children" and yet the expert panel considered avoidance of those who are ill to be one of the most important preventative measures that can be taken.

Commentary

This indicates that clear and accurate messages around prevention are simply not getting through, leaving people to rely on anecdotal and often inaccurate measures to try avoid the illness.

"Information on pneumonia must reach those who are at high risk of the disease in the most effective and efficient way, e.g. online self-assessment tools. Unless people know about pneumonia and how to prevent it, many more millions of lives will be lost to this deadly disease." **Dr Jane Barratt, Secretary General of the International Federation on Ageing**

Effective measures against protecting against pneumonia



Pneumonia vaccination

Awareness of pneumonia vaccination is low and there is a poor conversion rate from being aware to taking action, with even lower levels of vaccination.

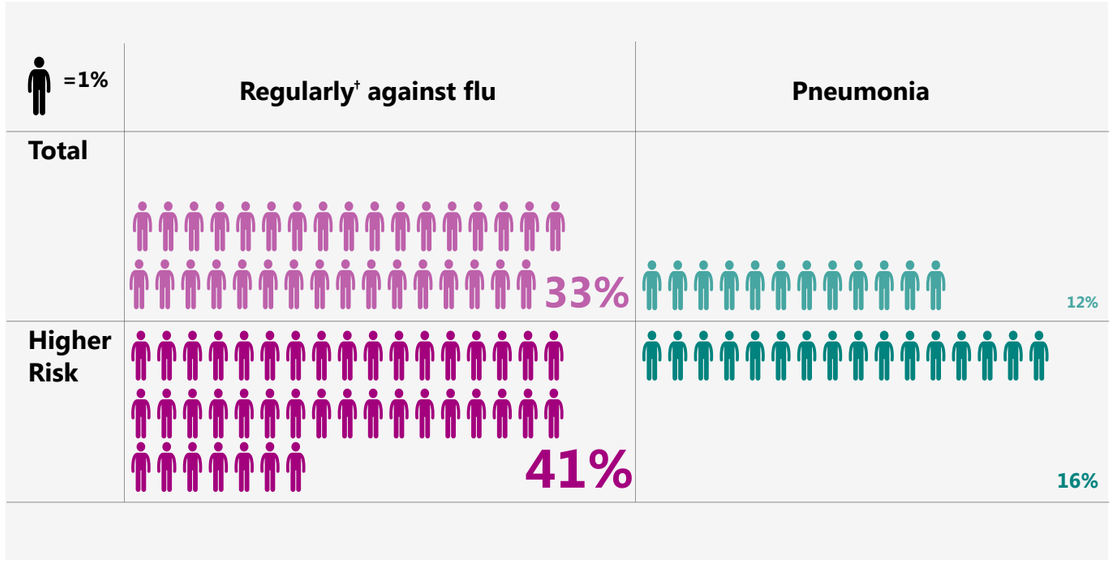
Overall, 29% are aware that it is possible to be vaccinated against pneumonia, although there is wide variation across markets (ranging from 14% in France to 49% in the UK and 48% in Greece). While this total figure is low, there is an indication of progress among the key target groups.

Higher awareness is reported among those aged 65 and above (35% compared with 24% among those under 65) and those in the higher risk group (32% compared with 22% for those at lower risk). At 48%, those with a lung condition like COPD or asthma are the most likely to be aware of pneumonia vaccination.

However, while positive, these figures are still low leaving 1 in 2 of those with a lung condition and two in three of those aged 65 and over not even aware of pneumonia vaccination.

Awareness is only the first step and does not necessarily translate into action. The level of self-reported pneumonia vaccination among all older adults is 12%, rising to 16% among the higher risk group. This can be compared to the 33% of the general 50 years and older population (and 41% of those at higher risk of pneumonia) claiming to have been regularly vaccinated† against flu.

Self reported - vaccination levels



†*Regularly vaccinated is defined as at least four times in the past five years*

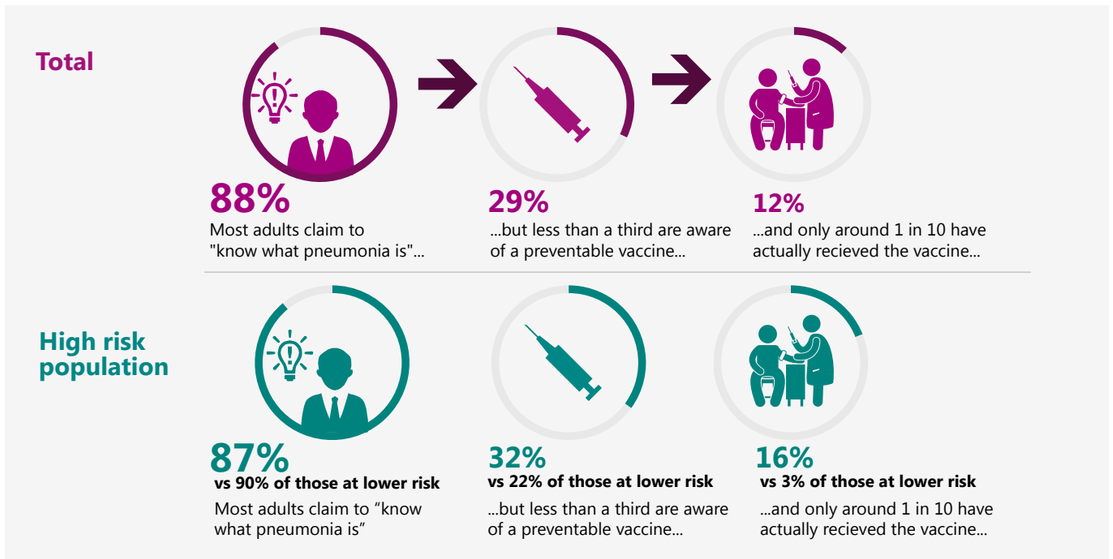
Looking at the patient pathway from awareness of pneumonia to actual vaccination reveals the high proportion being lost at key steps along the way. Ultimately only 42% of those aware of the vaccine go on to have it.

By far the most common driver for pneumonia vaccination is a prompt from a doctor (stated by 75% of those vaccinated against pneumonia – 66% stating GP or family doctor and/or 11% stating specialist doctor). This is consistent with the 92% who agree that they "follow their doctor's advice" when it comes to vaccination.

Similarly, when those who are aware of the pneumonia vaccine but have not received it are asked why not, the most common reason selected is "my doctor has never offered it to me" (55%). This further reinforces the important role that healthcare professionals (HCPs) have to play in increasing levels of pneumonia vaccination.

The doctor is even more significant when it comes to focusing on the higher risk population. This group is more likely to be seeking regular check-ups with their physician (83% compared with 75% of the lower risk population). A higher proportion also *strongly* agree that they follow their doctor's advice when it comes to vaccination (71% compared with 67% of the lower risk group). This would indicate that there is both an opportunity for, and an openness to, doctors raising the topic of pneumonia vaccination with their most at risk patients.

Conversion rates from disease awareness to vaccine awareness to having the vaccine



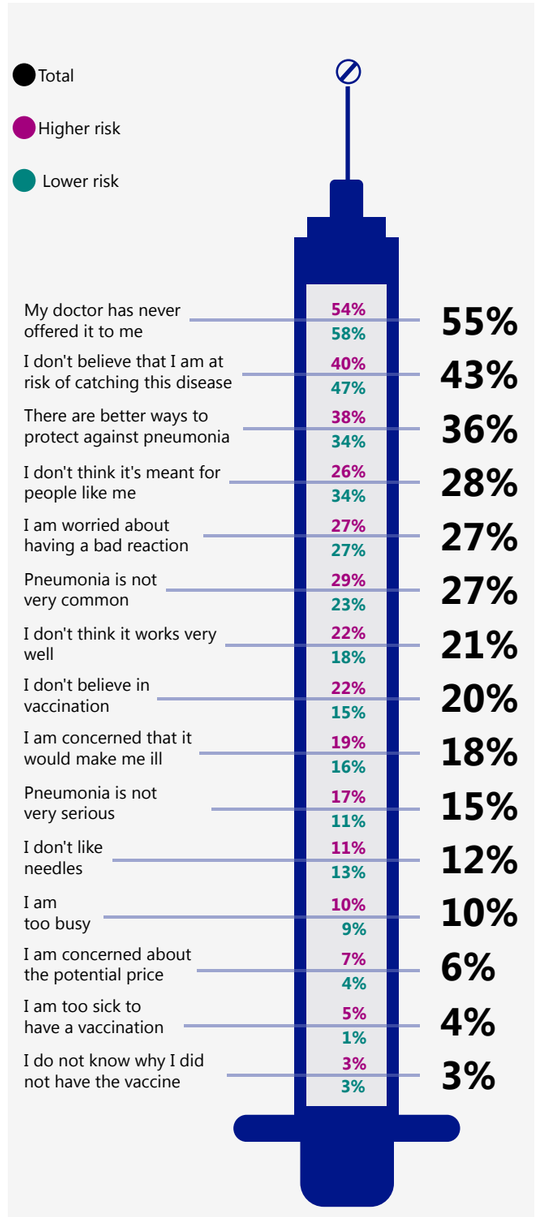
If the pneumonia vaccine were recommended by their doctor and at no cost to them, 53% of older adults (who have not already been vaccinated) would be likely to have it, providing a significant boost to vaccination levels. This figure rises to 56% of the higher risk group compared with 48% of those at lower risk.

Previous awareness of pneumonia vaccination leads to an even higher proportion likely to follow their doctor's advice and have the vaccination (63% of those previously aware compared with 50% of those unaware).

While physicians are undoubtedly key to raising vaccination rates, it would be overly simplistic to assume that it is just a question of offering it more frequently.
With one in two of those aged 50 and older likely to take up the offer, this still leaves 47% who would be unlikely to have the vaccination (44% of the higher risk group)[††].
Additional reasons commonly selected for not having had the vaccination are "I don't believe that I am at risk of catching the disease" (43%) and, of greater concern, "there are better ways to protect against pneumonia" (36%).

Fears over safety also feature. Among those who are aware of the pneumonia vaccine but have not had it, 27% are "worried about having a bad reaction" and 18% are "concerned it would make them ill". This issue is not specific to pneumonia vaccination with 27% of older adults agreeing that they "try to avoid vaccines because I think they are not safe."

Reasons for not being vaccinated against pneumonia



[††] *The remainder answered "don't know"*

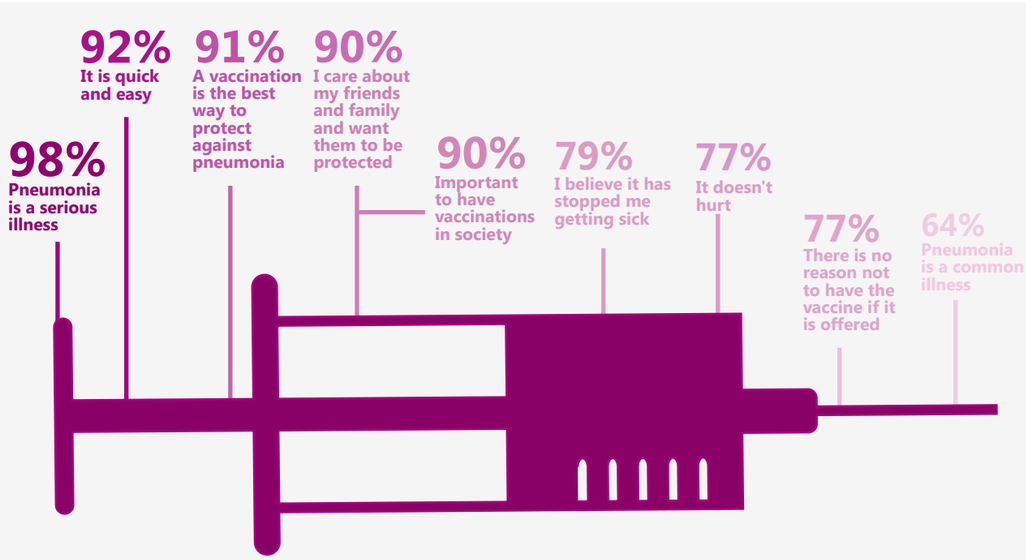
The majority (85%) of those who have had a pneumonia vaccination would recommend it. While the perceived seriousness of pneumonia is the main reason (98%), more emotional responses around a desire to protect also feature prominently. 91% see vaccination as the “best way to protect against pneumonia”, while 90% care about family and friends and want them to be protected. The same number think it is important to “have vaccinations in order to protect society”.

Commentary

There is a need to send out clearer messages around vaccine safety. People are often concerned about bad reactions or getting ill and require reassurance.

“Vaccination can support good health and offer prevention against serious, and potentially deadly contagious diseases like pneumonia. Pneumonia vaccination is safe and effective and can help to save lives.” **Prof Antoni Torres, Professor of Medicine, Hospital Clinic of Barcelona**

Reasons for reccomending the pneumonia vaccine



Information needs

Despite high stated levels of pneumonia awareness, older adults still recognise the need for more information on all aspects of the disease.

These results reinforce the lack of understanding about pneumonia and a desire for additional information. Less than 1 in 10 feel *very* well informed about "pneumonia as a disease in general" (8%), "risk factors for catching pneumonia" (7%) and "vaccination against pneumonia" (7%). While these numbers are slightly better for the at risk group, they remain low.

As a result of having pneumonia, people tend to feel better informed about "pneumonia as a disease in general" (65% very or fairly well informed compared with 42% for those with no personal experience of pneumonia) and about "risk factors for catching pneumonia" (57% very or fairly well informed compared with 39%). They also claim to be better informed about "vaccination vaccination against pneumonia" (32% very or fairly well informed compared with 20%) and more past sufferers have been vaccinated (25% compared with 10%).

	Total sample	Higher risk sample	Lower risk sample
Pneumonia in general			
Very well informed	8%	8%	7%
Fairly well informed	37%	38%	36%
Not very well informed	42%	40%	45%
Not at all informed	12%	13%	12%
Risk factors for catching pneumonia			
Very well informed	7%	7%	5%
Fairly well informed	35%	35%	34%
Not very well informed	43%	41%	47%
Not at all informed	14%	15%	12%
Vaccination against pneumonia			
Very well informed	7%	8%	4%
Fairly well informed	15%	16%	11%
Not very well informed	25%	23%	28%
Not at all informed	52%	50%	56%

However, previous sufferers' knowledge of pneumonia prevention and risk factors is not significantly better than those with no personal experience of the condition. They are just as likely to think it is *true* that "pneumonia can only be treated and not prevented" (45% for those with experience of pneumonia compared with 46% for those without) and the same number state that "being vaccinated against pneumonia" is effective at protecting against it (57% for those with experience of pneumonia compared with 58% for those without), while more commonly selecting the other lifestyle measures. Furthermore, they are even more likely to see "avoiding long periods in air conditioned rooms" as effective at protecting against pneumonia (67% for those with experience of pneumonia compared with 63% for those without).

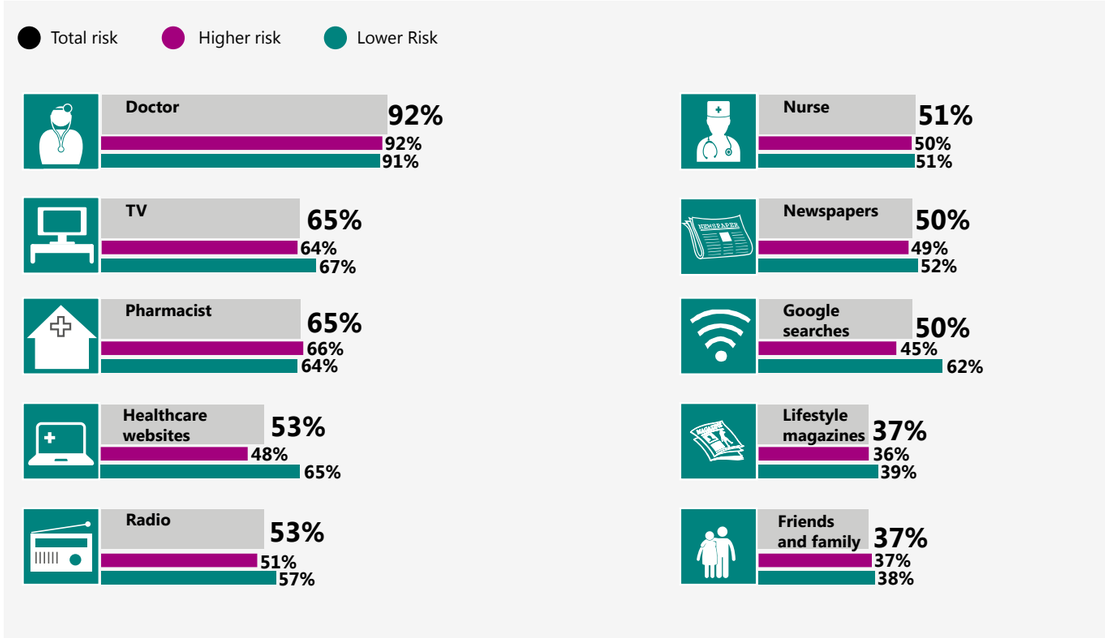
The majority of adults think that there is a need for more information on pneumonia (67%), risk factors(71%) and vaccination (70%). They also display an openness to multiple channels of information. While the doctor is the most popular source, for a general information campaign popular media, pharmacies and the internet are also felt to have a role. However, for more targeted communication the higher risk group appear less receptive to the internet, newspapers and radio as sources of further information.

Commentary

Doctors are very important but they are also constrained in what they can achieve by competing priorities and limited time during patient consultations. While there is a need to ensure physicians are properly equipped to quickly and easily educate patients, our expert panel believe that people also need to get more involved in their own 'healthy ageing'. They call for a cross-generational approach to pneumonia education, involving older adults and their family members, as well as doctors and other allied health professionals, like nurses and pharmacists.

"Growing older comes with a variety of health challenges, but regardless of age everyone can take action to maintain good health and reduce the risk of disease and disability. Grown-up children often play a pivotal role in supporting their parents in a variety of health-related matters, including ensuring timely and appropriate vaccinations and health screenings." **Dr Jane Barratt, Secretary General of the International Federation on Ageing**

The doctor is the most popular source of further information, again highlighting the important role they have to play more about pneumonia



Next steps from the research

The results of this study highlight a need for more information on all aspects of pneumonia. In particular, educating older adults on the risk it could pose to them personally.

Renewed efforts are needed to clearly communicate the following key messages:

- Pneumonia is more common and more serious than people may think
- Some forms of pneumonia may be contagious
- Pneumonia poses a real risk to those aged 65 years and older, or suffering from certain medical conditions
- Pneumonia can be prevented as well as treated

Physicians have a key role to play in pneumonia education and prevention. They can be better supported through wider awareness campaigns in popular media, as well as the provision of better patient orientated materials to distribute. However, older adults should also be encouraged to be more proactive in understanding their personal risk of pneumonia and steps that can be taken to protect themselves.

All those with an interest in pneumonia and pneumonia prevention are encouraged to make use of the study's findings to drive debate and inform future policy.

"Don't underestimate the power of this new data. We can use this to speak to healthcare professionals, but also politicians and public health authorities. Think creatively how to get this out to the public." Dr Jane Barratt, Secretary General of the International Federation on Ageing.

Please see the appendix for details on how to reference the PneuVUE® study or find out more.

AUSTRIA

[Note: Survey total figures refer to results for the total sample of all nine (9) countries surveyed weighted to population size]

PneuVUE®
Austria findings

Awareness and understanding of pneumonia is relatively low in Austria

81%
claim to
"know what it is"

61%
correctly identify it
as a lung condition

But
64%
think it's true that some forms of pneumonia may be contagious

Pneumonia is said to be a serious disease, but there is an apparent failure to link this to a risk to their own personal health in Austria and concern over the risk of catching pneumonia is very low

90%
think pneumonia is serious

Only
12%
are concerned about the risk of catching pneumonia

Only
22%
of those clinically defined as being at higher risk of pneumonia[5,8,9] recognise themselves as 'very much at risk'

22%
think pneumonia and flu are responsible for the highest number of deaths in Austria(6%)

– in reality, pneumonia is responsible for almost 17 times as many deaths as flu[††10]

There is a lot of uncertainty about whether pneumonia is a preventable disease, and how to prevent it

Only
51%
think it is *true* that "pneumonia can *only* be treated and not prevented".

A higher proportion think the following are effective at protecting against pneumonia

keeping fit and healthy	97%
not smoking	86%
wearing warm clothes	81%
avoiding long periods in air conditioned rooms	63%
compared to being vaccinated	48%

Awareness of a preventative pneumonia vaccine is relatively low and uptake is also low

Only
37%
are aware it is possible to be vaccinated against pneumonia

Trust in vaccines is generally low - with only 48% agreeing that "I trust vaccines to help prevent infectious disease"

Only
11%
of those at high risk of pneumonia have been vaccinated compared with 4% of the lower risk group

Doctors, and other allied health professionals such as pharmacists have a key role to play in widening awareness, increasing perceptions of personal risk and raising vaccination rates

72%
of those who have been vaccinated against pneumonia say it was prompted by their doctor

Most common reason for not being vaccinated is

58% My doctor has never offered it to me

††Pneumonia was responsible for 741 deaths in Austria in 2013 compared with 45 for flu. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)

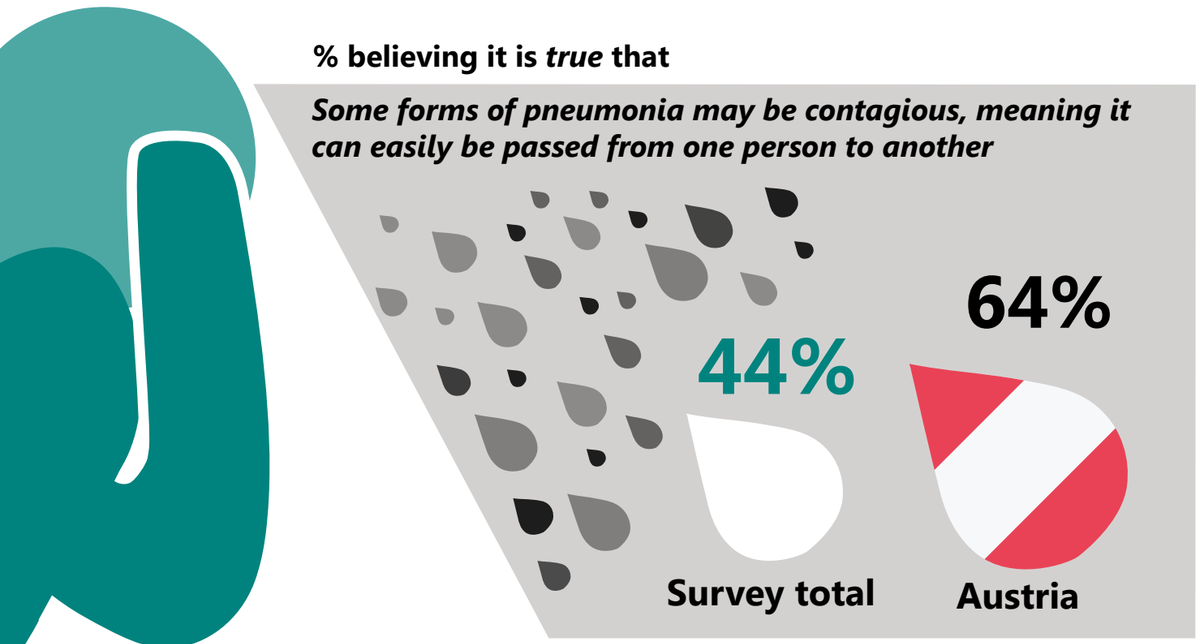
Pneumonia awareness

When it comes to pneumonia awareness, Austria is behind other countries although understanding of the symptoms and the contagious nature of the disease seem to be higher than general levels of awareness might suggest

Almost all respondents (99%) are aware of pneumonia, but just 81% claim to "know what pneumonia is". This is one of the lowest levels seen in all countries surveyed. Understanding of the disease is also low with just 61% identifying it as a lung condition and over a quarter (26%) acknowledging that they don't know what the nature of the condition is. This compares to a survey total of 80% associating pneumonia with a lung condition.

When prompted, the main symptoms are believed to be "difficulty breathing" (91%), "tiredness/fatigue" (90%), "coughing" (90%), high fever (88%) and chest pain (80%). Far fewer associate it with sneezing (21%) or nausea (16%).

Older adults in Austria are the most likely to think it is *true* that "some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another" (64% for Austria compared with 44% for survey total sample). This understanding leads to an increased perception of personal risk (which will be explored later in the report).



Pneumonia is recognised by most as a serious illness with 90% rating it as extremely serious or rather serious. The vast majority 90% also agree it is *true* that it can take months to recover from pneumonia.

In the context of other conditions tested, the proportion regarding pneumonia as serious is just behind meningitis (94%), HIV (92%) and just ahead of Hepatitis B (86%). It is far higher than the 65% considering influenza to be serious yet only 64% of older adults in Austria, agree it is true that "pneumonia is more deadly than flu".

A lack of clarity exists around the number of deaths pneumonia may be responsible for. Just under half (46%) believe it is *true* that "up to 20% of adults who catch pneumonia will die from it" and pneumonia is felt to cause fewer deaths than other causes presented.

The survey asked which out of pneumonia, car accidents, heart disease and influenza results in the most adult deaths in their country. 74% correctly select heart disease as the biggest killer. Only 6% thought pneumonia was the cause of the most adult deaths, the same proportion as those stated influenza (6%) and half as many as those who selected car accidents (12%). In reality however Eurostat figures for the Austria (2013) show that pneumonia is responsible for 50% more deaths than transport accidents[‡‡] and almost 17[§§] times as many deaths as flu.[10]

[‡‡]*In 2013, pneumonia was responsible for 741 deaths in Austria compared with 529 for transport accidents. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)*
[§§]*In 2013, pneumonia was responsible for 741 deaths in Austria compared with 45 for influenza. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)*

Risk groups & risk factors

In Austria there is a reasonable level of perceived risk yet little engagement with the condition and mixed views on preventative measures

Amongst those who have heard of pneumonia, 86% state that they feel at some risk from pneumonia; 19% feel very much at risk, however the majority (67%) only feel slightly at risk. Amongst the clinically defined higher risk group, concern is a little higher with around 1 in 5 (22%) considering themselves very much at risk (compared to 11% of those with lower pneumonia risk). Even though this is a higher level than seen in many other countries, when we consider that 67% of the Austrian sample meet the 'higher risk' criteria[5,8,9] this leaves a great number unaware of their personal risk level.

This compares with a higher figure of 27% who feel themselves to be "very much at risk" of catching flu, and 21% who feel "very much at risk" from tick borne encephalitis.

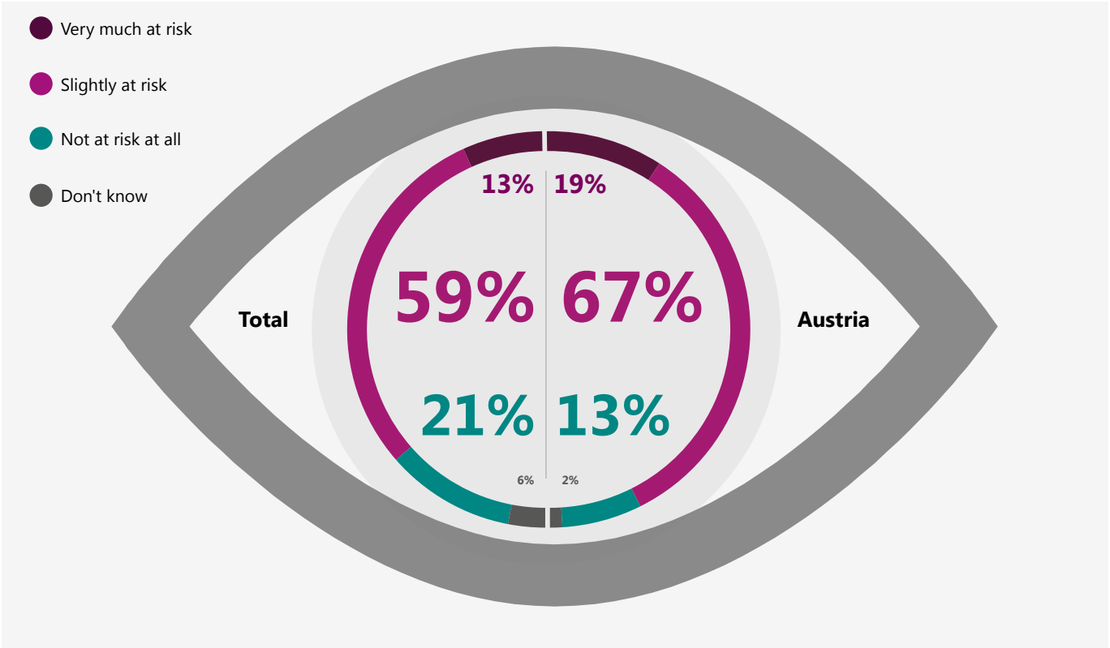
Although just 1 in 10 (11%) feel *very* well informed about risk factors for catching pneumonia, the majority (72%) acknowledge it is false that "pneumonia does not affect fit and healthy people". Amongst over 65s there is a higher level of misperception around this point, with 27% of those aged 65 and over *agreeing* that "pneumonia does not affect fit, healthy people" compared with 18% of under 65s.

Later in this report we will see again how many consider staying fit and healthy to be effective protection against pneumonia.

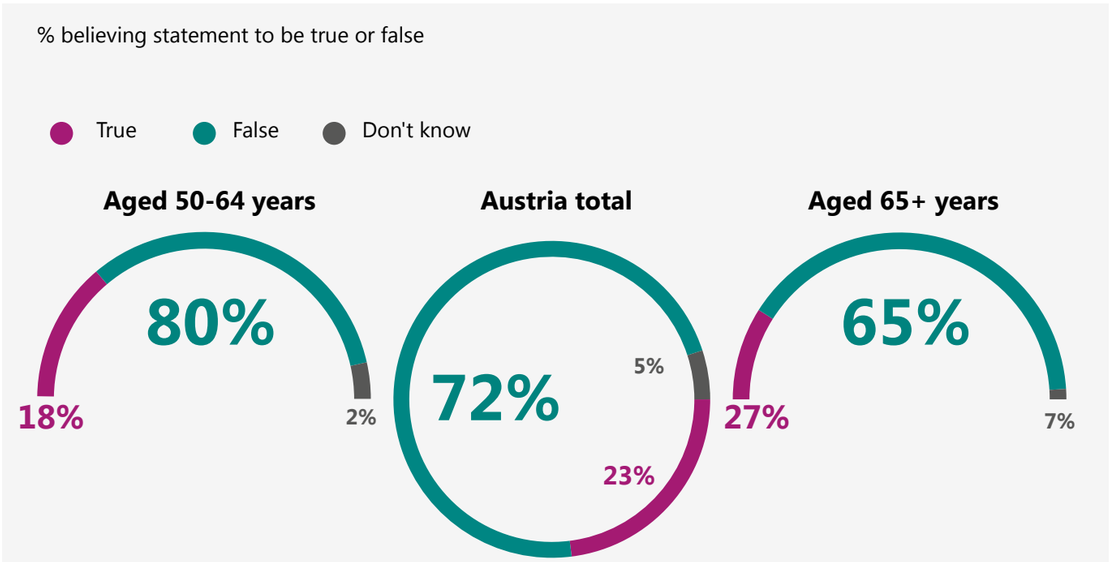
The state of a person's health is more commonly associated with a higher than average risk of catching pneumonia than simply old age.

Overall, people with chronic lung conditions (89%) or long term medical conditions (78%) and smokers (77%) are most commonly identified as being at a higher than average risk of catching pneumonia. At the other end of the scale, "people who have difficulty swallowing" receives very little recognition (17%) despite being strongly associated with community acquired pneumonia in the elderly.[11]

Perceptions of risk for pneumonia



Pneumonia does not affect fit and healthy people

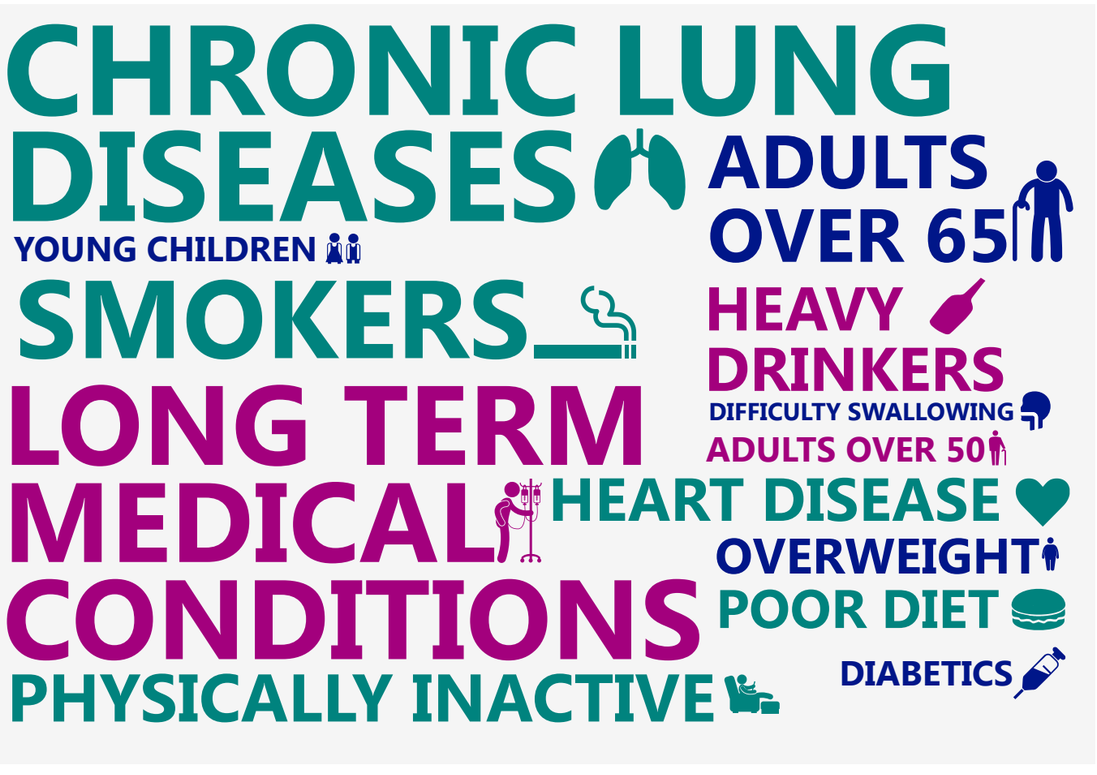


Young children are most likely to be seen as being at lower than average risk (27%), perhaps reflecting how successful the national pneumococcal immunisation programme has been in this age group.

When considering perceptions of age related risk, 3% believe it is true that pneumonia only affects old people and age is not strongly identified as a risk factor and around half of respondents (52%) think adults over 65 are at higher than average risk of pneumonia.

Although double the proportion (25%) considering adults over 50 to be at higher risk, it is still relatively low and age is not always given the same prominence as some other health conditions.

Groups felt to be at a higher than average risk of catching pneumonia



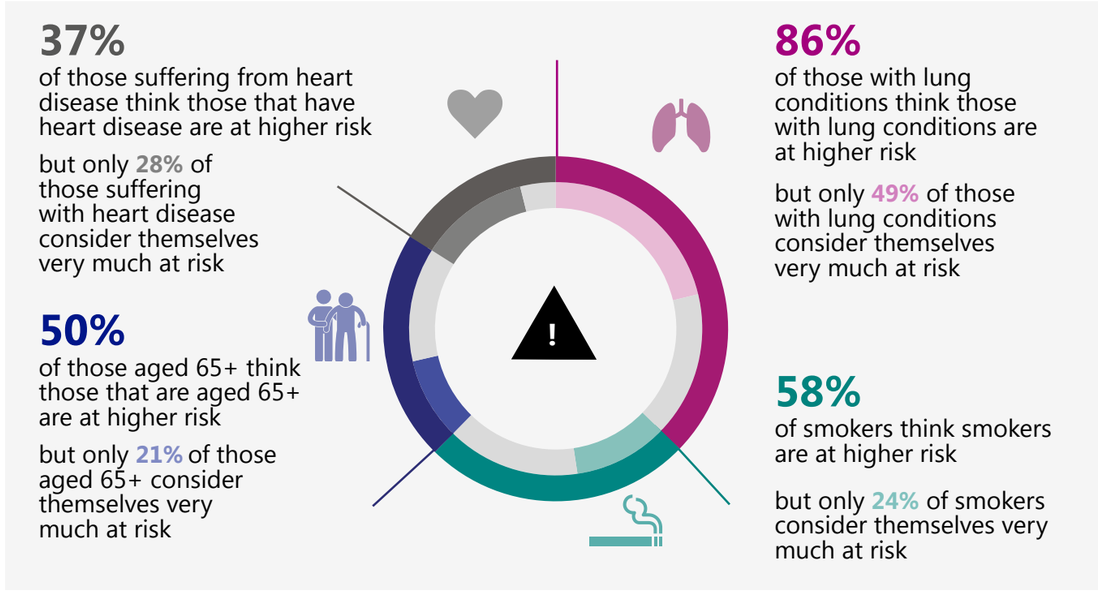
Pneumonia is more likely to be seen as an illness that affects other people rather than themselves, although this dynamic is less pronounced in Austria than in other countries.

- 50% of adults aged 65 years and older identify "adults over 65" as being at a higher than average risk of catching pneumonia. However, when thinking about their own risk, just 21% consider themselves "very much at risk"
- 58% of smokers identify "smokers" as being at a higher than average risk of catching pneumonia. However, just 24% consider themselves to be "very much at risk"

This sentiment is followed through to level of concern over catching pneumonia, with a greater proportion expressing concern for older friends and family (27%) compared to concern for themselves (12%) – some of the lowest levels in Europe (only Germany has comparable levels).

On the whole, older adult Austrians generally appear particularly unworried about the risk of catching pneumonia with 87% who are "not very" or "not at all concerned", and just 4% who are very concerned and 8% who are fairly concerned.

Disparity between those identifying group as being at a higher risk of pneumonia and considering them selves to be at a high risk



The impact of pneumonia

If pneumonia does strike, it tends to be worse than anticipated, although somewhat lower levels of negative impact were reported in Austria compared with other countries.

Pneumonia had certainly touched people's lives; 1 in 5 (21%) claimed to have personally suffered from the disease and 45% have a close friend or close family member who they believe has had pneumonia. Among sufferers, half (50%) claimed to have felt "surprised" when thinking back to that time reinforcing the false perception of the low risk of contracting the illness.

Continuing to reflect an "it will never happen to me" mentality, 1 in 4 (27%) had no preconceptions of what pneumonia would be like. However, amongst those who did, it turned out to be much worse in reality.

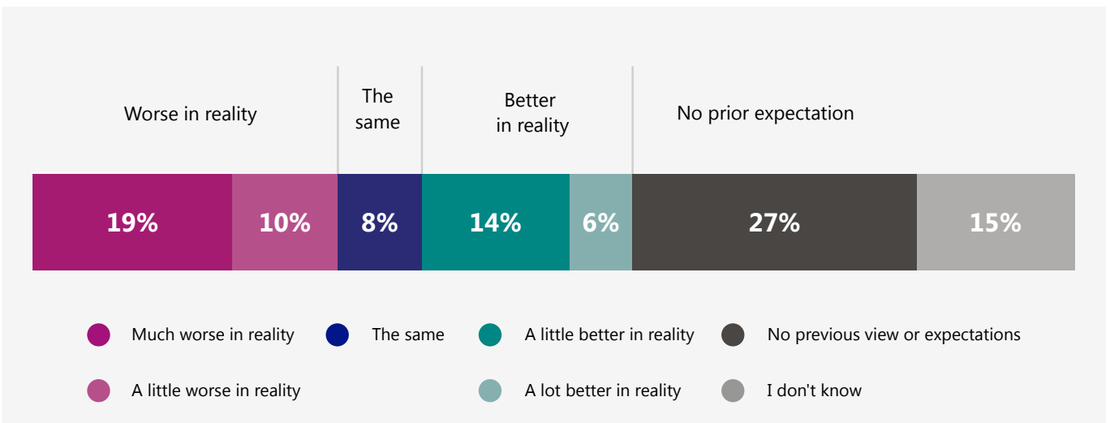
The most common areas where pneumonia has a *big* negative impact are "mobility/ ability to get out and about" (22%) followed by "social life" (14%) and independence in caring for myself (13%). From an economic perspective, 11% see a *big* negative impact on their "work life" but just 2% on their "finances".

Thinking back to the time they were suffering from pneumonia, the most commonly selected *negative* emotions are "surprised" (50%) and "powerless" (45%). Older adults in Austria are the least likely to feel scared (29% compared to a survey total of 35%) or anxious (12% compared to a survey total of 32%). On the positive side, pneumonia sufferers feel "supported" (73%) and optimistic with 69% saying they were "confident it would pass soon". Respondents in Austria are also most likely to be 'not bothered' by the experience (35% compared with 25% survey total).

Past pneumonia sufferers in Austria were generally optimistic about the outcome of their illness, and although many feel powerless, they are less likely to find it frightening than sufferers in other countries. This may help explain the relatively low levels of concern over pneumonia and, as we will see later, relatively limited interest in taking up a vaccine.

Despite this, personal experience of pneumonia does have an impact on attitudes towards the disease. While perceptions of its seriousness are similar to those who have not previously had pneumonia, the sense of one's own risk is heightened - 29% feel *very much* at risk compared to 15% of those who have not had pneumonia. In line with this, past sufferers' level of concern about catching pneumonia is also higher - 21% are very or fairly concerned compared with 9% of those with no personal experience of pneumonia.

How the reality of having pneumonia compared to preconceptions



Emotions felt by sufferers of pneumonia

Pneumonia prevention

Vaccination appears to be viewed with some caution in Austria, accompanied by a relatively low level of awareness of other effective preventative measures

When it comes to steps personally taken to stay healthy, 61% of older adults in Austria select "having all recommended vaccinations" (compared to a survey total of 68%). More likely to be chosen are "eat a healthy diet" (90%), "exercise regularly" (89%) and "seek regular check-ups with my doctor" (77%). Although in contrast, only 41% select "take vitamins". Older adults in Austria sample show some marked concerns around vaccination with only 79% of older adults agreeing that they "trust vaccines to help prevent infectious diseases" – only France has a lower figure at 76%. This proportion is higher in Vienna where 84% trust vaccines. Despite the generally lower level of trust among older adults in Austria, 90% agree that they "follow their doctor's advice" when it comes to vaccination.

This is reflected in when looking at what or who prompted those vaccinated against pneumonia to have the vaccine, with only 9% saying it was their own idea and the most common prompt being a doctor (72%). Given the underlying concerns around vaccines in general across the Austrian sample, it is clearly important to leverage this physician influence to help support uptake of the adult vaccine.

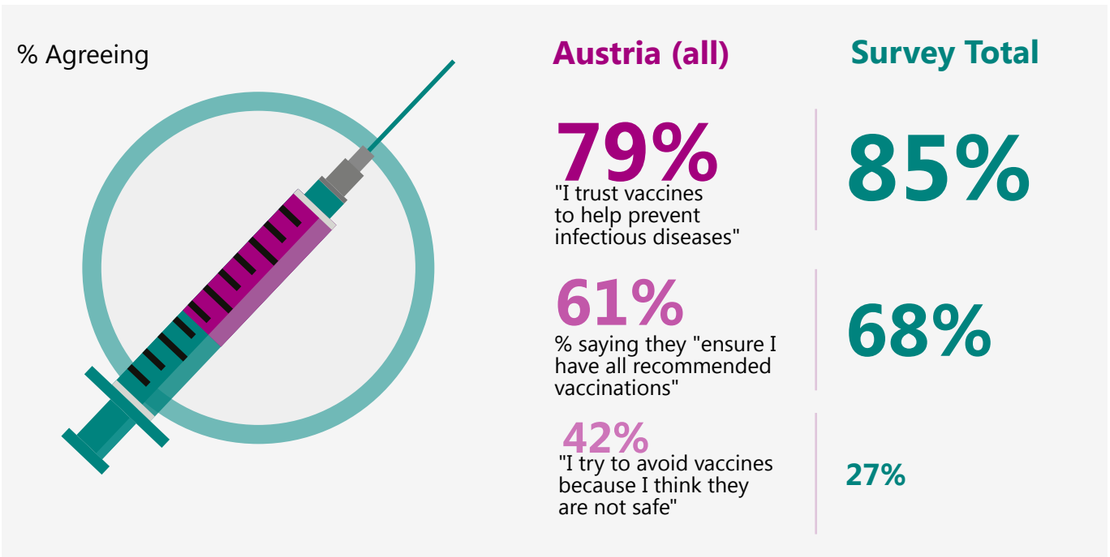
While almost everyone claims to be doing something to stay fit and healthy, when it comes to pneumonia, half (51%) believe it is *true* that "pneumonia can only be treated and not prevented" compared to 33% believing it is *false*[††]. Without this fundamental understanding, any talk of preventative strategies, let alone vaccination, would be premature.

It is clear that for many, lifestyle can be seen as effective at protecting against pneumonia. The most commonly selected responses are "keeping fit and healthy" (97%) and "not smoking" (86%).

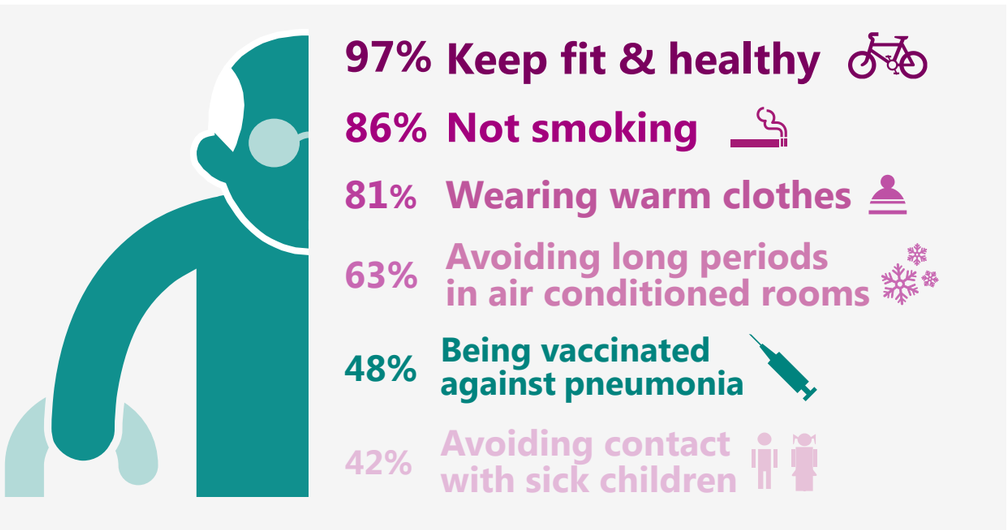
Older adults in the Austria are also very likely to consider anecdotal measures to be effective, such as "wearing warm clothes" (81%) or "avoiding long periods in air conditioned rooms" (63%) as effective. They are also highly likely to think it is *true* that "being cold and wet for a long period puts you at high risk of pneumonia" (80% compared with a total of 75%). Surprisingly, all of these measures are more likely to be seen as effective than "being vaccinated against pneumonia" (48%). While we see a similar ranking of effective measures in other countries, the proportion selecting vaccination in Austria is among the lowest seen. There are some regional differences however with higher recognition of the effectiveness of vaccination in 61% agreeing in Burgenland (61%) and Niederösterreich (56%).

The measure least likely to be seen as effective at protecting against pneumonia is "avoiding contact with sick children" (42%) and yet the expert panel considered avoidance of those who are ill to be one of the most important preventative measures that can be taken.

Attitude towards vaccination in general



Effective measures against protecting against pneumonia



Pneumonia vaccination

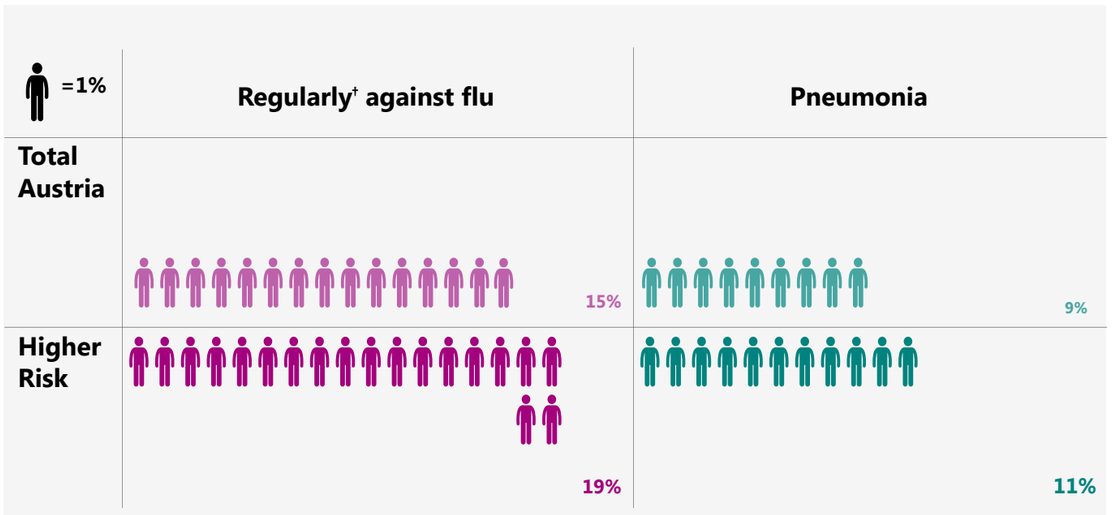
Awareness of a preventative pneumonia vaccine is not high, and uptake concentrated in the higher risk group.

Overall, 37% of older adults in Austria are aware that it is possible to be vaccinated against pneumonia, (compared with a total figure of 29%). Awareness is higher amongst at those at higher risk of pneumonia, although the difference is not great (39% awareness amongst higher risk compared with 32% amongst lower risk groups) and women are more aware (43%) than men (28%).

Awareness is only the first step and does not necessarily translate into action. The level of self-reported pneumonia vaccination among all older adults is low at 9%, although there are some wide regional differences ranging from 2% in Vorarlberg to 13% in Burgenland. Vaccination is more concentrated in the higher risk group with 11% vaccinated compared with 4% of those at lower risk. While this low level is in line with the rest of Europe, this does mean that 88% of the at risk group are left unprotected in Austria.

% vaccinated against pneumonia (self-reported)	
Total	9%
Burgenland	13%
Niederösterreich	11%
Wien	11%
Kärnten	8%
Steiermark	12%
Oberösterreich	5%
Salzburg	4%
Tirol	3%
Vorarlberg	2%

Self reported - vaccination levels



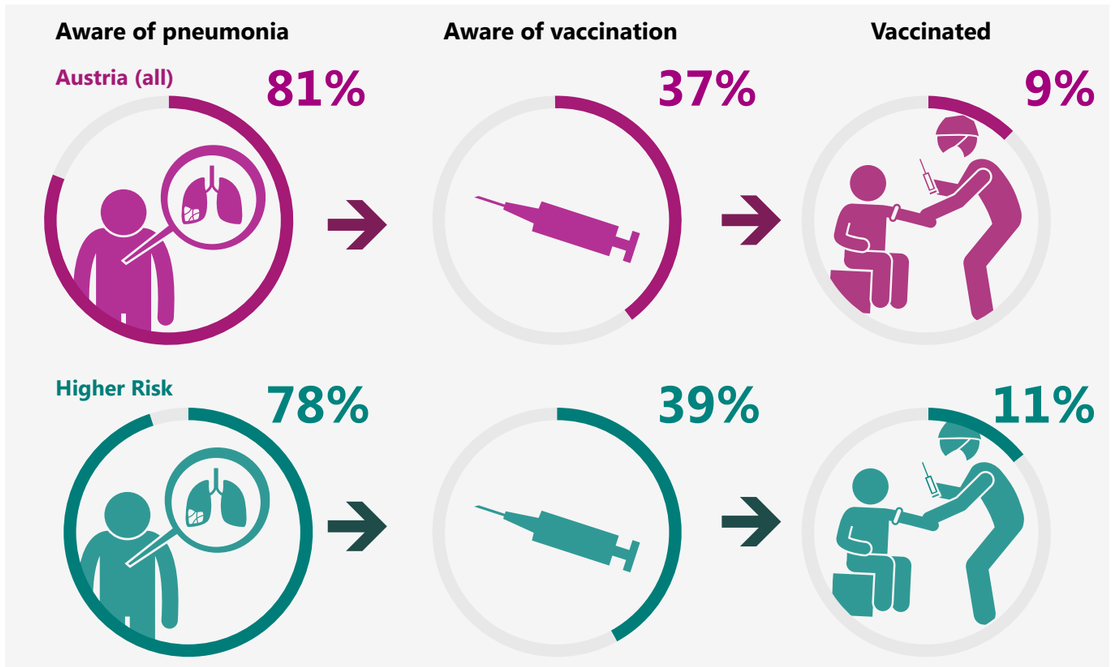
Low pneumonia vaccination rates can be compared to the 15% of the general 50 years and older population (and 19% of those at higher risk of pneumonia) claiming to have been regularly vaccinated† against flu – also low in comparison to other countries surveyed.

Looking at the patient pathway from awareness of pneumonia to actual vaccination reveals the high proportion being lost at key steps along the way. Ultimately only 23% of those aware of the vaccine will go on to have it, which compares negatively to the survey total of 42%.

By far the most common driver for pneumonia vaccination is a prompt from a doctor (stated by 72% of those vaccinated against pneumonia – 59% stating GP or family doctor and/or 15% stating specialist doctor). This is consistent with the 90% who agree that they "follow their doctor's advice" when it comes to vaccination.

Similarly, when those who are aware of the pneumonia vaccine but have not received it are asked why not, the most common reason selected is "my doctor has never offered it to me" (58%).

% lost at each key step of the patient journey



†*Regularly vaccinated is defined as at least four times in the past five years*

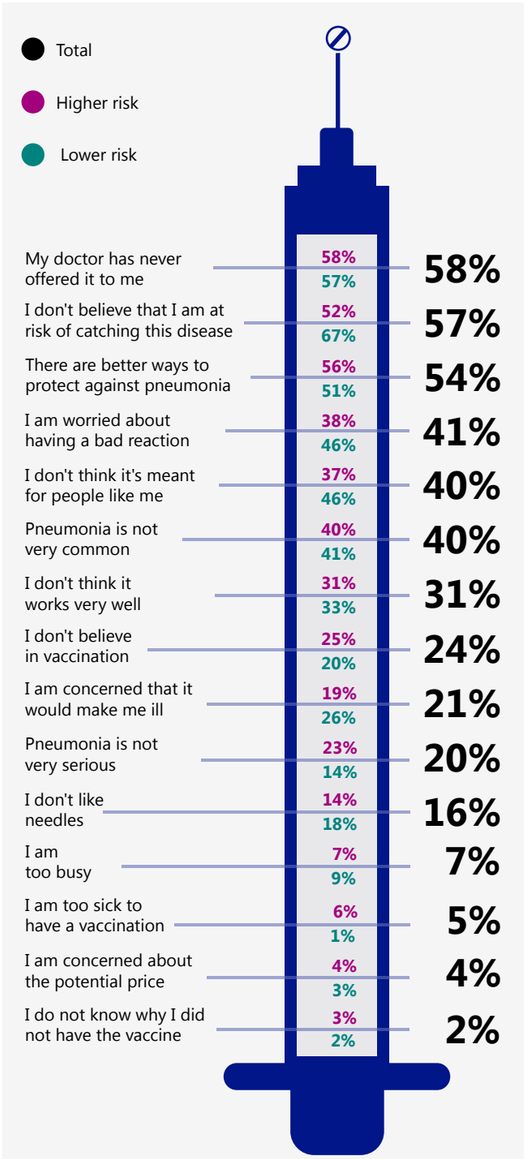
This further reinforces the important role that healthcare professionals (HCPs) have to play in increasing levels of pneumonia vaccination.

Austrian older adults more negative attitude towards vaccination is particularly apparent when asking if the pneumonia vaccine were recommended by their doctor and at no cost to them, how likely would (unvaccinated respondents) be to have it. Just 38% would be likely to have the vaccine, which is the lowest of all countries surveyed (survey total of 53%). The levels are higher, although still relatively low, amongst those aged 65 and older (44% would take up the offer compared with 33% of younger respondents) and the higher risk group (43% compared with 29% of those at lower risk).

Additional reasons commonly selected for not having had the vaccination are "I don't believe that I am at risk of catching the disease" (57%) and "there are better ways to protect against pneumonia" (54%). Continuing to reflect the low sense of one's own vulnerability, 40% have not been vaccinated because they think pneumonia is not very common and the same proportion think "it is not meant for people like me".

Fears over safety also feature. Among those aware of the pneumonia vaccine but who have not had it, 41% are "worried about having a bad reaction" and 21% are "concerned it would make me ill". At the same time, almost one in three (31%) "don't think it works very well". The issue of safety is not specific to pneumonia vaccination with 42% of older adults agreeing that they "try to avoid vaccines because I think they are

Reasons for not being vaccinated against pneumonia

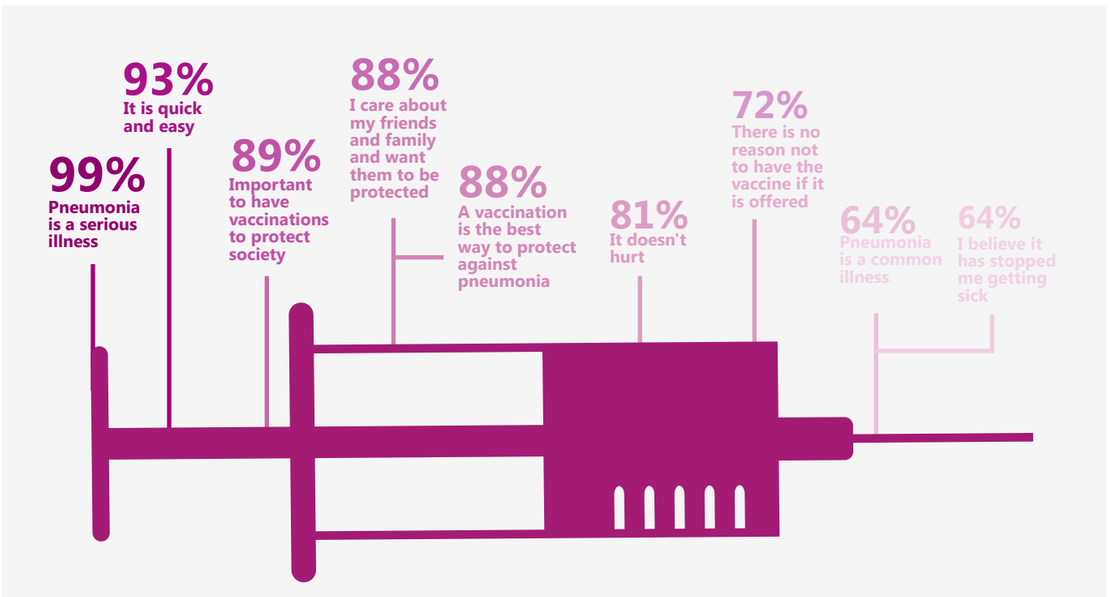


not safe". This is the highest level of seen and compares with a survey total of just 27%.

Among those who've had a pneumonia vaccination 85% would recommend it. The main reasons for this are both the practical and the more emotional. On the practical side there is the belief "pneumonia is a serious illness" (99%), the vaccination "is quick and easy" (93%), "vaccination is the best way to protect against pneumonia" (88%) and it "doesn't hurt" (81%).

On a more emotional level there is "I care about family and friends and want them to be protected" (88%) and "it is important to have vaccinations to protect society" (89%).

Reasons for recommending the pneumonia vaccine



Information needs

In line with the low levels of awareness of pneumonia vaccination, a high proportion do not feel well informed about the disease.

In Austria, only around 1 in 10 older adults feel very well informed about "pneumonia as a disease in general" (12%) or "risk factors for catching pneumonia" (11%). When it comes to vaccination against pneumonia, results are even lower with just 7% feeling very well informed.

As a result of having pneumonia, people tend to feel better informed about "pneumonia as a disease in general" (64% very or fairly well informed compared with 46% for those with no personal experience of pneumonia) and about "risk factors for catching pneumonia" (58% very or fairly well informed compared with 47%). They also claim to be better informed about "vaccination against pneumonia" (30% very or fairly well informed compared with 18%).

However, previous sufferers' knowledge of pneumonia prevention and risk factors is not significantly better than those with no personal experience of the condition. While more past sufferers have been vaccinated against pneumonia (17% compared with 6%), these individuals are just as likely to believe that "pneumonia can only be treated and not prevented" (52% for those with experience of pneumonia compared with 51% for those without). Those who have suffered from pneumonia are also as likely to see "being vaccinated against pneumonia" as effective as those who have not had pneumonia (both at 48%).

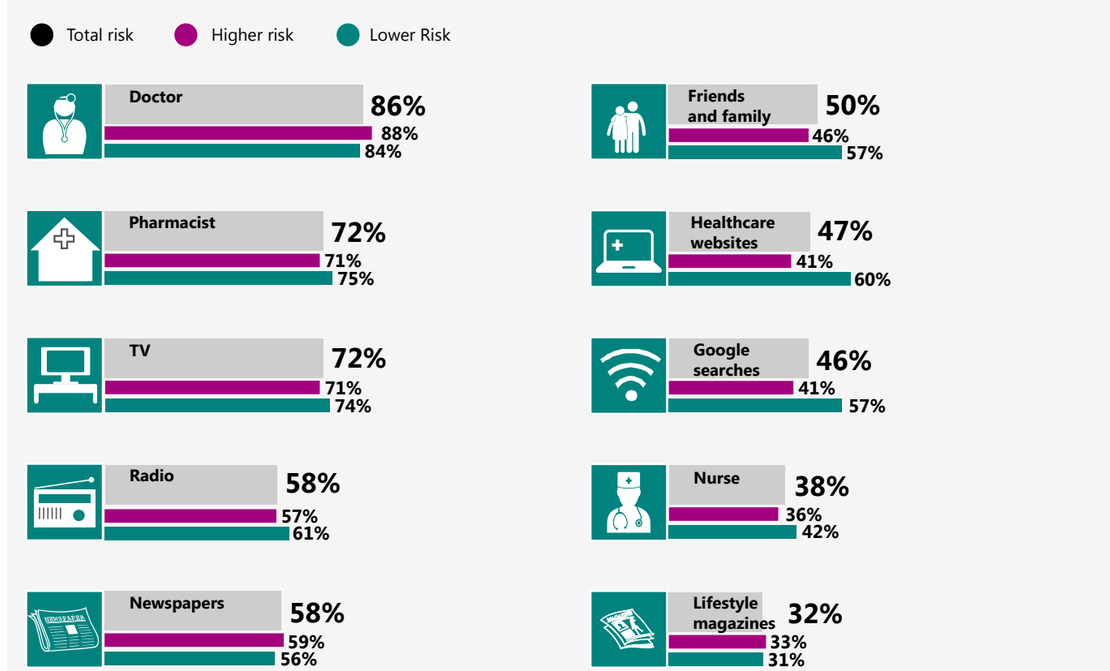
	Survey total sample	Austria total	Higher risk sample	Lower risk sample
Pneumonia in general				
Very well informed	8%	12%	12%	10%
Fairly well informed	37%	38%	39%	38%
Not very well informed	42%	43%	42%	44%
Not at all informed	12%	7%	7%	8%
Risk factors for catching pneumonia				
Very well informed	7%	11%	12%	11%
Fairly well informed	35%	38%	37%	40%
Not very well informed	43%	42%	42%	42%
Not at all informed	14%	8%	8%	8%
Vaccination against pneumonia				
Very well informed	7%	7%	8%	6%
Fairly well informed	15%	13%	13%	13%
Not very well informed	25%	23%	24%	21%
Not at all informed	52%	55%	53%	59%

Many older adults think that there is a need for more information on pneumonia, although the strength of their desire for additional information is still relatively low in Austria. Just 52% see a need for increased information on pneumonia in general, 62% for information on risk factors and 55% for information on vaccination. This compares to survey total figures of 67% for general information, 70% for risk factors and 71% for pneumonia vaccination for the proportion desiring additional information.

While the doctor is the most popular source (86%), pharmacists are also seen as important channel to disseminate information (72%). Older adults give more prominence to friends and family as a source of information (50% in Austria compared with a survey total of 37% and this group could become important influencers.

For a general information campaign popular media and the internet are felt to have a role to play.

Sources of information older adults would like to use to find out more about pneumonia



Next steps from the research

Austria is one of the least engaged countries in the survey when it comes to understanding of pneumonia and vaccination. There are fundamental barriers to overcome in terms of attitudes to vaccination in general and also in relation specifically to pneumonia.

Renewed efforts are needed to clearly communicate the following key messages:

- Pneumonia is serious and impactful illness
- Pneumonia poses a real risk to those aged 65 years and older, or suffering from certain medical conditions
- Pneumonia can be prevented as well as treate
- Pneumonia vaccines are available, safe and effective

Physicians and other allied health professional such as nurses and pharmacists have a key role to play in pneumonia education and prevention. They can be better supported through wider awareness campaigns in popular media, as well as the provision of better patient orientated materials to distribute. However, older adults should also be encouraged to be more proactive in understanding their personal risk of pneumonia and steps that can be taken to protect themselves.

All those with an interest in pneumonia and pneumonia prevention are encouraged to make use of the study's findings to drive debate and inform future policy.

"Don't underestimate the power of this new data. We can use this to speak to healthcare professionals, but also politicians and public health authorities. Think creatively how to get this out to the public." Dr Jane Barratt, Secretary General of the International Federation on Ageing

Please see the appendix for details on how to reference the PneuVUE® study or find out more.

[Translation note: For almost all of the survey the following term was used to refer to pneumonia in German:" Pneumonie oder Lungenentzündung". The exception is Q12 (Which one of the following options I will read out to you best matches your understanding of pneumonia? Pneumonia is...a heart condition, a lung infection, a severe type of cold/ similar to flu, none of these) where just the term "pneumonie" was used.]

CZECH REPUBLIC

[Note: Survey total figures refer to results for the total sample of all nine (9) countries surveyed weighted to population size]

PneuVUE®

Czech Republic findings

Awareness and understanding of pneumonia is relatively low in the Czech Republic

97%
claim to know what it is

Only
68%
correctly identify it as a lung condition

44%
think it's *true* that some forms of pneumonia may be contagious

Pneumonia is said to be a serious disease, but there is an apparent failure to link this to a risk to their own personal health in the Czech Republic and concern over the risk of catching pneumonia is very low

95%
think pneumonia is serious

Only
20%
are concerned about the risk of catching pneumonia

18%
of those clinically defined as being at higher risk of pneumonia[5,8,9] recognise themselves as 'very much at risk'

14%
think car accidents cause the highest number of deaths in their country vs. 5% for pneumonia

– in reality, pneumonia is responsible for almost 3 times as many deaths as transport accidents*[10]

There is a lot of uncertainty about whether pneumonia is a preventable disease, and how to prevent it

58%
think it is *false* that "pneumonia can only be treated not prevented"

A higher proportion think the following are effective at protecting against pneumonia

keeping fit and healthy	96%
not smoking	83%
wearing warm clothes	64%
avoiding long periods in air conditioned rooms	60%
compared to being vaccinated	41%

Awareness of a preventative pneumonia vaccine is relatively low and uptake is also low

Only
17%
are aware it is possible to be vaccinated against pneumonia

Only
4%
of those at high risk of pneumonia have been vaccinated with 1% of the lower risk group

Doctors, and other allied health professionals such as pharmacists have a key role to play in widening awareness, increasing perceptions of personal risk and raising vaccination rates.

57%
of those who have been vaccinated against pneumonia say it was prompted by their doctor

One of the most common reasons for not being vaccinated is

48% My doctor has never offered it to me

**Pneumonia was responsible for 2,250 deaths in the Czech Republic in 2013 compared with 815 for transport accidents. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)*

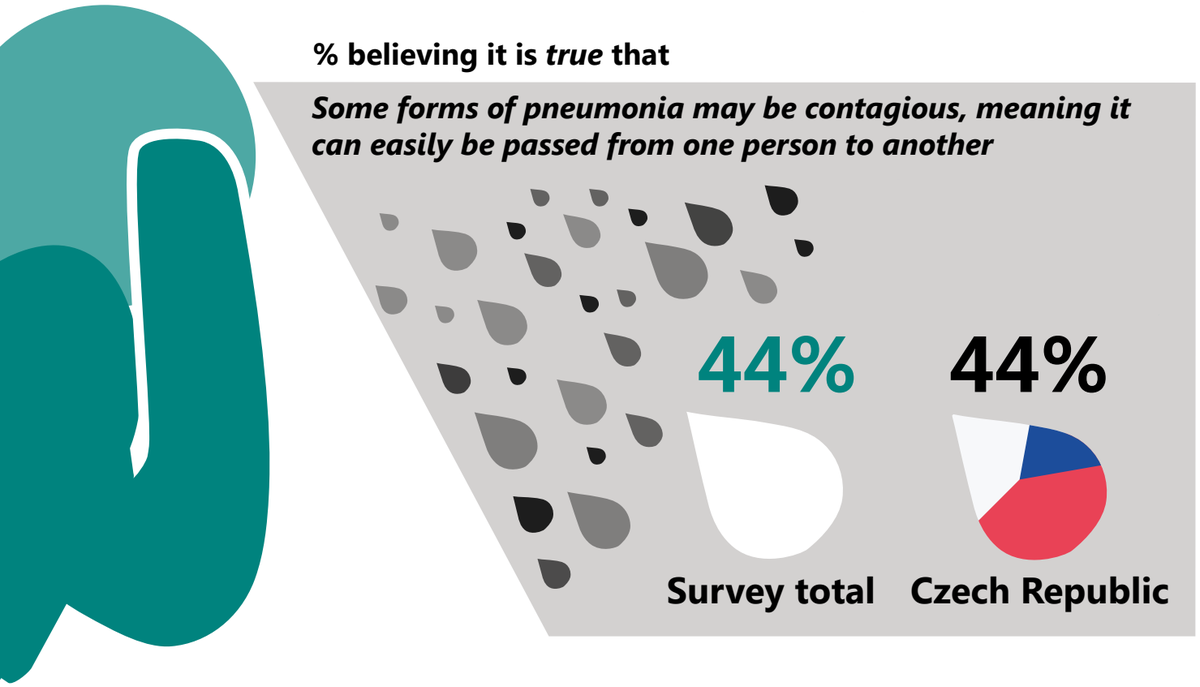
Pneumonia awareness

When it comes to pneumonia, awareness does not appear to be the problem as much as understanding.

Almost all respondents (100%) are aware of pneumonia and 97% also claim to "know what pneumonia is". These are amongst the strongest results of all countries surveyed and the Czech Republic does well for stated pneumonia awareness. However, as we will see in this report this, levels of accurate understanding are not as high as respondents may think.

Older adults in the Czech Republic are amongst the least likely to identify pneumonia as a lung infection (68% compared with a survey total of 80%). Just over a quarter (27%) understand pneumonia to be a "severe type cold/ similar to flu" – this is the highest of all countries surveyed. The repercussions of this confusion can be seen later when see the high proportion of older adults in the Czech Republic believing that they have had pneumonia.

In terms of symptoms, pneumonia is typically associated with trouble breathing (97%), a high fever (93%) and tiredness/fatigue (93%, as well as coughing (90%) and chest pain (80%). It is linked much less with dizziness (22%), nausea (20%) and sneezing (28%).



Only 44% think it is *true* that "some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another". This is in line with the survey total.

Pneumonia is almost universally recognised as a serious illness with 95% rating it as extremely serious or rather serious. In the context of other conditions tested, this places pneumonia behind HIV (99%), tick borne encephalitis (98%) and Hepatitis B (96%). It does come above meningitis (91%) and flu (67%). The majority (81%) also agree it is *true* that it can take months to recover from pneumonia. In line with the higher proportion viewing pneumonia as serious compared to flu, 60% of older adults in the Czech Republic, agree it is *true* that "pneumonia is more deadly than flu".

While stated understanding of the severity of pneumonia is high, knowledge of the number of deaths it is responsible for is far lower. Just under half (47%) believe it is *true* that "up to 20% of adults who catch pneumonia will die from it" and pneumonia is felt to cause fewer deaths than other causes presented.

The survey asked which out of pneumonia, car accidents, heart disease and influenza results in the most adult deaths in their country. 74% correctly select heart disease as the biggest killer. Only 5% thought pneumonia was the cause of the most adult deaths, the same proportion as those stated influenza (5%) and a third of those who selected car accidents (14%). In reality however Eurostat figures for the Czech Republic (2013) show that pneumonia is responsible for almost 3 times* as many deaths as transport accidents and almost 12† times as many deaths as flu.[10]

**Pneumonia was responsible for 2,250 deaths in the Czech Republic in 2013 compared with 815 for transport accidents. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)*
†Pneumonia was responsible for 2,250 deaths in the Czech Republic in 2013 compared with 188 for influenza. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)

Risk groups & risk factors

There is a tendency to project risk of pneumonia onto other people rather than acknowledge their own personal vulnerability.

This is reflected in an underestimation of the risk of catching pneumonia. Amongst those who have heard of pneumonia, the majority (68%) of older adults feel only slightly at risk of catching pneumonia and 14% state that they are not at risk at all.

Just 16% of those aware of pneumonia consider themselves "very much at risk" despite 72% of the Czech sample meeting one or more clinical criteria[5,8,9] for being at risk for pneumonia. Amongst the clinically defined higher risk group, just 18% believe themselves to be very much at risk. This is significantly more than among the lower risk population, yet it still represents just one in five of those with key pneumonia risk factors.

	Very much at risk	Slightly at risk	Not at risk at all
Total	16%	68%	14%
Praha	18%	67%	13%
Strední Cechy	7%	78%	14%
Jihozápad	15%	69%	14%
Severozápad	13%	66%	17%
Severovýchod	15%	70%	14%
Jihovýchod	21%	60%	17%
Strední Morava	17%	66%	15%
Moracompared withkoslezsko	23%	64%	12%

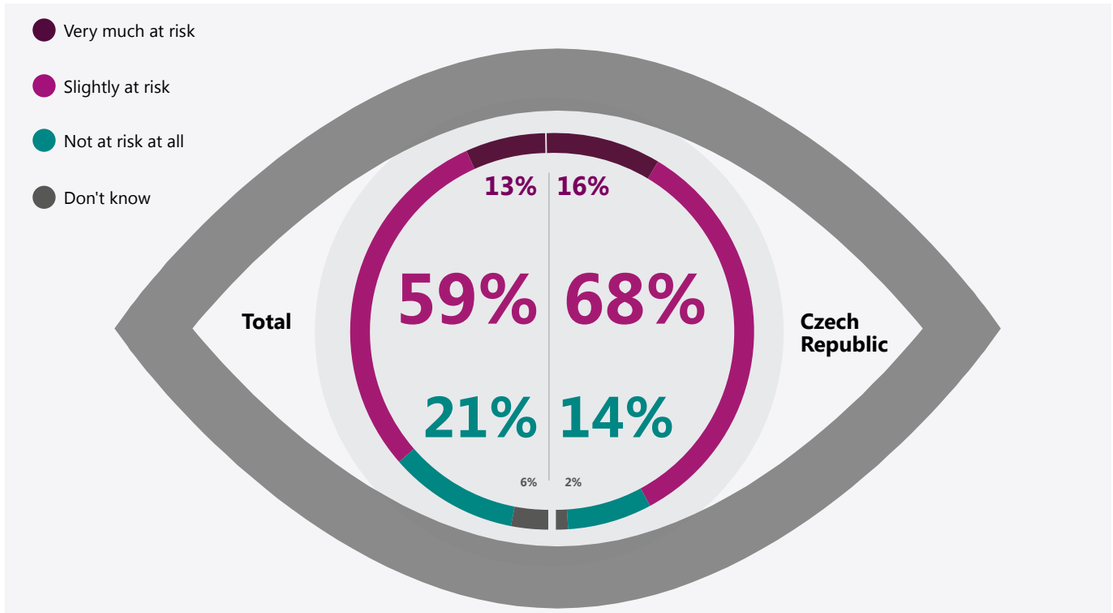
Some regional variations exist with older adults in the Moracompared Withkoslezsko area most likely to see themselves as "very much at risk" (23%) and those in Strední Cechy least likely to feel "very much at risk (7%).

While this perceived risk of pneumonia is lower than that of catching influenza (28% feel very much at risk" of flu), it is greater than the perceived risk of catching hepatitis B (12% feel "very much at risk") and yet self-reported vaccination levels hepatitis B are far higher (28% of older adults vaccinated against hepatitis B compared with 3% for pneumonia).

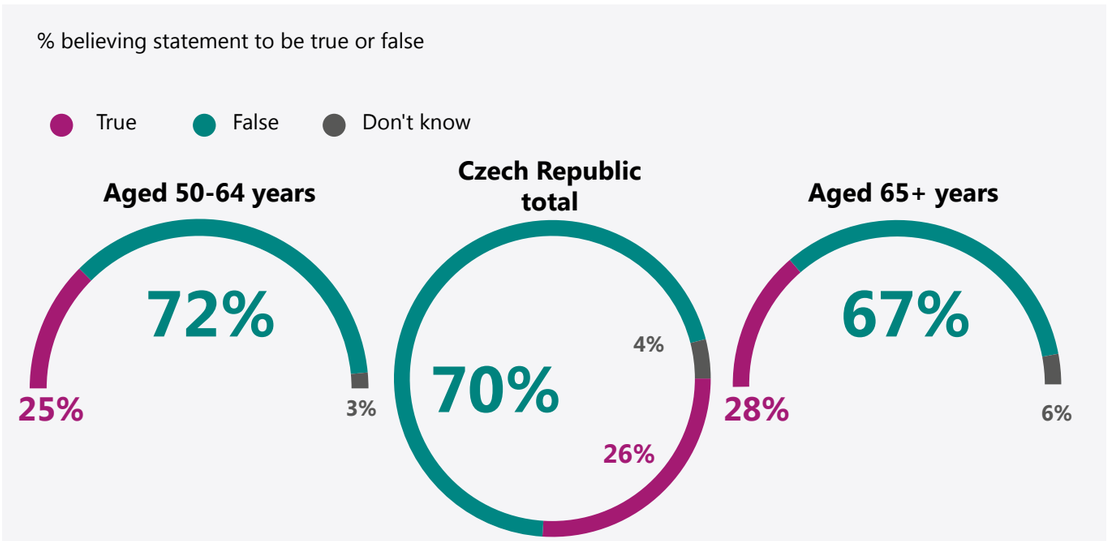
Less than 1 in 10 (7%) feel very well informed about risk factors for catching pneumonia. However, the majority (70%) do recognise that pneumonia is not confined to unfit or unhealthy people and acknowledge it is *false* that "pneumonia does not affect fit and healthy people". Men are more likely to think this is a true statement, with 32% thinking it is *true* compared to 22% of women. Later in this report we will see again how many consider staying fit and healthy to be effective protection against pneumonia.

The state of a person's health is more commonly associated with a higher than average risk of catching pneumonia than simply old age.

Perceptions of risk for pneumonia



Pneumonia does not affect fit and healthy people



Overall, people with chronic lung conditions (92%) and long term medical conditions (92%) are most commonly identified as being at a higher than average risk of catching pneumonia, followed by smokers (80%). At the other end of the scale, "people who have difficulty swallowing" receives very little recognition (12%) despite being strongly associated with community acquired pneumonia in the elderly.[11]

Looking at age, just 6% believe it is true that pneumonia *only* affects old people. This is not to say that age isn't recognised as a factor. When thinking more generally, 72% think adults over 65 are at higher than average risk of catching the disease compared to 38% for adults over 50. However, age is not given the same prominence as some health conditions.

Pneumonia is more likely to be seen as an illness that affects other people rather than themselves.

- 71% of adults aged 65 years and older identify "adults over 65" as being at a higher than average risk of catching pneumonia. However, when thinking about their own risk, just 17% consider themselves "very much at risk"
- 66% of smokers identify "smokers" as being at a higher than average risk of catching pneumonia. However, just 16% consider themselves to be "very much at risk"

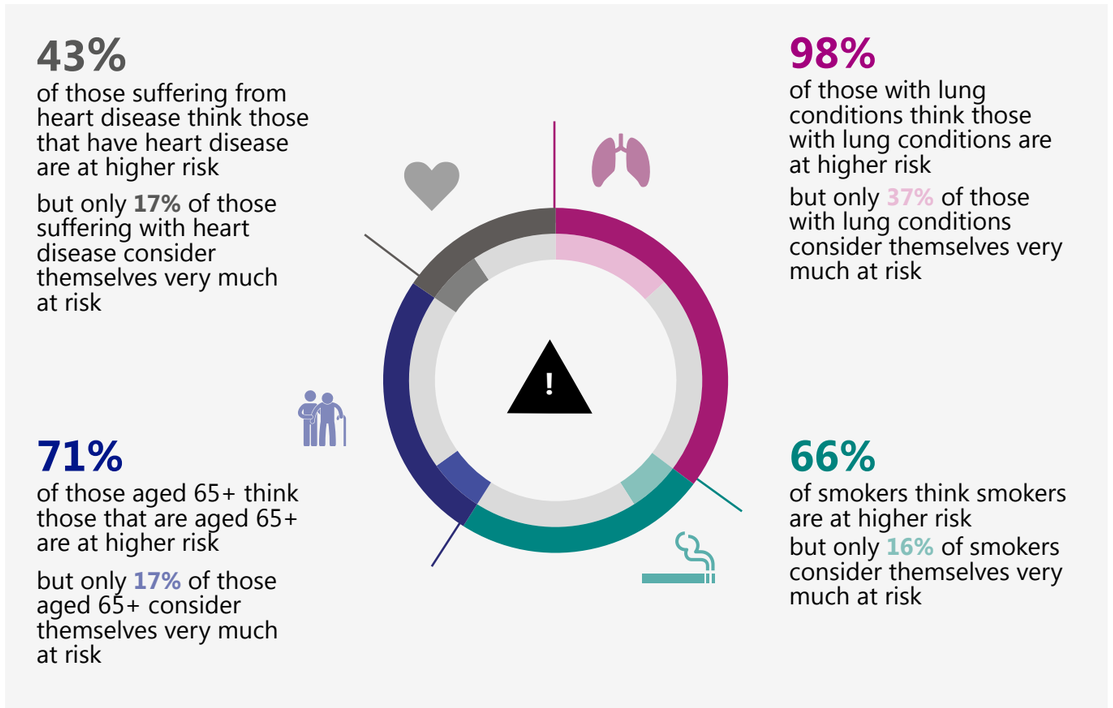
This is carried through to level of concern about pneumonia, with a greater proportion expressing concern for older friends and family (33%) compared to concern for themselves (20%). However, this difference is smaller than that seen in other countries surveyed.

On the whole, people are not overly worried about the risk of catching pneumonia (78% are not very or not at all concerned compared to 2% who are very concerned and 17% who are fairly concerned). A higher level of concern is expressed in the Strední Morava (29% very or fairly concerned), Moracompared Withkoslezsko and Jihovýchod (both with 26% very or fairly concerned) regions.

Together with France, older adults in the Czech Republic are the least likely to be very concerned about the risk of catching pneumonia. However, while in France this correlates to low self-reported levels of pneumonia, this is not the case in the Czech Republic (and will be explored in the next section).

Groups felt to be at a higher than average risk of catching pneumonia

Disparity between those identifying group as being at a higher risk of pneumonia and considering them selves to be at a high risk



The impact of pneumonia

If pneumonia does strike, it tends to be worse than anticipated.

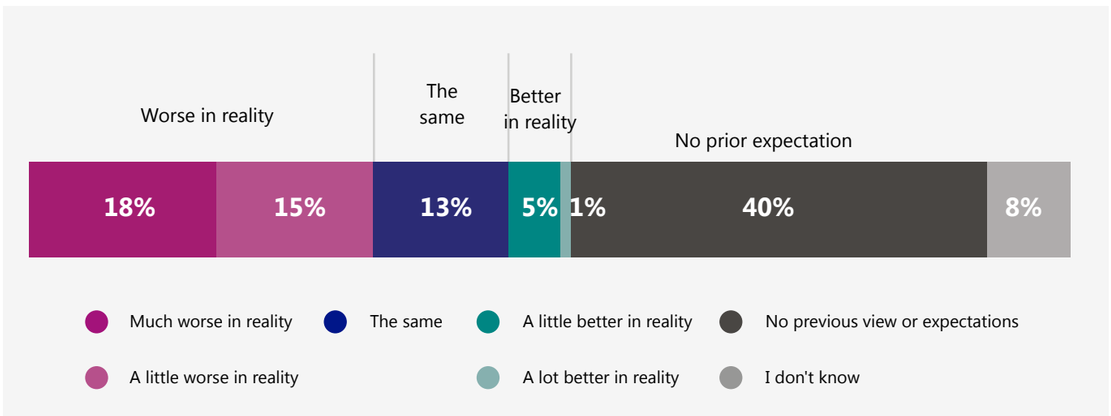
Pneumonia does touch people's lives. 28% claim to have personally suffered from the disease and an additional 27% have a close friend or close family member who they believe has had pneumonia. This compares with a survey total of 13% who have personally had pneumonia and is higher than all other countries surveyed.

While we see higher reported levels of pneumonia in the Czech Republic, results are not showing high levels of concern over the risk of catching the disease. However, older adults in the Czech Republic are the most likely to associate pneumonia with a "severe cold/ type of flu". It is possible that older adults in the Czech Republic think that they have had pneumonia when in fact it was something far milder. This could be diluting the impact pneumonia is seen to have and would represent a key educational need.

Among sufferers, one in two (46%) claimed to have felt "surprised" when thinking back to that time reinforcing the misconception that pneumonia is very much seen as a disease that happens to other people. Continuing to reflect an "it will never happen to me" mentality, 2 in 5 (40%) had no preconceptions of what pneumonia would be like. However, amongst those who did, it turned out to be much worse in reality, although not to the same extent seen in other countries.

The most common areas where pneumonia has a big negative impact are "mobility/ ability to get out and about" (23%) followed by "work life" (21%) and "social life" (20%). From an economic perspective, 12% see a big negative impact on their "finances" and this is significantly higher among those aged 50-64 years (17% report a *big* negative impact on their finances compare to 6% of older respondents).

How the reality of having pneumonia compared to preconceptions



Thinking back to the time they were suffering from pneumonia, the most commonly selected *negative* emotions are "surprised" (46%), "powerless" (40%), "anxious" (35%), and "scared" (34%). On the *positive* side, the older adults report feeling "supported" (74%), "confident it would pass soon" (57%) and "not bothered by it" (38%). Older adults in the Czech Republic are the most likely to say that they were "not bothered" by having pneumonia. However, they are relatively more likely to feel anxious or scared. The implication is that, while most sufferers tend to be optimistic about the outcome of the illness, for a third it is a frightening experience.

Personal experience of pneumonia has an understandable impact on attitudes towards the disease. While perceptions of its seriousness are similar to those who have not previously had pneumonia, the sense of one's own risk is heightened (26% feel very much at risk compared to 12% of those who have not had pneumonia). In line with this, past sufferers' level of concern about catching pneumonia is also higher (30% are very concerned compared with 16% of those with no personal experience of pneumonia).

Emotions felt by sufferers of pneumonia

Pneumonia prevention

Vaccination is less commonly felt to be an effective means of preventing pneumonia, compared to other simple lifestyle measures.

When thinking *generally* about steps personally taken to stay healthy, a lower proportion of adults selected "having all recommended vaccinations" (45%) than any of the other measures offered to them. This figure of 45% is also the lowest seen across all countries and is relatively consistent across risk groups and age.

Other measures were selected in larger numbers including "eat a healthy diet" (73%), "seek regular check-ups with their doctor" (72%) and "exercise regularly" (50%). Taking vitamins is popular in the Czech Republic with 60% saying they take vitamins to stay healthy, compared to a survey total of 37%.

This seems to reflect a less proactive attitude to vaccination. While 85% agree that they "trust vaccines to help prevent infectious diseases", 90% say they agree that they "follow their doctor's advice". Furthermore, looking at those who have been vaccinated against pneumonia, only 13% claimed it was their own idea (compared with a survey total of 8%). The implication is that people tend to wait to be offered a vaccination rather than actively requesting it.

While almost everyone claims to be doing something to stay fit and healthy, when it comes to pneumonia, over half (58%) believe it is false that "pneumonia can only be treated and not prevented" compared to 35% believing it is *true*[#]. This understanding of the possibility of preventing pneumonia is the highest seen across the nine countries and forms the basis for future discussions around vaccination.

It is clear that for many, lifestyle can be seen as effective at protecting against pneumonia. Almost all (96%) believe that "keeping fit and healthy" is effective, followed by "not smoking" (83%), "wearing warm clothes" (64%) and "avoiding long periods in air conditioned rooms" (60%).

However, two of the most effective measures for pneumonia prevention were selected the least often. Just 2 in 5 (41%) state that "being vaccinated against pneumonia" is effective. A similar number (40%) consider "avoiding contact with sick children" as effective. Yet the expert panel considered avoidance of those who are ill to be one of the most important preventative measures that can be taken.

Attitude towards vaccination in general

% Agreeing	Czech Republic	Survey Total
"I trust vaccines to help prevent infectious diseases"	85%	85%
% saying they "ensure I have all recommended vaccinations"	45%	68%
"I try to avoid vaccines because I think they are not safe"	32%	27%

Effective measures against protecting against pneumonia

- 96% Keep fit & healthy
- 83% Not smoking
- 64% Wearing warm clothes
- 60% Avoiding long periods in air conditioned rooms
- 41% Being vaccinated against pneumonia
- 40% Avoiding contact with sick children

Pneumonia vaccination

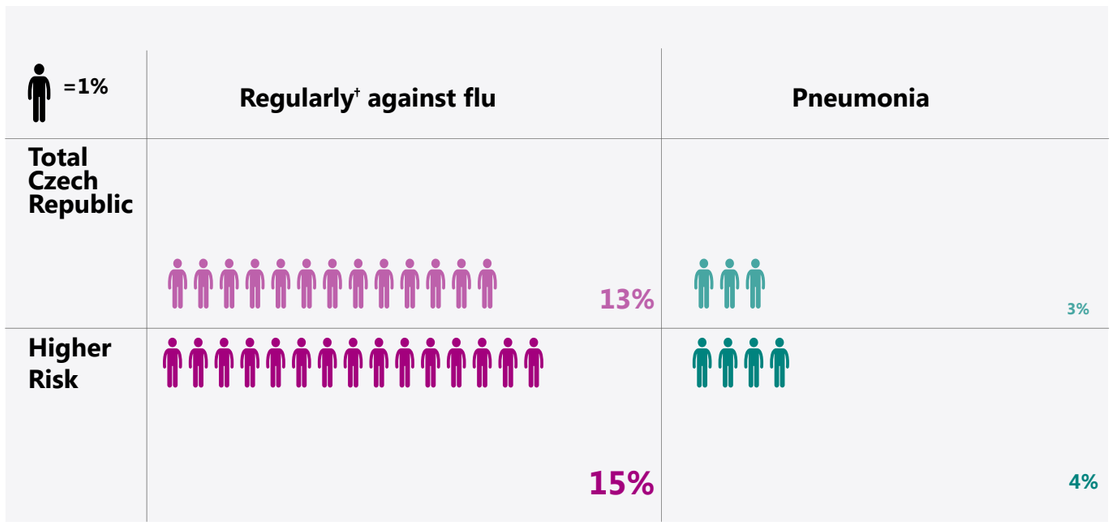
Awareness of pneumonia is high, but awareness of the vaccination is low and there is a very poor conversion rate from being aware to taking action, with extremely low levels of vaccination.

Overall, just 17% are aware that it is possible to be vaccinated against pneumonia – the 2nd lowest of our countries and much lower than the survey total figure of 29%. There is some difference visible by risk status with 18% of those at higher risk being aware compared with 13% of those at lower risk but it still represents just a small minority of those with pneumonia risk criteria even being aware that a vaccine exists. Those in the Prague and Severozápad regions are more likely to be aware of a pneumonia vaccine, both with 22% awareness.

Awareness is only the first step and does not necessarily translate into action. While awareness of a pneumonia vaccine is low, self-reported vaccination rates are even lower. Just 3% of older adults (compared to a survey total of 12%) claim to be vaccinated against pneumonia. This is the lowest level seen in the nine countries. Amongst the higher risk group 4% report having had the vaccination, indicating that they are no better protected than the older population in general.

It can be compared with the 13% of the older adult population in the Czech Republic (and 15% of those at higher risk of pneumonia) claiming to have been regularly vaccinated† against flu.

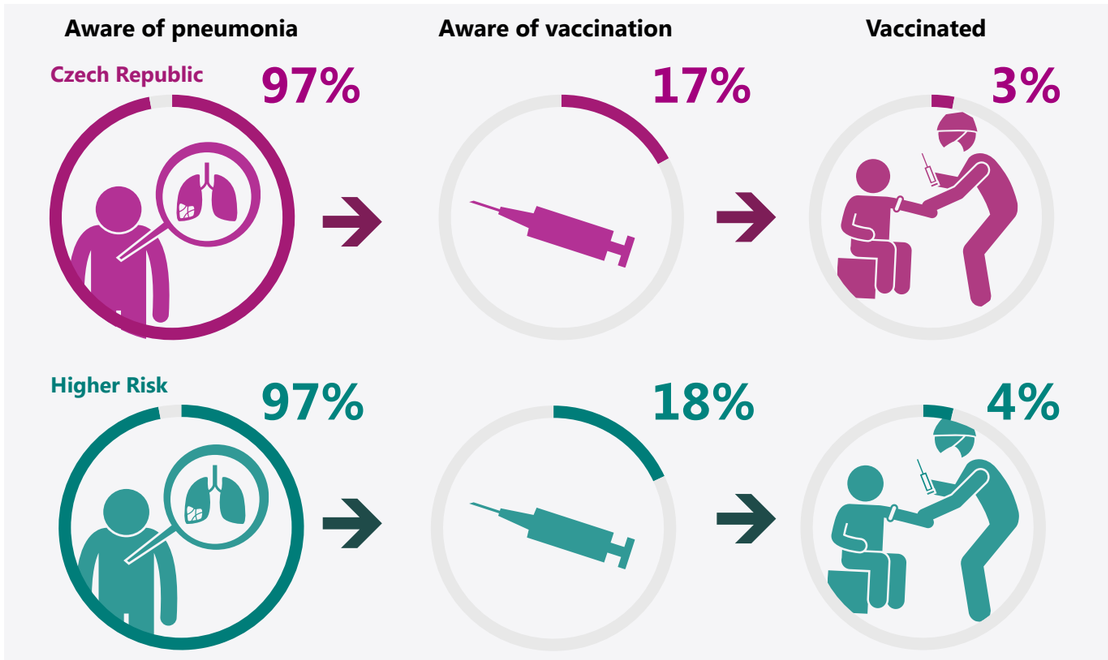
Self reported - vaccination levels



Looking at the patient pathway, from awareness of pneumonia to actual vaccination, reveals the high proportion being lost at key steps along the way. Whilst virtually all are aware of pneumonia, only 17% are aware of the vaccine and ultimately only 18% of those aware of the vaccine will go on to have it.

The most common driver for pneumonia vaccination is a prompt from a doctor (stated by 57% of those vaccinated against pneumonia – 43% stating GP or family doctor and/or 13% stating specialist doctor). These are the most often selected reasons albeit at lower levels that those seen in other countries. This is consistent with the 90% who agree that they "follow their doctor's advice" when it comes to vaccination, again at lower levels than other nationalities. So whilst doctors are important influencers in the Czech Republic, it is apparent that their influence is lower compared to in the other nine countries.

% lost at each key step of the patient journey



†*Regularly vaccinated is defined as at least four times in the past five years*

In most other countries, when those who are aware of the pneumonia vaccine but have not received it are asked why not, the most common reason is "my doctor has never offered it to me" (survey total response of 55%). In contrast, in the Czech Republic two other responses are cited above this. 59% say "there are better ways to protect against pneumonia" whilst 58% say "I don't believe I am at risk of catching the disease" and only 48% cite "my doctor has never offered it to me". This reinforces the previous finding that, while doctors have an important role to play in pneumonia vaccination, there are other more general barriers concerning beliefs around prevention and vaccination which may require wider education programmes.

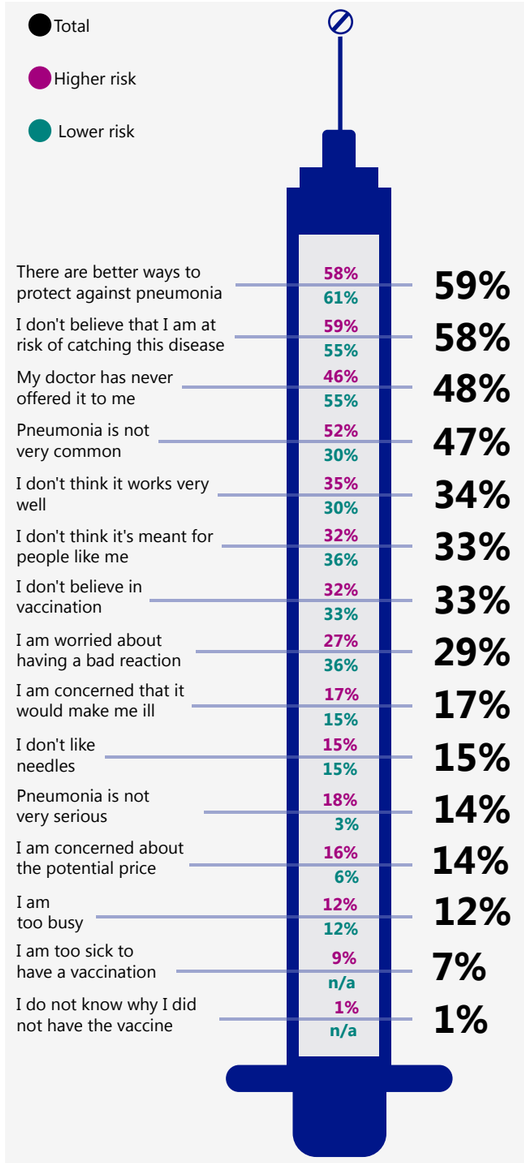
The influence of these barriers may be evident in the answers given when unvaccinated respondents were asked how likely they would be to have the pneumonia vaccine if it were recommended by their doctor and at no cost to them. Over half (55%) of older adults say they would be *unlikely* to have the vaccination with just 42% saying they would be very or fairly likely to take up the offer.

This would provide a significant boost to vaccination rates but is still at a relatively low level. The proportion likely to follow the recommendation is higher among older adults (48% for those aged 65 and older, compared with 37% younger respondents), men (47% compared with 39% of women) and much higher in the higher pneumonia risk group (48% compared with 27% of those at lower pneumonia risk).

Fears over safety may also be a factor in reluctance to take up the vaccine. Thinking generally about vaccination, 32% of the Czech sample agree that "I try to avoid vaccines because I think they are not safe". This sentiment is particularly pronounced in the Jihozápad, Severovýchod and Jihovýchod regions and much less so in Strední Cechy and specifically in relation to pneumonia, among those who are aware of the pneumonia vaccine but have not had it, 29% are "worried about having a bad reaction" and 17% are "concerned it would make them ill".

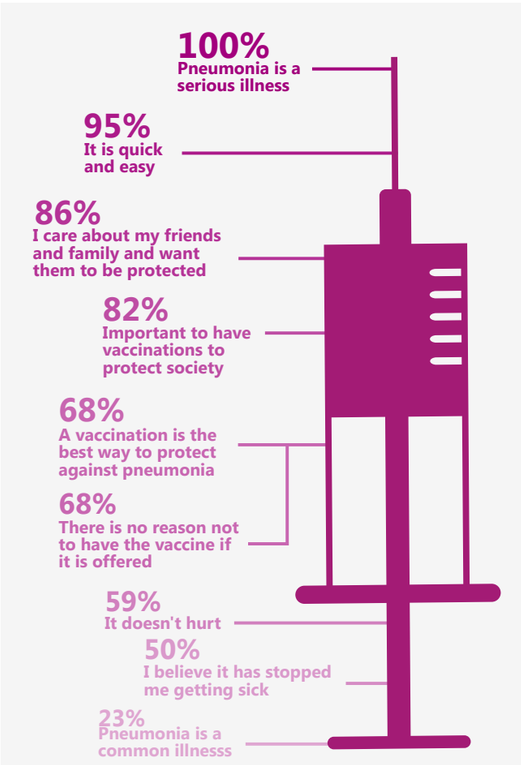
	Strongly agree	Agree a little	Disagree a little	Strongly disagree
Total	9%	23%	23%	43%
Praha	6%	23%	26%	42%
Strední Cechy	3%	27%	24%	43%
Jihozápad	14%	21%	21%	44%
Severozápad	11%	20%	27%	41%
Severovýchod	13%	20%	23%	42%
Jihovýchod	13%	22%	19%	44%
Strední Morava	9%	24%	16%	48%
Moracompared withkoslezsko	8%	26%	23%	41%

Reasons for not being vaccinated against pneumonia



Other factors also come into play such as efficacy and credibility of vaccination in general with 34% selecting "I don't think it works very well" and 33% saying "I don't believe in vaccination". In addition, 33% agree with the statement "I don't think it is meant for people like me" – this includes 32% of the higher pneumonia risk group and means a third of those meeting pneumonia risk criteria are not seeing the vaccination as relevant to them.

Reasons for recommending the pneumonia vaccine



NOTE: Based on small sample of n=22

Information needs

Despite high stated levels of pneumonia awareness, older adults still recognise the need for more information on all aspects of the disease.

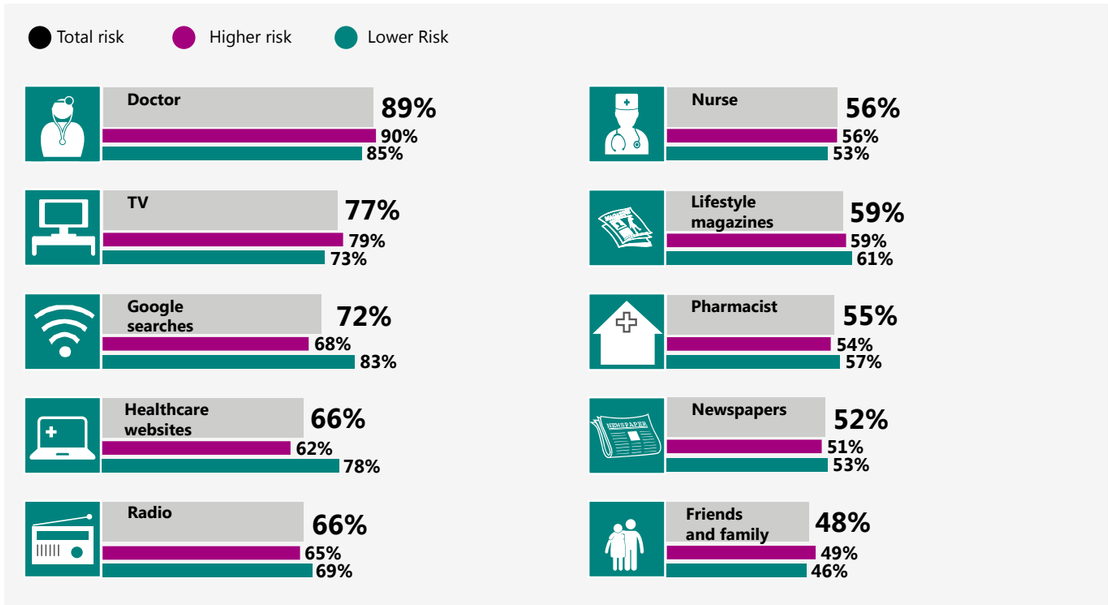
These results reinforce the lack of understanding around pneumonia and a desire for additional information. Less than one in 10 feel *very* well informed about "pneumonia as a disease in general" (9%) or "risk factors for catching pneumonia" (7%) and less than one in 20 feel very well informed about "vaccination against pneumonia. In fact, nearly all (90%) feel they are not informed about "vaccination against pneumonia". A similar picture is evident among the higher risk group.

As a result of having pneumonia, people tend to feel better informed about "pneumonia as a disease in general" (74% very or fairly well informed compared with 57% for those with no personal experience of pneumonia) and about "risk factors for catching pneumonia" (61% fairly or very well informed compared with 47% for those with no personal experience of pneumonia). No difference is evident when it comes to how well informed those who have/ have not had pneumonia feel about pneumonia vaccination.

The majority of adults think that there is a need for more information on pneumonia (72%), risk factors (85%) and vaccination (86%). While the doctor is the most popular source (89%). Respondents in the Czech Republic are particularly open to multiple channels of information with 77% selecting TV. Television is particularly amongst the higher risk group (79% compared with 73% for lower risk respondents) making this a potentially highly effective route to reach at risk groups. Mentions of other channels were also high in the Czech sample showing an acceptance of popular media as sources of information on pneumonia.

	Survey total sample	Czech Republic total
Pneumonia in general		
Very well informed	8%	9%
Fairly well informed	37%	53%
Not very well informed	42%	31%
Not at all informed	12%	7%
Risk factors for catching pneumonia		
Very well informed	7%	7%
Fairly well informed	35%	44%
Not very well informed	43%	36%
Not at all informed	14%	12%
Vaccination against pneumonia		
Very well informed	7%	2%
Fairly well informed	15%	7%
Not very well informed	25%	14%
Not at all informed	52%	76%

Sources of information older adults would like to use to find out more about pneumonia



Next steps from the research

The results of this study highlight a need for more information on all aspects of pneumonia. In particular, educating older adults on what is and is not pneumonia and the risk it could pose to them personally.

Renewed efforts are needed to clearly communicate the following key messages:

- Pneumonia is more serious than just a severe cold
- Some forms of pneumonia may be contagious
- Pneumonia poses a real risk to those aged 65 years and older, or suffering from certain medical conditions
- Pneumonia can be prevented as well as treated
- A preventative vaccine is available and is safe and effective

Physicians, and allied health professional such as nurses and pharmacists have a key role to play in pneumonia education and prevention and their profile needs to be raised in the Czech Republic. They can be better supported through wider awareness campaigns in popular media, as well as the provision of better patient orientated materials to distribute. However, older adults should also be encouraged to be more proactive in understanding their personal risk of pneumonia and steps that can be taken to protect themselves.

All those with an interest in pneumonia and pneumonia prevention are encouraged to make use of the study's findings to drive debate and inform future policy.

"Don't underestimate the power of this new data. We can use this to speak to healthcare professionals, but also politicians and public health authorities. Think creatively how to get this out to the public." Dr Jane Barratt, Secretary General of the International Federation on Ageing

Please see the appendix for details on how to reference the PneuVUE® study or find out more.

FRANCE

[Note: Survey total figures refer to results for the total sample of all nine (9) countries surveyed weighted to population size]

PneuVUE®
France findings

French older adults claim good awareness of the basic facts about pneumonia

93%
claim to know what it is

92%
identify it as a lung infection

But only
47%
think it's *true* that some forms of pneumonia may be contagious

While there is a stated acknowledgement that pneumonia is a serious disease, there is an apparent failure to link this to a risk to their own personal health and levels of concern about the risks of catching pneumonia are low.

95%
think pneumonia is serious

Only
12%
are concerned about the risk of catching pneumonia

11%
of those clinically at higher risk of pneumonia[5,8,9] recognise themselves as 'very much at risk'

30%
think car accidents cause the highest number of deaths in their country compared with 0.5% for pneumonia.

– in reality, pneumonia is responsible for more than 3.5 x as many deaths*[10]

There is a lot of uncertainty about whether pneumonia is a preventable disease, and how to prevent it.

Only
30%
% think it is *false* that "pneumonia can only be treated and not prevented"

A higher proportion think the following are effective at protecting against pneumonia

keeping fit and healthy	**89%**
not smoking	**87%**
wearing warm clothes	**60%**
avoiding long periods in air conditioned rooms	**55%**
compared to being vaccinated	**50%**

Awareness and uptake of a preventative pneumonia vaccine in France are amongst the lowest of all countries

Only
14%
are aware it is possible to be vaccinated against pneumonia

Only
6%
of those at higher risk of pneumonia have been vaccinated

Doctors, and other allied health professionals such as nurses and pharmacists have a key role to play in widening awareness and raising vaccination rates.

73%
of those who have been vaccinated against pneumonia say it was prompted by their doctor

Most common reason for not being vaccinated is

55% My doctor has never offered it to me

Pneumonia was responsible for 12,018 deaths in France in 2013 compared with 3,303 for transport accidents. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)

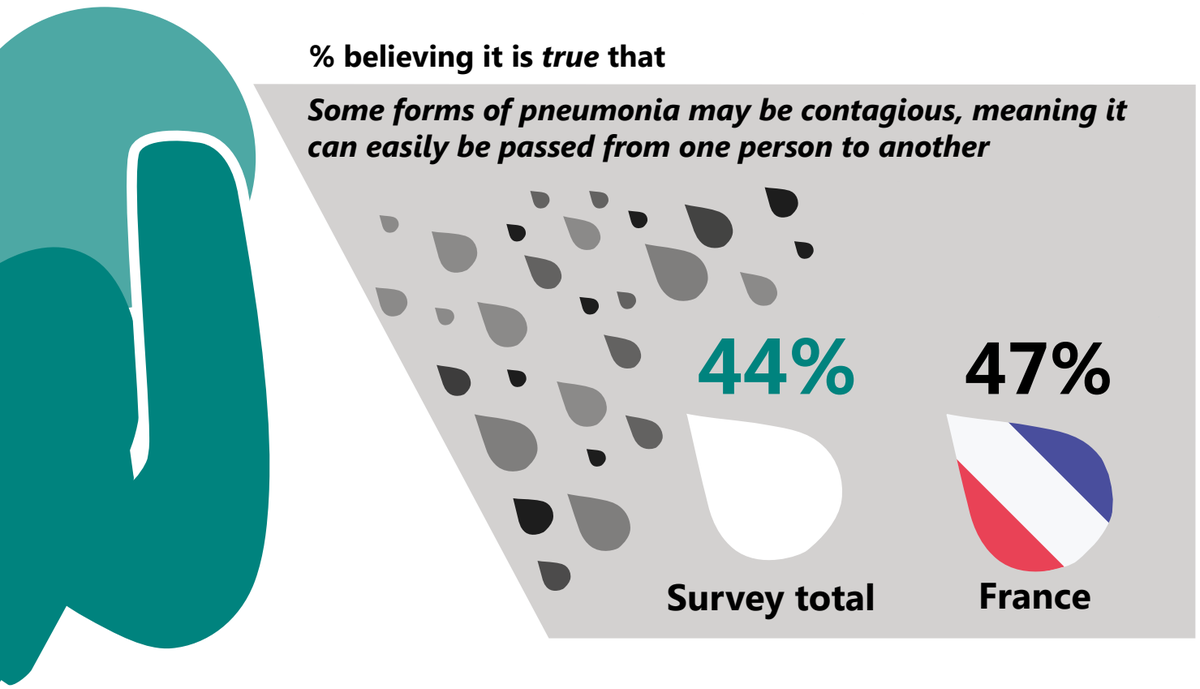
Pneumonia awareness

When it comes to pneumonia, awareness does not appear to be the problem as much as understanding.

Amongst older adults in France, almost all (97%) have heard of pneumonia. However, although 93% also claim to "know what pneumonia is", survey results show that they do not always know as much as they think they do about the disease. In particular, there is a less knowledge around disease transmission and risk factors, as well as the true spectrum of symptoms and number dying from pneumonia.

Most older adults (92%) correctly identify pneumonia as a lung infection. In line with this, pneumonia is typically associated with trouble breathing (92%) and coughing (87%) as well as a high fever (82%), tiredness/ fatigue (86%) and chest pain (81%). It is linked much less with dizziness (24%), sneezing (24%) and nausea (19%).

Furthermore, only 47% think it is *true* that "some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another".



Pneumonia is however almost universally recognised as a serious illness with 95% rating it as extremely serious or rather serious. In the context of other conditions tested, this places pneumonia just behind meningitis (97%) and HIV (96%) and far above influenza (65%). The majority (86%) also agree it is true that it can take months to recover from pneumonia.

Despite more people regarding pneumonia as serious compared to flu, pneumonia is not regarded as more deadly. Just 39% believe it is true that "pneumonia is more deadly than flu" compared with a survey total of 70%. The expert panel attribute this could to the strong messages being promoted by flu vaccination campaigns in France.

Just over half (55%) believe it is true that "up to 20% of adults who catch pneumonia will die from it" and pneumonia is felt to cause fewer deaths than other causes presented.

When asked which, out of pneumonia, car accidents, heart disease and influenza, results in the most adult deaths in their country, pneumonia is chosen by just six people. 58% correctly select heart disease as the biggest killer. This is followed by car accidents at 30% and then a large drop to influenza (8%) and finally pneumonia (<1%). In reality however, pneumonia is responsible for over 3.5 times as many deaths as transport accidents* and almost 17 times as deaths as influenza** in France.[10]

**In 2013, pneumonia was responsible for 12,018 deaths in the France compared with 3,303 for transport accidents. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)*
***In 2013, pneumonia was responsible for 12,018 deaths in France compared with 716 for influenza. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)*

Risk groups & risk factors

There is a tendency to project risk of pneumonia onto other people rather than acknowledge one's own personal vulnerability.

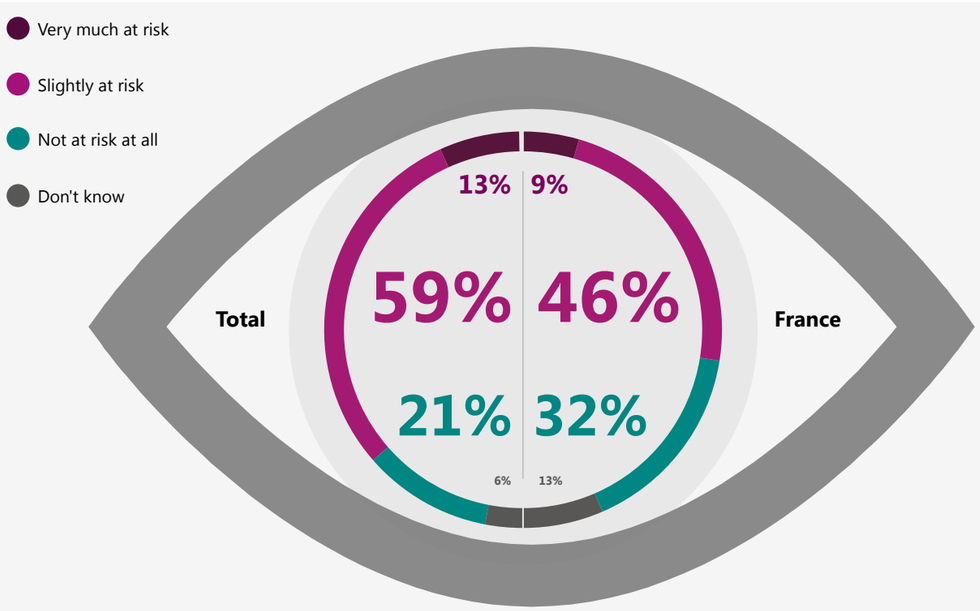
This is reflected in an underestimation of the risk of catching pneumonia. Amongst older adults who have heard of pneumonia, the largest proportion (46%) feel only slightly at risk of catching pneumonia and 32% state that they are "not at risk at all". This sense of not being at risk is the highest of all countries surveyed.

Just 9% of those aware of pneumonia consider themselves "very much at risk" despite 69% of the French sample meeting one or more clinical criteria[5,8,9] for being at risk for pneumonia. Amongst this clinically defined higher risk group, just 11% believe themselves to be very much at risk. While significantly higher than among the lower risk population, it still represents just one in 10 of those at higher risk of pneumonia.

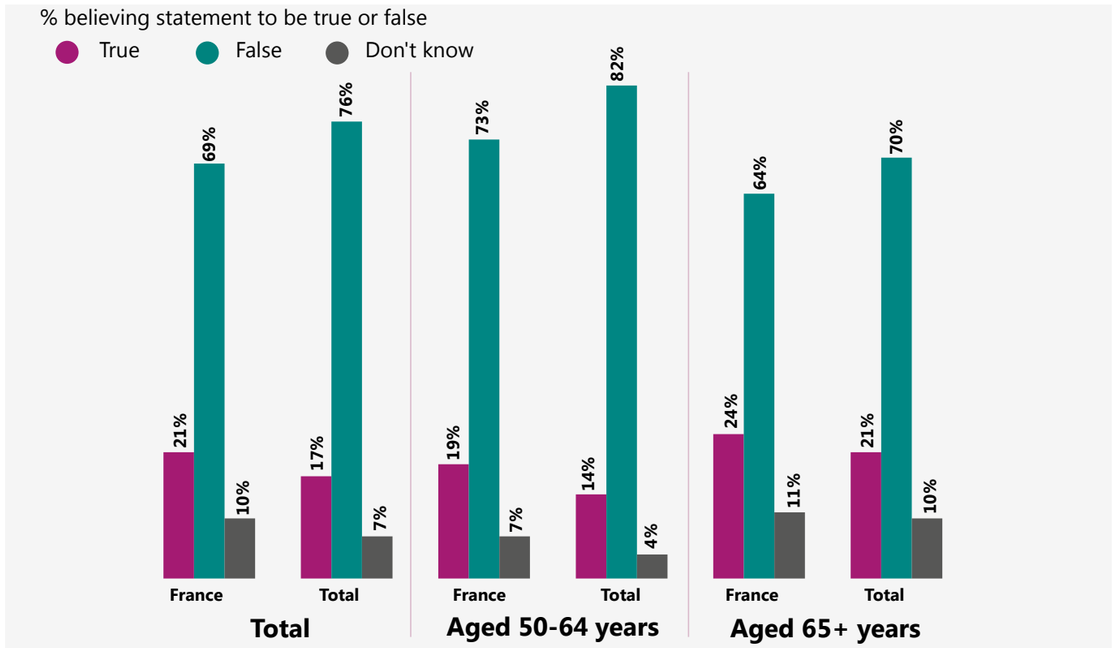
France is amongst the least likely of all countries surveyed to recognise that pneumonia is not confined to unfit or unhealthy people. Two thirds (69%) (compared with a survey total of 76%) acknowledge it is false that "pneumonia does not affect fit and healthy people".

At the same time however, one in five (21%) do think that "pneumonia does not affect fit and healthy people" is a *true* statement. This view is more likely to be held by males (26% compared with 18% for females) and those aged 65 and older (24% compared with 19% for younger respondents). Later in this report we will see again how many consider staying fit and healthy to be effective protection against pneumonia.

Perceptions of risk for pneumonia



Pneumonia does not affect fit and healthy people

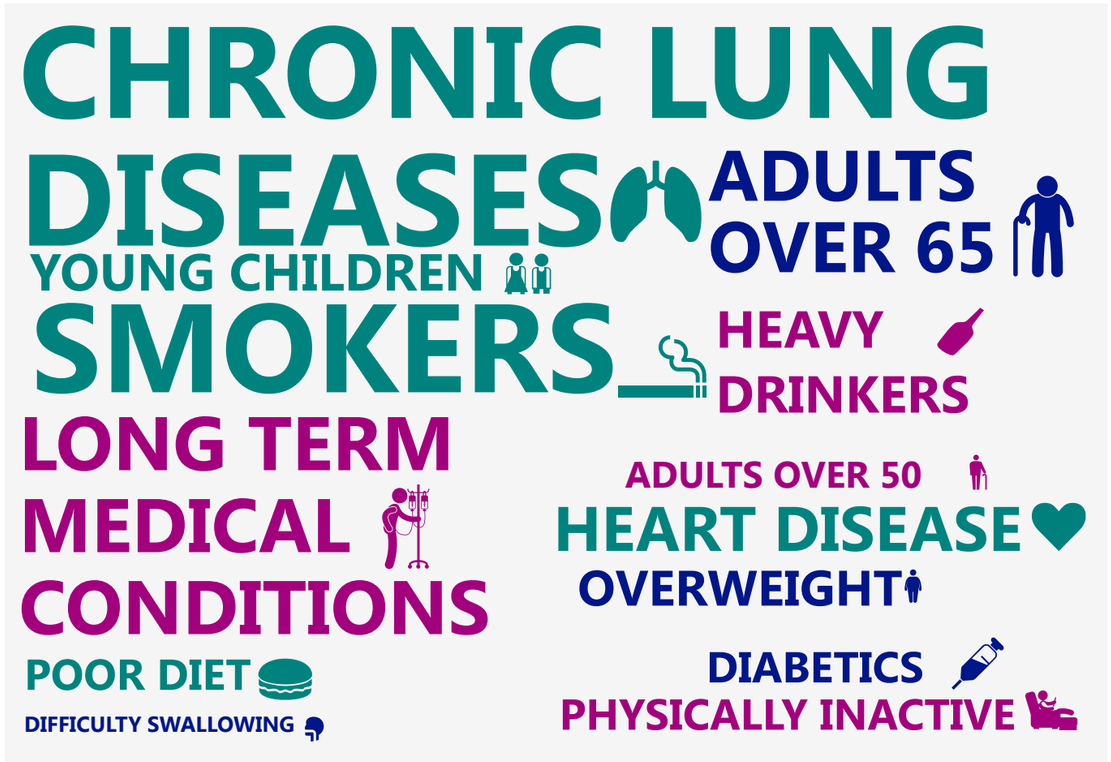


Older adults in France are much more selective than other nationalities about who they consider to be at above average risk of pneumonia.

People with chronic lung conditions (89%) and smokers (86%) are most commonly identified as having a higher than average risk of catching pneumonia. However, there is then a big drop to remaining risk factors such as age or other health conditions. Least likely to be seen as having a higher risk of pneumonia are "people who have difficulty swallowing" (15%) despite being strongly associated with community acquired pneumonia in the elderly.[11]

Looking at age, just 4% believe it is *true* that pneumonia only affects old people. Age is given less prominence as a risk factor in France with 50% considering adults over 65 to be at higher than average risk (compared with a survey total figure of 60%).

Groups felt to be at a higher than average risk of catching pneumonia



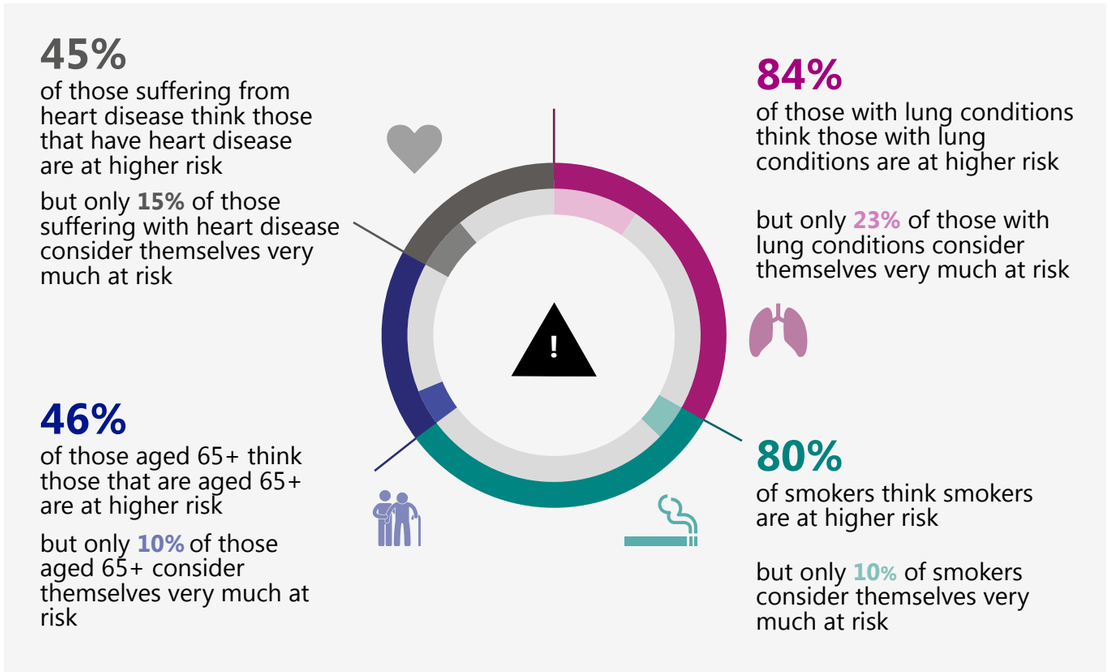
Pneumonia is more likely to be seen as an illness that affects other people rather than themselves.

- 46% of adults aged 65 years and older identify "adults over 65" as being at a higher than average risk of catching pneumonia. However, when thinking about their own risk, just 10% consider themselves "very much at risk"
- 80% of smokers identify "smokers" as being at a higher than average risk of catching pneumonia. However, just 10% consider themselves to be "very much at risk"

This sentiment is followed through to level of concern over the risk of catching pneumonia, with a greater proportion expressing concern for older friends and family (31%) compared to concern for themselves (12%).

Older adults in France are amongst the least concerned about the risk of catching pneumonia (88% are not very or not at all concerned compared to 3% who are very concerned and 9% who are fairly concerned).

Disparity between those identifying group as being at a higher risk of pneumonia and considering them selves to be at a high risk



The impact of pneumonia

If pneumonia does strike, it tends to be worse than anticipated.

Pneumonia does touch people's lives. 6% claim to have personally suffered from the disease and 23% have a close friend or close family member who they believe has had pneumonia. However, these are the lowest figures of all countries surveyed and could explain the lower levels of concern seen in France.

When thinking back to that time when they were suffering from pneumonia, one in two (51%) sufferers claimed to have felt "surprised", reinforcing the misconception that pneumonia is very much seen as an illness that happens to other people.

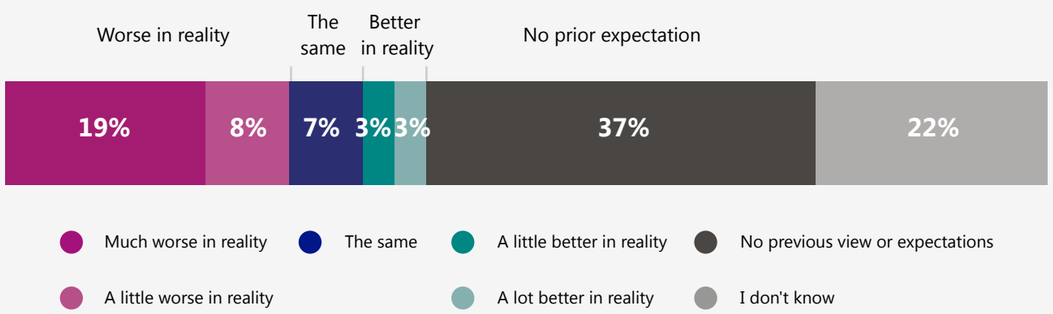
Continuing to reflect an "it will never happen to me" mentality, one in three (37%) had no preconceptions of what pneumonia would be like. However, for one in five sufferers it turned out to be much worse in reality.

The most common areas where pneumonia has a negative impact are "mobility/ ability to get out and about" (39%) and "social life" (34%). From an economic perspective, 20% see a negative impact on their "work life" and 10% on their "finances". Older adults in France are less likely than in other countries to report a big negative impact as a result of pneumonia and this could be influencing the levels of concern seen.

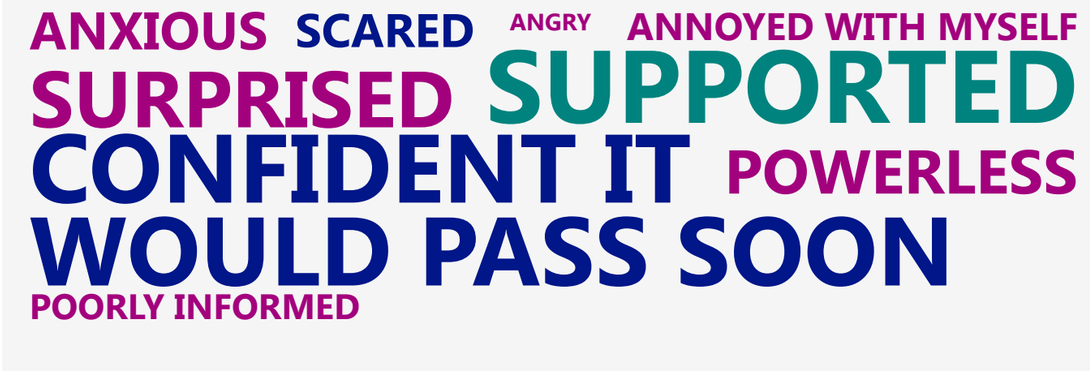
Thinking back to the time when they were suffering from pneumonia, the most commonly selected *negative* emotions are "surprised" (51%), followed by "powerless" (39%), "anxious" (34%) and "scared" (31%). A quarter feel "annoyed with myself". On the *positive* side, older adults report feeling "supported" (66%) and "confident it would pass soon" (63%). While appropriate care may be in place for sufferers, this indicates that they were less prepared for catching pneumonia and the experience can be quite frightening.

Personal experience of pneumonia has an understandable impact on attitudes towards the disease. While views of its seriousness are similar to those who have not had pneumonia, the sense of one's own risk is heightened (29% feel very much at risk compared with 7% of those who have not had pneumonia). In line with this, past sufferers' level of concern about catching pneumonia is also higher (17% are very concerned compared with 2% of those with no personal experience of pneumonia).

How the reality of having pneumonia compared to preconceptions



Emotions felt by sufferers of pneumonia



Pneumonia prevention

Vaccination is less commonly felt to be an effective means of preventing pneumonia, compared to other simple lifestyle measures.

When thinking generally about steps personally taken to stay healthy, a smaller proportion of adults selected "having all recommended vaccinations" (72%) compared to 93% for "eat a healthy diet", 86% for "seek regular check-ups with their doctor" and 74% for "exercise regularly".

Although 90% agree that they follow their doctor's advice when it comes to vaccines, trust in vaccinations in France is the lowest of all countries surveyed. 76% agree that they "trust vaccines to help prevent infectious diseases" compared with a survey total of 85%. In line with other countries surveyed, French older adults do not appear to be very proactive in seeking vaccination. Of those vaccinated against pneumonia, just 8% say it was their own idea.

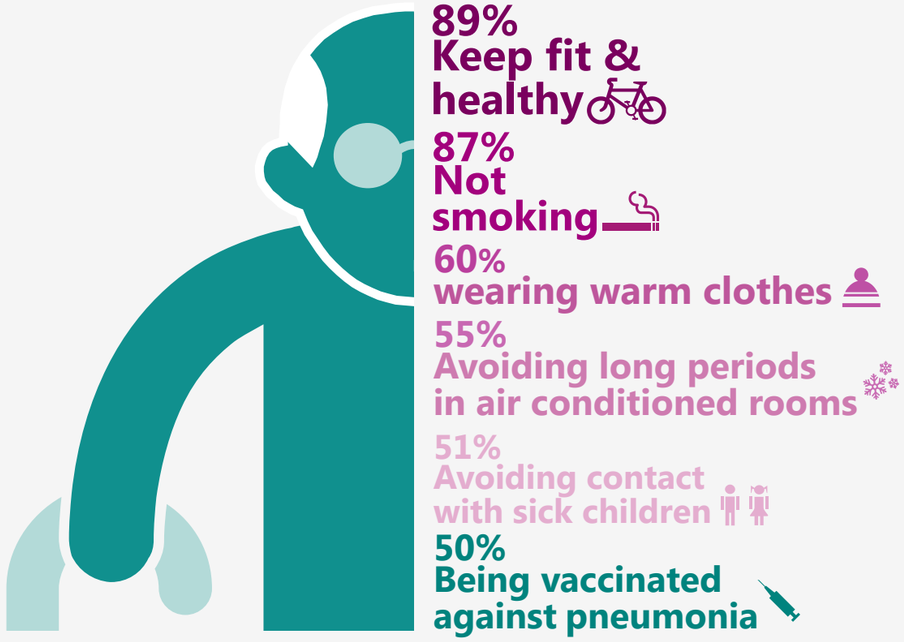
While almost everyone claims to be doing something to stay fit and healthy, when it comes to pneumonia, only half believe it is true that it can be prevented. Amongst older adults in France, 46% think it is true that "pneumonia can only be treated and not prevented" compared to 30% believing it to be false.[‡] Without this fundamental understanding, any talk of preventative strategies, let alone vaccination, would be premature.

It is clear that for many, lifestyle can be seen as effective at protecting against pneumonia. Almost all (89%) believe that "keeping fit and healthy" is effective, followed by "not smoking" (87%), "wearing warm clothes" (60%) and "avoiding long periods in air conditioned rooms" (55%). This reflects the 76% believing it is true that "being cold and wet for a long period puts you at high risk of pneumonia".

Two of the most effective measures for pneumonia prevention were selected the least often. Just one in two (50%) state that "being vaccinated against pneumonia" is effective. This is the same proportion as the 51% seeing "avoiding contact with sick children" as effective. Yet the expert panel considered avoidance of those who are ill to be one of the most important preventative measures that can be taken.

Attitude towards vaccination in general

Effective measures against protecting against pneumonia



[‡] *Remainder answered don't know*

Pneumonia vaccination

Awareness of pneumonia vaccination is low and there is a poor conversion rate from being aware to taking action, with even lower levels of vaccination.

Overall, just 14% (rising to 20% in the Méditerranée region) are aware that it is possible to be vaccinated against pneumonia. This is half the survey total figure of 29%. There is no difference by risk status, although those who have had pneumonia are more likely to be aware that a preventative vaccine exists (27% of those who have had pneumonia compared with 13% of those who have not).

Levels of pneumonia vaccination among older adults in France are also low. Compared to a survey total of 12%, just 5% of older adults in France say that they have had the pneumonia vaccine. This ranges from 2% in Île De France to 8% for Méditerranée and barely changes among the higher risk group (6%). It can be compared with the 35% of the French older adult population (and 44% of those at higher risk of pneumonia) claiming to have been regularly vaccinated† against flu.

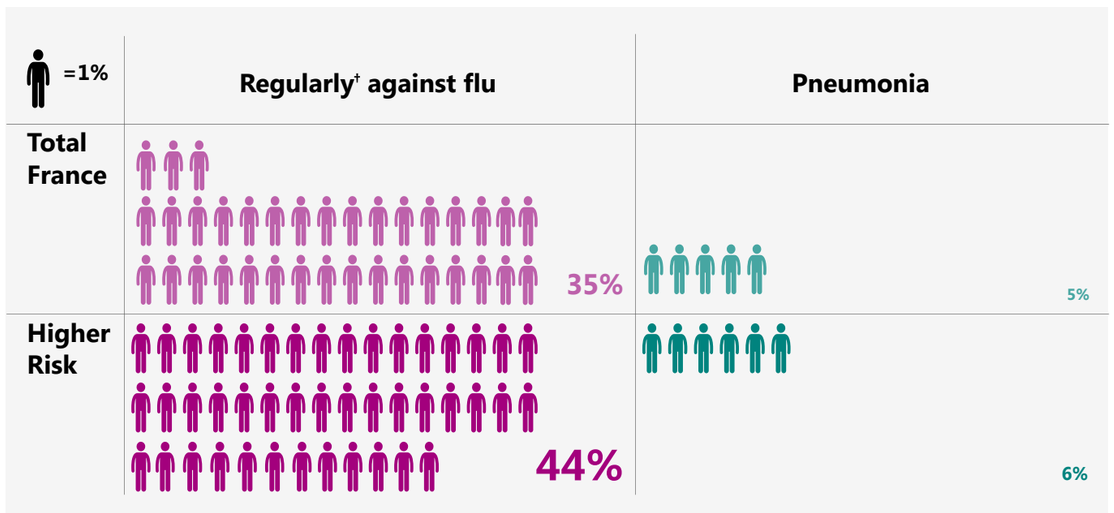
Looking at the patient pathway, from awareness of pneumonia to actual vaccination, reveals the high proportion being lost at key steps along the way. Ultimately only 35% of those aware of the vaccine will go on to have it.

By far the most common driver for pneumonia vaccination is a prompt from a doctor (stated by 73% of those vaccinated against pneumonia – 56% stating GP or family doctor and/or 25% stating specialist doctor). This is consistent with the 90% who agree that they "follow their doctor's advice" when it comes to vaccination.

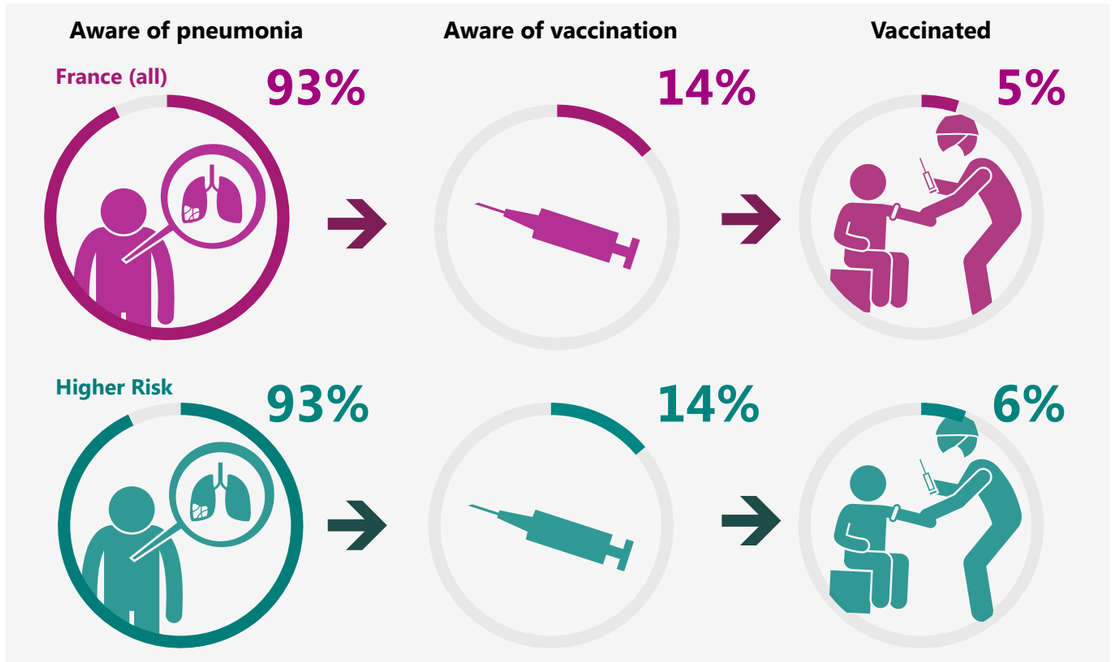
Similarly, when those who are aware of the pneumonia vaccine but have not received it are asked why not, the most common reason is "my doctor has never offered it to me" (55%). This further reinforces the important role that healthcare professionals (HCPs) have to play in increasing levels of pneumonia vaccination.

By far the most common driver for pneumonia vaccination is a prompt from a doctor (stated by 73% of those vaccinated against pneumonia – 56% stating GP or family doctor and/or 25% stating specialist doctor). This is consistent with the 90% who agree that they "follow their doctor's advice" when it comes to vaccination.

Self reported - vaccination levels



% lost at each key step of the patient journey



†*Regularly vaccinated is defined as at least four times in the past five years*

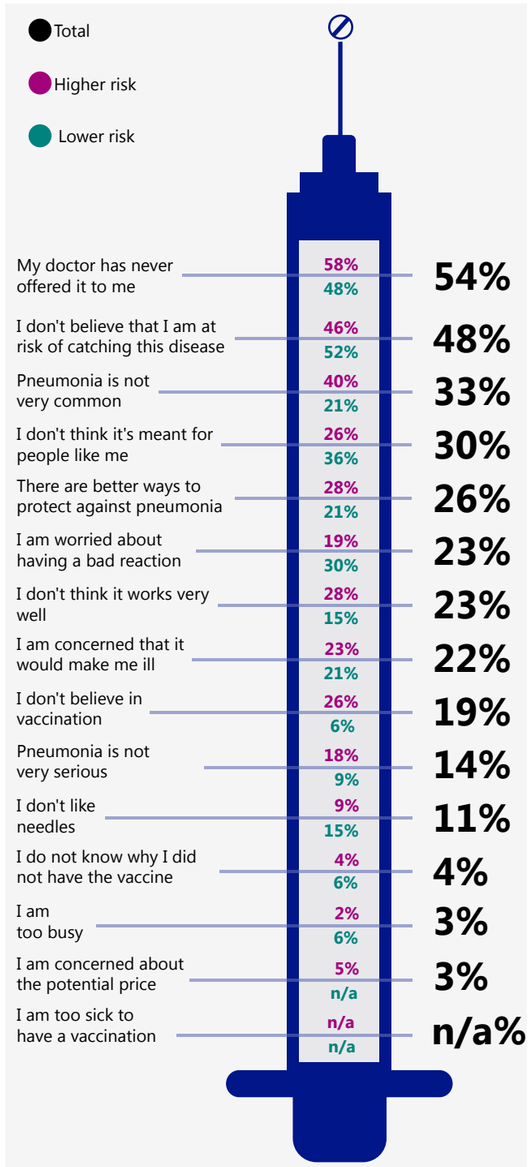
Similarly, when those who are aware of the pneumonia vaccine but have not received it are asked why not, the most common reason is "my doctor has never offered it to me" (55%). This further reinforces the important role that healthcare professionals (HCPs) have to play in increasing levels of pneumonia vaccination.

If the pneumonia vaccine were recommended by their doctor and at no cost to them, 43% of older adults (not already vaccinated) would be likely to have it. This would provide a significant boost to vaccination rates but is still one of the lowest levels of all countries surveyed. The proportion likely to follow the recommendation is higher among males (50% compared with 38% of females) and the higher risk group (46% compared with 37% of those at lower pneumonia risk).

While physicians are undoubtedly key to raising vaccination rates, it would be overly simplistic to assume that it is just a question of offering it more frequently. With two in five of those aged 50 and older likely to take up the offer, this still leaves 52% who would be unlikely to have the vaccination (48% of the higher risk group).** Additional reasons commonly selected for not having had the vaccination are "I don't believe that I am at risk of catching the disease" (48%) and, of greater concern, "there are better ways to protect against pneumonia" (26%).

Fears over safety also feature. Among those who are aware of the pneumonia vaccine but have not had it, 23% are "worried about having a bad reaction" and 22% are "concerned it would make them ill". This issue

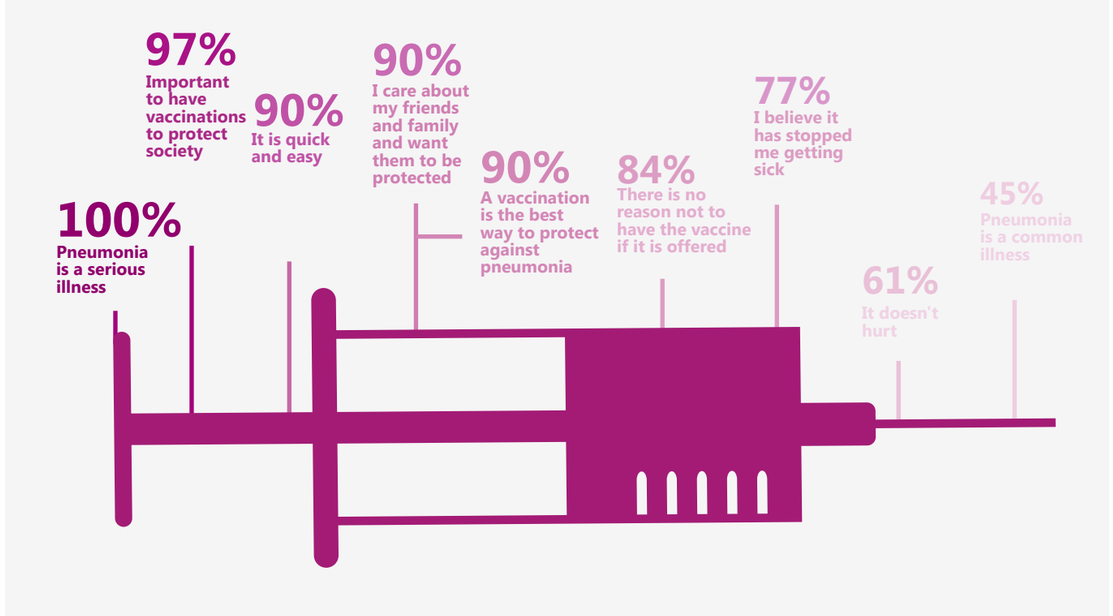
Reasons for not being vaccinated against pneumonia



is not specific to pneumonia vaccination with 30% of older adults agreeing that they "try to avoid vaccines because I think they are not safe." There is some regional variation here with older adults in Centre-Est least likely to agree at 20% and those in Est region most likely to agree (38%).

The majority (65%) of those who have had a pneumonia vaccination would recommend it, although this is lower than the proportion in other countries. The main reasons for this are both the practical and the more emotional. On the practical side there is the belief that "pneumonia is a serious illness" (100%), "it is quick and easy" (90%) and "vaccination is the best way to protect against pneumonia" (90%). On a more emotional level there is "it is important to have vaccinations to protect society" (97%) and "I care about family and friends and want them to be protected" (90%).

Reasons for recommending the pneumonia vaccine



**Remainder answered don't know*

Information needs

Despite high stated levels of pneumonia awareness, older adults still recognise the need for more information on all aspects of the disease.

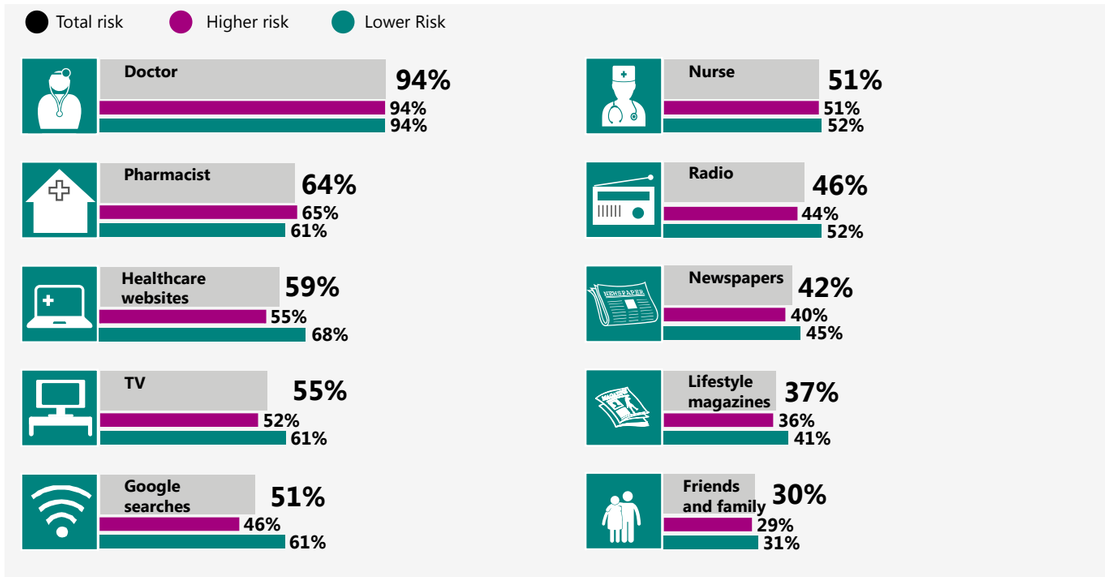
These results reinforce the lack of understanding around pneumonia and a desire for additional information. Less than one in 20 feel very well informed about "pneumonia as a disease in general" (4%), "risk factors for catching pneumonia" (3%) and "vaccination against pneumonia" (2%). These figures are approximately half of the survey total figures and show little improvement among the higher risk group. Those in the Méditerranée region tend to feel the best informed.

As a result of having pneumonia, people tend to feel better informed about "pneumonia as a disease in general" (14% very well informed compared with 4% for those with no personal experience of pneumonia) and about "risk factors for catching pneumonia" (14% very well informed compared with 3% for those with no personal experience of pneumonia). They also claim to be better informed about "vaccination against pneumonia" (10% very well informed compared with 2% for those with no personal experience of pneumonia) and more past sufferers have been vaccinated (19% compared with 4%).

The majority of adults think that there is a need for more information on pneumonia (65%), risk factors (69%) and vaccination (67%). While the doctor is the most popular source, pharmacists and nurses are also seen as important. Older adults also display an openness to multiple channels of information. For a general information campaign, popular media is felt to have a role to play. However, for more targeted communication the higher risk group appear less receptive to the internet and TV as sources of further information.

	Survey total sample	France total	Higher risk sample	Lower risk sample
Pneumonia in general				
Very well informed	8%	4%	5%	4%
Fairly well informed	37%	23%	25%	21%
Not very well informed	42%	47%	46%	49%
Not at all informed	12%	24%	24%	26%
Risk factors for catching pneumonia				
Very well informed	7%	3%	4%	2%
Fairly well informed	35%	22%	22%	20%
Not very well informed	43%	47%	46%	50%
Not at all informed	14%	26%	27%	25%
Vaccination against pneumonia				
Very well informed	7%	2%	3%	2%
Fairly well informed	15%	7%	7%	7%
Not very well informed	25%	19%	18%	19%
Not at all informed	52%	71%	71%	70%

Sources of information older adults would like to use to find out more about pneumonia



Next steps from the research

The results of this study highlight a need for more information on all aspects of pneumonia. In particular, educating older adults on the risk it could pose to them personally.

A greater focus in particular is required for the higher risk group who currently show similar levels of vaccine awareness and uptake to the general older adult population.

Renewed efforts are needed to clearly communicate the following key messages:

- Pneumonia is more common and more serious than people may think
- Some forms of pneumonia may be contagious
- Pneumonia poses a real risk to those aged 65 years and older, or suffering from certain medical conditions
- Pneumonia can be prevented as well as treated
- Preventative vaccines are available

Physicians, and allied health professional such as nurses and pharmacists have a key role to play in pneumonia education and prevention. They can be better supported through wider awareness campaigns in popular media, as well as the provision of better patient orientated materials to distribute. However, older adults should also be encouraged to be more proactive in understanding their personal risk of pneumonia and steps that can be taken to protect themselves.

All those with an interest in pneumonia and pneumonia prevention are encouraged to make use of the study's findings to drive debate and inform future policy.

"Don't underestimate the power of this new data. We can use this to speak to healthcare professionals, but also politicians and public health authorities. Think creatively how to get this out to the public." Dr Jane Barratt, Secretary General of the International Federation on Ageing

Please see the appendix for details on how to reference the PneuVUE® study or find out more.

GERMANY

[Note: Survey total figures refer to results for the total sample of all nine (9) countries surveyed weighted to population size]

PneuVUE®
Germany findings

Older adults in Germany are least confident in their pneumonia knowledge compared to other countries surveyed

Only
73%
claim to know what it is

39%
do not identify it as a lung infection

But
58%
know it's true that some forms of pneumonia may be contagious

Pneumonia is said to be a serious disease, but there is an apparent failure to link this to a risk to their own personal health in Germany and concern over the risk of catching pneumonia is very low

92%
think pneumonia is serious

Only
13%
are concerned about the risk of catching pneumonia

Only
21%
of those clinically defined as being at higher risk of pneumonia[5,8,9] recognise themselves as 'very much at risk'

14%
think car accidents cause the highest number of deaths in their country vs

5%
for pneumonia - in reality, pneumonia is responsible for more than 5 x as many deaths*[10]

There is a lot of uncertainty about whether pneumonia is a preventable disease, and how to prevent it.

Only
34%
think it is false that "pneumonia can only be treated and not prevented"

A higher proportion think the following are effective at protecting against pneumonia

keeping fit and healthy	96%
not smoking	85%
wearing warm clothes	81%
avoiding long periods in air conditioned rooms	61%
compared to being vaccinated	51%

Awareness of a preventative pneumonia vaccine is low with uptake even lower

Only
34%
are aware it is possible to be vaccinated against pneumonia

Only
20%
of those at higher risk of pneumonia have been vaccinated.

Doctors, and other allied health professionals such as nurses & pharmacists have a key role to play in widening awareness and raising vaccination rates.

81%
of those who have been vaccinated against pneumonia say it was prompted by their doctor

Among the most common reason for not being vaccinated is
56% My doctor has never offered it to me

Pneumonia was responsible for 19,943 deaths in Germany in 2013 compared with 3,947 for transport accidents. Eurostat: Causes of death - Deaths by country of residence and occurrence. Figures for 2013 and based on 'All deaths reported in the country' – see reference at end

Pneumonia awareness

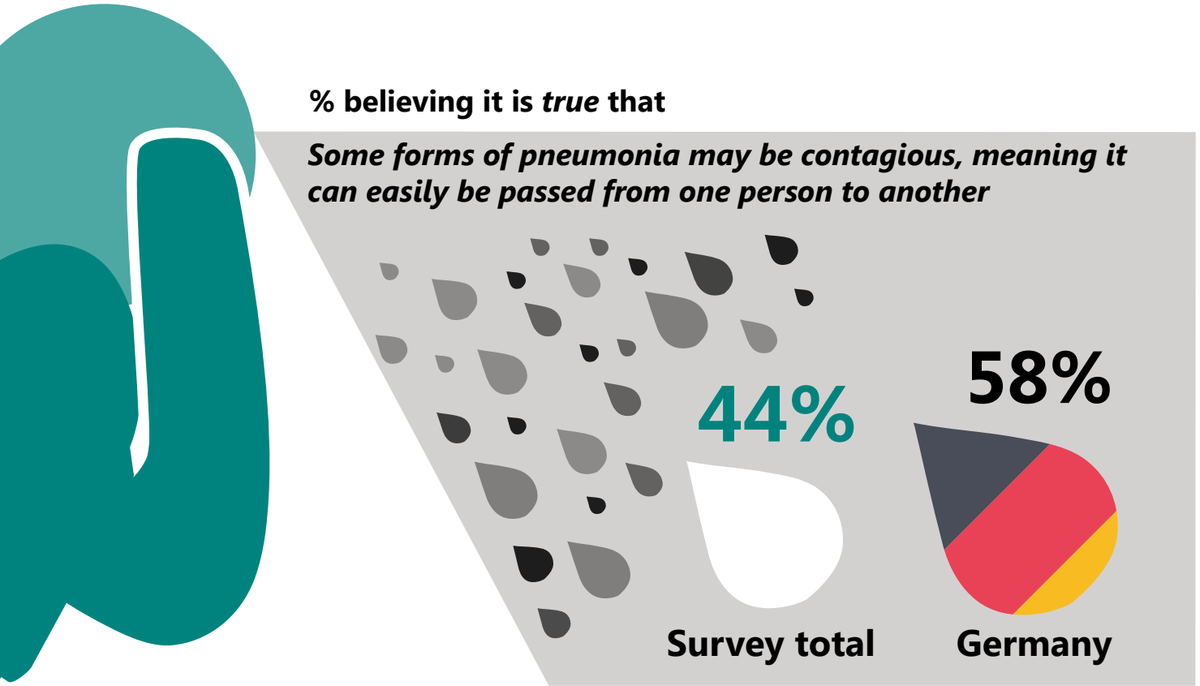
When it comes to pneumonia, awareness does not appear to be the problem as much as understanding.

Among older adults in Germany, almost all (95%) have heard of pneumonia, although less than three quarters (73%) claim to know what it is. This is the lowest of all countries surveyed and this lower level of understanding is evident throughout the survey.

Germany (along with Austria) is the least likely (61%) to associate pneumonia with a lung infection. The remainder either don't know (23%) or falsely associate it with something else[†].

Despite this, pneumonia is typically associated with trouble breathing (92%) and coughing (91%) in addition to high fever (89%) and tiredness/fatigue (86%). It is linked much less with dizziness (43%), sneezing (25%) and nausea (25%).

Although less clear on what pneumonia actually is, older adults in Germany are among the most likely to think it is true that "some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another" (58% for Germany compared with 44% for survey total sample).



Interestingly, despite being at higher risk of pneumonia,[5,8,9] those aged 65 and above have the least understanding of pneumonia. A significantly smaller proportion of this older age group state that they "know what pneumonia is" (70% compared to 77% of under 65s) or correctly identify it as a lung infection (56% compared to 66% of those under 65). The same is true for the higher risk pneumonia group. Fewer of those at higher risk of pneumonia identify pneumonia as a lung condition (58% compared to 69% of those at lower risk), although there is little difference between groups when it comes to pneumonia awareness and familiarity.

Pneumonia is however almost universally recognised as a serious illness with 92% rating it as extremely serious or rather serious. In the context of other conditions tested, this places pneumonia just behind meningitis (96%) and HIV (95%) and far above influenza (68%). The majority (92%) also agree it is true that it can take months to recover from pneumonia.

In line with the higher proportion viewing pneumonia as serious compared to flu, 70% agree it is true that "pneumonia is more deadly than flu". Yet only half (51%) believe it is true that "up to 20% of adults who catch pneumonia will die from it" and pneumonia is felt to cause fewer deaths than other causes presented.

When asked which out of pneumonia, car accidents, heart disease and influenza results in the most adult deaths in their country, pneumonia is generally the least chosen option. 74% correctly select heart disease as the biggest killer. This is followed by car accidents at 14% and then a large drop to influenza (6%) and finally pneumonia (5%). In reality however, pneumonia is responsible for over five times as many deaths as transport accidents[*] and over 44 times as deaths as influenza[**] in Germany.[10]

[†]Other options include "heart condition" (5%)," severe cold/ similar to flu" (3%) or "I don't associate it with any of these conditions" (8%)
[*]In 2013, pneumonia was responsible for 19,943 deaths in Germany compared with 3,947 for car accidents. Taken from Eurostat causes of death data (see references at end)
[**] In 2013, pneumonia was responsible for 19,943 deaths in Germany compared with 448 for influenza. Taken from Eurostat causes of death data (see references at end)

Risk groups & risk factors

There is a tendency to project risk of pneumonia onto other people rather than acknowledge their own personal vulnerability and take steps to address it.

When it comes to a sense of personal risk, the majority (67%) feel only slightly at risk of catching pneumonia and 12% state that they are not at risk at all. Germany is however among the countries most likely to feel "very much at risk" of pneumonia (19% compared with 13% for the survey total).

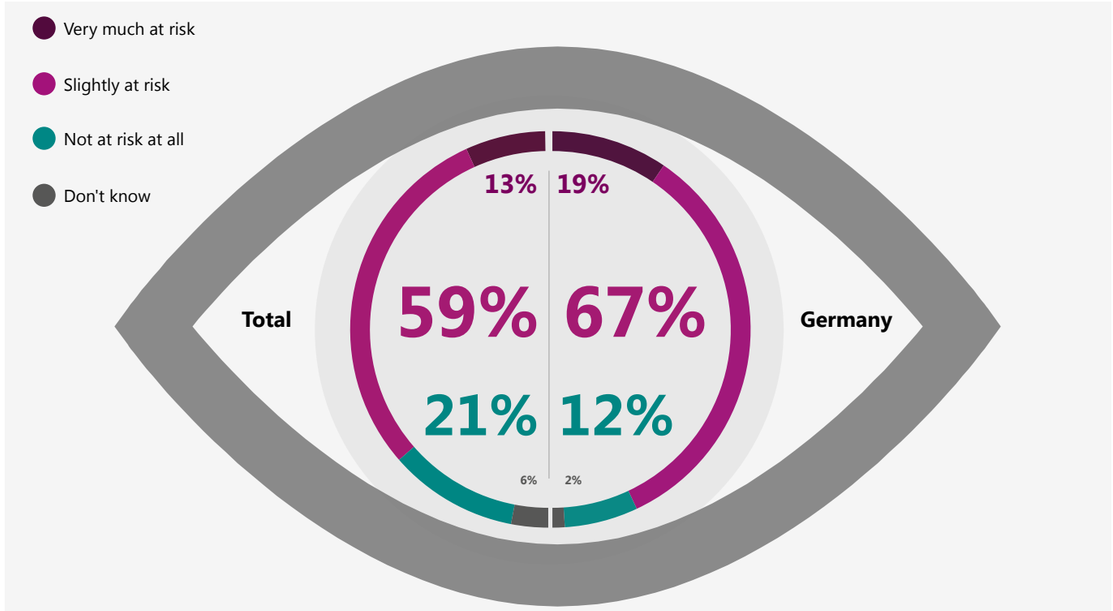
Despite being a relatively high figure, it is far lower than the 73% of the German sample meeting a clinical criteria[5,8,9] for being at risk for pneumonia. Amongst this clinically defined higher risk group, just 13% believe themselves to be very much at risk. While significantly higher than among the lower risk population, it still represents just one in five of those with key risk factors for pneumonia.

There is some regional variation in perceptions of personal risk. A higher proportion in Schleswig-Holstein (30% and Hessen (27%) consider themselves "very much at risk". Older adults in Baden-Württemberg are most likely to consider themselves "not at risk at all" (20%).

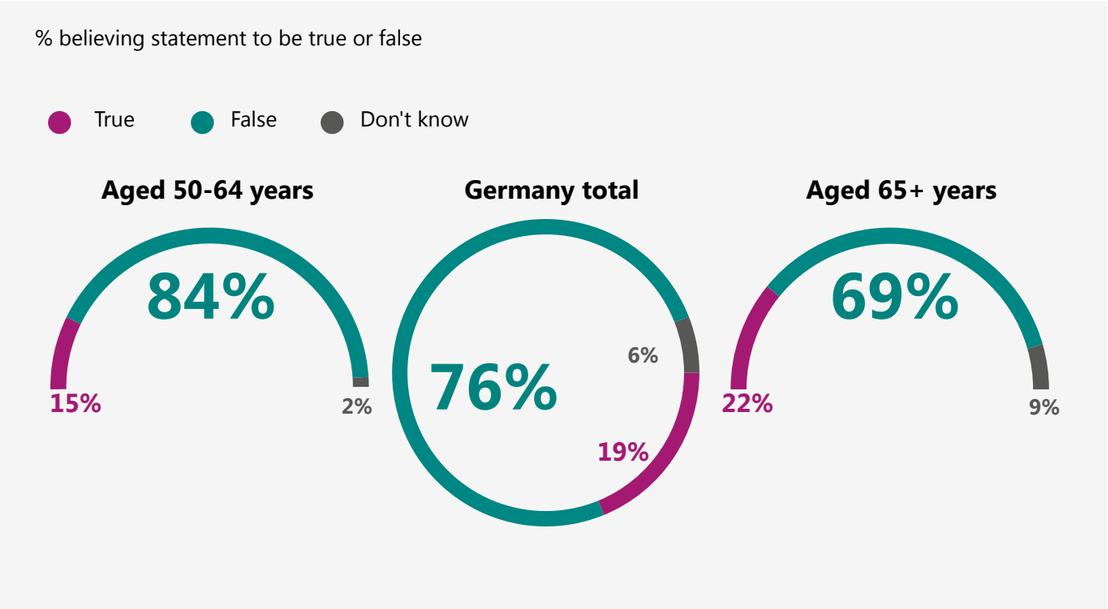
There is a recognition that pneumonia is not confined to unfit or unhealthy people. Three quarters (76%) acknowledge it is false that "pneumonia does not affect fit and healthy people".

At the same time however, one in five (19%) do think that "pneumonia does not affect fit and healthy people" is a true statement. This is particularly the case for those at higher risk of pneumonia (20% think it is true compared with 15% of those at lower risk) and the 65 and older age group (15% compared with 22%). Later in this report we will see again how many consider staying fit and healthy to be effective protection against pneumonia.

Perceptions of risk for pneumonia



Pneumonia does not affect fit and healthy people



The state of a person's health is more commonly associated with a higher than average risk of catching pneumonia than simply old age.

Overall, people with chronic lung conditions (89%) or long term medical conditions (81%) and smokers (73%) are most commonly identified as being at a higher than average risk of pneumonia. At the other end of the scale, "people who have difficulty swallowing" receives very little recognition (17%) despite being strongly associated with community acquired pneumonia in the elderly.[11]

Young children are most likely to be seen as being at lower than average risk (23%), perhaps reflecting how successful the national pneumococcal immunisation programme has been in this age group.

Looking at age, just 3% believe it is true that pneumonia *only* affects old people. There is some uncertainty over the impact of age on risk. More than double the proportion consider those aged 60* and above to be at higher than average risk of pneumonia (46%) compared to adults over 50 (22%). At the same time, an equal proportion considers this older age group to be just at *average* risk (43%). This indicates those aged over 60 are not clearly identified as particularly vulnerable to pneumonia in Germany.

Groups felt to be at a higher than average risk of catching pneumonia

Note: Based on local advice, in Germany the cut off of 60 years was tested compared with 65 years in other countries.

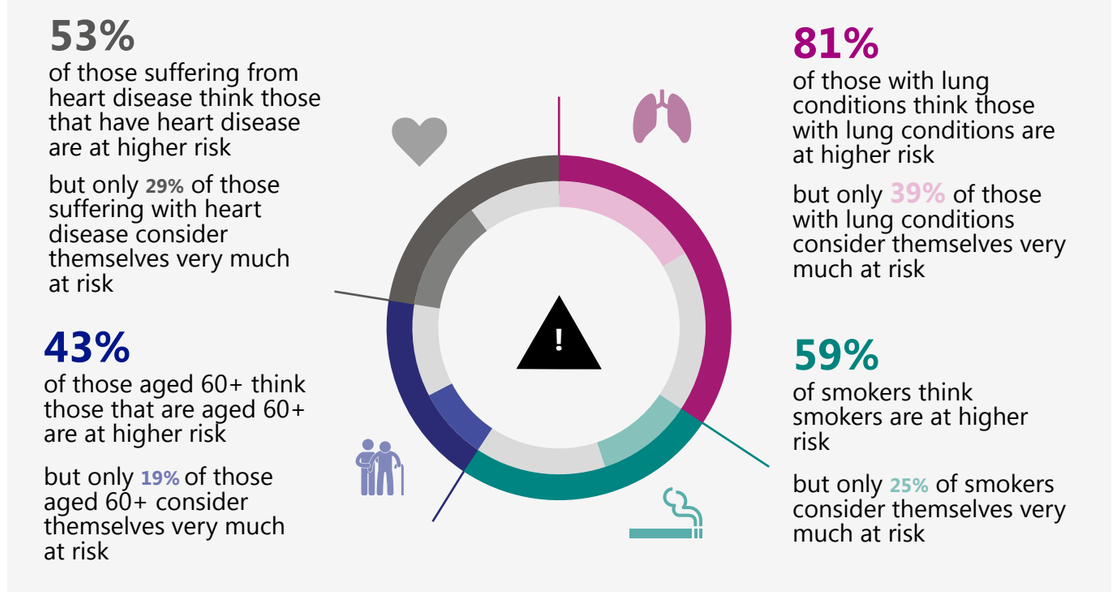
Pneumonia is more likely to be seen as an illness that affects other people rather than themselves.

- 43% of adults aged 60 years and older identify "adults over 60" as being at a higher than average risk of catching pneumonia. However, when thinking about their own risk, Just 19% consider themselves "very much at risk"
- 59% of smokers identify "smokers" as being at a higher than average risk of catching pneumonia. However, just 25% consider themselves to be "very much at risk"

This sentiment is followed through to level of concern over catching pneumonia, with a greater proportion expressing concern for older friends and family (27%) compared to concern for themselves (13%).

On the whole, people are not overly worried about the risk of catching pneumonia (87% are not very or not at all concerned compared to 4% who are very concerned and 8% who are fairly concerned). This places Germany among the less concerned countries of those surveyed.

Disparity between those identifying group as being at a higher risk of pneumonia and considering them selves to be at a high risk



The impact of pneumonia

If pneumonia does strike, it tends to be worse than anticipated.

Pneumonia does touch people's lives. 18% claim to have personally suffered from the disease and 35% have a close friend or close family member who they believe has had pneumonia. When thinking back to that time when they had pneumonia, 1 in 2 (56%) sufferers claimed to have felt "surprised", reinforcing the misconception that pneumonia is very much seen as an illness that happens to other people.

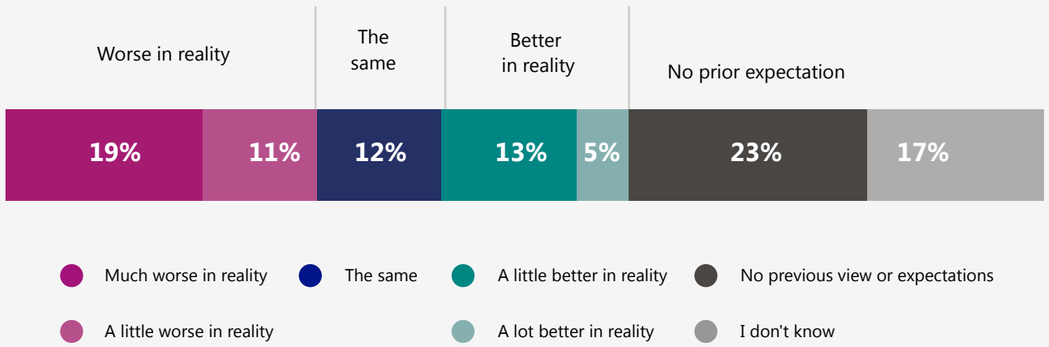
Continuing to reflect an "it will never happen to me" mentality, 1 in 4 (23%) had no preconceptions of what pneumonia would be like. However, amongst those who did, it turned out to be much worse in reality.

The most common areas where pneumonia has a big negative impact are "mobility/ ability to get out and about" (30%) followed by "independence in caring for oneself" (19%), "social life" (18%) and "caring for one's family" (15%). From an economic perspective, 14% see a big negative impact on their "work life". Interestingly, a greater proportion of those under 65 report a *big* negative impact of pneumonia compared to older sufferers.

Thinking back to the time they were suffering from pneumonia, the most commonly selected *negative* emotion is "surprised" (56%), followed by "powerless" (48%), "poorly informed" (35%) and "scared" (30%). On the positive side, older adults report feeling "supported" (70%) and "confident it would pass soon" (70%). This indicates that while appropriate care may be in place for sufferers, less success has been had with educating and informing people about the disease, particularly in terms of enabling them to feel more in control and prepared.

Personal experience of pneumonia has an understandable impact on attitudes towards the disease. While views of its seriousness are similar to those who have not had pneumonia, the sense of one's own risk is heightened (35% feel very much at risk compared with 15% of those who have not had pneumonia). In line with this, past sufferers' level of concern about the risk of catching pneumonia is also higher (25% are very or fairly concerned compared to 10% of those with no personal experience of pneumonia).

How the reality of having pneumonia compared to preconceptions



Emotions felt by sufferers of pneumonia

Pneumonia prevention

Vaccination is less commonly felt to be an effective means of preventing pneumonia, compared to other simple lifestyle measures.

When thinking generally about steps personally taken to stay healthy, a smaller proportion of adults selected "having all recommended vaccinations" (75%) compared to 93% for "eat a healthy diet", 91% for "exercise regularly" and 85% for "seek regular check-ups with their doctor".

Almost all (93%) agree that they "follow their doctor's advice" when it comes to vaccination and 83% agree that they "trust vaccines to help prevent infectious diseases". Trust in vaccines is particularly high in Sachsen (92%), Brandenburg (92%) and Thüringen (91%) and lower in Baden-Württemberg (74%).

Older adults in Germany appear to be more proactive in requesting vaccination. Looking at those who have been vaccinated against pneumonia, 17% claimed it was their own idea. This compares to a survey total figure of just 8%.

Attitude towards vaccination in general

% Agreeing	Germany (all)	Survey Total
"I trust vaccines to help prevent infectious diseases"	83%	85%
% saying they "ensure I have all recommended vaccinations"	75%	68%
"I try to avoid vaccines because I think they are not safe"	33%	27%

While almost everyone claims to be doing something to stay fit and healthy, when it comes to pneumonia, only half believe it is true that it can be prevented. At a survey total level 52% think it is true that "pneumonia can only be treated and not prevented" compared to 34% believing it is false. Without this fundamental understanding, any talk of preventative strategies, let alone vaccination, would be premature.

It is clear that for many, lifestyle can be seen as effective at protecting against pneumonia. Almost all (96%) believe that "keeping fit and healthy" is effective, followed by "not smoking" (85%), "wearing warm clothes" (81%) and "avoiding long periods in air conditioned rooms" (61%). This reflects the 80% believing it is true that "being cold and wet for a long period puts you at high risk of pneumonia".

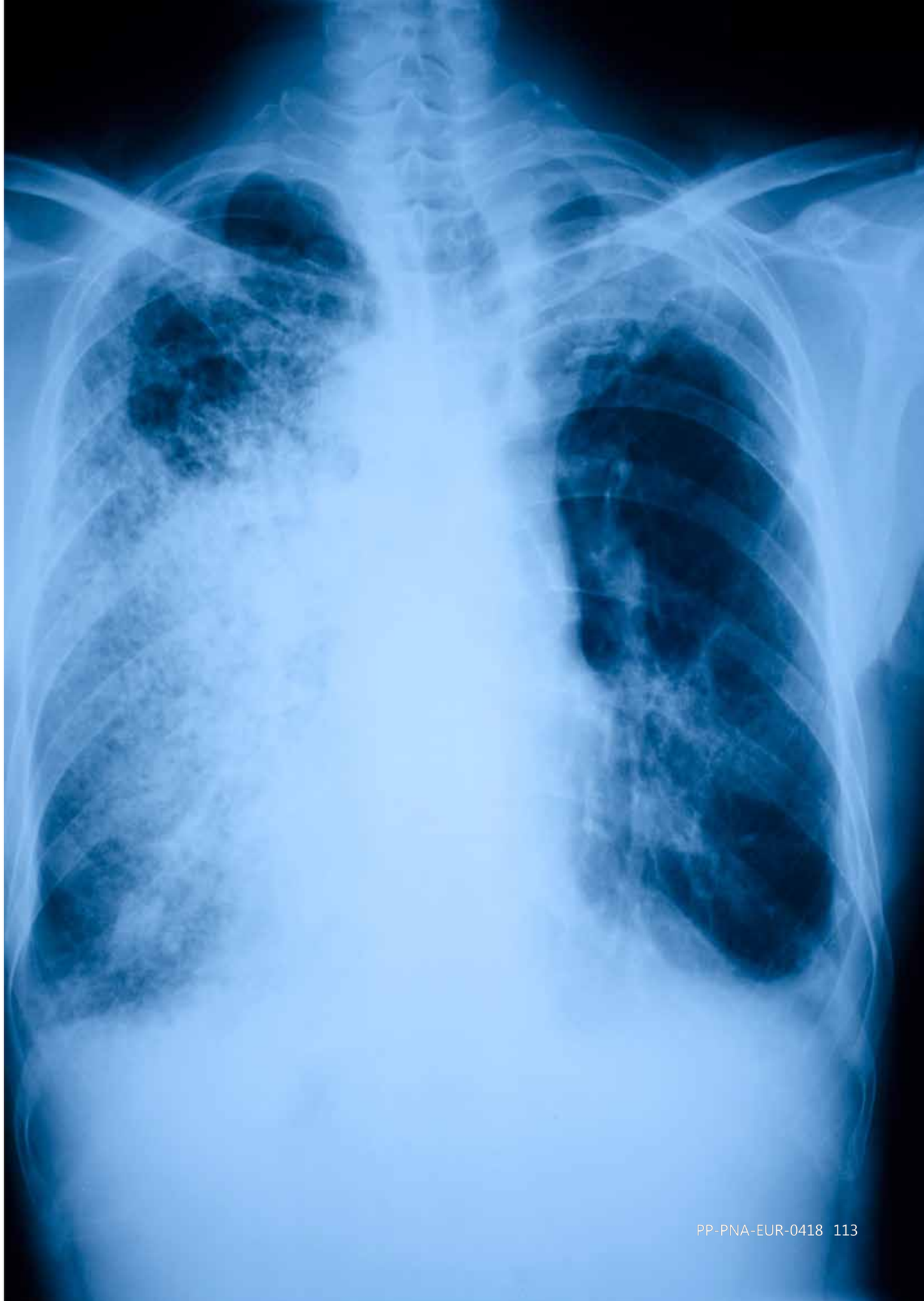
Effective measures against protecting against pneumonia

- 96% Keep fit & healthy
- 85% Not smoking
- 81% Wearing warm clothes
- 61% Avoiding long periods in air conditioned rooms
- 37% Avoiding contact with sick children
- 51% Being vaccinated against pneumonia

In the context of the above lifestyle measures, a relatively low number of older adults (51%) state that "being vaccinated against pneumonia" is effective. Even lower is the 37% selecting "avoiding contact with sick children" and yet the expert panel considered avoidance of those who are ill to be one of the most important preventative measures that can be taken.

There is a lot of variation across regions in the proportion considering "vaccination against pneumonia" to be effective. This ranges from 73% in Brandenburg to 40% in Baden-Württemberg.

(note: regions with a sample size of less than 30 are not shown)	% considering "vaccination against pneumonia" to be effective
Total	51%
Baden-Württemberg	40%
Bayern	41%
Berlin	68%
Brandenburg	73%
Hessen	55%
Niedersachsen	48%
Nordrhein-Westfalen	47%
Rheinland-Pfalz	62%
Sachsen	53%
Sachsen-Anhalt	67%
Schleswig-Holstein	58%
Thüringen	68%



Pneumonia vaccination

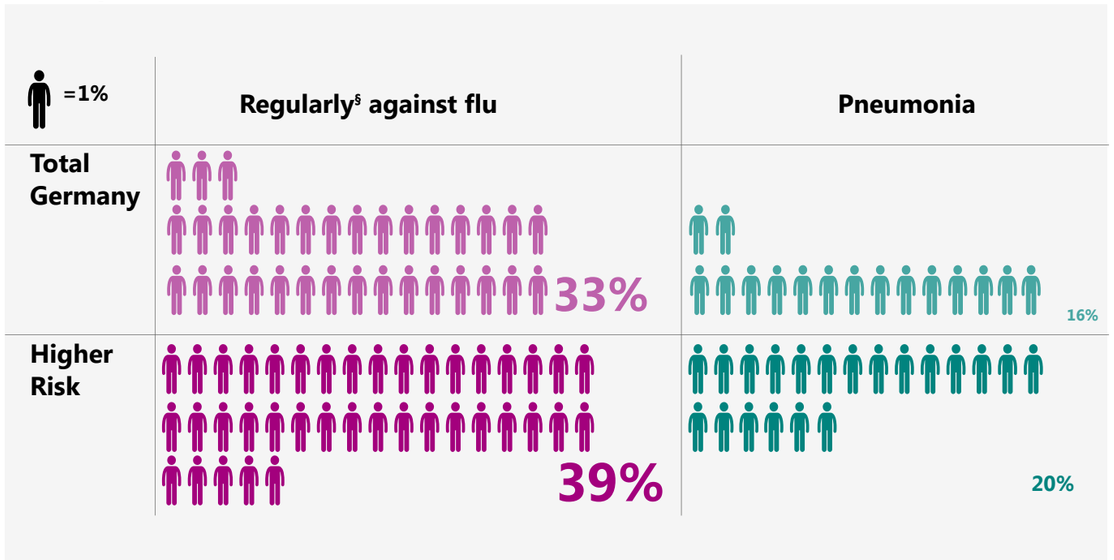
Awareness of pneumonia vaccination is low and there is a poor conversion rate from being aware to taking action, with even lower levels of vaccination.

Overall, 34% are aware that it is possible to be vaccinated against pneumonia. While this figure is low, there is an indication of progress among the key target groups. Higher awareness is reported by those aged 65 and above (42% vs 25% among those under 65) and those in the higher risk group (37% vs 24% for those at lower risk). At 59%, those with a lung condition like COPD or asthma are the most likely to be aware of pneumonia vaccination.

However, while positive, these figures are still low leaving two in five of those with a lung condition and three in five of those aged 65 and over not even aware of pneumonia vaccination.

Awareness is only the first step and does not necessarily translate into action. The level of self-reported pneumonia vaccination among all older adults is 16%, rising to 20% among the higher risk group. This can be compared to the 33% of the general 50 years and older population (and 39% of those at higher risk of pneumonia) claiming to have been regularly vaccinated[§] against flu.

Self reported - vaccination levels



§Regularly vaccinated is defined as at least four times in the past five years

Looking at the patient pathway from awareness of pneumonia to actual vaccination reveals the high proportion being lost at key steps along the way. Ultimately only 47% of those aware of the vaccine will go on to have it.

Across Germany there are some regional variations in both awareness of a pneumonia vaccine and vaccination rates. Self-reported pneumonia vaccination levels are particularly high in Sachsen-Anhalt (33%), Brandenburg (32%) and Berlin (29%) and lowest in Baden-Württemberg (5%). Awareness follows a similar pattern.

By far the most common driver for pneumonia vaccination is a prompt from a doctor (stated by 81% of those vaccinated against pneumonia – 69% stating GP or family doctor and/or 13% stating specialist doctor). This is consistent with the 93% who agree that they "follow their doctor's advice" when it comes to vaccination.

Similarly, when those who are aware of the pneumonia vaccine but have not received it, are asked why not, "my doctor has never offered it to me" is in joint first place at 56%*. This further reinforces the important role that healthcare professionals (HCPs) have to play in increasing levels of pneumonia vaccination.

If the pneumonia vaccine were recommended by their doctor and at no cost to them, 46% of older adults (not already vaccinated) would be likely to have it, providing a significant boost to vaccination levels. This figure rises to 50% of the higher risk group compared with 38% of those at lower risk.

Previous awareness of pneumonia vaccination leads to an even higher proportion likely to follow their doctor's advice and have the vaccination (57% of those previously aware vs 43% of those unaware).

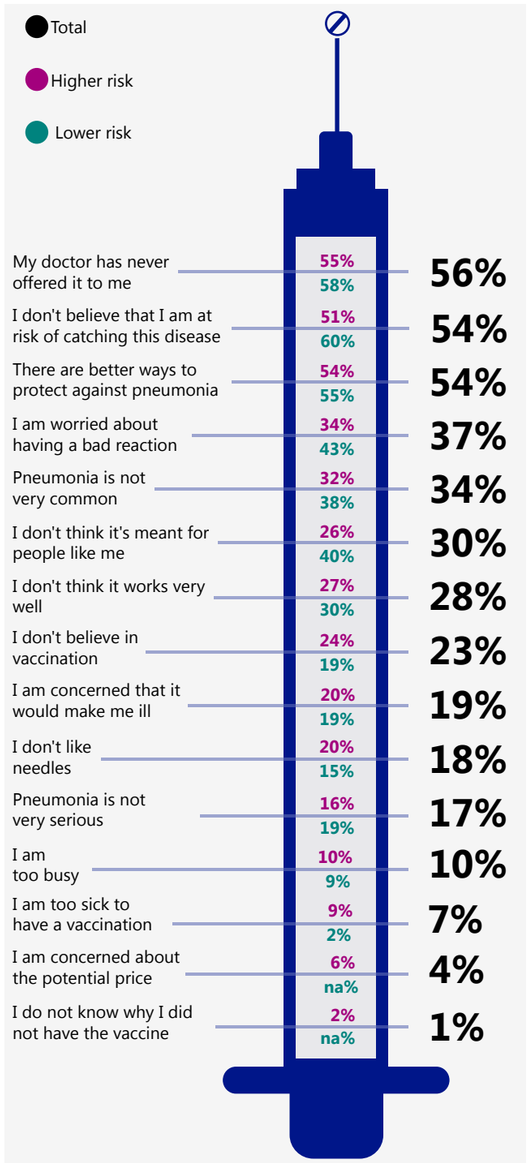
While physicians are undoubtedly key to raising immunisation rates, it would be overly simplistic to assume that it is just a question of offering it more frequently. With one in two of those aged 50 and older likely to take up the offer, this still leaves 51% who would be unlikely to have the vaccination (47% for the higher risk group)†.

First place is shared with "I don't believe that I am at risk of catching the disease" (54%) and "there are better ways to protect against pneumonia" (54%)
†The remainder answered "don't know"

Additional reasons commonly selected for not having had the vaccination are "I don't believe that I am at risk of catching the disease" (54%) and "there are better ways to protect against pneumonia" (54%) in joint first place. Continuing to reflect the low sense of one's own vulnerability, 34% have not been vaccinated because they think pneumonia is not very common and 30% think "it is not meant for people like me".

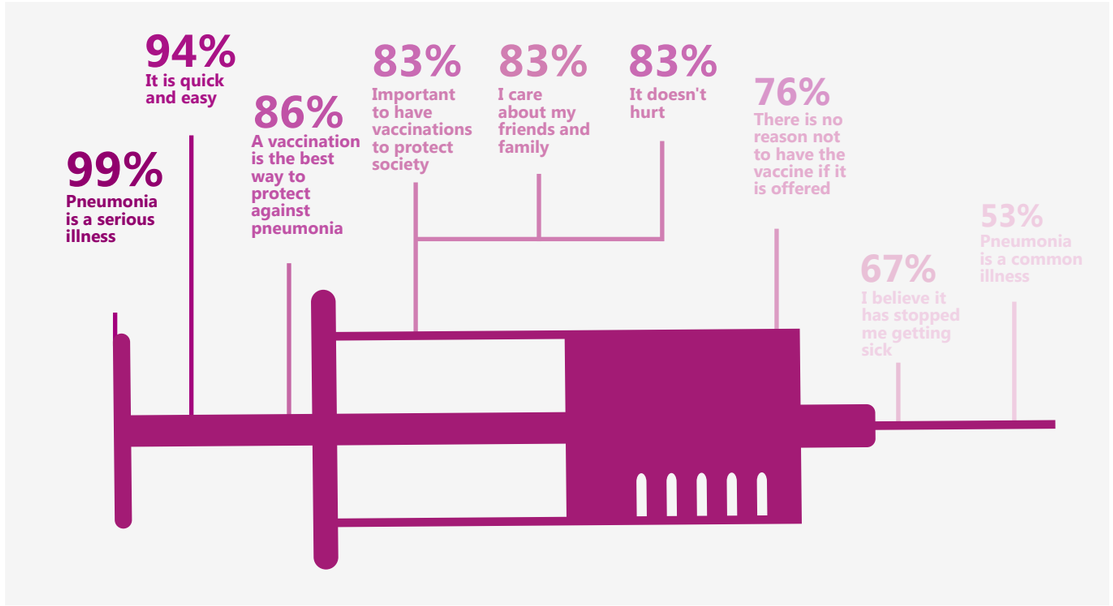
Fears over safety also feature. Among those aware of the pneumonia vaccine but who have not had it, 37% are "worried about having a bad reaction" and 19% are "concerned it would make me ill". At the same time, almost one in three "don't think it works very well". The issue of safety is not specific to pneumonia vaccination with 33% of older adults agreeing that they "try to avoid vaccines because I think they are not safe" (particularly high in Schleswig-Holstein (43%)

Reasons for not being vaccinated against pneumonia



The majority (83%) of those who have had a pneumonia vaccination would recommend it. The main reasons for this are both the practical and the more emotional. On the practical side there is the belief "pneumonia is a serious illness" (99%), "it is quick and easy" (94%),"vaccination is the best way to protect against pneumonia" (86%) and "it doesn't hurt" (83%). On a more emotional level the same number say "I care about family and friends and want them to be protected" and "it is important to have vaccinations to protect society" (83%).

Reasons for recommending the pneumonia vaccine



Information needs

Despite high stated levels of pneumonia awareness, older adults still recognise the need for more information on all aspects of the disease.

These results reinforce the lack of understanding about pneumonia and a desire for additional information. Less than 1 in 10 feel very well informed about "pneumonia as a disease in general" (9%), "risk factors for catching pneumonia" (8%) and "vaccination against pneumonia" (7%). While these numbers are slightly better for the at risk group, they remain low.

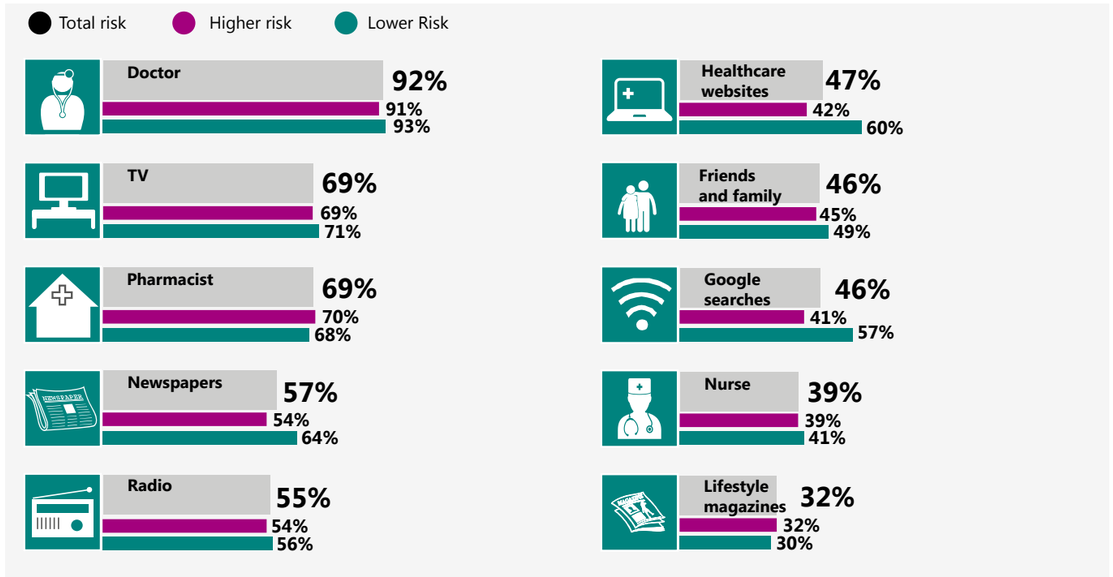
As a result of having pneumonia, people tend to feel better informed about "pneumonia as a disease in general" (65% very or fairly well informed vs. 44% for those with no personal experience of pneumonia) and about "risk factors for catching pneumonia" (58% very or fairly well informed vs. 47% for those with no personal experience of pneumonia). They also claim to be better informed about "vaccination against pneumonia" (37% very or fairly well informed vs. 22%) and more past sufferers have been vaccinated (31% vs 12%).

However, previous sufferers' knowledge of pneumonia prevention and risk factors is not significantly better than those with no personal experience of the condition. They are just as likely to think it is true that "pneumonia can only be treated and not prevented" (49% for those with experience of pneumonia vs 52% for those without) and a similar number state that "being vaccinated against pneumonia" is effective at protecting against it, while more commonly selecting the other lifestyle measures.

The majority of adults think that there is a need for more information on pneumonia (54%), risk factors (62%) and vaccination (60%). Older adults also display an openness to multiple channels of information. While the doctor is the most popular source, for a general information campaign popular media, pharmacies and the internet are also felt to have a role. However, for more targeted communication the higher risk group are less receptive to the internet and newspapers as sources of further information. Friends and family are also given more prominence in Germany.

	Survey total sample	Germany total	Higher risk sample	Lower risk sample
Pneumonia in general				
Very well informed	8%	9%	9%	9%
Fairly well informed	37%	39%	40%	36%
Not very well informed	42%	42%	40%	46%
Not at all informed	12%	10%	10%	10%
Risk factors for catching pneumonia				
Very well informed	7%	8%	8%	6%
Fairly well informed	35%	41%	40%	43%
Not very well informed	43%	41%	40%	43%
Not at all informed	14%	9%	10%	7%
Vaccination against pneumonia				
Very well informed	7%	7%	8%	3%
Fairly well informed	15%	18%	20%	14%
Not very well informed	25%	21%	21%	22%
Not at all informed	52%	52%	49%	62%

Sources of information older adults would like to use to find out more about pneumonia



Next steps from the research

The results of this study show that older adults in Germany are least confident in their knowledge of pneumonia and highlight a need for more information. In particular, building on relatively higher awareness of the fact that some forms of pneumonia are contagious to educate them on the personal risk pneumonia poses.

Renewed efforts are needed to clearly communicate the following key messages:

- Pneumonia is more common and more serious than people may think
- Some forms of pneumonia may be contagious
- Pneumonia poses a real risk to those aged 60 years and older, or suffering from certain medical conditions
- Pneumonia can be prevented as well as treated

Physicians, and allied health professional such as nurses and pharmacists have a key role to play in pneumonia education and prevention. They can be better supported through wider awareness campaigns in popular media, as well as the provision of better patient orientated materials to distribute. However, older adults should also be encouraged to be more proactive in understanding their personal risk of pneumonia and steps that can be taken to protect themselves.

All those with an interest in pneumonia and pneumonia prevention are encouraged to make use of the study's findings to drive debate and inform future policy.

"*Don't underestimate the power of this new [survey] data. We can use this to speak to healthcare professionals, but also politicians and public health authorities. Think creatively how to get the PneuVUE® survey results out to the public.*" Dr Jane Barratt, Secretary General of the International Federation on Ageing

Please see the appendix for details on how to reference the PneuVUE® study or find out more.

[Translation note: For almost all of the survey the following term was used to refer to pneumonia in German:" Pneumonie oder Lungenentzündung". The exception is Q12 (Which one of the following options I will read out to you best matches your understanding of pneumonia? Pneumonia is...a heart condition, a lung infection, a severe type of cold/ similar to flu, none of these) where just the term "pneumonie" was used.]

GREECE

[Note: Survey total figures refer to results for the total sample of all nine (9) countries surveyed weighted to population size]

PneuVUE®
Greece findings

Older adults in Greece generally think they know more about pneumonia than they actually do

91%
claim to know what it is

78%
correctly identify it as a lung infection

Only
43%
think it's *true* that some forms of pneumonia may be contagious

Pneumonia is said to be a serious disease, but there is an apparent failure to link this to a risk to their own health and concern is particularly low in Greece

90%
think pneumonia is serious

Only
31%
are concerned about the risk of catching pneumonia

20%
of those at higher risk of pneumonia[5,8,9] recognise themselves as 'very much at risk'

30%
think car accidents cause the highest number of deaths in Greece compared with

2%
for pneumonia and

1%
for flu

in reality, pneumonia is responsible for a similar number of deaths as transport accidents but over 90 x as many deaths as flu*[10]

There is a lot of uncertainty about whether pneumonia is a preventable disease, let alone the measures that could be taken to prevent it

Only
55%
think it is *false* that "pneumonia can only be treated and not prevented".

A higher proportion think the following are effective at protecting against pneumonia

keeping fit and healthy	98%
not smoking	95%
wearing warm clothes	82%
avoiding long periods in air conditioned rooms	77%
compared to being vaccinated	73%

Awareness of a preventative pneumonia vaccine is relatively low with uptake even lower

Only **40%**
are aware it is possible to be vaccinated against pneumonia

Only
21%
of those at higher risk of pneumonia have been vaccinated

Doctors, and other allied health professionals such as nurses and pharmacists have a key role to play in widening awareness and raising vaccination rates.

67%
of those who have been vaccinated against pneumonia say it was prompted by their doctor

The most common reason for not being vaccinated is

50% My doctor has never offered it to me

Pneumonia was responsible for 1,196 deaths in Greece in 2013 compared with 1,096 for transport accidents and only 13 deaths from flu. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)

Pneumonia awareness

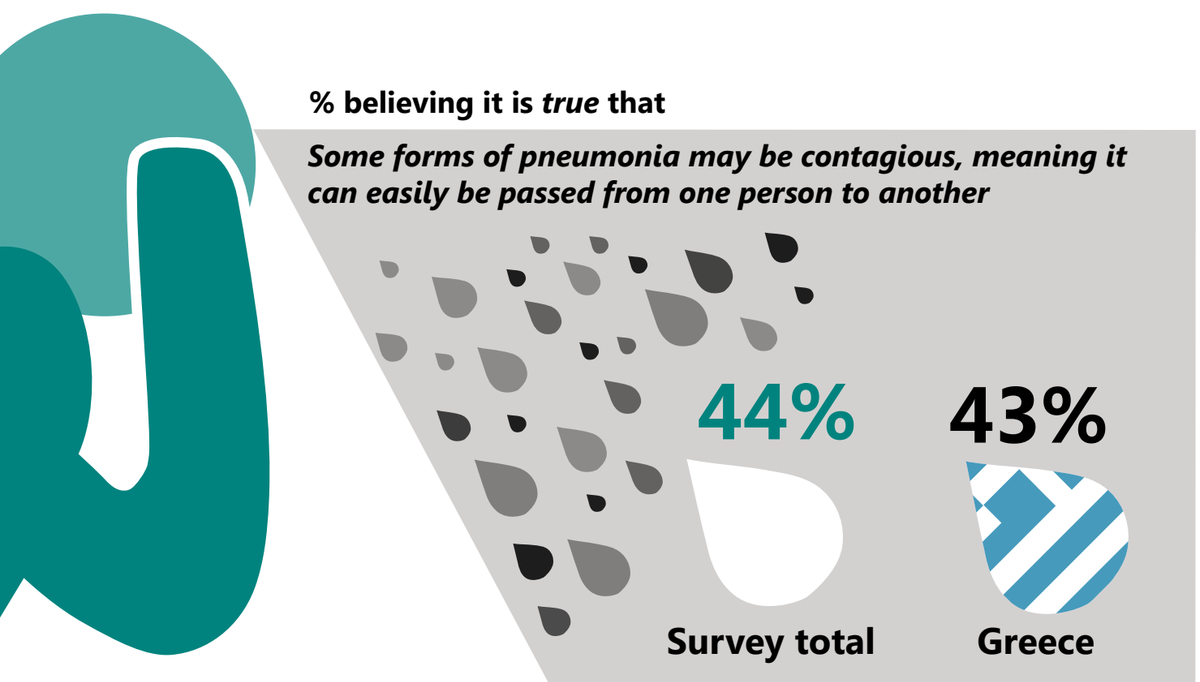
When it comes to pneumonia, awareness does not appear to be the problem as much as understanding.

Among older adults in Greece, almost all (99%) have heard of pneumonia. However, although 91% also claim to "know what pneumonia is", survey results show that they do not always know as much as they think they do about the disease. In particular, there is less knowledge around disease transmission and risk factors, as well as the true spectrum of symptoms and number dying from pneumonia.

Most older adults (78%) correctly identify pneumonia as a lung infection, although almost one in five (19%) see it more as a "severe type of cold/similar to flu". Pneumonia is typically associated with trouble breathing (92%) and high fever (92%) as well as coughing (91%), tiredness/fatigue (85%) and chest pain (75%), but much less so with dizziness (37%), sneezing (33%) and nausea (19%).

Furthermore, only 43% think it is *true* that "some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another".

Interestingly, despite being at higher risk of pneumonia,[5,8,9] those aged 65 and above have the least understanding of pneumonia. A significantly smaller proportion of those aged 65 and above correctly identifies pneumonia as a lung infection (73% compared with 83% of those under 65).



Pneumonia is however almost universally recognised as a serious illness, with 90% rating it as extremely serious or rather serious. In the context of other conditions tested, this places pneumonia just behind HIV (98%) and meningitis (96%) and far above influenza (50%). The same proportion of Greek older adults see pneumonia as serious as hepatitis B. The majority (74%) also agree that it is true that "it can take months to recover from pneumonia".

In line with the higher proportion viewing pneumonia as serious compared to flu, 70% agree it is true that "pneumonia is more deadly than flu". Yet under half (47%) believe it is true that "up to 20% of adults who catch pneumonia will die from it" and pneumonia is felt to cause fewer deaths than other causes presented.

When asked which out of pneumonia, car accidents, heart disease and influenza results in the most adult deaths in their country, pneumonia and flu are the least chosen options. 64% correctly select heart disease as the biggest killer. This was followed by car accidents at 30% and then a large drop to pneumonia (2%) and influenza (1%). In reality however 2013 Eurostat data for Greece shows that pneumonia is responsible for a similar number of deaths as transport accidents* in the country and over 90 times as many deaths as influenza.**[10]

**In 2013, pneumonia was responsible for 1,196 deaths in Greece compared with 1,096 for transport accidents. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)*
***In 2013, pneumonia was responsible for 1,196 deaths in Greece compared with only 13 for influenza. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)*

Risk groups & risk factors

There is a tendency to project risk of pneumonia onto other people rather than acknowledge one's own personal vulnerability.

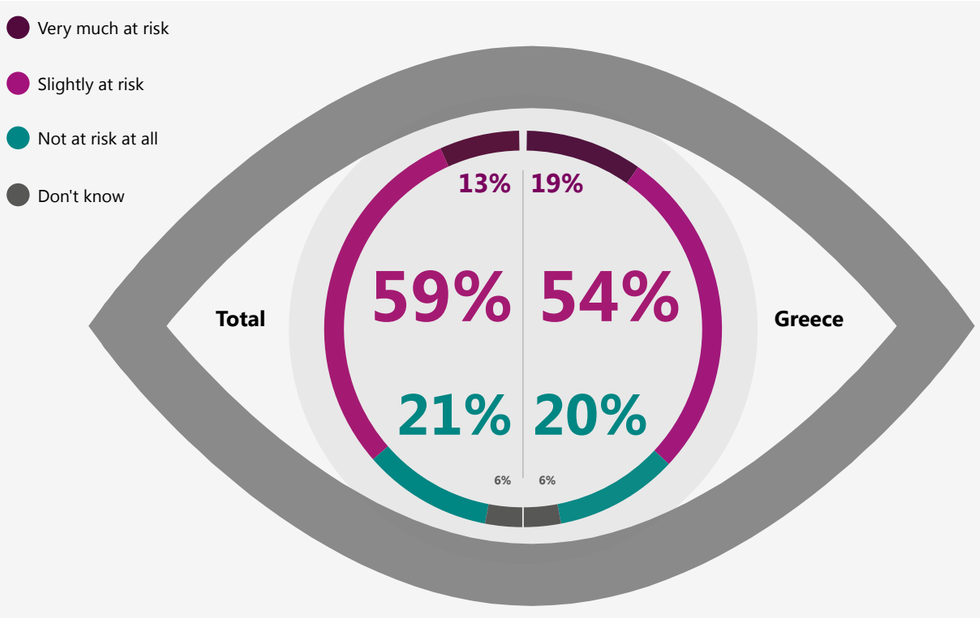
This is reflected in an underestimation of the risk of catching pneumonia. Amongst those who have heard of pneumonia, the majority (54%) of older adults feel only slightly at risk of catching pneumonia and 20% state that they are not at risk at all.

Just 19% of those aware of pneumonia consider themselves "very much at risk" despite 77% of the Greek sample meeting one or more clinical criteria[5,8,9] for being at risk for pneumonia. Amongst this clinically defined higher risk group, just 20% believe themselves to be very much at risk. This is only marginally higher than among the lower risk population (17%), and it represents a small minority of those with pneumonia risk criteria.

Less than half of older adults (47%) feel either very or fairly well informed about risk factors for catching pneumonia, but the majority recognise that pneumonia is not confined to unfit or unhealthy people. 3 in 5 (59%) acknowledge it is false that "pneumonia does not affect fit and healthy people".

At the same time however, one in four (28%) do think that "pneumonia does not affect fit and healthy people" is a true statement. This number is also significantly higher among the 65 and above age group (33% compared with 24% for those under 65 thinking it is a *true* statement). Later in this report we will see again how many consider staying fit and healthy to be effective protection against pneumonia.

Perceptions of risk for pneumonia



Pneumonia does not affect fit and healthy people

The state of a person's health is more commonly associated with a higher than average risk of catching pneumonia than simply old age.

Overall, people with chronic lung conditions (96%) or long term medical conditions (79%) and smokers (87%) are most commonly identified as being at a higher than average risk of catching pneumonia. This is followed by those with heart disease at 71%. At the other end of the scale, "people who have difficulty swallowing" receives very little recognition (24%) despite being strongly associated with community acquired pneumonia in the elderly.[11]

Looking at age, just 6% believe it is *true* that pneumonia *only* affects old people. This is not to say that age isn't recognised as a factor. When thinking more generally, 68% think adults over 65 are at higher than average risk of catching the disease, compared with 46% for young children and just 34% for adults over 50. However, age is not given the same prominence as the health conditions mentioned earlier.

Groups felt to be at a higher than average risk of catching pneumonia

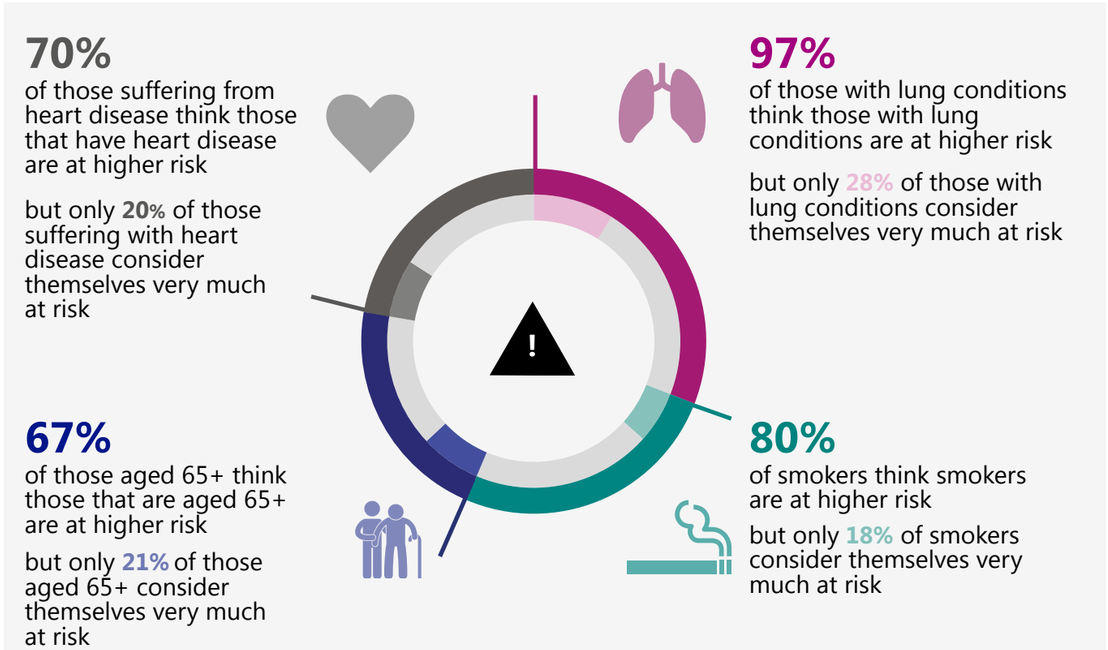
Pneumonia is more likely to be seen as an illness that affects other people rather than oneself.

- 67% of adults aged 65 years and older identify "adults over 65" as being at a higher than average risk of catching pneumonia. However, when thinking about their own risk, just 21% consider themselves "very much at risk"
- 80% of smokers identify "smokers" as being at a higher than average risk of catching pneumonia. However, just 18% consider themselves to be "very much at risk"

This sentiment is followed through to the level of concern over the risk of catching pneumonia, with a greater proportion expressing concern for older friends and family (53%) compared to concern for themselves (31%).

On the whole, people are not overly worried about the risk of catching pneumonia (68% are not very or not at all concerned compared to 9% who are very concerned and 22% who are fairly concerned).

Disparity between those identifying group as being at a higher risk of pneumonia and considering them selves to be at a high risk



The impact of pneumonia

If pneumonia does strike, it tends to be worse than anticipated.

Pneumonia does touch people's lives. 12% claim to have personally suffered from the disease and 37% have a close friend or close family member who they believe has had pneumonia. When thinking back to that time when they had pneumonia, one in three (37%) of sufferers claimed to have felt "surprised", reinforcing the misconception that pneumonia is very much seen as a disease that happens to other people.

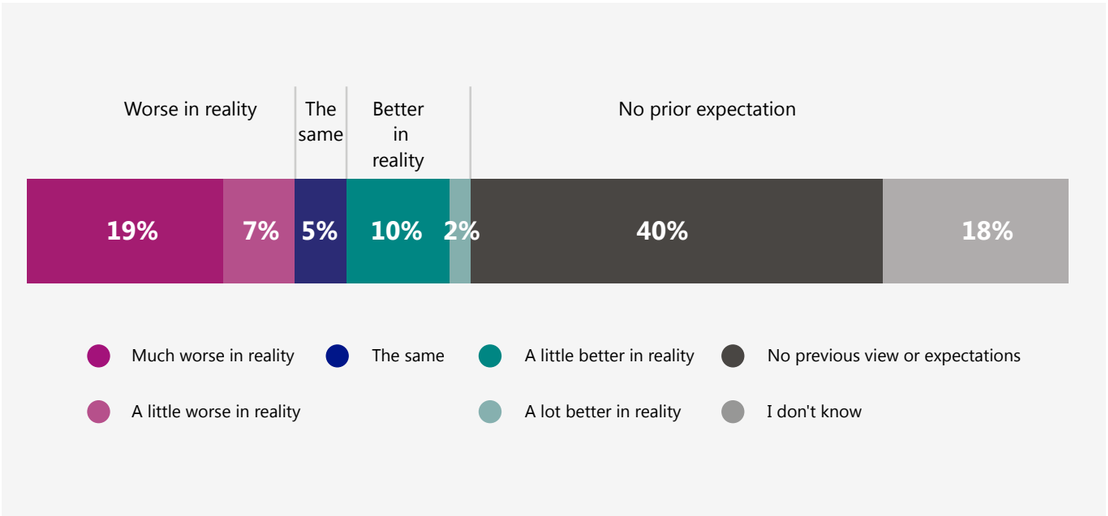
Continuing to reflect an "it will never happen to me" mentality, 2 in 5 (40%) had no preconceptions of what pneumonia would be like. However, amongst those who did, it often turned out to be much worse in reality (19%).

The most common areas where pneumonia has a *big* negative impact are "mobility/ ability to get out and about" (33%) and "social life" (33%). From an economic perspective, 18% see a *big* negative impact on their "work life" and 11% on their "finances".

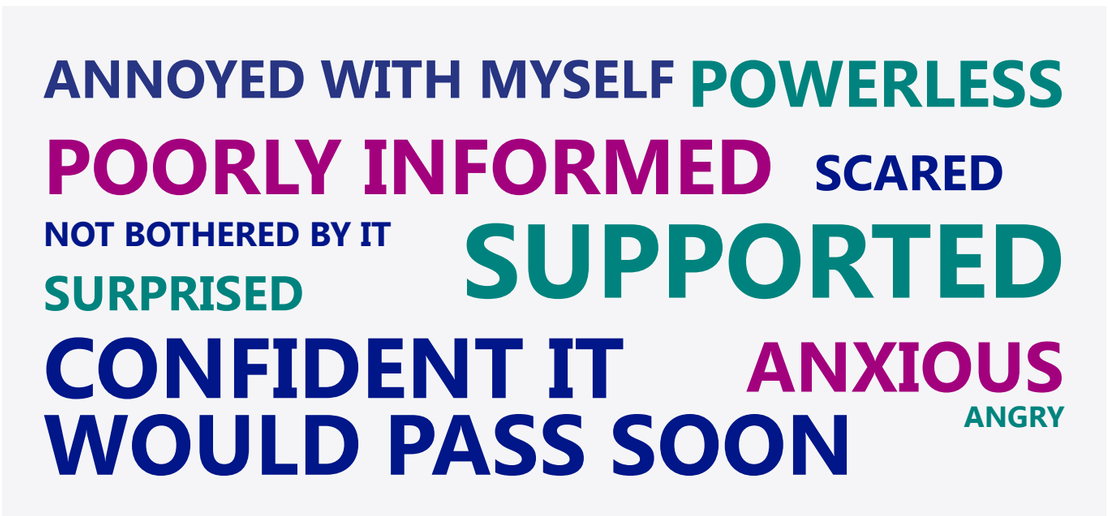
Thinking back to the time they were suffering from pneumonia, the most commonly selected *negative* emotion is "poorly informed" (60%) followed by "anxious" (55%), "powerless" (50%), "annoyed with self"(42%) and "scared" (41%). On the *positive side*, older adults report feeling "supported" (81%) and "confident it would pass soon" (66%). This indicates that while appropriate care may be in place for sufferers, less success has been had with educating and informing people about the disease, particularly in terms of enabling them to feel more in control and prepared.

Personal experience of pneumonia has an understandable impact on attitudes towards the disease. While views of its seriousness are similar to those who have not had pneumonia, past sufferers' level of concern about the risk of catching pneumonia is also higher (16% are very concerned compared with 8% of those with no personal experience of pneumonia).

How the reality of having pneumonia compared to preconceptions



Emotions felt by sufferers of pneumonia



Pneumonia prevention

Vaccination is less commonly felt to be an effective means of preventing pneumonia, compared to other simple lifestyle measures.

When thinking generally about steps personally taken to stay healthy, a smaller proportion of adults select "ensure I have all recommended vaccinations" (48%) compared to 85% for "eat a healthy diet" and 76% for "seek regular check-ups with their doctor". Having all recommended vaccinations is on the same level as "exercise regularly" (46%).

This seems to reflect a less proactive attitude to vaccination. While 89% agree that they "trust vaccines to help prevent infectious diseases", 92% say they agree that they "follow their doctor's advice" when it comes to vaccination. Furthermore, looking at those who have been vaccinated against pneumonia, only 17% claimed it was their own idea. The implication is that people tend to wait to be offered a vaccination rather than actively requesting it. Greece is, nevertheless, one of the countries where older adults appear most likely to personally request pneumonia vaccination.

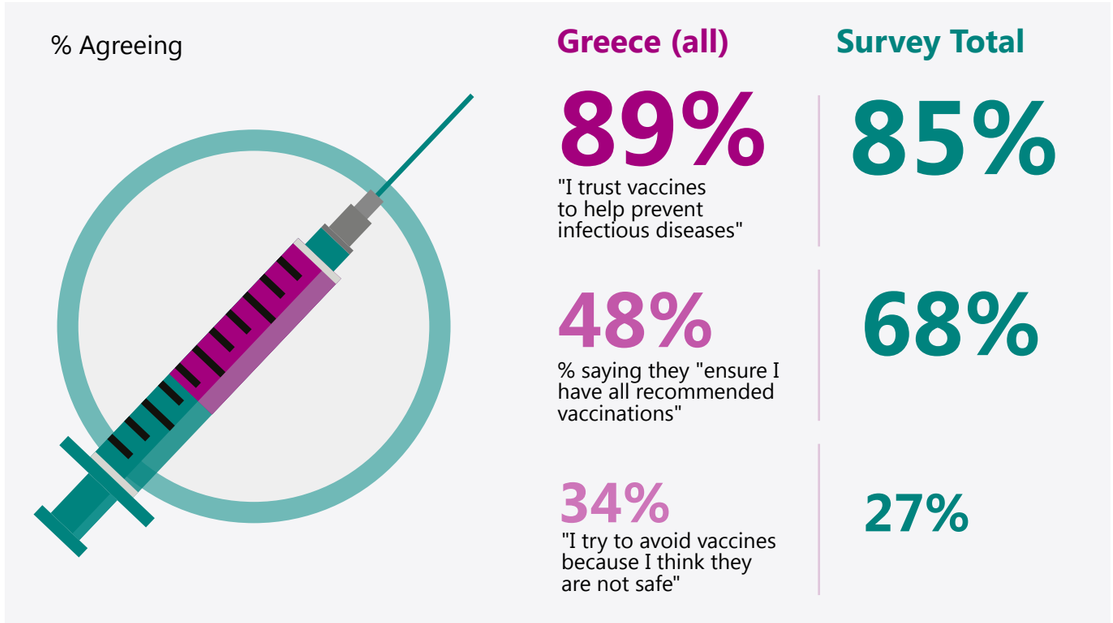
While almost everyone claims to be doing something to stay fit and healthy, when it comes to pneumonia, people are uncertain whether or not it can be prevented. Older adults are divided as to whether "pneumonia can only be treated and not prevented" with 35% thinking this statement is *true* compared to 55% believing it to be false. Without this fundamental understanding, any talk of preventative strategies, let alone vaccination, would be premature.

It is clear that for many, lifestyle can be seen as effective at protecting against pneumonia. Almost all (98%) believe that "keeping fit and healthy" is effective, followed by "not smoking" (95%), "wearing warm clothes" (82%) and "avoiding long periods in air conditioned rooms" (77%). This reflects the 89% believing it is true that "being cold and wet for a long period puts you at high risk of pneumonia", with older adults in among the most likely to believe this to be true.

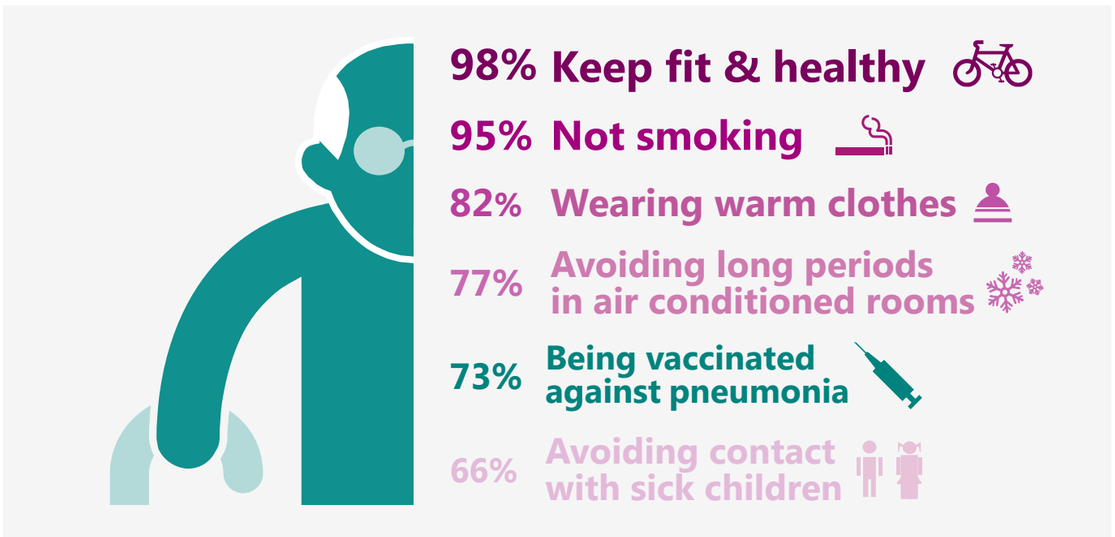
In the context of the above lifestyle measures, a relatively low number of older adults (73%) state that "being vaccinated against pneumonia" is effective. Even lower is the 66% selecting "avoiding contact with sick children" and yet the expert panel considered avoidance of those who are ill to be one of the most important preventative measures that can be taken.

While, in the context of other preventative measures, vaccination and avoiding sick children are given less attention in Greece, older adults in this country are still more likely to see each of these steps as effective compared with the survey total figure.

Attitude towards vaccination in general



Effective measures against protecting against pneumonia



Pneumonia vaccination

Compared to other countries awareness of a preventative pneumonia vaccine is high in Greece; however there is a poor conversion rate from being aware to taking action, with only low levels of vaccination.

Overall, 48% are aware that it is possible to be vaccinated against pneumonia. This puts Greece in joint first place for awareness (together with the UK at 49%) and compares with a survey total figure of 29%. While this figure is relatively high there is little heightened awareness among the key target groups with the exception of those with a lung condition like COPD (71%) who are the most likely to be aware of pneumonia vaccination.

Awareness is only the first step and does not necessarily translate into action. The level of self-reported pneumonia vaccination among all older adults is 19%, rising to 21% among the higher risk group. There is some regional variation with lower levels seen in Kentriki Makedon (11%), Dytiki Makedonia (12%) and Sterea Ellada (11%).

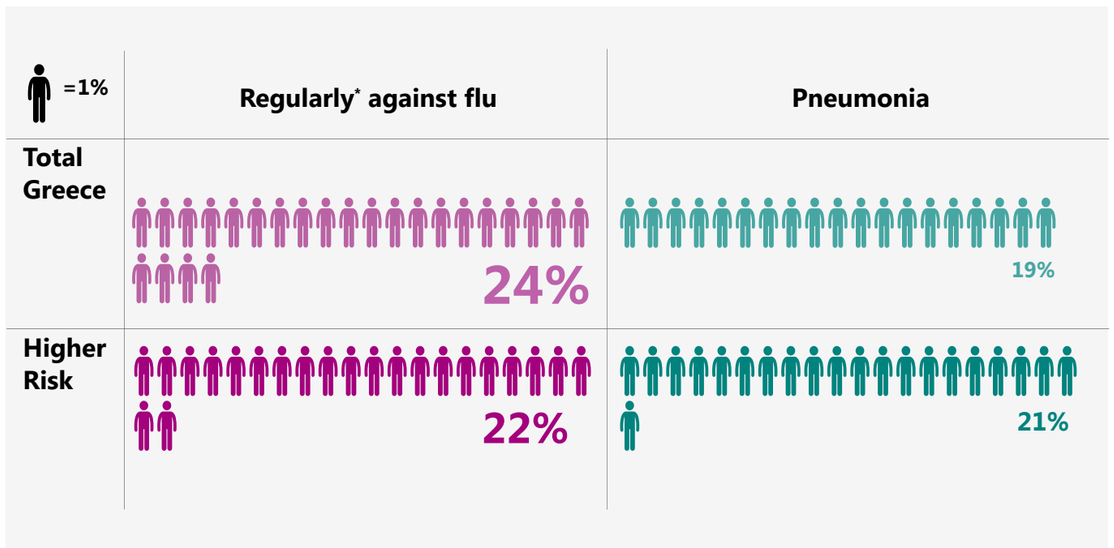
These levels of self-reported pneumonia vaccination in Greece can be compared to the 24% of the general 50 years and older population (and 22% of those at higher risk of pneumonia) claiming to have been regularly vaccinated* against flu. Immunisation figures for the two diseases are far closer in Greece than seen in other countries.

Looking at the patient pathway from awareness of pneumonia to actual vaccination reveals the high proportion being lost at key steps along the way. Ultimately only 39% of those aware of the vaccine in Greece will go on to have it. This compares with 42% at a survey total level.

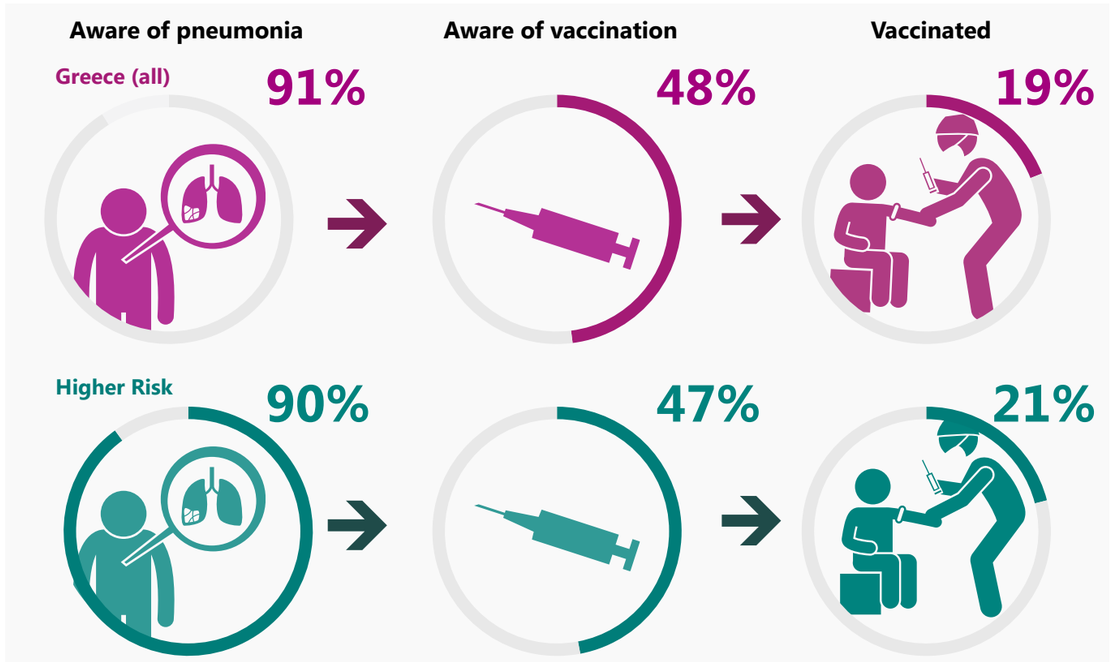
By far the most common driver for pneumonia vaccination is a prompt from a doctor (stated by 67% of those vaccinated against pneumonia – 41% stating GP or family doctor and/or 28% stating specialist doctor). This is consistent with the 92% who agree that they "follow their doctor's advice" when it comes to vaccination. Specialists have more prominence in Greece as advocates of the pneumonia vaccine – only 11% at a survey total level claim their decision to have the pneumonia vaccine was prompted by a specialist (compared to 28% in Greece).

Similarly, when those who are aware of the pneumonia vaccine but have not received it are asked why not, the most common reason selected is "my doctor has never offered it to me" (50%). This further reinforces the

Self reported - vaccination levels



% lost at each key step of the patient journey



*Regularly vaccinated is defined as at least four times in the past five years

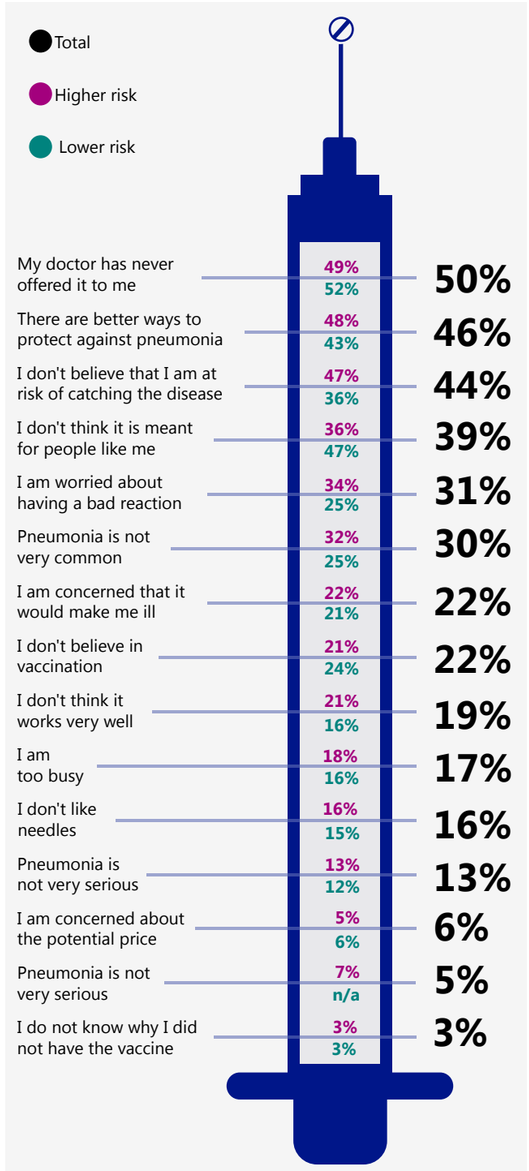
important role that healthcare professionals have to play in increasing levels of pneumonia vaccination.

The doctor is even more significant when it comes to focusing on the higher risk population. A higher proportion of this group *strongly* agrees that they follow their doctor's advice when it comes to vaccination (72% compared with 63% of the lower risk group).

If the pneumonia vaccine were recommended by their doctor and at no cost to them, 69% of older adults (who have not already been vaccinated) would be likely to have it, providing a significant boost to vaccination levels. This figure rises to 71% of the higher risk group compared with 63% of those at lower risk. However, previous awareness of the pneumonia vaccination or personal experience of pneumonia has no significant impact on the proportion likely to follow their doctor's advice and have the vaccination.

While physicians are undoubtedly key to raising vaccination rates, it would be overly simplistic to assume that it is just a question of offering it more frequently. With two thirds of those aged 50 and older likely to take up the offer, this still leaves 28% who would be unlikely to have the vaccination (25% of the higher risk group). Additional reasons commonly selected for not having had the vaccination are "there are better ways to protect against pneumonia" (46%),

Reasons for not being vaccinated against pneumonia

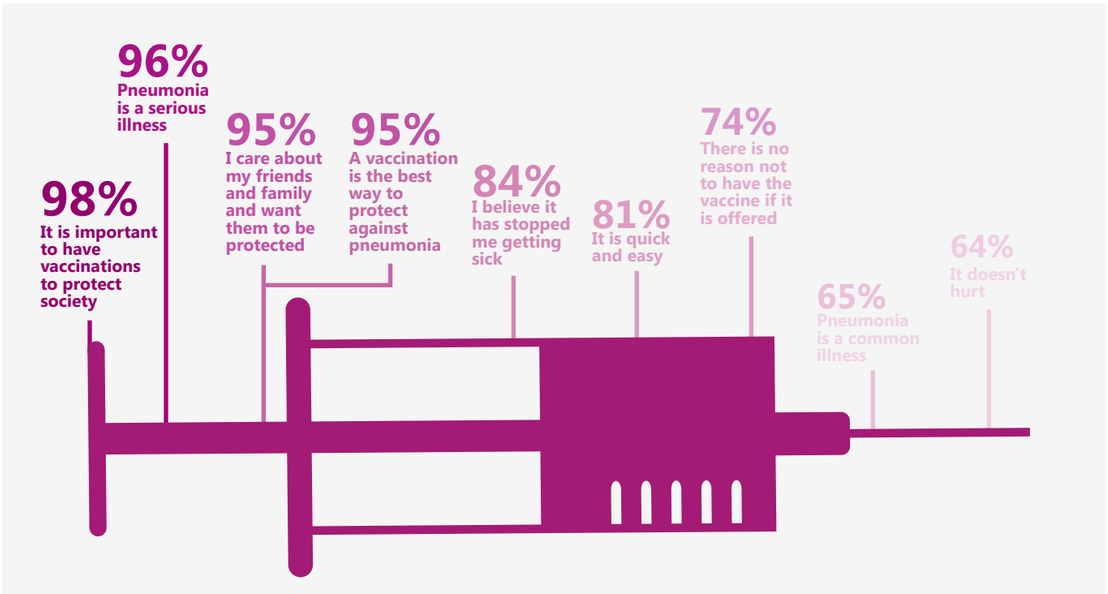


"I don't believe that I am at risk of catching the disease" (44%) and "I don't think it is meant for people like me" (39%).

Fears over safety also feature. Among those who are aware of the pneumonia vaccine but have not had it, 31% are "worried about having a bad reaction" and 22% are "concerned it would make them ill". One in five (19%) also say they have not been vaccinated against pneumonia because they "don't think it works very well". This issue is not specific to pneumonia vaccination with 34% of older adults agreeing that they "try to avoid vaccines because I think they are not safe."

The majority (83%) of those who have had a pneumonia vaccination would recommend it. The main reasons given for this are both practical and emotional. From a mainly practical perspective the belief is that "pneumonia is a serious illness" (96%), "vaccination is the best way to protect against pneumonia" (95%), "it is quick and easy" (81%) and believe "it has stopped me getting sick" (84%). On a more emotional level they believe that "it is important to have vaccinations to protect society" (98%) and "I care about family and friends and want them to be protected" (95%).

Reasons for recommending the pneumonia vaccine



Information needs

Despite Greece showing relatively high levels of pneumonia knowledge and awareness, a high proportion of older adults still recognise the need for more information on all aspects of the disease.

These results reinforce the lack of understanding about pneumonia and a desire for additional information. Only one in 10 feels very well informed about "pneumonia as a disease in general" (10%), "risk factors for catching pneumonia" (11%) and "vaccination against pneumonia" (10%). For general pneumonia knowledge and risk factors, those at lower risk of the disease feel better informed than the higher pneumonia risk group (with no difference when it comes to vaccination against pneumonia).

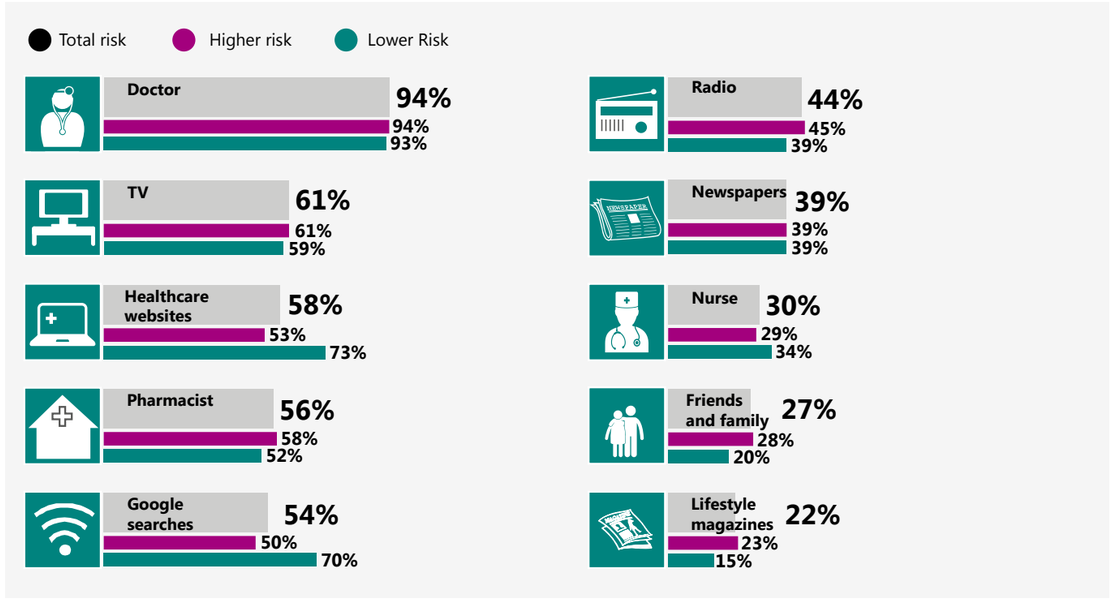
As a result of having pneumonia, people tend to feel better informed about "pneumonia as a disease in general" (65% very or fairly well informed compared with 45% for those with no personal experience of pneumonia) and about "risk factors for catching pneumonia" (59% very or fairly well informed compared with 46%). They also claim to be better informed about "vaccination against pneumonia" (48% very or fairly well informed compared with 30%) and more past sufferers have been vaccinated (37% compared with 16%).

However, previous sufferers' knowledge of pneumonia prevention and risk factors is no better than those with no personal experience of the condition. There is no significant difference in the proportion thinking it is *true* that "pneumonia can only be treated and not prevented" and a similar number state that "being vaccinated against pneumonia" is effective at protecting against it, while more commonly selecting the other lifestyle measures.

The majority of adults think that there is a need for more information on pneumonia (63%), risk factors (71%) and vaccination (68%). They also display openness to multiple channels of information. While the doctor is the most popular source, for a general information campaign popular media, pharmacies and the internet are also felt to have a role. However, for more targeted communication the higher risk group appear less receptive to the internet as a source of further information. The higher risk group are more likely than those at lower risk to see lifestyle magazines and friends and family as potential sources of further information.

	Survey total sample	Greece total	Higher risk sample	Lower risk sample
Pneumonia in general				
Very well informed	8%	10%	10%	10%
Fairly well informed	37%	37%	35%	44%
Not very well informed	42%	41%	41%	38%
Not at all informed	12%	11%	12%	7%
Risk factors for catching pneumonia				
Very well informed	7%	11%	11%	12%
Fairly well informed	35%	36%	34%	42%
Not very well informed	43%	39%	39%	37%
Not at all informed	14%	12%	13%	7%
Vaccination against pneumonia				
Very well informed	7%	10%	11%	9%
Fairly well informed	15%	22%	20%	26%
Not very well informed	25%	30%	28%	33%
Not at all informed	52%	36%	38%	29%

Sources of information older adults would like to use to find out more about pneumonia



Next steps from the research

The results of this study highlight a need for more information on all aspects of pneumonia. In particular, educating older adults on the risk it could pose to them personally.

Renewed efforts are needed to clearly communicate the following key messages:

- Pneumonia is more common and more serious than people may think
- Some forms of pneumonia may be contagious
- Pneumonia poses a real risk to those aged 65 years and older, or suffering from certain medical conditions
- Pneumonia can be prevented as well as treated
- Pneumonia vaccination is safe and effective

Physicians and other allied health professional such as nurses and pharmacists have a key role to play in pneumonia education and prevention. They can be better supported through wider awareness campaigns in popular media, as well as the provision of better patient orientated materials to distribute. However, older adults should also be encouraged to be more proactive in understanding their personal risk of pneumonia and steps that can be taken to protect themselves.

All those with an interest in pneumonia and pneumonia prevention are encouraged to make use of the study's findings to drive debate and inform future policy.

"Don't underestimate the power of this new data. We can use this to speak to healthcare professionals, but also politicians and public health authorities. Think creatively how to get this out to the public." Dr Jane Barratt, Secretary General of the International Federation on Ageing

Please see the appendix for details on how to reference the PneuVUE® study or find out more.

ITALY

[Note: Survey total figures refer to results for the total sample of all nine (9) countries surveyed weighted to population size]

PneuVUE®
Italy findings

Awareness and a superficial understanding of pneumonia is high in Italy

95%
claim to know what it is

90%
correctly identify it as a lung condition

36%
think it's *true* that some forms of pneumonia may be contagious

Pneumonia is said to be a serious disease, but there is an apparent failure to link this to a risk to their own health and concern about the risk of catching pneumonia is low

88%
think pneumonia is serious

Only
22%
are concerned about the risk of catching pneumonia

Only
15%
of those at clinically defined as being higher risk of pneumonia[5,8,9] recognise themselves as 'very much at risk'

37%
think car accidents cause the highest number of deaths in Italy compared with only 1% for pneumonia

1%
in reality, pneumonia is responsible for more than twice as many deaths [*10]

There is a lot of uncertainty about whether pneumonia is a preventable disease, and how to prevent it.

42%
think it is *false* that "pneumonia can only be treated and not prevented"

A higher proportion think the following are effective at protecting against pneumonia.

keeping fit and healthy	**91%**
not smoking	**91%**
avoiding long periods in air conditioned rooms	**80%**
wearing warm clothes	**67%**
compared to being vaccinated	**50%**

Awareness of a preventative pneumonia vaccine is particularly low in Italy with uptake even lower

Only
20%
are aware it is possible to be vaccinated against pneumonia

Only
5%
of those at high risk of pneumonia have been vaccinated with 1% of the lower risk group

Doctors, and other allied health professionals such as nurses and pharmacists have a key role to play in widening awareness and raising vaccination rates.

84%
of those who have been vaccinated against pneumonia say it was prompted by their doctor

Most common reason for not being vaccinated is

45% My doctor has never offered it to me

Pneumonia was responsible for 9,068 deaths in Italy in 2013 compared with 3,755 for transport accidents and 417 for flu. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)

Pneumonia awareness

When it comes to pneumonia, awareness does not appear to be the problem as much as understanding.

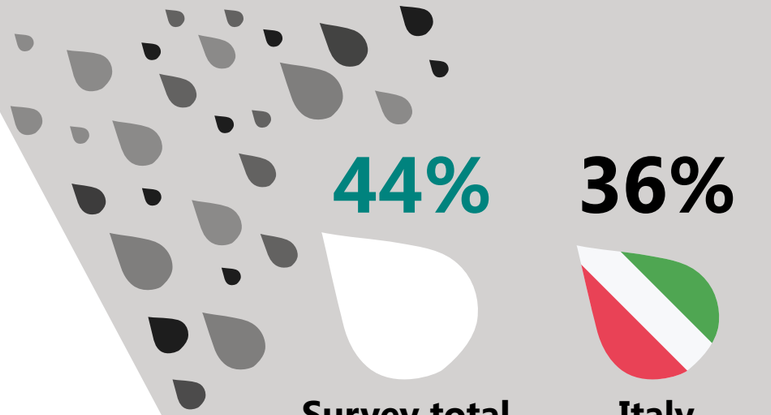
Among older adults in Italy, virtually all (100%) have heard of pneumonia and 95% also claim to "know what pneumonia is". These are among the strongest results of all the countries surveyed. However, the survey results show that they do not always know as much as they think they do about the disease. In particular, there is less knowledge around disease transmission and risk factors, as well as the true spectrum of symptoms and number dying from pneumonia.

Most older adults (90%) correctly identify pneumonia as a lung infection, although a small minority (5%) see it more as a "severe type of cold/similar to flu". Pneumonia's association with a lung infection is strongest among younger respondents (94% of those under 65 say it is a lung condition compared with 87% among older respondents) and those at lower risk of pneumonia (95% compared with 88% among higher risk respondents).

In line with its recognition as a lung infection, pneumonia is typically associated with trouble breathing (95%) and coughing (88%) as well as a high fever (87%) and tiredness/ fatigue (84%). It is linked much less with nausea (28%), sneezing (27%) and dizziness (24%).

% believing it is *true* that

Some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another



Furthermore, only 36% think it is *true* that "some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another". The score for this in Italy is relatively low in comparison with the other countries.

Pneumonia is almost universally recognised as a serious illness with 88% rating it as extremely serious or rather serious. In the context of other conditions tested, this places pneumonia just behind meningitis (98%) and HIV (96%) and far above influenza (23%). The majority (76%) also agree it is *true* that it can take months to recover from pneumonia.

In line with the higher proportion viewing pneumonia as serious compared to flu, 80% agree it is true that "pneumonia is more deadly than flu". Yet less than one third (30%) believe it is *true* that "up to 20% of adults who catch pneumonia will die from it" and pneumonia is felt to cause fewer deaths than other causes presented.

The survey asked which out of pneumonia, car accidents, heart disease and influenza results in the most adult deaths in their country. 54% correctly select heart disease as the biggest killer. This was followed by car accidents at 37% and then a large drop to influenza (2%) and pneumonia (1%). In reality however, pneumonia is responsible for over twice as many deaths as transport accidents[‡] and over 20 times as many deaths as influenza.[§10]

[‡]In 2013, pneumonia was responsible for 9,068 deaths in Italy compared with 3,755 for transport accidents. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)
[§]In 2013, pneumonia was responsible for 9,068 deaths in Italy compared with 417 for influenza. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)

Risk groups & risk factors

There is a tendency to project risk of pneumonia onto other people rather than acknowledge one's own personal vulnerability.

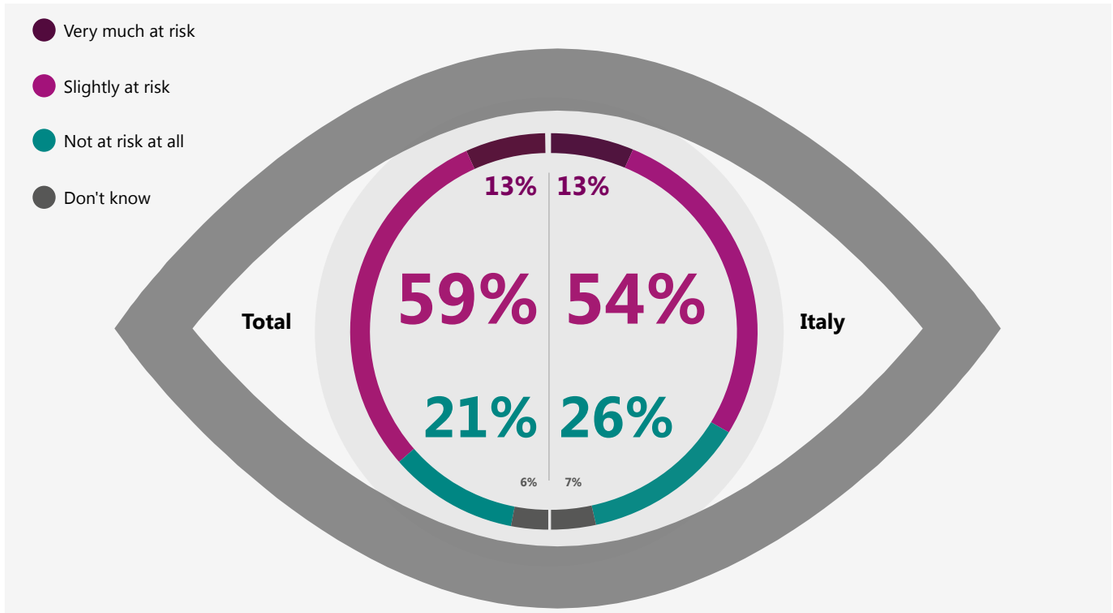
This is reflected in an underestimation of the risk of catching pneumonia. Amongst those who have heard of pneumonia, the majority (54%) of older adults feel only slightly at risk of catching pneumonia and 26% state that they are not at risk at all. While this perceived risk is lower than that of catching influenza, it is greater than the perceived risk of catching meningitis, and yet self-reported vaccination levels for the two conditions are the same (4% of older adults).

Just 13% of older adults consider themselves "very much at risk" despite 70% of the Italian sample meeting one or more clinical criteria[5,8,9] for being at risk for pneumonia. Amongst this clinically defined higher risk group, just 15% believe themselves to be very much at risk. While significantly higher than among the lower risk population, it still represents a small minority of those with pneumonia risk criteria.

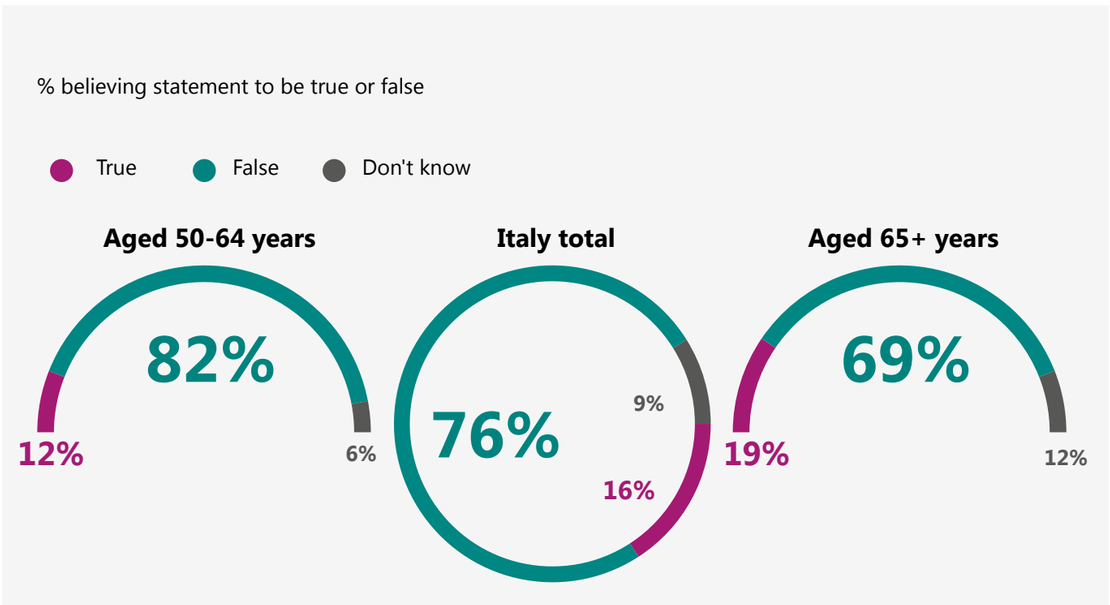
Although only one in 20 (5%) feels very well informed about risk factors for catching pneumonia, the majority (76%) do recognise that pneumonia is not confined to unfit or unhealthy people and acknowledge it is *false* that "pneumonia does not affect fit and healthy people".

At the same time however, one in six (16%) do think that "pneumonia does not affect fit and healthy people" is a *true* statement. This number is also significantly higher among the 65 and above age group (19% compared with 12% for those under 65) and those at higher risk (17% compared with 12% for those at lower risk). Later in this report we will see again how many consider staying fit and healthy to be effective protection against pneumonia.

Perceptions of risk for pneumonia



Pneumonia does not affect fit and healthy people



The state of a person's health is more commonly associated with a higher than average risk of catching pneumonia than simply old age.

Overall, people with chronic lung conditions (92%) or long term medical conditions (76%) and smokers (86%) are most commonly identified as being at a higher than average risk of catching pneumonia. At the other end of the scale, "people who have difficulty swallowing" receives very little recognition (22%) despite being strongly associated with community acquired pneumonia in the elderly.[11]

Looking at age, just 2% believe it is true that pneumonia *only* affects old people and age is given less prominence as a risk factor compared to some health conditions and the recognition it receives in other countries. This is not to say that age isn't recognised as a factor. When thinking more generally, 55% think adults over 65 are at higher than average risk of catching the disease, compared with 27% for adults over 50.

Groups felt to be at a higher than average risk of catching pneumonia

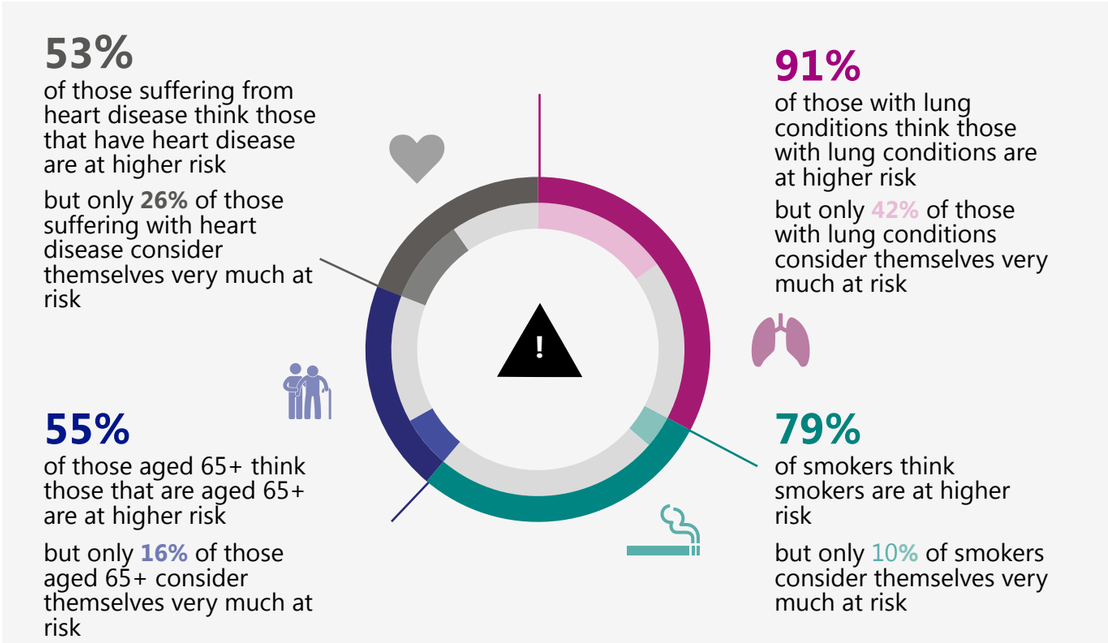
Pneumonia is more likely to be seen as an illness that affects other people rather than themselves.

- 55% of adults aged 65 years and older identify "adults over 65" as being at a higher than average risk of catching pneumonia. However, when thinking about their own risk, just 16% consider themselves "very much at risk"
- 79% of smokers identify "smokers" as being at a higher than average risk of catching pneumonia. However, just 10% consider themselves to be "very much at risk"

This sentiment is followed through to level of concern over the risk of catching pneumonia, with a greater proportion expressing concern for older friends and family (37%) compared to concern for themselves (22%).

On the whole, people are not overly worried about the risk of catching pneumonia (75% are not very or not at all concerned compared to 7% who are very concerned and 15% who are fairly concerned).

Disparity between those identifying group as being at a higher risk of pneumonia and considering them selves to be at a high risk



The impact of pneumonia

If pneumonia does strike, it tends to be worse than anticipated.

Pneumonia does touch people's lives. 12% claim to have personally suffered from the disease and 32% have a close friend or close family member who they believe has had pneumonia. When thinking back to that time, one in two (52%) sufferers claimed to have felt "surprised", reinforcing the misconception that pneumonia is very much seen as a disease that happens to other people.

Continuing to reflect an "it will never happen to me" mentality, one in three (29%) had no preconceptions of what pneumonia would be like. However, for 16% it turned out to be much worse in reality.

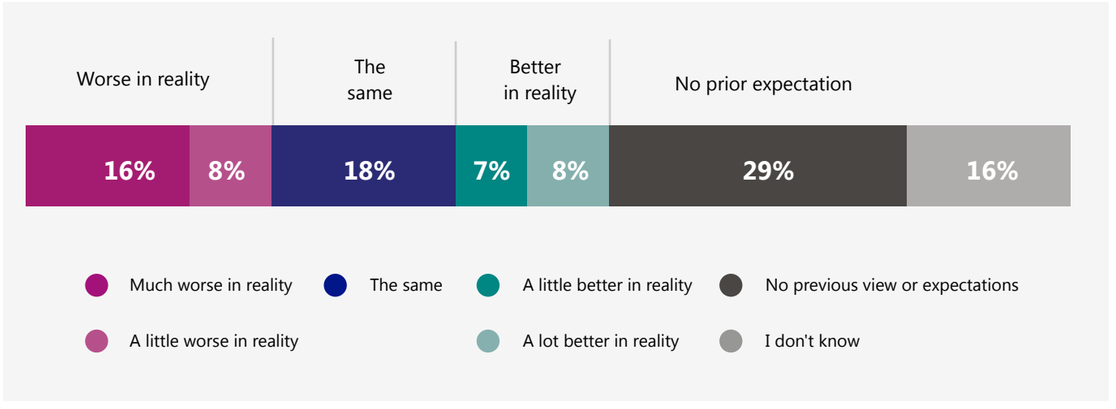
The most common area where pneumonia has a *big* negative impact is "mobility/ ability to get out and about" (37%) and it also hinders their "social life" (18%). From an economic perspective, 21% see a *big* negative impact on their "work life" and 8% on their "finances". Interestingly, a greater proportion of those under 65 report a *big* negative impact of pneumonia compared to older sufferers.

Thinking back to the time they were suffering from pneumonia, the most commonly selected *negative* emotion is "surprised" (52%), followed by "poorly informed" (48%) and "powerless" (38%). They also report feeling "anxious" (38%), "scared" (33%) and "annoyed with myself" (33%). Older adults are the most likely to have felt "angry" (25%).

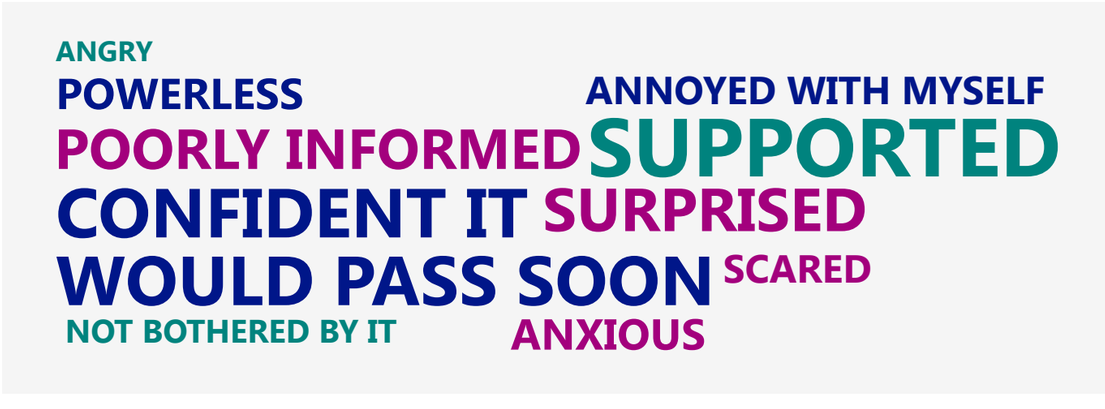
On the *positive* side, older adults say they felt "supported" (72%) and "confident it would pass soon" (60%). This indicates that while appropriate care may be in place for sufferers, less success has been had with educating and informing people about the disease, particularly in terms of enabling them to feel more in control and prepared.

Personal experience of pneumonia has an understandable impact on attitudes towards the disease. While views of its seriousness are similar to those who have not had pneumonia, the sense of one's own risk is heightened (20% feel very much at risk compared with 12% of those who have not had pneumonia). In line with this, past sufferers' level of concern about the risk of catching pneumonia is also higher (33% are very concerned compared with 20% of those with no personal experience of pneumonia).

How the reality of having pneumonia compared to preconceptions



Emotions felt by sufferers of pneumonia



Pneumonia prevention

Vaccination is less commonly felt to be an effective means of preventing pneumonia, compared to other simple lifestyle measures and this is particularly true in Italy.

When thinking *generally* about steps personally taken to stay healthy, a smaller proportion of adults selected "having all recommended vaccinations" (53%) compared to 92% for "eat a healthy diet", 81% for "seek regular check-ups with their doctor" and 72% for "exercise regularly". Only one in three (39%) select "take vitamins".

This seems to reflect a less proactive attitude to vaccination. 90% say they agree that they "follow their doctor's advice" and looking at those who have been vaccinated against pneumonia, not one of them claimed it was their own idea. The implication is that people in Italy tend to wait to be offered a vaccination rather than actively requesting it.

Attitudes towards vaccination in general are interesting in Italy. While 86% agree that they "trust vaccines to help prevent infectious diseases", Italy has one of the highest proportions (34% compared with a total of 27%) agreeing that "I try to avoid vaccinations because I think they are not safe".

While almost everyone claims to be doing something to stay fit and healthy, when it comes to pneumonia, less than half believe it is *true* that it can be prevented.

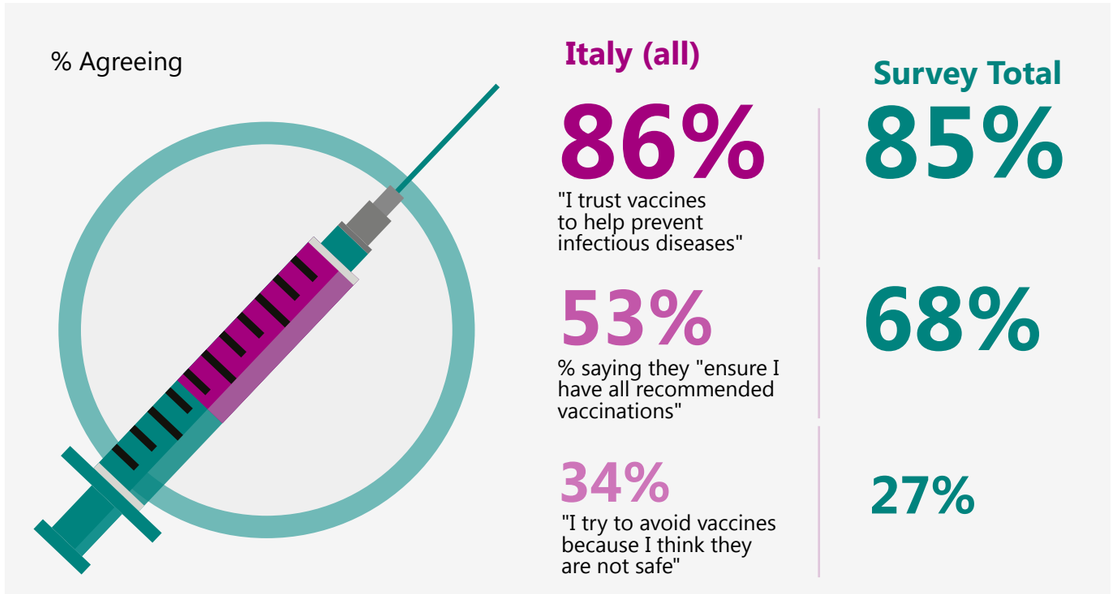
Amongst older adults in Italy, 46% think it is *true* that "pneumonia can only be treated and not prevented" compared to 42% believing it to be *false*. Without this fundamental understanding, any talk of preventative strategies, let alone vaccination, would be premature.

It is clear that for many, lifestyle can be seen as effective at protecting against pneumonia. Almost all (91%) believe that "keeping fit and healthy" is effective, as is "not smoking" (91%). In Italy "avoiding long periods in air conditioned rooms" (80%), which comes next, is mentioned more often than in the other countries (total figure is 64%). This is followed by "wearing warm clothes" (67%).

The clear importance placed on keeping warm is reflected by the 83% believing it is *true* that "being cold and wet for a long period puts you at high risk of pneumonia".

In the context of the above lifestyle measures, a relatively low number of older adults (50%) state that "being vaccinated against pneumonia" is effective. Italy has one of the lowest scores for this when compared with the other countries (total is 58%). Even lower is the 44% selecting "avoiding contact with sick children" and yet the expert panel considered avoidance of those who are ill to be one of the most important preventative measures that can be taken.

Attitude towards vaccination in general



Effective measures against protecting against pneumonia

Pneumonia vaccination

Awareness of pneumonia vaccination is particularly low in Italy and there is a poor conversion rate from being aware to taking action, with even lower levels of vaccination.

Overall, only 20% of older adults in Italy are aware that it is possible to be vaccinated against pneumonia, compared with a survey total figure of 29%. Awareness is highest in Liguria (32%) and Puglia (26%) and lowest in Piemonte (13%) and Campani (14%).

Although in other countries there is an indication of progress among the key target groups, in Italy there is no significant difference in awareness according to age group or risk category. At 30%, those with a lung condition like COPD or those with cancer (also 30%) are the most likely to be aware of pneumonia vaccination. However, 2 in 3 (64%) of those with a lung condition and almost 8 out of 10 (76%) of those in the higher pneumonia risk group are not even aware of pneumonia vaccination.

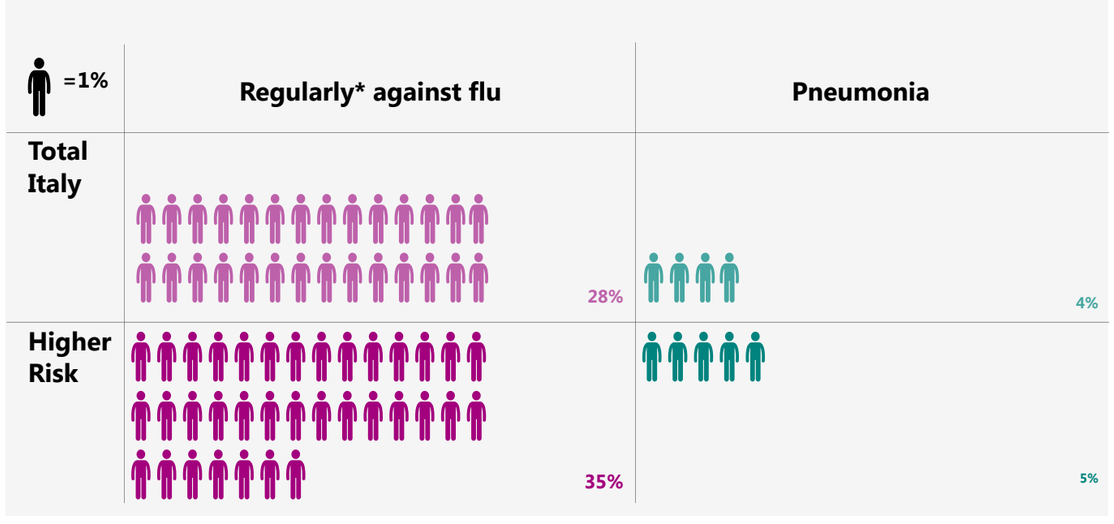
Awareness is only the first step and does not necessarily translate into action. The level of self-reported pneumonia vaccination among all older adults is 4% and is almost exclusively concentrated in the higher pneumonia risk group (5% of those at higher risk have been vaccinated compared to 1% of those at lower risk). This can be compared to the 28% of the general 50 years and older population (and 35% of those at higher risk of pneumonia) claiming to have been regularly vaccinated* against flu.

Looking at the patient pathway from awareness of pneumonia to actual vaccination reveals the high proportion being lost at key steps along the way. Ultimately only 19% of those aware of the vaccine will go on to have it and overall Italy has one of the lowest rates of pneumonia vaccination of any country (4% compared with a total of 12%).

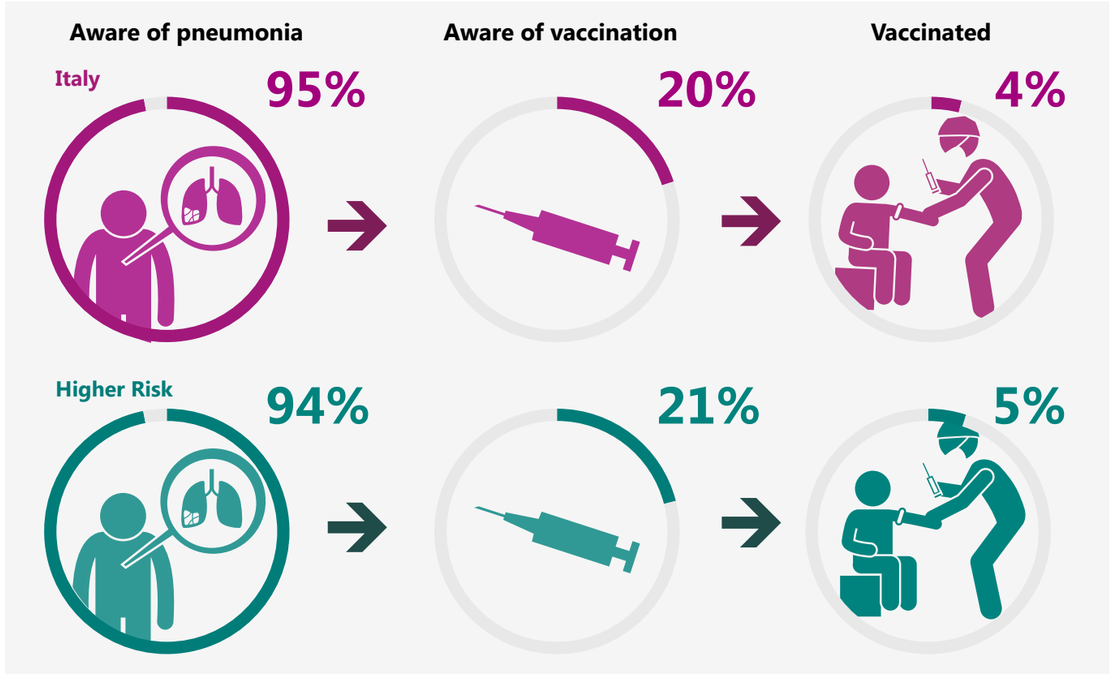
By far the most common driver for pneumonia vaccination is a prompt from a doctor (stated by 84% of those vaccinated against pneumonia – 71% stating GP or family doctor and/or 16% stating specialist doctor). This is consistent with the 90% who agree that they "follow their doctor's advice" when it comes to vaccination.

Similarly, when those who are aware of the pneumonia vaccine but have not received it are asked why not, the most common reason selected is "my doctor has never offered it to me" (45%). This further reinforces the important role that healthcare professionals (HCPs) have to play in increasing levels of pneumonia vaccination.

Self reported - vaccination levels



% lost at each key step of the patient journey



** Regularly vaccinated is defined as at least four times in the past five years*

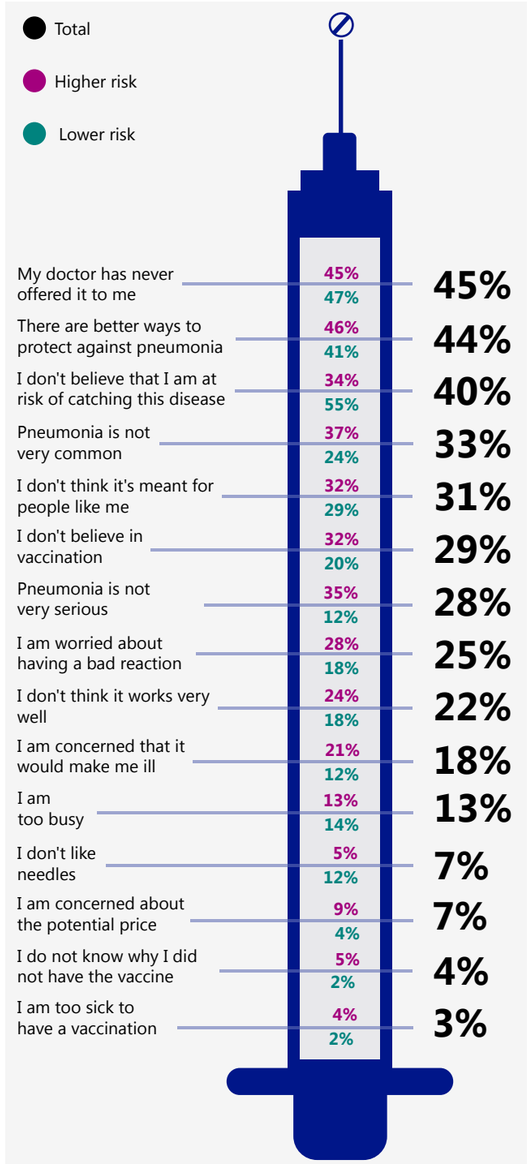
The doctor is even more significant when it comes to focusing on the higher risk population. This group is more likely to be seeking regular check-ups with their physician (83% compared with 76% of the lower risk population). Furthermore, as 2 out of 3 higher risk respondents in Italy *strongly* agree that they follow their doctor's advice when it comes to vaccination, this would indicate that there is both an opportunity for, and an openness to, doctors raising the topic of pneumonia vaccination with their most at risk patients.

If the pneumonia vaccine were recommended by their doctor and at no cost to them, 47% of older adults (who have not already been vaccinated) would be likely to have it, providing a significant boost to vaccination levels. This figure rises to 50% of the higher risk group compared with 40% of those at lower risk. Likely uptake is highest in the Emilia Romagna region (59%) and lowest in Puglia (36%).

Previous awareness of pneumonia vaccination leads to an even higher proportion likely to follow their doctor's advice and have the vaccination (55% of those previously aware compared with 45% of those unaware).

While physicians are undoubtedly key to raising vaccination rates, it would be overly simplistic to assume that it is just a question of offering it more frequently. With one in two of those aged 50 and older likely to take up the offer, this still leaves 47% who would be unlikely to have the vaccination (43% of the higher risk group). Additional

Reasons for not being vaccinated against pneumonia

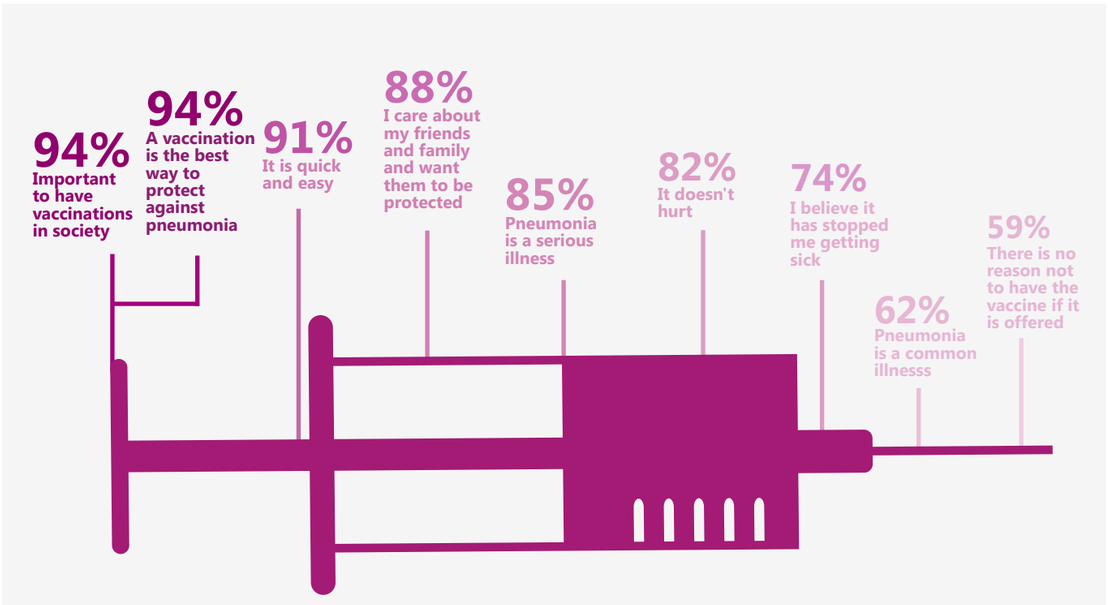


reasons commonly selected for not having had the vaccination are, of particular concern, "there are better ways to protect against pneumonia" (44%) but also "I don't believe that I am at risk of catching the disease" (40%), "pneumonia is not very common"(33%) and "I don't think it is meant for people like me" (31%).

Fears over safety also feature. Among those who are aware of the pneumonia vaccine but have not had it, 25% are "worried about having a bad reaction" and 18% are "concerned it would make them ill". This issue is not specific to pneumonia vaccination, with 34% of older adults in Italy agreeing that they "try to avoid vaccines because I think they are not safe." This proportion is higher than in other countries (total 27%).

The majority (89%) of those who have had a pneumonia vaccination would recommend it. The main reasons given for this are both practical and emotional. From a mainly practical perspective the belief is that "vaccination is the best way to protect against pneumonia" (94%), "it is quick and easy" (91%) and "pneumonia is a serious illness" (85%). On a more emotional level they believe that "it is important to have vaccinations to protect society" (94%) and "I care about family and friends and want them to be protected" (88%).

Reasons for recommending the pneumonia vaccine



Information needs

Despite high stated levels of pneumonia awareness, older adults recognise the need for more information on all aspects of the disease.

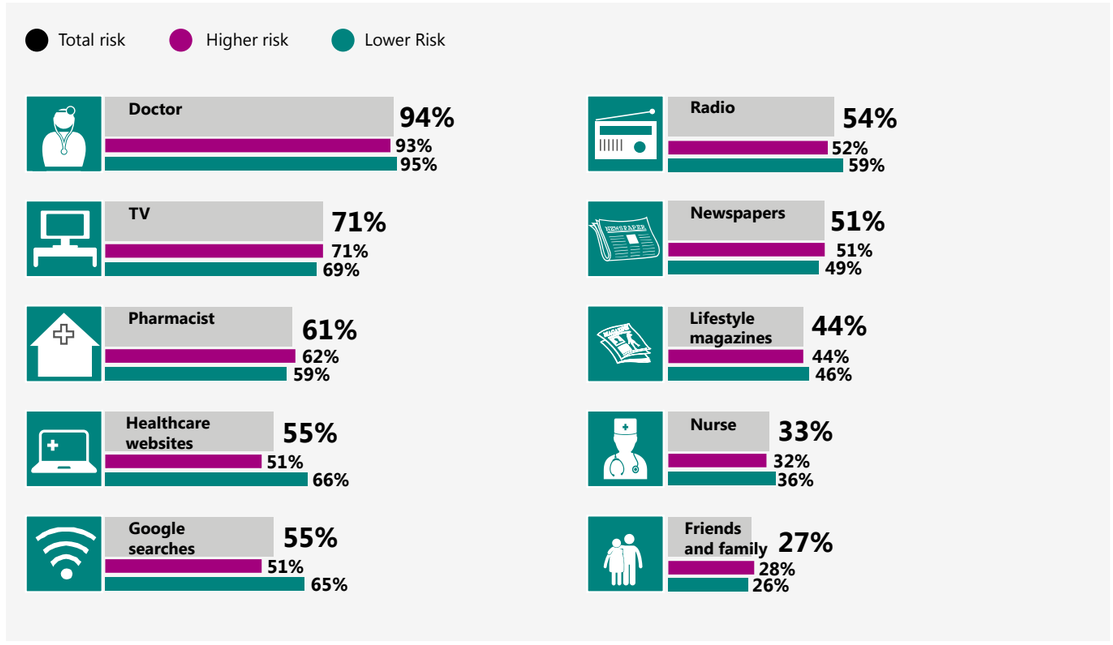
These results reinforce the lack of understanding about pneumonia and a desire for additional information. This is particularly true in Italy where less than one in 10 of older adults feels very well informed about "pneumonia as a disease in general" (6%), "risk factors for catching pneumonia" (5%) and "vaccination against pneumonia" (3%).

As a result of having pneumonia, people tend to feel better informed about "pneumonia as a disease in general" (62% very or fairly well informed compared with 44% for those with no personal experience of pneumonia) and about "risk factors for catching pneumonia" (50% very or fairly well informed compared with 37%). Less difference is seen when it comes to "vaccination against pneumonia".

Despite this, previous sufferers' knowledge of pneumonia prevention and risk factors is not significantly better than those with no personal experience of the condition. They are just as likely to think it is *true* that "pneumonia can only be treated and not prevented" (48% for those with experience of pneumonia compared with 46% for those without) and there is no significant difference in the proportion who state that "being vaccinated" is effective at protecting against pneumonia.

	Survey total sample	Italy total	Higher risk sample	Lower risk sample
Pneumonia in general				
Very well informed	8%	6%	5%	6%
Fairly well informed	37%	40%	41%	38%
Not very well informed	42%	44%	42%	49%
Not at all informed	12%	10%	11%	7%
Risk factors for catching pneumonia				
Very well informed	7%	5%	5%	6%
Fairly well informed	35%	33%	34%	31%
Not very well informed	43%	48%	46%	54%
Not at all informed	14%	13%	14%	10%
Vaccination against pneumonia				
Very well informed	7%	3%	3%	3%
Fairly well informed	15%	12%	13%	10%
Not very well informed	25%	29%	27%	34%
Not at all informed	52%	54%	55%	53%

Sources of information older adults would like to use to find out more about pneumonia



The majority of adults think that there is a need for more information on pneumonia (84%), risk factors (83%) and vaccination (82%). They also display openness to multiple channels of information. While the doctor (94%) is the most popular source, pharmacists are also seen as important channel to disseminate information (61%). For a general information campaign, popular media such as TV (71%) and the internet are felt to have a role. However, for more targeted communication the higher risk group appear less receptive to the internet and radio as sources of further information.

Next steps from the research

The results of this study highlight a need for more information on all aspects of pneumonia. In particular, educating older adults on the risk it could pose to them personally.

Renewed efforts are needed to clearly communicate the following key messages:

- Pneumonia is more common and more serious than people may think
- Some forms of pneumonia may be contagious
- Pneumonia poses a real risk to those aged 65 years and older, or suffering from certain medical conditions
- Pneumonia can be prevented as well as treated
- Preventative vaccinations exist for pneumonia and are safe

Physicians and other allied health professional such as nurses and pharmacists have a key role to play in pneumonia education and prevention. They can be better supported through wider awareness campaigns in popular media, as well as the provision of better patient orientated materials to distribute. However, older adults should also be encouraged to be more proactive in understanding their personal risk of pneumonia and steps that can be taken to protect themselves.

All those with an interest in pneumonia and pneumonia prevention are encouraged to make use of the study's findings to drive debate and inform future policy.

"*Don't underestimate the power of this new data. We can use this to speak to healthcare professionals, but also politicians and public health authorities. Think creatively how to get this out to the public.*" Dr Jane Barratt, Secretary General of the International Federation on Ageing

Please see the appendix for details on how to reference the PneuVUE® study or find out more.

PORTUGAL

[Note: Survey total figures refer to results for the total sample of all nine (9) countries surveyed weighted to population size]

PneuVUE®
Portugal findings

Awareness and understanding of pneumonia is strong in Portugal.

96%
claim to know what it is

81%
identify it as a lung condition

60%
think it's true that some forms of pneumonia may be contagious

Pneumonia is said to be a serious disease, but there is an apparent failure to link this to a risk to their own personal health and concern about the risk of catching pneumonia is low in Portugal

95%
think pneumonia is serious

Only
23%
are concerned about the risk of catching pneumonia

27%
of those at higher risk of pneumonia recognise themselves as 'very much at risk' almost the same proportion as those at lower risk

61%
think heart disease cause the highest number of deaths in Portugal

21%
think car accidents cause the highest number of deaths in Portugal vs. 5% for pneumonia and 1% for flu

In reality, pneumonia is responsible for over 7x as many deaths as transport accidents and 135x as many deaths as flu*[10]

There is a lot of uncertainty about whether pneumonia is a preventable disease, and how to prevent it.

Over 1 in 2 (56%) think it is false that "pneumonia can *only* be treated and not prevented"

A higher proportion think the following are effective at protecting against pneumonia

keeping fit and healthy	94%
not smoking	92%
avoiding long periods in air conditioned rooms	83%
wearing warm clothes	79%
avoiding contact with sick children	78%
compared to being vaccinated	73%

Despite relatively high awareness of a preventative pneumonia vaccine compared to other countries, uptake of the vaccine is low

Only **40%**
are aware it is possible to be vaccinated against pneumonia

14%
of those at high risk of pneumonia have been vaccinated compared with

6%
of the lower risk group

Doctors have a key role to play in widening awareness and raising vaccination rates.

84%
of those who have been vaccinated against pneumonia say it was prompted by their doctor

Most common reason for not being vaccinated is

55% My doctor has never offered it to me

Pneumonia was responsible for 5,935 deaths in Portugal in 2013 compared with 733 for transport accidents and 44 for flu. Eurostat: Causes of death - Deaths by country of residence and occurrence Figures for 2013 and based on 'All deaths reported in the country' for all age groups – see reference at end of chapter

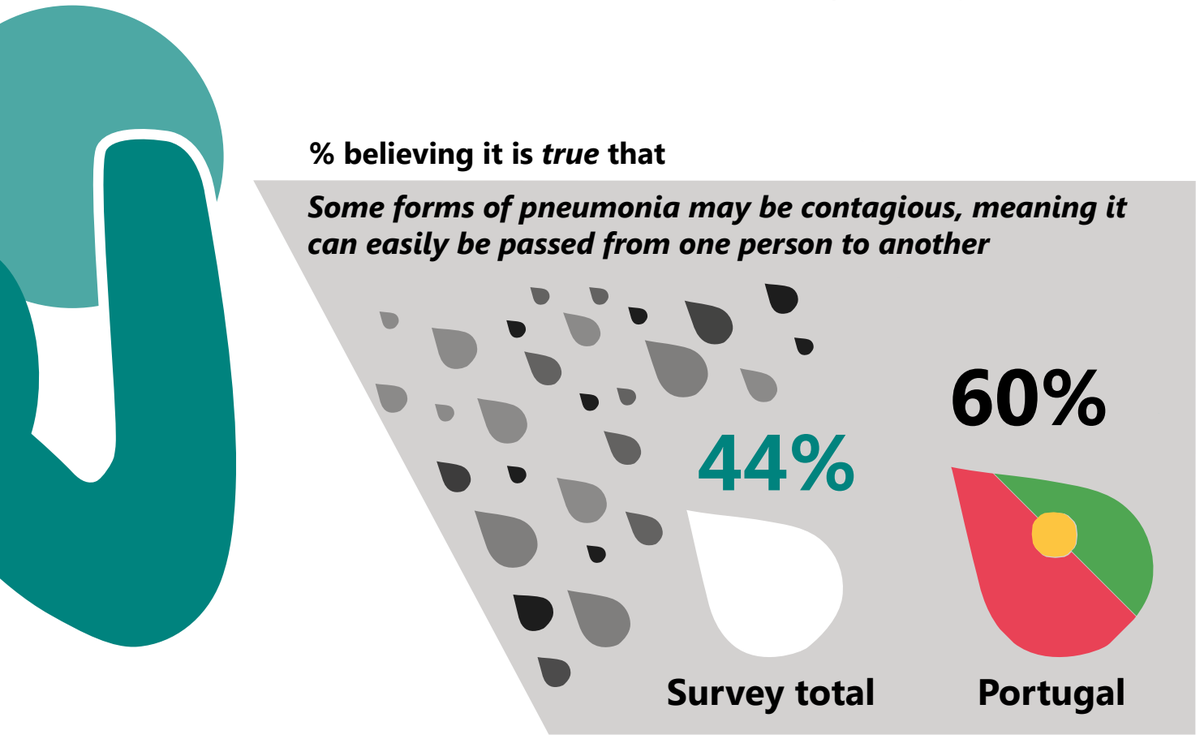
Pneumonia awareness

When it comes to pneumonia, awareness does not appear to be the problem as much as understanding.

Among older adults in the Portugal, virtually all (99%) have heard of pneumonia and 96% also claim to "know what pneumonia is". These are amongst the strongest results of all countries surveyed and Portugal does well for pneumonia awareness. Despite this, there are some gaps around understanding disease transmission, risk factors for catching pneumonia and the number actually dying from it.

Most older adults (81%) correctly identify pneumonia as a lung infection, although over one in seven (14%) see it more as a "severe type of cold/ similar to flu". Pneumonia is typically associated with trouble breathing (93%), tiredness/fatigue (91%) and coughing (89%) as well as a high fever (88%), and chest pain (80%). It is linked much less with sneezing (56%), dizziness (38%), and nausea (28%).

Older adults in Portugal are among the most likely to think it is true that "some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another" (60% for Portugal compared with 44% for survey total sample).



Pneumonia is almost universally recognised as a serious illness with 95% rating it as extremely serious or rather serious (less so in the Algarve region (88%). The majority (87%) also agree it is true that it can take months to recover from pneumonia.

In the context of other conditions tested, this places pneumonia just behind HIV (97%) and meningitis (96%) but ahead of hepatitis B (92%). It is also far higher than the 52% considering influenza to be serious. In line with the higher proportion viewing pneumonia as a serious illness compared to flu, 87% agree it is true that "pneumonia is more deadly than flu".

While stated understanding of the severity of pneumonia is high, knowledge of the number of deaths it is responsible for is far lower. Only 36% believe it is true that "up to 20% of adults who catch pneumonia will die from it" and pneumonia is felt to cause fewer deaths than other causes presented.

The survey asked which, out of pneumonia, car accidents, heart disease and influenza, results in the most adult deaths in their country. 61% correctly select heart disease as the biggest killer. This was followed by car accidents at 21% and then a large drop to pneumonia (5%) and influenza (1%). In reality pneumonia is responsible for over 7* times as many deaths as car accidents and almost 135** times as many deaths as flu.[10]

**In 2013, pneumonia was responsible for 5,935 deaths in Portugal compared with 733 for car accidents.*
Taken from Eurostat causes of death data and based on all age groups (see references at end of chapter)
***In 2013, pneumonia was responsible for 5,935 deaths in Portugal compared with 44 for influenza.*
Taken from Eurostat causes of death data and based on all age groups (see references at end of chapter)

Risk groups & risk factors

There is a tendency to project risk of pneumonia onto other people rather than acknowledge their own personal vulnerability.

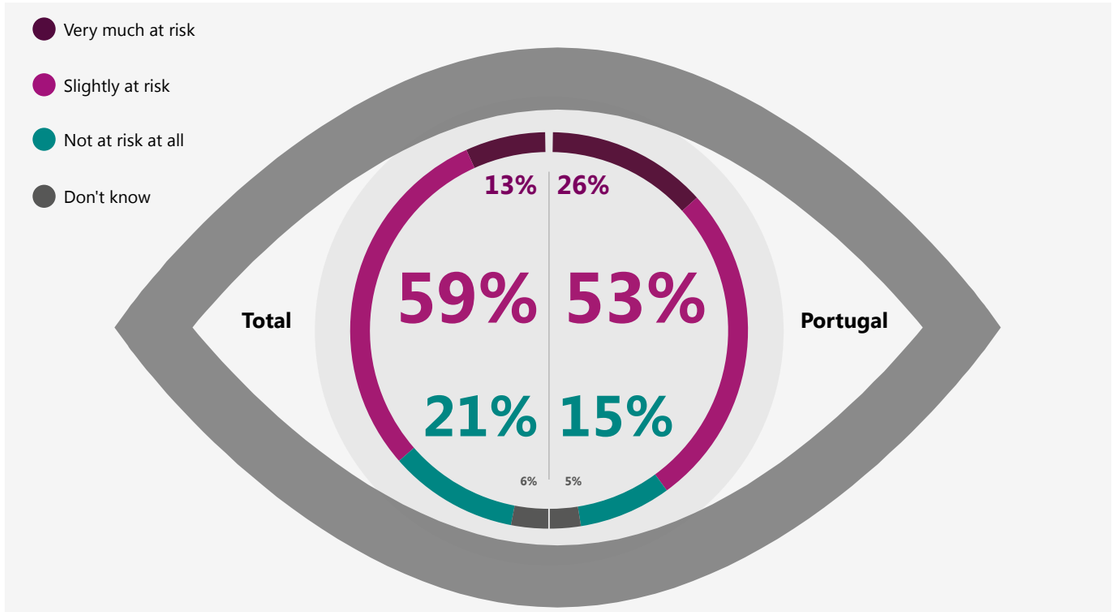
This is reflected in an underestimation of the risk of catching pneumonia. Amongst those who have heard of pneumonia, over half (53%) of older adults feel only slightly at risk of catching pneumonia and 15% state that they are not at risk at all. A higher proportion of the over 65 age group claim they are not at risk at all compared with the under 65 age group (18% vs. 13%).

Only 26% of those aware of pneumonia consider themselves "very much at risk" despite 71% of the Portuguese sample meeting a clinical criteria[5,8,9] for being at risk for pneumonia. Amongst the clinically defined higher risk group, just 27% believe themselves to be very much at risk and this is a similar proportion to those within the lower risk population (24%). There are also some regional variations in the proportion feeling very much at risk of pneumonia, ranging from 12% in the Algarve to 31% in Centro.

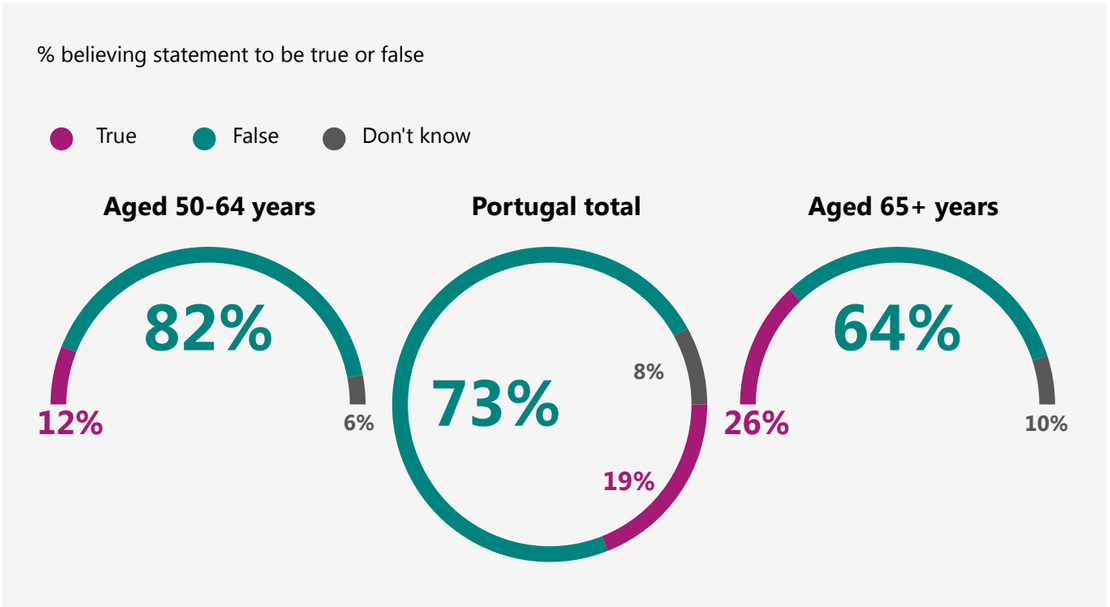
This perceived risk of pneumonia is greater than the perceived risk of catching hepatitis B and meningitis. Yet (as we will see later) this does not correlate to self-reported vaccination levels.

Portuguese respondents feel the most well informed of all countries surveyed when it comes to risk factors for pneumonia. Almost three-quarters (73%) also recognise that pneumonia is not confined to unfit or unhealthy people and acknowledge it is false that "pneumonia does not affect fit and healthy people". However, recognition is lower among those aged 65 and older with 64% thinking the statement is *false* compared with 82% of younger respondents. Later in this report we will see again how many consider staying fit and healthy to be effective protection against pneumonia.

Perceptions of risk for pneumonia



Pneumonia does not affect fit and healthy people



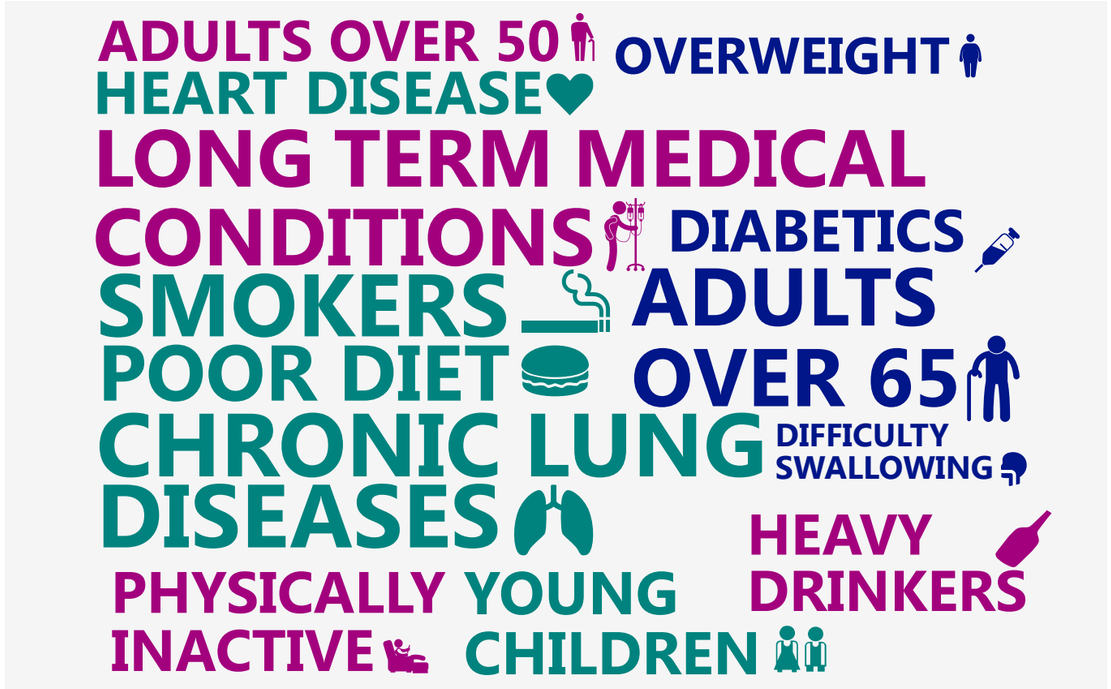
The state of a person's health is more commonly associated with a higher than average risk of catching pneumonia than simply old age.

Overall, people with "chronic lung conditions" (92%) and "smokers" (91%) and are most commonly identified as being at a higher than average risk of catching pneumonia. This is followed by "adults over 65" (84%) and those with "long term medical conditions" (83%).

At the other end of the scale, "people who have difficulty swallowing" receives very little recognition (33%), although this is higher than in all other markets surveyed. This is important as it is strongly associated with community acquired pneumonia in the elderly[11] despite being widely unrecognised as a risk factor.

Looking at age, just 7% believe it is true that pneumonia *only* affects old people. This is not to say that age isn't recognised as a factor. When thinking more generally, 84% think that adults over 65 are at higher than average risk of catching the disease compared to 62% for young children and 59% for adults over 50.

Groups felt to be at a higher than average risk of catching pneumonia



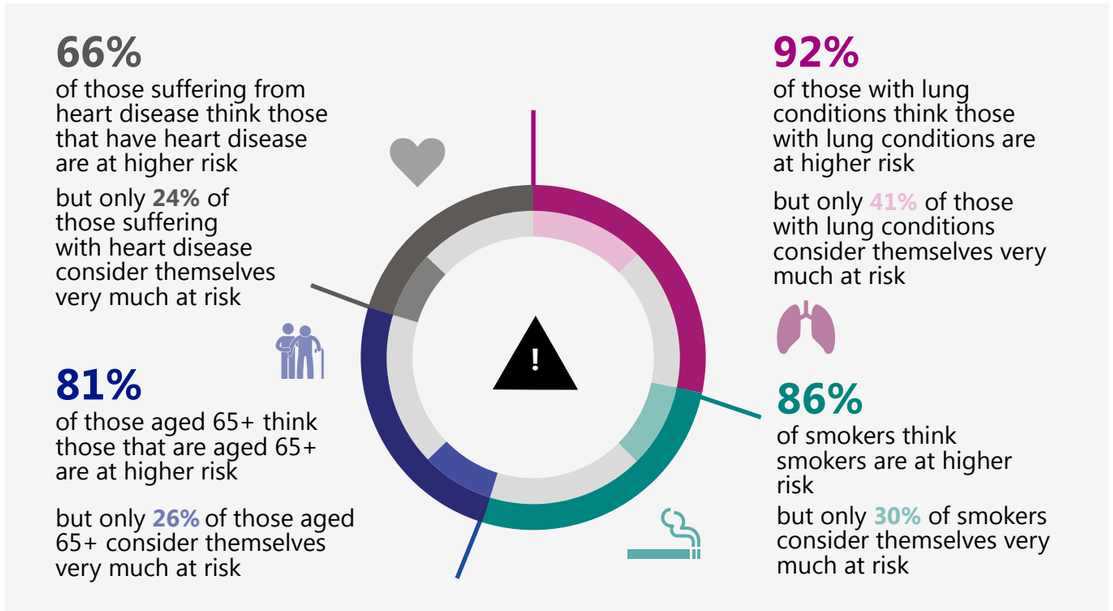
Pneumonia is more likely to be seen as an illness that affects other people rather than themselves.

- 81% of adults aged 65 years and older identify "adults over 65" as being at a higher than average risk of catching pneumonia. However, when thinking about their own risk, Just 26% of the 65+ age group consider themselves "very much at risk"
- 86% of smokers identify "smokers" as being at a higher than average risk of catching pneumonia. However, just 30% consider themselves to be "very much at risk"

This is carried through to level of concern about pneumonia, with a greater proportion expressing concern for older friends and family (42%) compared to concern for themselves (23%).

On the whole, people are not overly worried about the risk of catching pneumonia (76% are not very or not at all concerned compared to 8% who are very concerned and 14% who are fairly concerned). And those people who are "very concerned" tend to have had previous experience of pneumonia (13%) or an existing lung condition (17%).

Disparity between those identifying group as being at a higher risk of pneumonia and considering them selves to be at a high risk



The impact of pneumonia

If pneumonia does strike, it tends to be worse than anticipated.

Pneumonia does touch people's lives. 11% claim to have personally suffered from the disease and 41% have a close friend or close family member who they believe has had pneumonia. . Among sufferers, over two in five (42%) claimed to have felt "surprised" when thinking back to the time they were sick, reinforcing the misconception that pneumonia is very much seen as a illness that happens to other people.

Continuing to reflect an "it will never happen to me" mentality, one in three (33%) had no preconceptions of what pneumonia would be like. However, amongst those who did, it turned out to be much worse in reality.

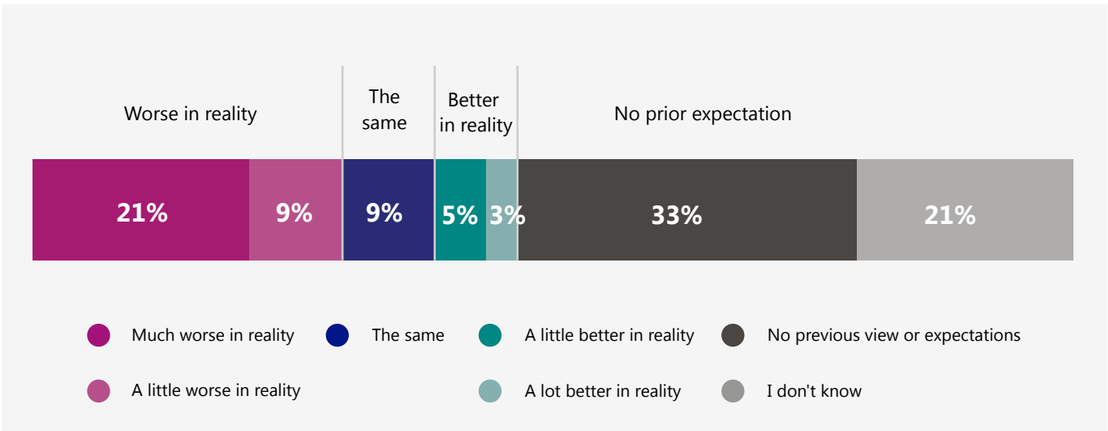
The most common areas where pneumonia has a big negative impact are "mobility/ ability to get out and about" (33%) followed by "social life" (30%) and "independence in caring for myself" (29%). From an economic perspective, 22% see a big negative impact on their "work life" and 18% on their "finances".

Thinking back to the time they were suffering from pneumonia, the most commonly selected negative emotions are "surprised" (42%), "powerless" (36%), "anxious" (32%), and "scared" (30%). On the positive side, the older adults report feeling "supported" (79%) and "confident it would pass soon" (60%). Consequently, while sufferers tend to be optimistic about the outcome, the actual experience of having pneumonia can be frightening.

Personal experience of pneumonia has an understandable impact on attitudes towards the disease. While perceptions of its seriousness are similar to those who have not previously had pneumonia, the sense of one's own risk is heightened (41% feel very much at risk compared to 25% of those who have not had pneumonia). In line with this, past sufferers' level of concern about catching pneumonia is also higher (13% are very concerned compared with 8% of those with no personal experience of pneumonia).

Interestingly, while more past sufferers have been vaccinated against pneumonia (29% vs 10%), they are just as likely to believe it is true that "pneumonia can only be treated and not prevented" (43% for those with experience of pneumonia compared to 32% for those without).

How the reality of having pneumonia compared to preconceptions



Emotions felt by sufferers of pneumonia

Pneumonia prevention

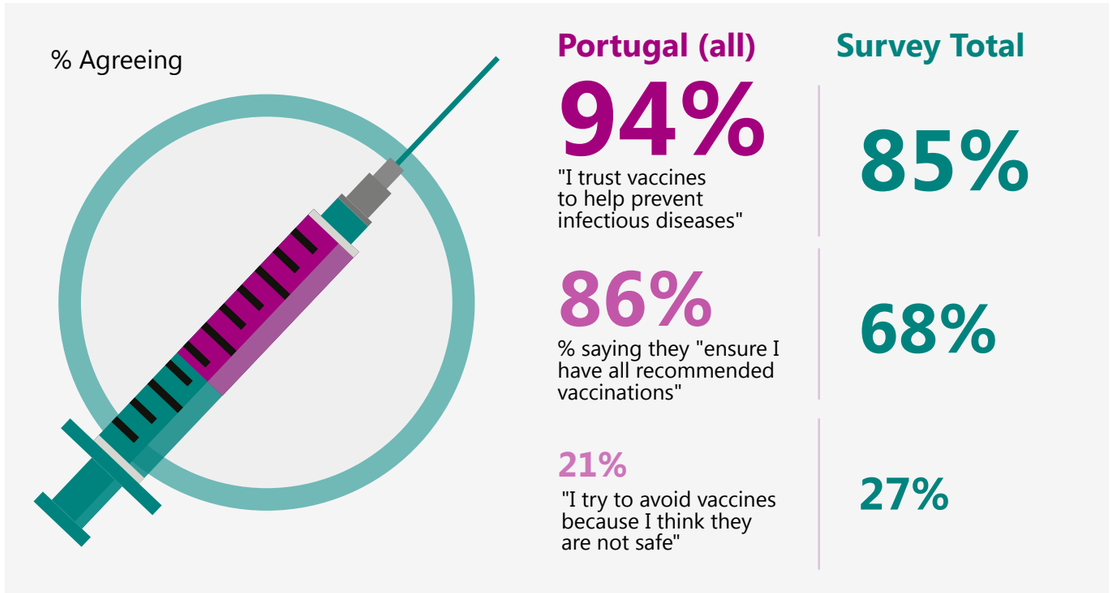
Whilst attitudes towards vaccination are positive in Portugal, there is a lot of uncertainty about how effective a vaccination is versus other simple lifestyle measures.

When it comes to steps personally taken to stay healthy, older adults in Portugal are the most likely* of all countries to select "Having all recommended vaccinations" (86%). This compares to a survey total figure of 68%. It does however come third behind "seek regular check-ups with their doctor" (90%) and "eat a healthy diet" (88%). Other steps tested include "exercise regularly" (65%) and "take vitamins" (34%).

Continuing to reflect Portugal's more positive attitude towards vaccination, 94% of older adults agree that they "trust vaccines to help prevent infectious diseases". Portugal also has one of the lowest proportions (13% compared with a survey total of 27%) agreeing that "I try to avoid vaccinations because I think that they are not safe". Almost all (98%) agree that they "follow their doctor's advice" when thinking about vaccinations.

However, although open to vaccination, among older adults in Portugal who have been vaccinated against pneumonia, only 9% claimed it was their own idea. Portugal therefore appears to be one of the less proactive countries when it comes to requesting pneumonia vaccination.

Attitude towards vaccination in general



*Joint 1st place with the UK

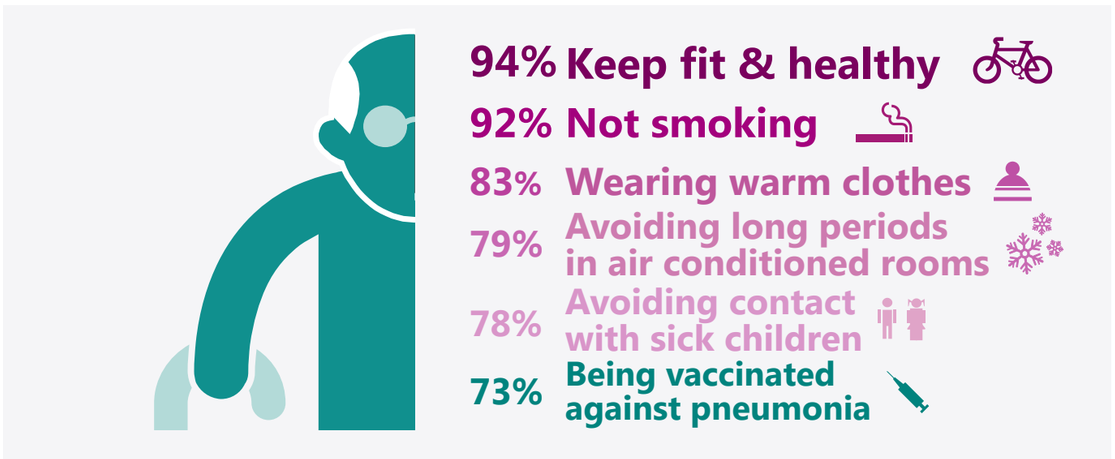
While almost everyone claims to be doing something to stay fit and healthy, when it comes to pneumonia, just over half (56%) believe that pneumonia can be prevented. However, one in three (34%) think that the statement "pneumonia can only be treated and not prevented" is *true*. This is the lowest of all countries surveyed and compares with a survey total of 46% considering it to be a *true* statement.

It is clear that for many, lifestyle can be seen as effective at protecting against pneumonia. Respondents were presented with a list of possible measures including "keeping fit and healthy", "being vaccinated against pneumonia", "wearing warm clothes", "avoiding long periods in air conditioned rooms", not smoking" and "avoiding contact with sick children". When thinking about which steps are effective at protecting against pneumonia 73% see "being vaccinated against pneumonia" as effective. This is significantly higher than all other countries surveyed (survey total figure is 58%). There is some regional variation in terms of the proportion seeing "vaccination against pneumonia" as very effective, ranging from 44% in the Algarve to 64% in Norte.

Despite being more commonly selected than in other countries, it still falls behind other measures in Portugal. The most commonly selected responses are "keeping fit and healthy" (94%) and "not smoking" (92%).

Older adults in Portugal are also likely to see anecdotal measures such as "wearing warm clothes" (79%) or "avoiding long periods in air conditioned rooms" (83%) as more effective than being vaccinated. And 91% are likely to think it is true that "being cold and wet for a long period puts you at high risk of pneumonia" (compared with a survey total of 75%).

Effective measures against protecting against pneumonia



Pneumonia vaccination

Awareness of pneumonia vaccination is relatively low and there is a poor conversion rate from being aware to taking action, with even lower levels of vaccination

Overall, 40% of older adults in Portugal are aware that it is possible to be vaccinated against pneumonia, compared with a survey total figure of 29%. Higher awareness is reported amongst those who have previously had pneumonia versus those who have not (51% compared with 38% of those who have not had pneumonia) and amongst those with specific comorbidities. There is a higher awareness of the pneumonia vaccination amongst those with a lung condition (54% awareness), or cancer (56% awareness). It is important to note in Portugal that aside from specific comorbidities there is minimal *difference* in awareness between the varying age groups or those defined higher or lower risk. However, there are some regional differences in awareness, varying from 47% in Norte to 30% in Alentejo.

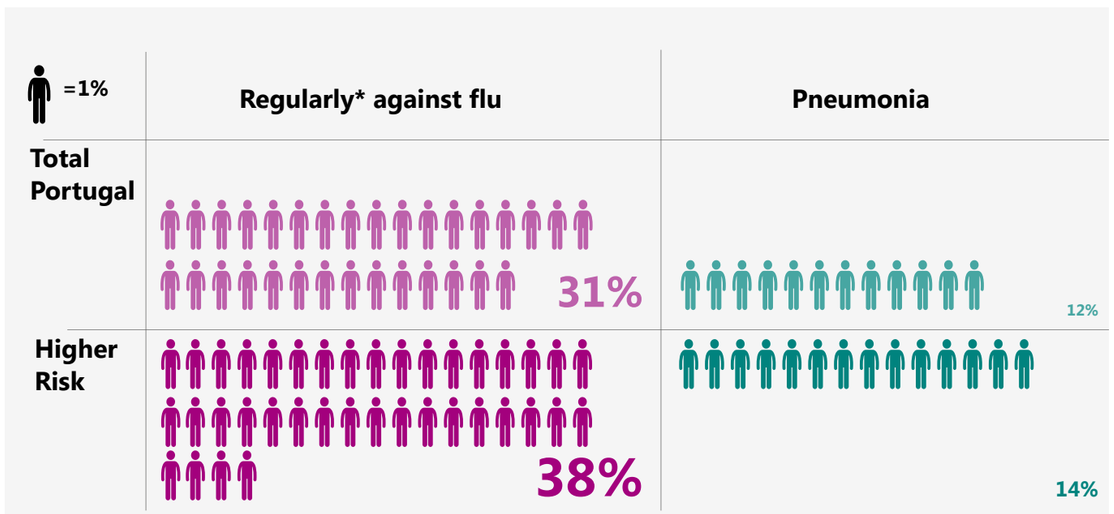
Awareness is only the first step and does not necessarily translate into action. The level of self-reported pneumonia vaccination among all older adults is only 12%. This is driven by the higher risk group with 15% vaccinated compared with 6% of those at lower risk. It still leaves the majority of those at higher risk unprotected. This can be compared to the 31% of the older adult population (and 38% of those at higher risk of pneumonia) claiming to have been regularly vaccinated* against flu.

Looking at the patient pathway from awareness of pneumonia to actual vaccination reveals the high proportion being lost at key steps along the way. Ultimately only 30% of those aware of the pneumonia vaccination have had it, compared to 42% at a survey total level – this is despite Portugal having higher awareness of a pneumonia vaccine.

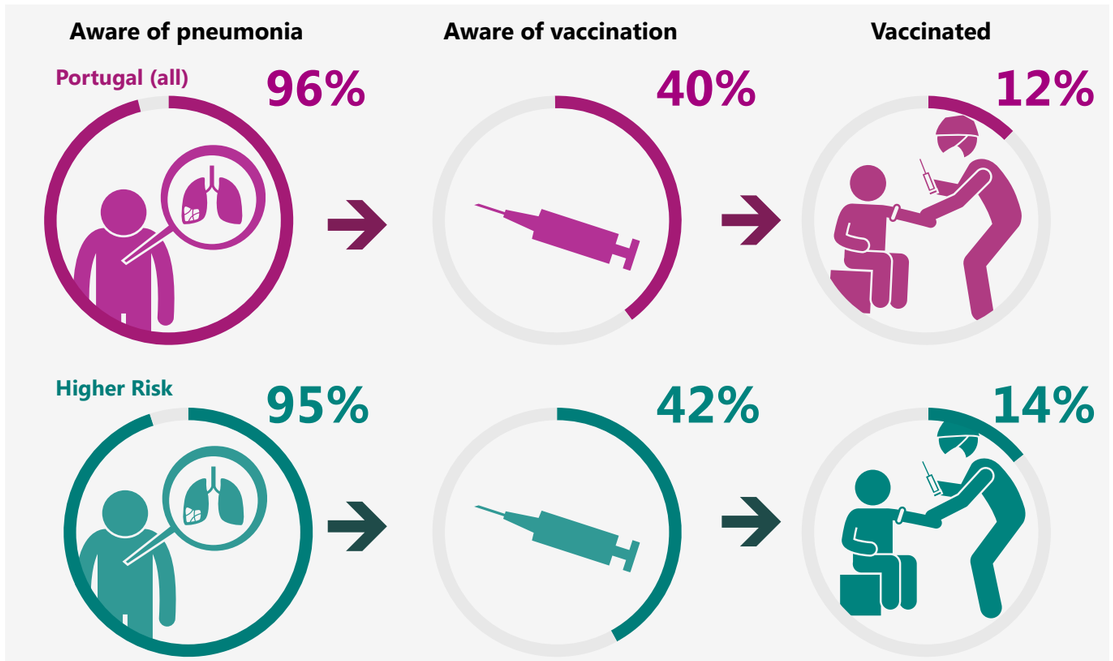
By far the most common driver for pneumonia vaccination is a prompt from a doctor (stated by 84% of those vaccinated against pneumonia – 71% stating GP or family doctor and/or 20% stating specialist doctor). This is consistent with the 98% who agree that they "follow their doctor's advice" when it comes to vaccination.

Similarly, when those who are aware of the pneumonia vaccine but have not received it are asked why not, the most common reason is "my doctor has never offered it to me" (55%). This further reinforces the important role that healthcare professionals (HCPs) have to play in increasing levels of pneumonia vaccination.

Self reported - vaccination levels



% lost at each key step of the patient journey



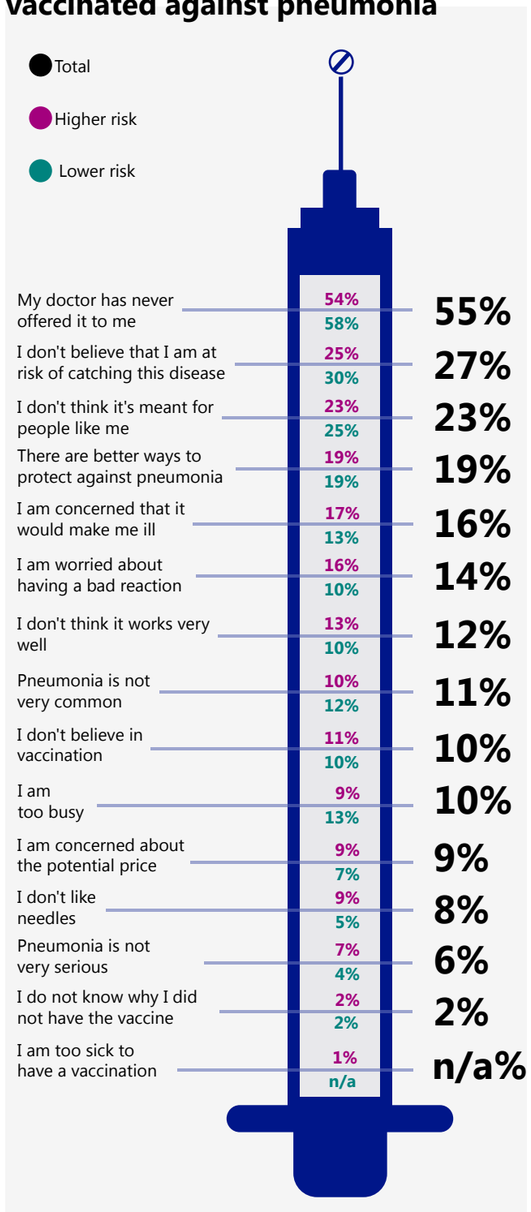
*Regularly vaccinated is defined as at least four times in the past five years

If the pneumonia vaccine were recommended by their doctor and at no cost to them, 75% of older adults (who have not already been vaccinated) would be likely to have it, providing a significant boost to vaccination levels.

This likelihood is amongst the highest seen, reiterating the acceptance of vaccination in Portugal. It leaves just one in five unwilling to have the pneumonia vaccine**. Reasons for not being vaccinated against pneumonia other than "my doctor has never offered it to me" include "I don't believe I'm at risk" (27%), "I don't think it's meant for people like me" (23%) and "there are better ways to protect against pneumonia" (19%)

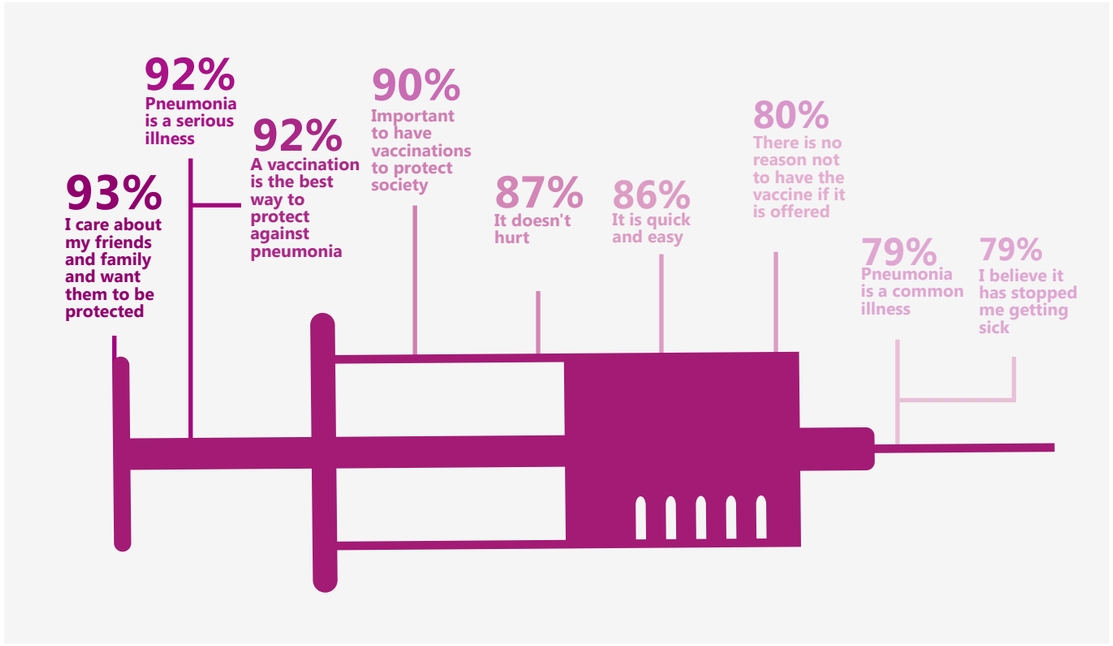
Fears over safety also feature, although to a lesser extent than in other markets. Among those who are aware of the pneumonia vaccine but have not had it, 16% are "concerned it would make me ill" and 14% are "worried about having a bad reaction". This issue is not specific to pneumonia vaccination with 21% of older adults agreeing that they "try to avoid vaccines because I think they are not safe."

Reasons for not being vaccinated against pneumonia



The majority (84%) of those who have had a pneumonia vaccination would recommend it. The main reasons for this are both the practical and the more emotional. On the practical side there is the belief "pneumonia is a serious illness" (92%), "vaccination is the best way to protect against pneumonia" (92%) and "it is quick and easy" (86%). On a more emotional level there is "I care about family and friends and want them to be protected" (93%) and "it is important to have vaccinations to protect society" (90%).

Reasons for recommending the pneumonia vaccine



** Remainder answered "don't know"*

Information needs

Despite high stated levels of pneumonia knowledge, older adults in Portugal still recognise the need for more information

Older adults in Portugal are the most likely of all markets surveyed to feel informed about "pneumonia as a disease in general" (76% compared with a survey total of 45%) or "risk factors for catching pneumonia" (75% compared with a survey total of 41%). When it comes to vaccination against pneumonia, results are lower at 38% feeling informed but still the highest* of all markets tested (survey total figure of 22).

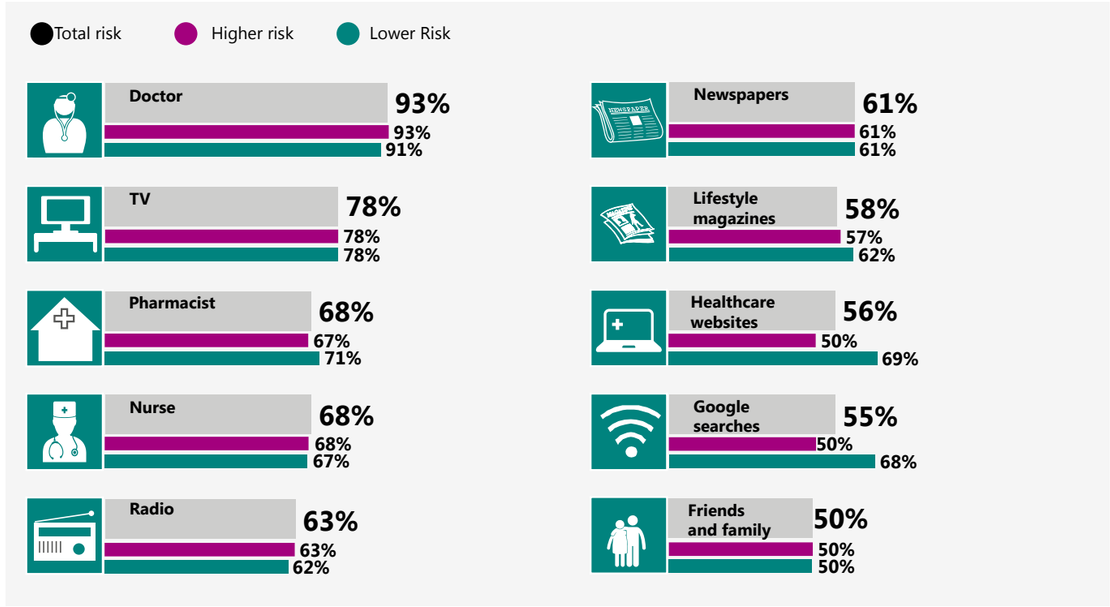
How informed older adults in Portugal feel about pneumonia as a disease in general, risk factors or vaccination does not appear to be linked to any clear age groups, higher or lower risk populations or experience of pneumonia with no significant differences noted.

Over half of Portuguese older adults think that there is a need for more information on pneumonia (52%), risk factors (54%) and vaccination (56%). While the doctor is the most popular source, pharmacists and nurses are also seen as important. They also display an openness to multiple channels of information (although the 50-59 age groups appear more receptive than older age groups to the internet as an information source). For a general information campaign, popular media is felt to have a role to play.

	Total sample (all 9 countries)	PORTUGAL total
Pneumonia in general		
Very well informed	8%	16%
Fairly well informed	37%	60%
Not very well informed	42%	19%
Not at all informed	12%	4%
Risk factors for catching pneumonia		
Very well informed	7%	18%
Fairly well informed	35%	57%
Not very well informed	43%	19%
Not at all informed	14%	5%
Vaccination against pneumonia		
Very well informed	7%	13%
Fairly well informed	15%	25%
Not very well informed	25%	23%
Not at all informed	52%	38%

*Joint with the UK

Sources of information older adults would like to use to find out more about pneumonia



Next steps from the research

While Portugal is one of the leading countries surveyed when it comes to awareness of pneumonia and vaccination and positive attitudes towards vaccinations and prevention, the results show that there is a clear need more for information on all aspects of pneumonia.

There is still a considerable proportion of those at higher risk of pneumonia who are unvaccinated and unaware that a vaccine exists.

Renewed efforts are needed to clearly communicate the following key messages:

- Who is most at risk of pneumonia
- Some forms of pneumonia may be contagious
- Pneumonia poses a real risk to those aged 65 years and older, or suffering from certain medical conditions
- Pneumonia can be prevented as well as treated
-

Physicians, and to a lesser extent allied health professional such as nurses and pharmacists have a key role to play in pneumonia education and prevention. They can be better supported through wider awareness campaigns in popular media, as well as the provision of better patient orientated materials to distribute. However, older adults should also be encouraged to be more proactive in understanding their personal risk of pneumonia and steps that can be taken to protect themselves.

All those with an interest in pneumonia and pneumonia prevention are encouraged to make use of the study's findings to drive debate and inform future policy.

"Don't underestimate the power of this new data. We can use this to speak to healthcare professionals, but also politicians and public health authorities. Think creatively how to get this out to the public." Dr Jane Barratt, Secretary General of the International Federation on Ageing

Please see the appendix for details on how to reference the PneuVUE® study or find out more.

SPAIN

[Note: Survey total figures refer to results for the total sample of all nine (9) countries surveyed weighted to population size]

PneuVUE®
Spain findings

Awareness and understanding of pneumonia is strong in Spain.

84%
claim to know what it is

85%
identify it as a lung condition

42%
think it's true that some forms of pneumonia may be contagious

Pneumonia is said to be a serious disease, but there is an apparent failure to link this to a risk to their own personal health and concern about the risk of catching pneumonia is low in Spain

88%
think pneumonia is serious

Only
43%
are concerned about the risk of catching pneumonia

11%
of those at higher risk of pneumonia[5,8,9] recognise themselves as 'very much at risk'

41%
think car accidents cause the highest number of deaths in Spain vs

3%
for pneumonia and 2% for flu - in reality pneumonia is responsible for 4x as many deaths as transport acccidents and over 75x as many deaths as flu[*10].

There is a lot of uncertainty about whether pneumonia is a preventable disease, and how to prevent it.

Only
39%
think it is false that "pneumonia can *only* be treated and not prevented"

A higher portion think the following are effective at protecting against pneumonia

keeping fit and healthy	**92%**
not smoking	**91%**
avoiding long periods in air conditioned rooms	**72%**
wearing warm clothes	**69%**
compared to being vaccinated	**66%**

Compared to other countries awareness of a preventative pneumonia vaccine is below average

Only **22%**
are aware it is possible to be vaccinated against pneumonia

Only
9%
of those at high risk of pneumonia have been vaccinated vs

3%
of the lower risk group

Doctors and other allied health professionals such as nurses and pharmanicts have a key role to play in widening awareness and raising vaccine rates.

73%
of those who have been vaccinated against pneumonia say it was prompted by their doctor

Most common reason for not being vaccinated is

49% My doctor has never offered it to me

**Pneumonia was responsible for 8,333 deaths in Spain in 2013 compared with 2,139 for transport accidents and 111 for flu. Eurostat: Causes of death - Deaths by country of residence and occurrence*
Figures for 2013 and based on 'All deaths reported in the country' for all age groups – see reference at end of chapter

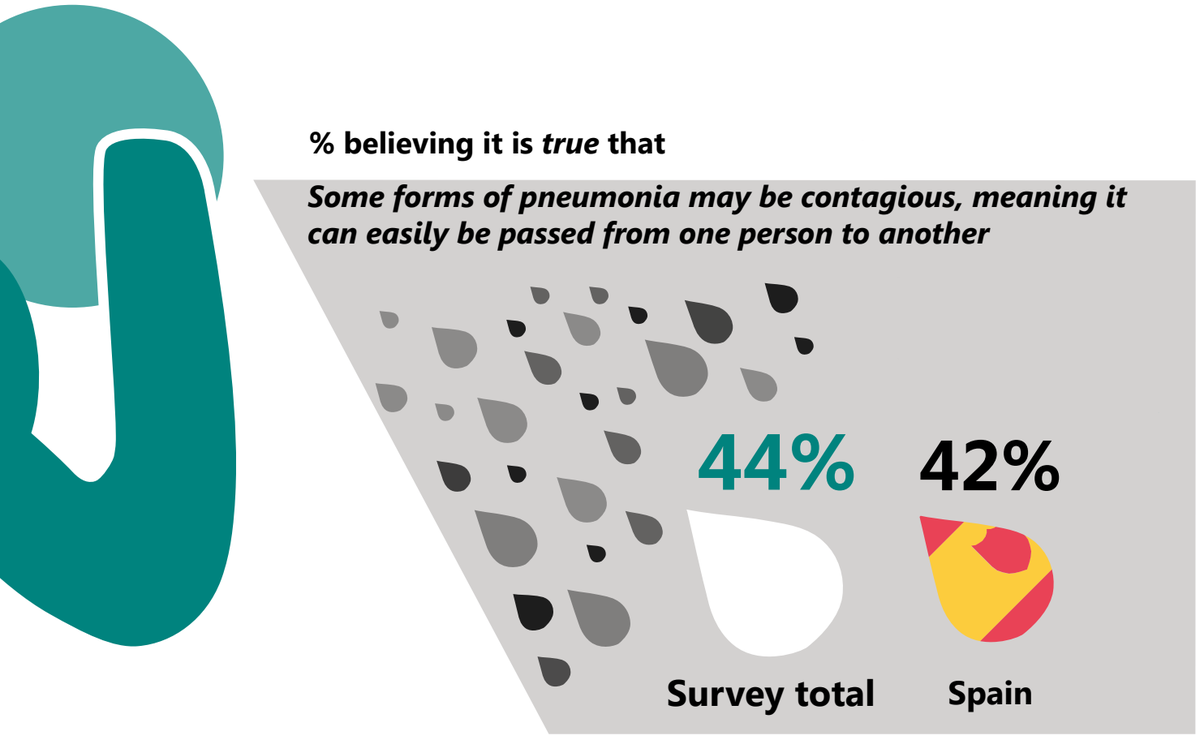
Pneumonia awareness

When it comes to pneumonia, awareness does not appear to be the problem as much as understanding.

Among older adults in Spain, virtually all (97%) have heard of pneumonia. While pneumonia awareness is in line with other countries, a relatively low proportion (84%) also claim to "know what it is". Despite this, there are some gaps around understanding disease transmission, risk factors for catching pneumonia and the number actually dying from it.

Most older adults (85%) correctly identify pneumonia as a lung infection, although just over 1 in 10 (11%) see it more as a "severe type of cold/ similar to flu". Pneumonia is typically associated with trouble breathing (92%) and coughing (83%) as well as a high fever (87%), tiredness/fatigue (85%). It is linked less with sneezing (36%), dizziness (27%) and nausea (25%).

Only two in five (42%) think it is true that "some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another". The remainder either think the statement is false (34%) or don't know (24%).



Relative to respondents in other countries, older adults in Spain are less likely to regard pneumonia as serious (23% in Spain consider pneumonia to be very serious compared with a survey total of 44%). They are also one of the least likely nationalities to agree it is true that "it can take months to recover from pneumonia" (76% in Spain compared with a survey total of 85%).

In the context of other conditions tested, the proportion regarding pneumonia as serious is below meningitis (96%) and HIV (96%) and at the same level as hepatitis B (87%). It is far higher than the 34% considering influenza to be serious and the majority (79%) believe it is true that "pneumonia is more deadly than flu".

A lack of clarity exists around the number of deaths pneumonia may be responsible for. Just under half (45%) believe it is true that "up to 20% of adults who catch pneumonia will die from it" and pneumonia is felt to cause fewer deaths than other causes presented.

The survey asked which, out of pneumonia, car accidents, heart disease and influenza, results in the most adult deaths in their country. 47% correctly select heart disease as the biggest killer, however car accidents were also selected by a large proportion (41%). Just 3% select pneumonia and 2% choose influenza. In reality however Eurostat figures for Spain (2013) show that pneumonia is responsible for 4* times as many deaths as car accidents and over 75** times as many deaths as flu[10].

**In 2013, pneumonia was responsible for 8,333 deaths in Spain compared with 2,139 for car accidents. Taken from Eurostat causes of death data (see references at end of chapter)*
***In 2013, pneumonia was responsible for 8,333 deaths in the Spain compared with 111 for influenza. Taken from Eurostat causes of death data (see references at end of chapter)*

Risk groups & risk factors

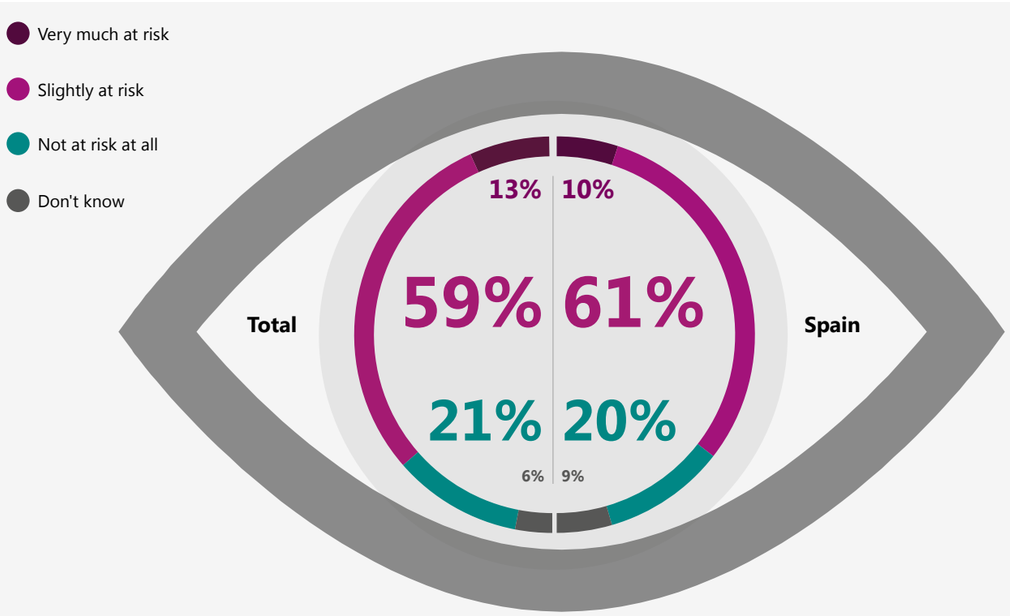
There is a tendency to project risk of pneumonia onto other people rather than acknowledge their own personal vulnerability.

This is reflected in an underestimation of the risk of catching pneumonia. Amongst those who have heard of pneumonia, the majority (61%) of older adults feel only slightly at risk of catching pneumonia and 20% state that they are not at risk at all.

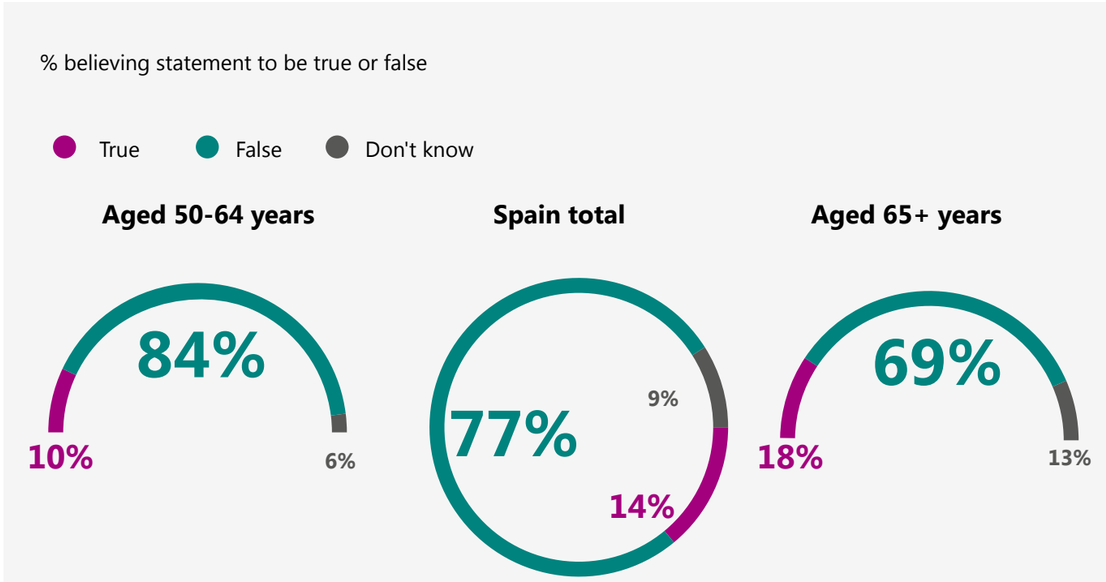
Just 10% of those aware of pneumonia consider themselves "very much at risk" despite 69% of the Spanish sample meeting a clinical criteria[5,8,9] for being at risk for pneumonia. Amongst the clinically defined higher risk group, just 11% believe themselves to be very much at risk. This is no different to the lower pneumonia risk group (9% of those at lower risk regard themselves as "very much at risk" of pneumonia).

Although just 1 in 20 (6%) feel *very* well informed about risk factors for catching pneumonia, the majority (77%) acknowledge it is *false* that "pneumonia does not affect fit and healthy people". This number is significantly higher among younger respondents (84% for those aged 50-64 compared with 69% for those 65 years and older). A difference is also seen between the pneumonia risk groups with 74% of those at higher risk of pneumonia thinking can the statement is false compared with 84% of the lower risk group. Later in this report we will see again how many consider staying fit and healthy to be effective protection against pneumonia.

Perceptions of risk for pneumonia



Pneumonia does not affect fit and healthy people



The state of a person's health is more commonly associated with a higher than average risk of catching pneumonia than simply old age.

Overall, people with chronic lung conditions (93%) and smokers (92%) are most commonly identified as being at a higher than average risk of catching pneumonia. This is followed by those with long term medical conditions (77%) and adults over 65 (76%). At the other end of the scale, "people who have difficulty swallowing" receives very little recognition (29%) despite being strongly associated with community acquired pneumonia in the elderly.[11]

Looking at age, just 6% believe it is true that pneumonia only affects old people. This is not to say that age isn't recognised as a factor. When thinking more generally, 76% think adults over 65 are at higher than average risk of catching the disease compared to 48% for adults over 50.

- 73% of adults aged 65 years and older identify "adults over 65" as being at a higher than average risk of catching pneumonia. However, when thinking about their own risk, Just 11% consider themselves "very much at risk"

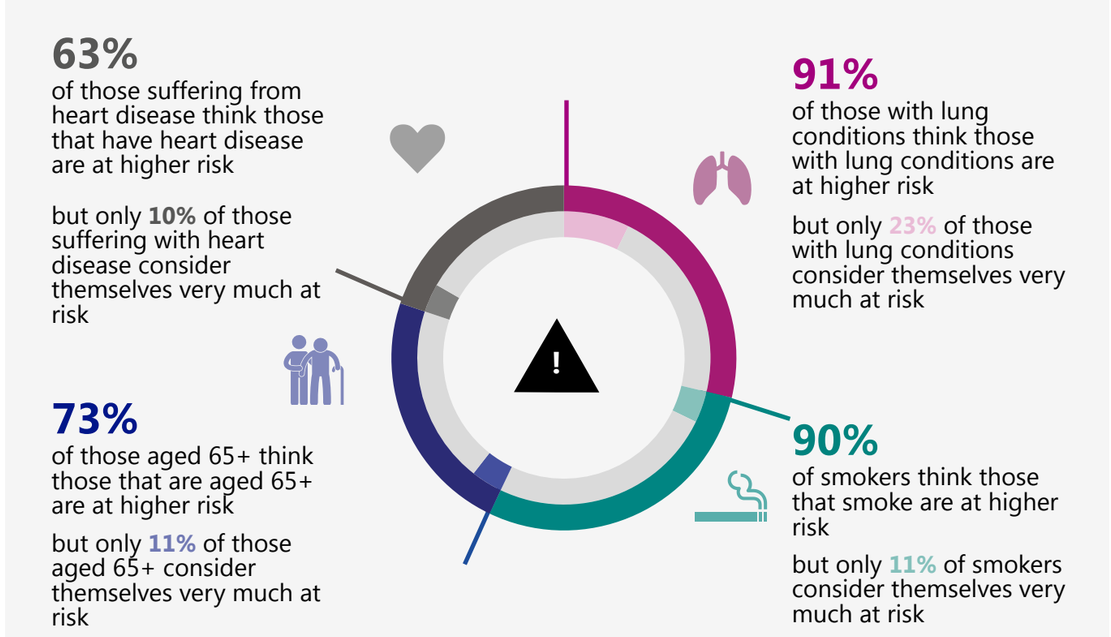
Groups felt to be at a higher than average risk of catching pneumonia

- 90% of smokers identify "smokers" as being at a higher than average risk of catching pneumonia. However, just 11% consider themselves to be "very much at risk"

This is carried through to level of concern about pneumonia, with a greater proportion expressing concern for older friends and family (69%) compared to concern for themselves (43%).

However, older adults in Spain are more concerned than other countries about their personal risk of catching pneumonia. Just 55% say they are not very or not at all concerned, compared with a survey total of 78%. Furthermore, 21% of older adults in Spain are *very* concerned about catching pneumonia, compared with a survey total of just 7%. Despite this, those are higher risk of pneumonia are more likely than lower risk respondents to say that they are not at all concerned (31% for the higher risk group compared with 23% of those at lower risk).

Disparity between those identifying group as being at a higher risk of pneumonia and considering them selves to be at a high risk



The impact of pneumonia

If pneumonia does strike, it tends to be worse than anticipated.

Pneumonia does touch people's lives. 9% claim to have personally suffered from the disease and 38% have a close friend or close family member who they believe has had pneumonia. Among sufferers, one in two (53%) claimed to have felt "surprised" when thinking back to that time reinforcing the misconception that pneumonia is very much seen as an illness that happens to other people.

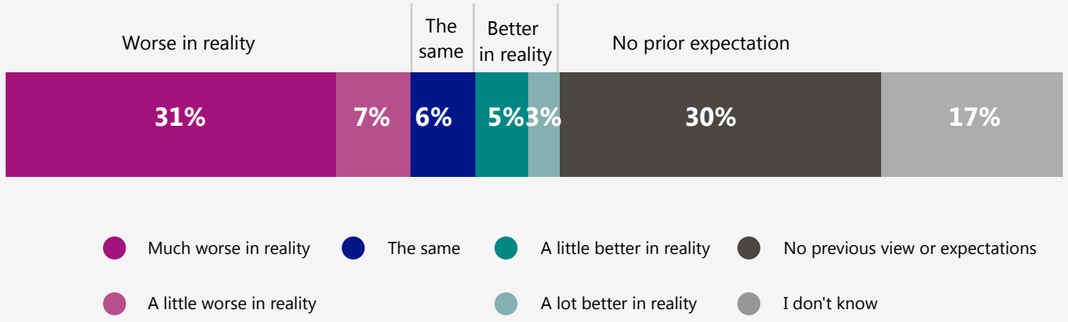
Continuing to reflect an "it will never happen to me" mentality, 1 in 3 (30%) had no preconceptions of what pneumonia would be like. However, amongst those who did, it turned out to be much worse in reality.

The most common areas where pneumonia has a *big* negative impact are "mobility/ ability to get out and about" (25%) followed by "work life" (19%), "independence in caring for yourself (19%) and 'social life' (18%). From an economic perspective, 9% see a big negative impact on their "finances".

Thinking back to the time they were suffering from pneumonia, the most commonly selected *negative* emotions are "surprised" (53%), "poorly informed"(49%), "powerless" (44%), "anxious" (39%), and "scared" (38%). On the *positive* side, older adults report feeling "supported" (83%) and "confident it would pass soon" (57%). Consequently, while sufferers tend to be optimistic about the outcome, the actual experience of having pneumonia can be frightening.

Personal experience of pneumonia has an understandable impact on attitudes towards the disease. While perceptions of its seriousness are similar to those who have not previously had pneumonia, the sense of one's own risk is heightened (24% feel very much at risk compared to 9% of those who have not had pneumonia). In line with this, past sufferers' level of concern about catching pneumonia is also higher (33% are very concerned vs. 20% of those with no personal experience of pneumonia).

How the reality of having pneumonia compared to preconceptions



Emotions felt by sufferers of pneumonia

Pneumonia prevention

There is a lot of uncertainty about whether pneumonia is a preventable disease, and the measures that could be taken to prevent it.

When it comes to steps personally taken to stay healthy, 60% of older adults in Spain select "Having all recommended vaccinations. More likely to be chosen are "eat a healthy diet" (93%), "seek regular check-ups with my doctor" (85%) and "exercise regularly" (76%). Only one in four (23%) select "take vitamins".

Although a below average number of older adults in Spain select "having all recommended vaccinations" (survey total average is 68%), 90% of older adults agree that they "trust vaccines to help prevent infectious diseases" and 92% agree that they "follow their doctor's advice" when it comes to vaccination.

However, although open to vaccination, among older adults in Spain who have been vaccinated against pneumonia, only 3% claimed it was their own idea. Spain therefore appears to be one of the less proactive countries when it comes to requesting pneumonia vaccination.

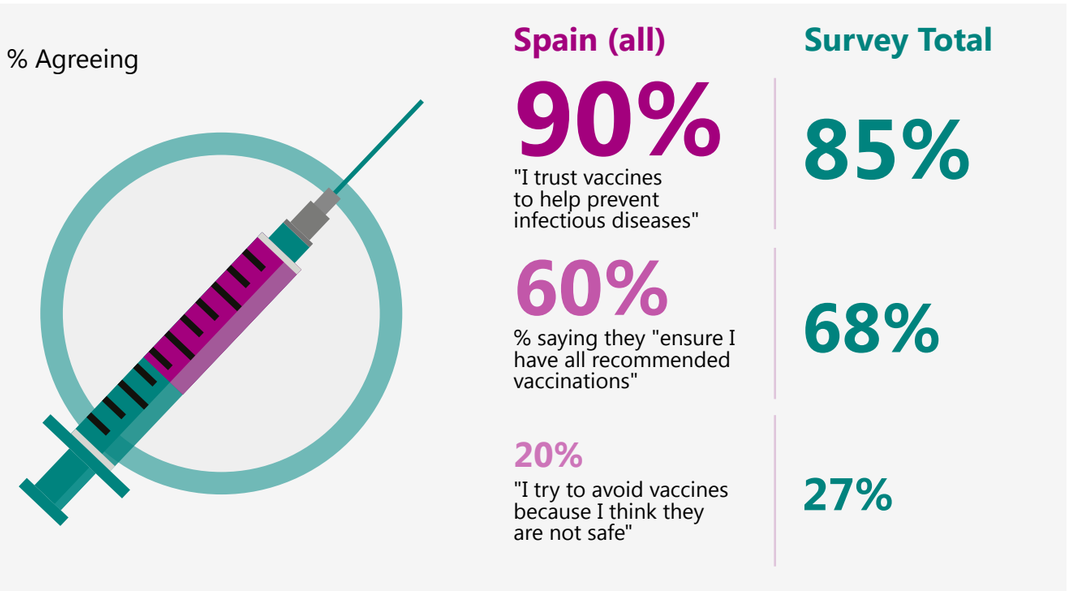
While almost everyone claims to be doing something to stay fit and healthy, when it comes to pneumonia, less than half believe it can be prevented. Older adults are divided as to whether "pneumonia can only be treated and not prevented" with 44% thinking this statement is true compared to 39% believing it to be false*. Without this fundamental understanding, any talk of preventative strategies, let alone vaccination, would be premature.

It is clear that for many, lifestyle can be seen as effective at protecting against pneumonia. When thinking about which steps are effective at protecting against pneumonia, being vaccinated is regarded as effective by 66% of older adults in Spain compared with a survey total of 58%.

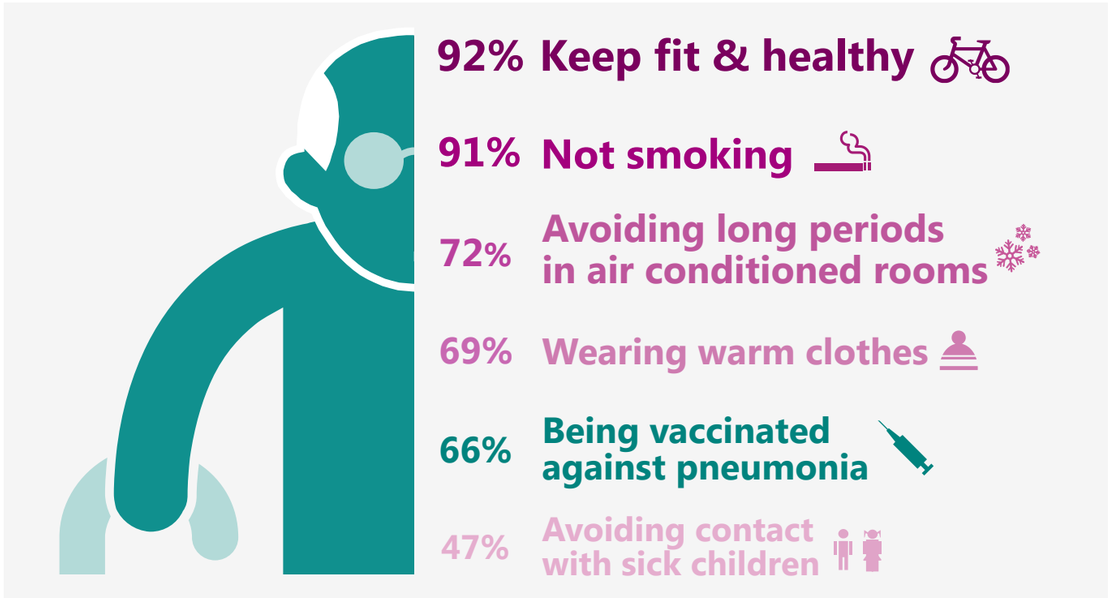
While one of the higher results of the countries surveyed, within Spain "being vaccinated" is still less likely to be seen as effective than "keeping fit and healthy" (92%) and "not smoking" (91%). It also falls behind more anecdotal measures such as "wearing warm clothes" (69%) or "avoiding long periods in air conditioned rooms" (72%). Over three quarters (79%) of older adults in Spain also think it is true that "being cold and wet for a long period puts you at high risk of pneumonia".

Spain has a low awareness of effective ways of protecting against pneumonia. Almost half (47%) regard "avoiding contact with sick children" as effective and yet our expert panel considered avoidance of those who are ill to be one of the most important preventative measures that can be taken.

Attitude towards vaccination in general



Effective measures against protecting against pneumonia



*17% said "don't know"

Pneumonia vaccination

Awareness of pneumonia vaccination is low and there is a poor conversion rate from being aware to taking action, with even lower levels of vaccination.

Overall, 22% of older adults in Spain are aware that it is possible to be vaccinated against pneumonia, compared with a survey total figure of 29%. Similar figures are recorded for both the higher (23%) and lower (21%) pneumonia risk groups. Those with a lung condition (31%) or heart disease (30%) or are most likely most likely to be aware of the pneumonia vaccination.

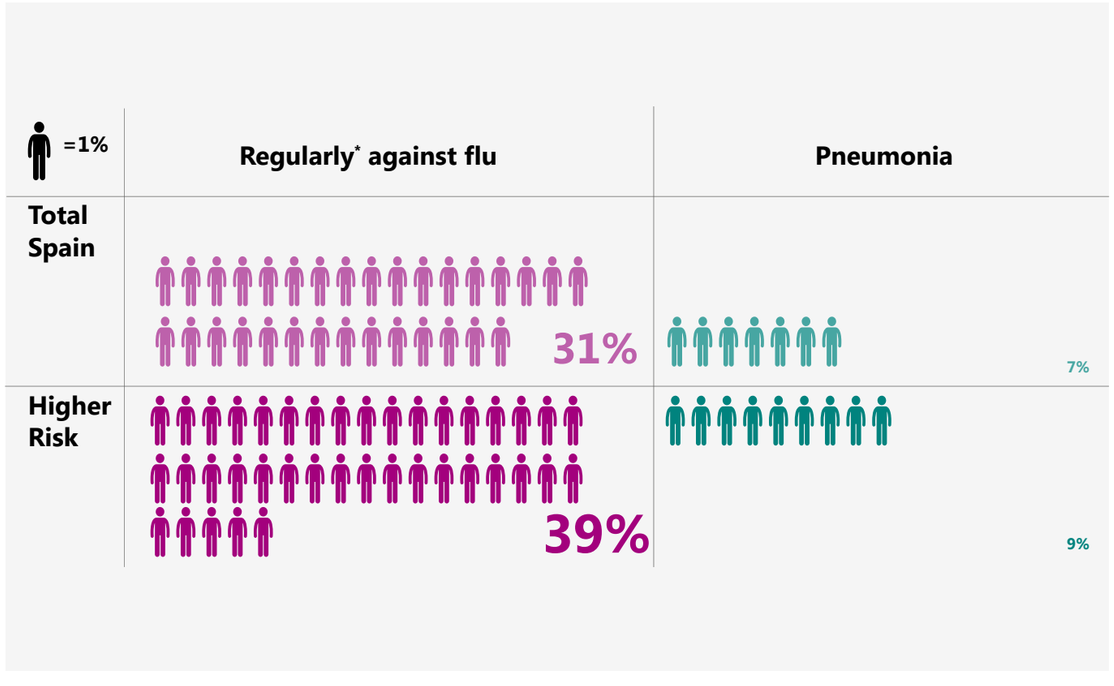
Awareness is only the first step and does not necessarily translate into action. The level of self-reported pneumonia vaccination among all older adults is 7%. Among the higher risk group only 9% have been vaccinated compared with 3% of those at lower risk. This leaves nine out of 10 of those most vulnerable to pneumonia unprotected. It can be compared with the 31% of the general older adult population (and 39% of those at higher risk of pneumonia) claiming to have been regularly vaccinated* against flu.

Looking at the patient pathway, from awareness of pneumonia to actual vaccination, reveals that, a significant proportion are lost at key steps along the way. Only a third (33%) of those aware of the pneumonia vaccination have had it, compared to 42% at a survey total level.

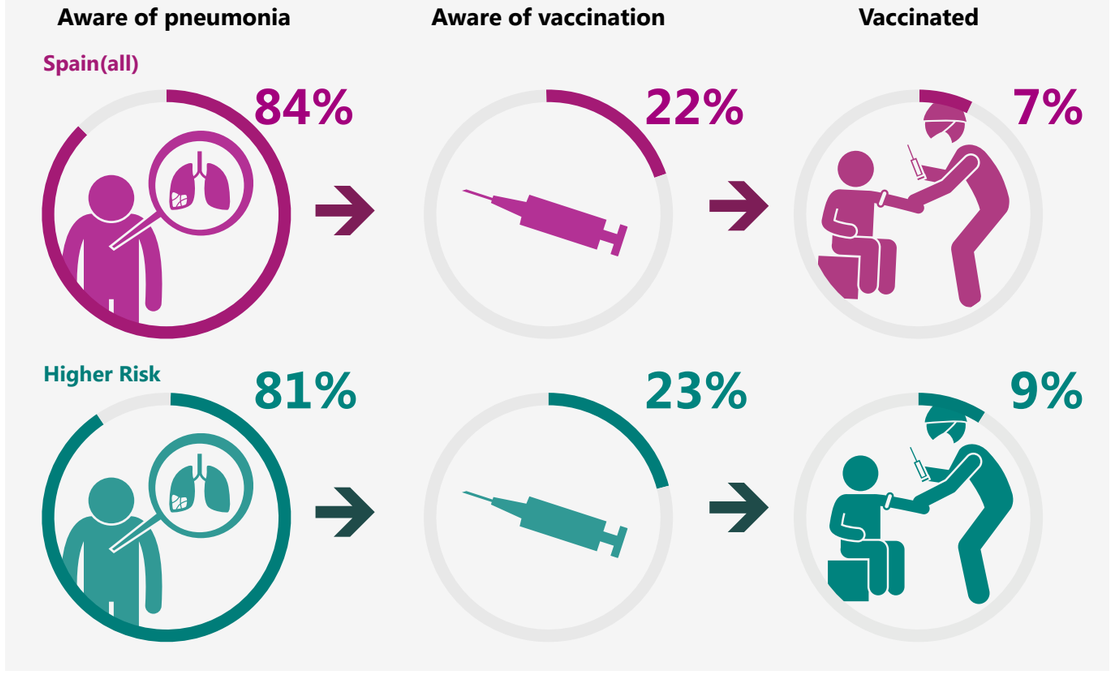
By far the most common driver for pneumonia vaccination is a prompt from a doctor (stated by 73% of those vaccinated against pneumonia – 64% stating GP or family doctor and/or 15% stating specialist doctor). This is consistent with the 92% who agree that they "follow their doctor's advice" when it comes to vaccination.

Similarly, when those who are aware of the pneumonia vaccine but have not received it are asked why not, the most common reason selected is "my doctor has never offered it to me" (49%). This further reinforces the important role that healthcare professionals (HCPs) have to play in increasing levels of pneumonia vaccination.

Self reported - vaccination levels



% lost at each key step of the patient journey



*Regularly vaccinated is defined as at least four times in the past five years

If the pneumonia vaccine were recommended by their doctor and at no cost to them, 63% of older adults (who have not already been vaccinated) would be likely to have it, providing a significant boost to vaccination levels. This figure rises to 66% of the higher risk group compared with 59% of those at lower risk.

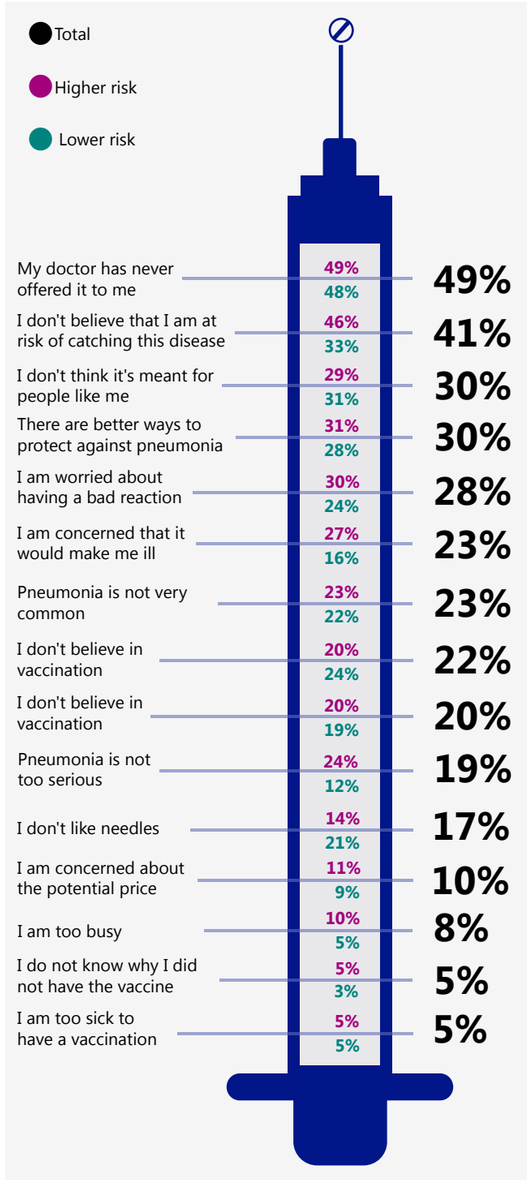
While physicians are undoubtedly key to raising immunisation rates, it would be overly simplistic to assume that it is just a question of offering it more frequently. With three in five of those aged 50 and older likely to take up the offer, this still leaves 29% who would be unlikely to have the vaccination (26% for the higher risk group)*.

Reasons for not being vaccinated against pneumonia other than "my doctor has never offered it to me" include "I don't believe I'm at risk" (41%), "I don't think it's meant for people like me" (30%) and "there are better ways to protect against pneumonia" (30%).

Fears over safety also feature, although to a lesser extent than in other countries. Among those who are aware of the pneumonia vaccine but have not had it, 28% are "worried about having a bad reaction" and 23% are "concerned it would make them ill". This issue is not specific to pneumonia vaccination with 20% of older adults agreeing that they "try to avoid vaccines because I think they are not safe."

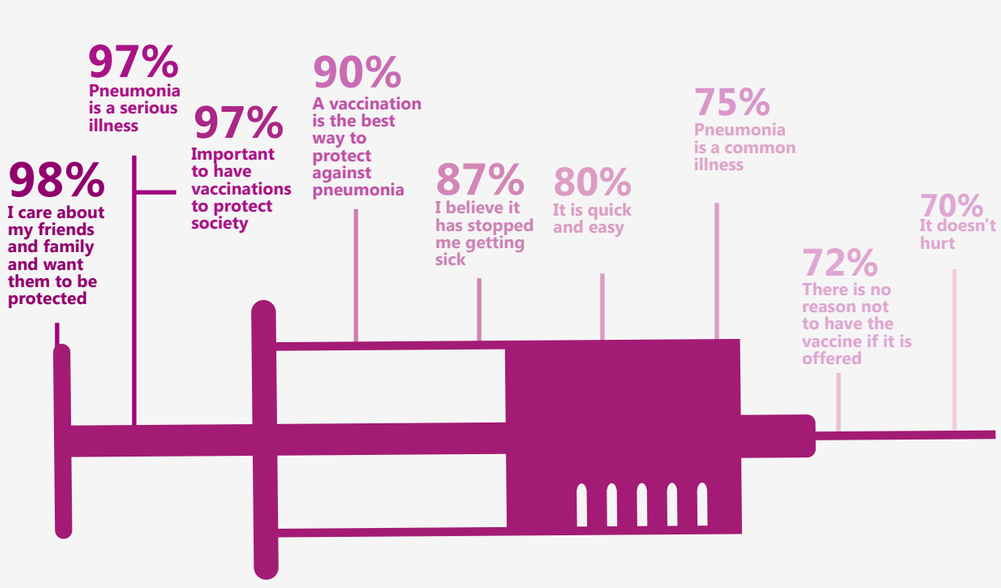
*The remainder answered "don't know"

Reasons for not being vaccinated against pneumonia



The majority (84%) of those who have had a pneumonia vaccination would recommend it. The main reasons for this are both the practical and the more emotional. On the practical side there is the belief that "pneumonia is a serious illness" (97%), "vaccination is the best way to protect against pneumonia" (90%), "it has stopped me getting sick" (87%) and "it is quick and easy" (80%). On a more emotional level there is "I care about family and friends and want them to be protected" (98%) and "it is important to have vaccinations to protect society" (97%).

Reasons for reccomending the pneumonia vaccine



Information needs

Spain has relatively low levels of pneumonia knowledge and vaccination awareness, a high proportion do not feel well informed about the disease

In Spain, less than 1 in 10 older adults feel very well informed about "pneumonia as a disease in general" (7%) or "risk factors for catching pneumonia" (6%). When it comes to vaccination against pneumonia, results are worse with 1 in 20 feeling very well informed (5%).

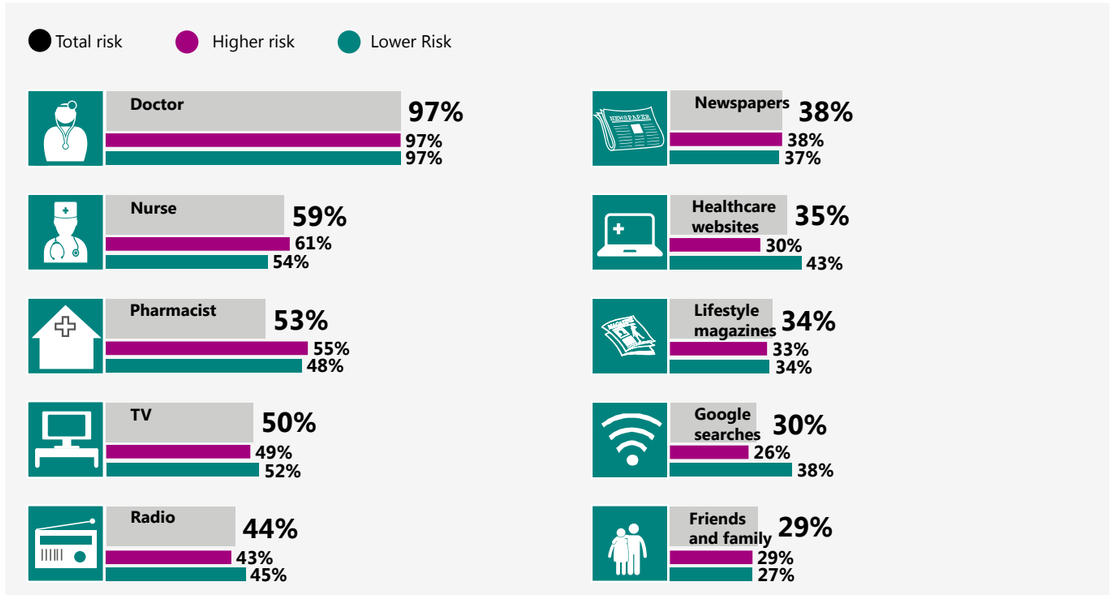
As a result of having pneumonia, people tend to feel better informed about "pneumonia as a disease in general" 52% very or fairly well informed vs. 29% for those with no personal experience of pneumonia) and about "risk factors for catching pneumonia" (48% very or fairly well informed vs. 27%). They also claim to be better informed about "vaccination against pneumonia" (22% very or fairly well informed compared to 13%).

Interestingly, while more past sufferers have been vaccinated against pneumonia (16% for those with experience of pneumonia vs. 6% of those without prior experience of pneumonia), they are just as likely to believe it is true that "pneumonia can only be treated and not prevented" (43% for those with experience of pneumonia vs 44% for those without).

The majority of adults think that there is a need for more information on pneumonia (63%), risk factors (62%) and vaccination (64%). While the doctor is the most popular source, pharmacists and nurses are also seen as important. They also display openness to multiple channels of information. For a general information campaign, popular media such as internet, TV and radio is felt to have a role to play. However, for more targeted communication the higher risk group appear less receptive to the internet as a source of further information.

	Survey total sample	Spain total	Higher risk sample	Lower risk sample
Pneumonia in general				
Very well informed	8%	7%	7%	6%
Fairly well informed	37%	25%	24%	27%
Not very well informed	42%	50%	50%	51%
Not at all informed	12%	16%	17%	14%
Risk factors for catching pneumonia				
Very well informed	7%	6%	6%	6%
Fairly well informed	35%	23%	22%	24%
Not very well informed	43%	50%	48%	55%
Not at all informed	14%	19%	21%	14%
Vaccination against pneumonia				
Very well informed	7%	5%	5%	5%
Fairly well informed	15%	9%	10%	6%
Not very well informed	25%	31%	29%	36%
Not at all informed	52%	53%	53%	51%

Sources of information older adults would like to use to find out more about pneumonia



Next steps from the research

The results of this study show that Spain still has some way to go when it comes to knowledge of pneumonia and pneumonia vaccination levels. Lower levels of pneumonia knowledge among older adults in Spain are also reflected in lower levels of concern.

There is a considerable proportion of those at higher risk of pneumonia who are unvaccinated and older adults express a desire for more information on all aspects of the disease. In particular, educating older adults on the risk it could pose to them personally.

Renewed efforts are needed to clearly communicate the following key messages:

- Pneumonia is more common and more serious than people may think
- Some forms of pneumonia are may be contagious
- Pneumonia poses a real risk to those aged 65 years and older, or suffering from certain medical conditions
- Pneumonia can be prevented as well as treated

Physicians, and allied health professional such as nurses & pharmacists have a key role to play in pneumonia education and prevention. They can be better supported through wider awareness campaigns in popular media, as well as the provision of better patient orientated materials to distribute. However, older adults should also be encouraged to be more proactive in understanding their personal risk of pneumonia and steps that can be taken to protect themselves.

All those with an interest in pneumonia and pneumonia prevention are encouraged to make use of the study's findings to drive debate and inform future policy.

"Don't underestimate the power of this new data. We can use this to speak to healthcare professionals, but also politicians and public health authorities. Think creatively how to get this out to the public." Dr Jane Barratt, Secretary General of the International Federation on Ageing

Please see the appendix for details on how to reference the PneuVUE® study or find out more.

UK

[Note: Survey total figures refer to results for the total sample of all nine (9) countries surveyed weighted to population size]

PneuVUE®
UK findings

Awareness and understanding of pneumonia is strong in the UK.

97%
claim to know what it is

88%
identify it as a lung condition

However, only
25%
think it's *true* that some forms of pneumonia may be contagious

Pneumonia is said to be a serious disease, but there is an apparent failure to link this to a risk to their own health and concern about the risk of catching pneumonia is low

96%
think pneumonia is serious

Only
23%
are concerned about the risk of catching pneumonia

13%
of those clinically defined as being at higher risk of pneumonia[5,8,9] recognise themselves as 'very much at risk'

When asked what causes the most deaths in the UK

9%
think pneumonia and flu

8%
think transport accidents

In reality, pneumonia is responsible for over 17x as many deaths as transport accidents and and 130x as many deaths as flu.*[10]

There is a lot of uncertainty about whether pneumonia is a preventable disease, and how to prevent it.

Only
43%
think it is *false* that "pneumonia can only be treated and not prevented"

A higher proportion think the following are effective at protecting against pneumonia

keeping fit and healthy	**90%**
compared to being vaccinated	**82%**

Compared to other countries, awareness of a preventative pneumonia vaccine is high and uptake heavily concentrated in the higher risk group

49%
are aware it is possible to be vaccinated against pneumonia

40%
of those at higher risk of pneumonia have been vaccinated compared with

5%
of the lower risk group

Doctors, and other allied health professionals such as nurses and pharmacists have a key role to play in widening awareness and raising vaccination rates.

72%
of those who have been vaccinated against pneumonia say it was prompted by their doctor

Most common reason for not being vaccinated is

68% My doctor has never offered it to me

Pneumonia was responsible for 29,165 deaths in the UK in 2013 compared with 1,711 for transport accidents and 222 for flu. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)

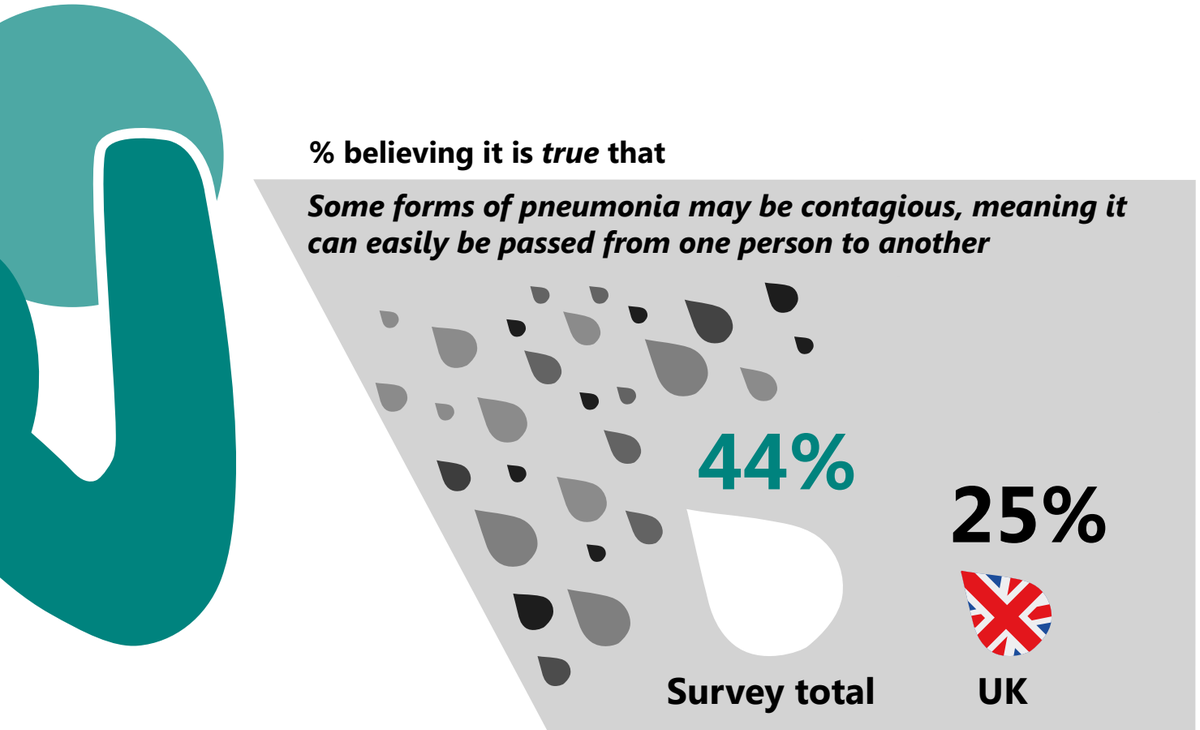
Pneumonia awareness

When it comes to pneumonia, awareness does not appear to be the problem as much as understanding.

Among older adults in the UK, virtually all (100%) have heard of pneumonia and 97% also claim to "know what pneumonia is". These are amongst the strongest results of all countries surveyed and the UK does well for pneumonia awareness. Despite this, there are some gaps around understanding disease transmission, risk factors for catching pneumonia and the number actually dying from it.

Most older adults (88%) correctly identify pneumonia as a lung infection, although almost one in 10 (9%) see it more as a "severe type of cold/ similar to flu". In line with its recognition as a lung infection, pneumonia is typically associated with trouble breathing (97%) and coughing (89%) as well as a high fever (88%), tiredness/ fatigue (88%) and chest pain (84%) but much less so with dizziness (43%), nausea (35%) and sneezing (33%).

Only one in four (25%) think it is *true* that "some forms of pneumonia may be contagious, meaning it can easily be passed from one person to another". This is low in relation to other countries surveyed.



Pneumonia is almost universally recognised as a serious illness with 96% rating it as extremely serious or rather serious. In the context of other conditions tested, this places pneumonia just behind meningitis (98%) but ahead of HIV (94%) and hepatitis B (89%). It is also far higher than the 73% considering influenza to be serious. The majority (91%) also agree it is *true* that it can take months to recover from pneumonia. In line with the higher proportion viewing pneumonia a serious compared to flu, 84% of older adults in the UK, agree it is *true* that "pneumonia is more deadly than flu".

While stated understanding of the severity of pneumonia is high, knowledge of the number of deaths it is responsible for is far lower. Just over half (57%) believe it is *true* that "up to 20% of adults who catch pneumonia will die from it" and pneumonia is felt to cause fewer deaths than other causes presented.

The survey asked which out of pneumonia, car accidents, heart disease and influenza results in the most adult deaths in their country. 72% correctly select heart disease as the biggest killer, however pneumonia, car accidents and influenza are chosen by the same proportion of people (9%/8%/9%). In reality however Eurostat figures for the UK (2013) show that pneumonia is responsible for 17* times as many deaths as transport accidents and over 130** times as many deaths as flu.[10]

**In 2013, pneumonia was responsible for 29,165 deaths in the UK compared with 1,711 for car accidents. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)*
***In 2013, pneumonia was responsible for 29,165 deaths in the UK compared with 222 for influenza. Taken from Eurostat causes of death data for all age groups (see references at end of chapter)*

Risk groups & risk factors

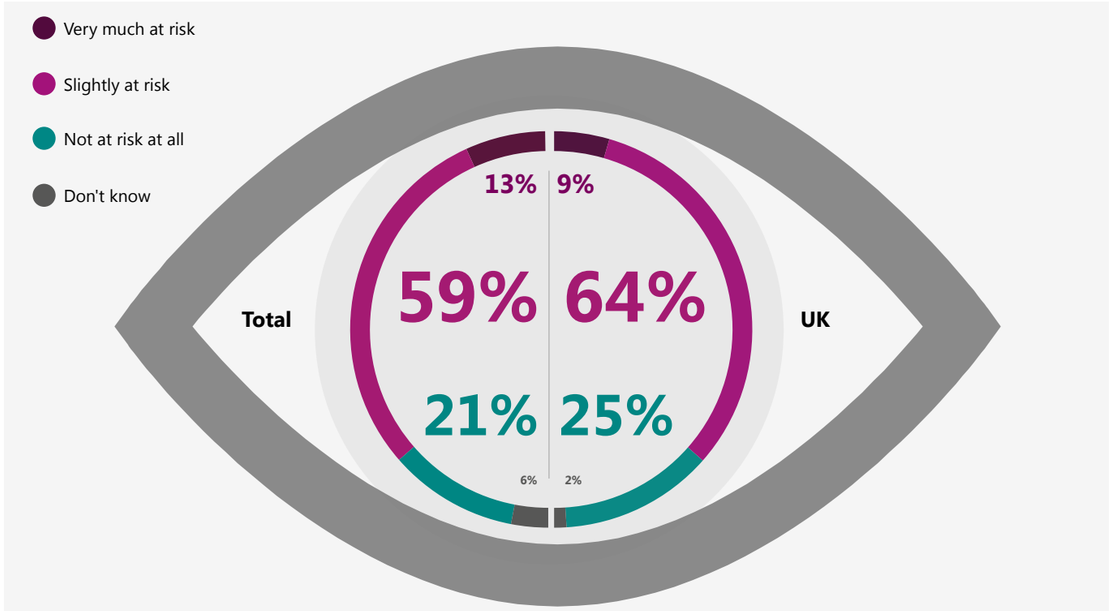
There is a tendency to project risk of pneumonia onto other people rather than acknowledge their own personal vulnerability.

This is reflected in an underestimation of the risk of catching pneumonia. Amongst those who have heard of pneumonia, the majority (64%) of older adults feel only slightly at risk of catching pneumonia and 25% state that they are not at risk at all. While this perceived risk of pneumonia is lower than that of catching influenza, it is greater than the perceived risk of catching hepatitis B and yet self-reported vaccination levels for the two conditions are the same (28% of older adults).

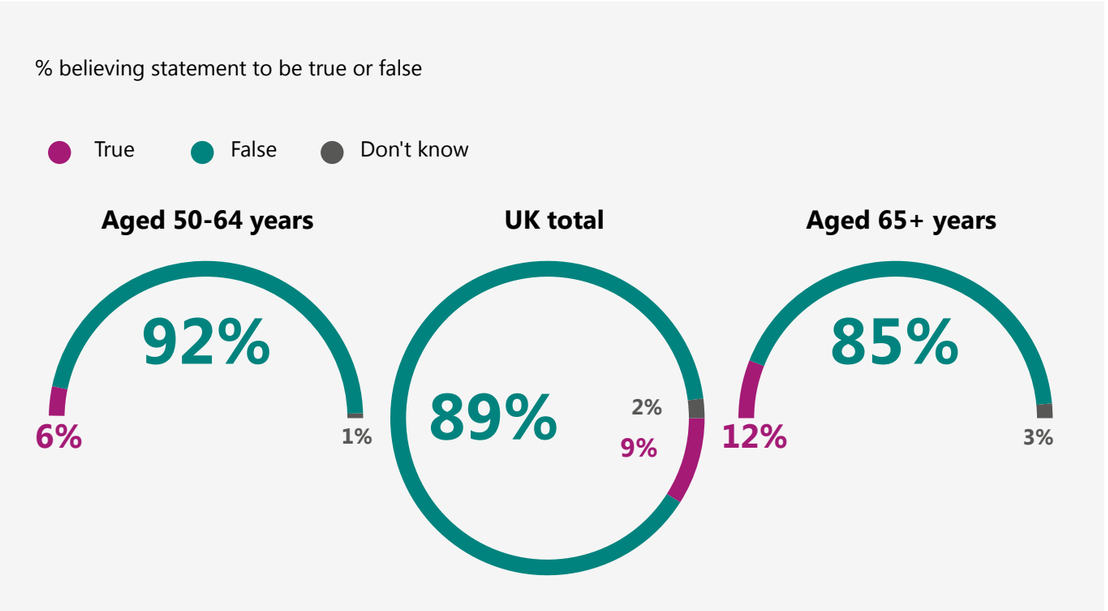
Just 9% of those aware of pneumonia consider themselves "very much at risk" despite 67% of the UK sample meeting one or more clinical criteria[5,8,9] for being at risk for pneumonia. Amongst the clinically defined higher risk group, just 13% believe themselves to be very much at risk. While this is significantly more than among the lower risk population, it still represents just one in eight of those with key pneumonia risk factors.

Only 1 in 10 (8%) feel *very* well informed about risk factors for catching pneumonia. However, the majority (89%) do recognise that pneumonia is not confined to unfit or unhealthy people and acknowledge it is *false* that "pneumonia does not affect fit and healthy people". This number is significantly lower among the 65 and above age group (85% think it is a *false* statement compared to 92% of younger respondents). Later in this report we will see again how many consider staying fit and healthy to be effective protection against pneumonia.

Perceptions of risk for pneumonia



Pneumonia does not affect fit and healthy people



The state of a person's health is more commonly associated with a higher than average risk of catching pneumonia than simply old age.

Overall, people with chronic lung conditions (96%) or long term medical conditions (80%) and smokers (85%) are most commonly identified as being at a higher than average risk of catching pneumonia. At the other end of the scale, "people who have difficulty swallowing" receives very little recognition (28%) despite being strongly associated with community acquired pneumonia in the elderly.[11]

Young children are most likely to be seen as being at lower than average risk (29%), perhaps reflecting how successful the national pneumococcal immunisation programme has been in this age group.

Looking at age, just 3% believe it is *true* that pneumonia *only* affects old people. This is not to say that age isn't recognised as a factor. When thinking more generally, 77% think adults over 65 are at higher than average risk of catching the disease compared to 41% for adults over 50. However, age is not given the same prominence as other health conditions.

Groups felt to be at a higher than average risk of catching pneumonia

Pneumonia is more likely to be seen as an illness that affects other people rather than themselves.

- 70% of adults aged 65 years and older identify "adults over 65" as being at a higher than average risk of catching pneumonia. However, when thinking about their own risk, just 10% consider themselves "very much at risk"
- 75% of smokers identify "smokers" as being at a higher than average risk of catching pneumonia. However, just 13% consider themselves to be "very much at risk"

This is carried through to level of concern about pneumonia, with a greater proportion expressing concern for older friends and family (54%) compared to concern for themselves (23%).

On the whole, people are not overly worried about the risk of catching pneumonia (76% are not very or not at all concerned compared to 8% who are very concerned and 15% who are fairly concerned).

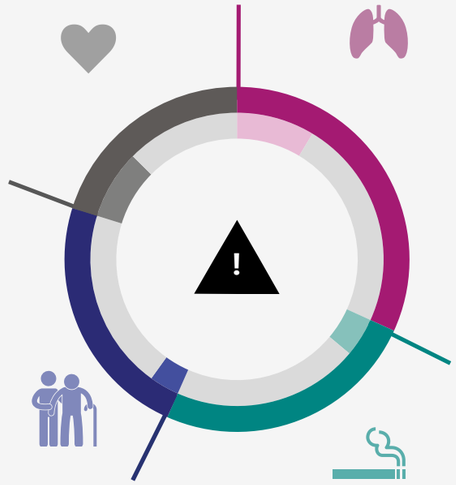
Disparity between those identifying group as being at a higher risk of pneumonia and considering them selves to be at a high risk

61%
of those suffering from heart disease think those that have heart disease are at higher risk

but only **23%** of those suffering with heart disease consider themselves very much at risk

70%
of those aged 65+ think those that are aged 65+ are at higher risk

but only **10%** of those aged 65+ consider themselves very much at risk



96%
of those with lung conditions think those with lung conditions are at higher risk

but only **26%** of those with lung conditions consider themselves very much at risk

75%
of smokers think smokers are at higher risk

but only **13%** of smokers consider themselves very much at risk

The impact of pneumonia

If pneumonia does strike, it tends to be worse than anticipated.

Pneumonia does touch people's lives. 13% claim to have personally suffered from the disease and 49% have a close friend or close family member who they believe has had pneumonia. Among sufferers, one in two (52%) claimed to have felt "surprised" when thinking back to that time when they had pneumonia, reinforcing the misconception that pneumonia is very much seen as an illness that happens to other people.

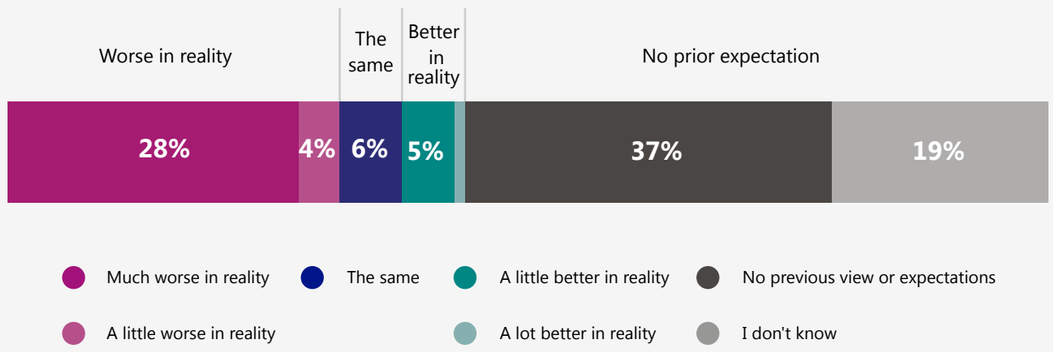
Continuing to reflect an "it will never happen to me" mentality, 1 in 3 (37%) had no preconceptions of what pneumonia would be like. However, amongst those who did, it turned out to be much worse in reality.

The most common areas where pneumonia has a *big* negative impact are "mobility/ ability to get out and about" (38%) followed by "social life" (31%). From an economic perspective, 22% see a *big* negative impact on their "work life" and 9% on their "finances". A greater proportion of those under 65 report a *big* negative impact of pneumonia compared to older sufferers.

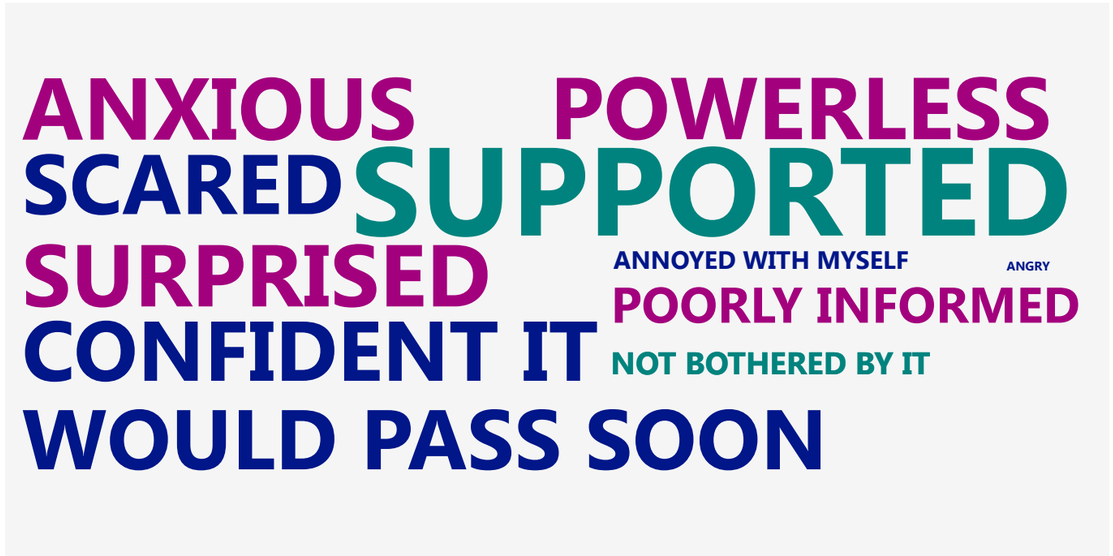
Thinking back to the time they were suffering from pneumonia, the most commonly selected *negative* emotions are "powerless" (53%), "anxious" (53%), "surprised" (52%), and "scared" (50%). On the *positive* side, the older adults report feeling "supported" (75%) and "confident it would pass soon" (50%). Consequently, while sufferers tend to be optimistic about the outcome, the actual experience of having pneumonia can be frightening. UK previous pneumonia sufferers are the most likely of all countries surveyed to report feeling "scared" (survey total figure is 35%).

Personal experience of pneumonia has an understandable impact on attitudes towards the disease. While perceptions of its seriousness are similar to those who have not previously had pneumonia, the sense of one's own risk is heightened (27% feel very much at risk compared to 7% of those who have not had pneumonia). In line with this, past sufferers' level of concern about catching pneumonia is also higher (21% are very concerned compared with 5% of those with no personal experience of pneumonia).

How the reality of having pneumonia compared to preconceptions



Emotions felt by sufferers of pneumonia



Pneumonia prevention

While vaccination gets more recognition in the UK, there is a lot of uncertainty about whether pneumonia is a preventable disease, and the measures that could be taken to prevent it.

When it comes to steps personally taken to stay healthy, older adults in the UK are the most likely* of all countries to select "Having all recommended vaccinations" (83%). This compares to a survey total figure of 68%. It does however come second to "eat a healthy diet" (91%). Additional steps taken include "exercise regularly" (74%) and "seek regular check-ups with their doctor" (67%). Only one in three (34%) select "take vitamins".

Continuing to reflect the UK's more positive attitude towards vaccination, 93% of older adults agree that they "trust vaccines to help prevent infectious diseases". The same proportion agree that they "follow their doctor's advice". The UK also has the lowest proportion (11% compared with a survey total of 27%) agreeing that "I try to avoid vaccinations because I think that they are not safe".

However, although open to vaccination, among older adults in the UK who have been vaccinated against pneumonia, only 2% claimed it was their own idea. The UK therefore appears to be one of the less proactive countries when it comes to requesting pneumonia vaccination.

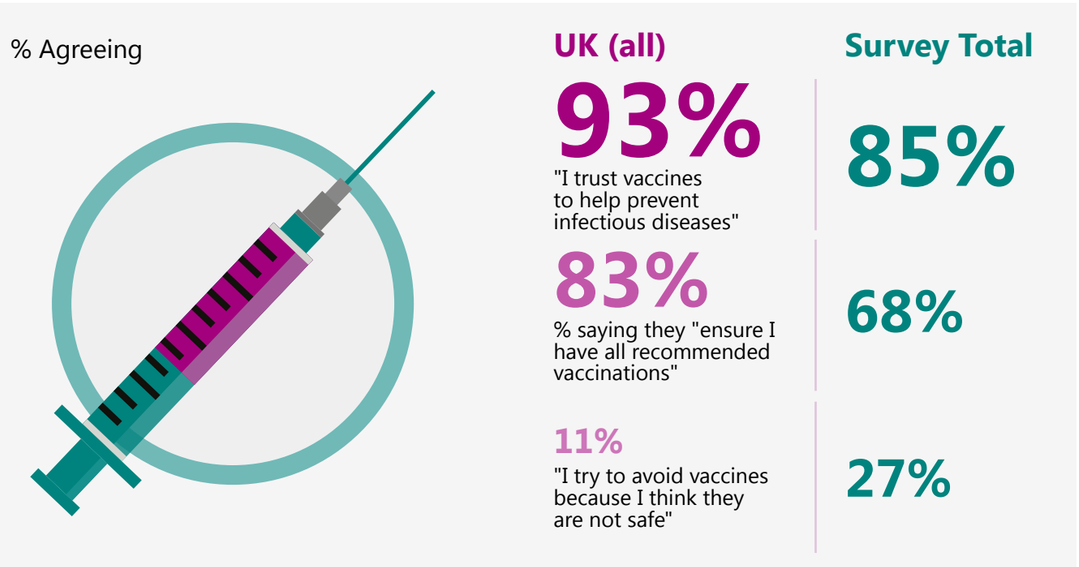
While almost everyone claims to be doing something to stay fit and healthy, when it comes to pneumonia, less than half believe it is *true* that pneumonia can be prevented. Older adults are divided as to whether "pneumonia can only be treated and not prevented". At a survey total level 46% think this statement is *true* compared to 43% believing it to be *false*.** Without this fundamental understanding, any talk of preventative strategies, let alone vaccination, would be premature.

It is clear that for many, lifestyle can be seen as effective at protecting against pneumonia. Respondents were presented with a list of possible measures including "keeping fit and healthy", "being vaccinated against pneumonia", "wearing warm clothes", "avoiding long periods in air conditioned rooms", not smoking" and "avoiding contact with sick children". When thinking about which steps are effective at protecting against pneumonia, being vaccinated comes in third place with 82% claiming it is effective. This is significantly higher than all other countries surveyed (survey total figure is 58%). The other most commonly selected responses are "keeping fit and healthy" (90%) and "not smoking" (84%).

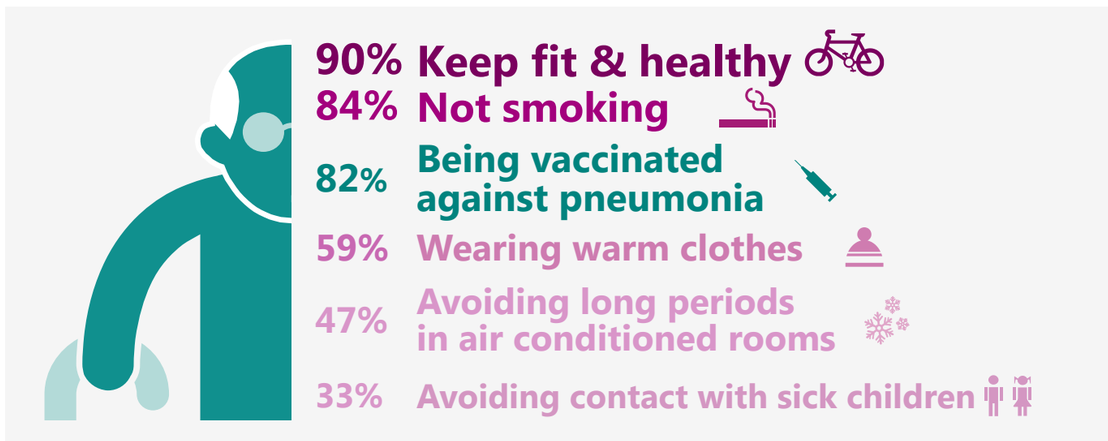
Older adults in the UK are least likely to see anecdotal measures such as "wearing warm clothes" (59%) or "avoiding long periods in air conditioned rooms" (47%) as effective. Similarly, the UK is least likely to think it is *true* that "being cold and wet for a long period puts you at high risk of pneumonia" (52% compared with a survey total of 75%).

While being good at identifying less effective ways of protecting against pneumonia, the implications of not knowing that pneumonia can be contagious can be seen here. Only one in three (33%) regard "avoiding contact with sick children" as effective (the lowest of all countries) and yet the expert panel considered avoidance of those who are ill to be one of the most important preventative measures that can be taken.

Attitude towards vaccination in general



Effective measures against protecting against pneumonia



*Joint 1st place with portugal

**Remainder answered 'don't know'

Pneumonia vaccination

Compared to other countries, awareness of a preventative pneumonia vaccine is high and uptake heavily concentrated in the higher risk group.

Overall, 49% of older adults in the UK are aware that it is possible to be vaccinated against pneumonia, compared with a survey total figure of 29%. Additional progress has also been made among the key target groups. Higher awareness is reported among those aged 65 and above (65% compared with 35% among those under 65) and those in the higher risk group (60% compared with 26% for those at lower risk). At 73%, those with either a lung condition or a weakened immune system are both most likely to be aware of the pneumonia vaccination.

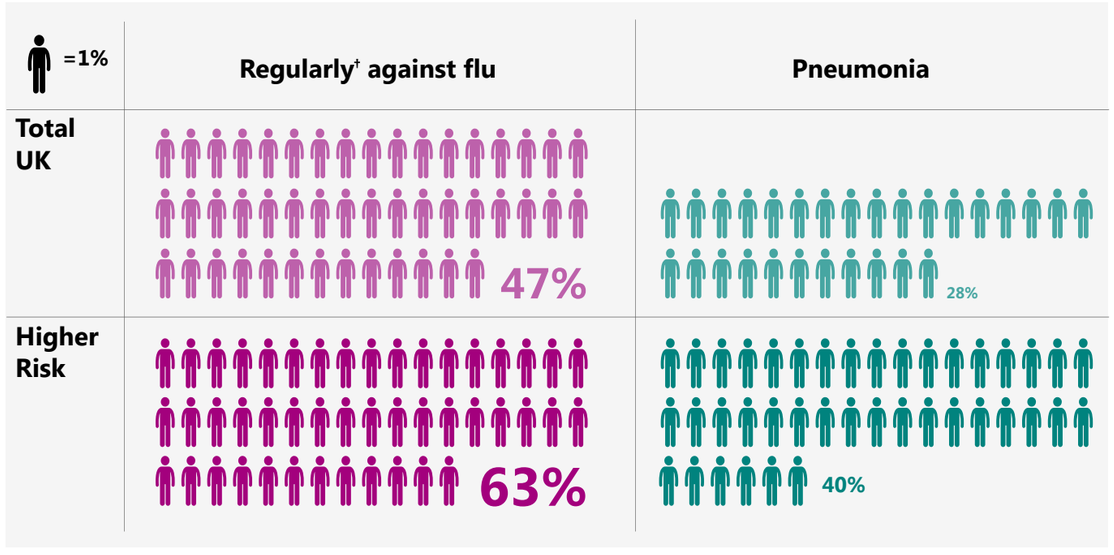
Awareness is only the first step and does not necessarily translate into action. The level of self-reported pneumonia vaccination among all older adults is 28% (although it drops to 17% in Scotland). This is heavily concentrated in the higher risk group with 40% vaccinated compared with 5% of those at lower risk. While high compared to other countries surveyed, this still leaves over half of those at higher risk unprotected. This can be compared to the 47% of the general 50 years and older population (and 63% of those at higher risk of pneumonia) claiming to have been regularly vaccinated† against flu.

Looking at the patient pathway from awareness of pneumonia to actual vaccination reveals that, while a significant proportion are lost at key steps along the way, this amount is lower compared to other countries. 58% of those aware of the pneumonia vaccination have had it, compared to 42% at a total survey level.

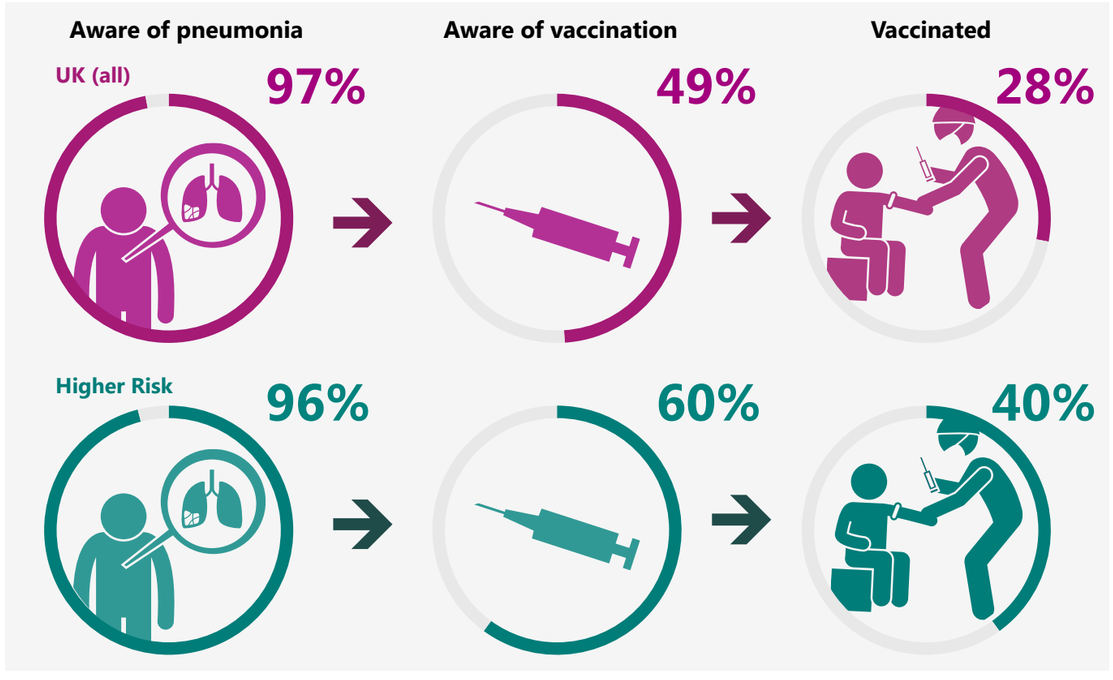
By far the most common driver for pneumonia vaccination is a prompt from a GP or family doctor (69%). This is consistent with the 93% who agree that they "follow their doctor's advice" when it comes to vaccination.

Similarly, when those who are aware of the pneumonia vaccine but have not received it are asked why not, the most common reason selected was "my doctor has never offered it to me" (68%). This further reinforces the important role that healthcare professionals (HCPs) have to play in increasing levels of pneumonia vaccination.

Self reported - vaccination levels



% lost at each key step of the patient journey



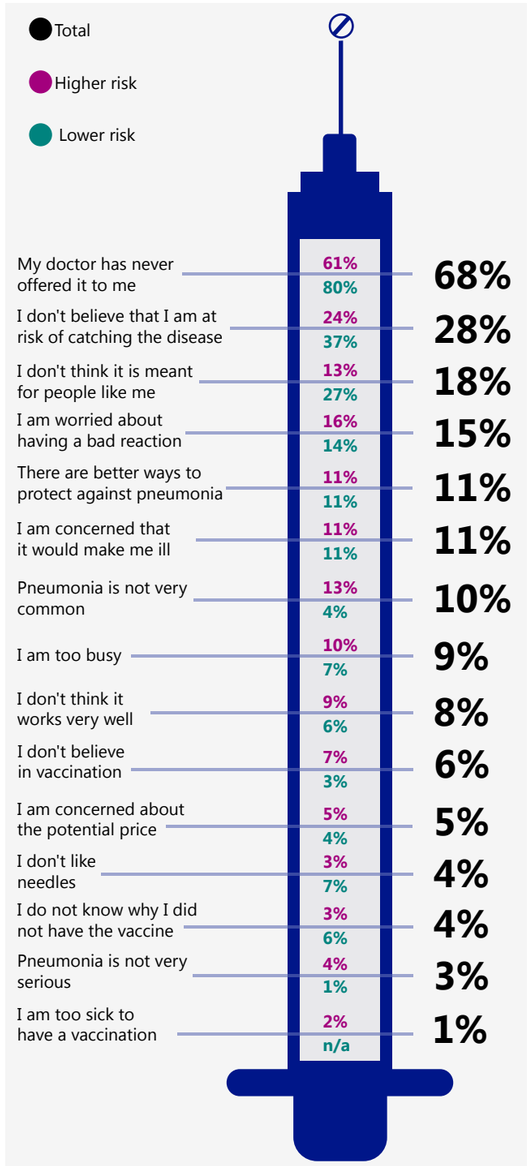
†*Regularly vaccinated is defined as at least four times in the past five years*

If the pneumonia vaccine were recommended by their doctor and at no cost to them, 75% of older adults (not already vaccinated) would be likely to have it, providing a significant boost to vaccination levels. This figure rises to 79% of the higher risk group compared with 71% of those at lower risk. Previous awareness of pneumonia vaccination leads to an even higher proportion likely to follow their doctor's advice and have the vaccination (84% of those previously aware compared with 72% of those unaware). Those in the North West of England would be most likely to follow this recommendation (90%).

This likelihood is amongst the highest of all countries surveyed, reiterating the acceptance of vaccination in the UK. It leaves just one in five of those at higher risk unwilling to have the pneumonia vaccine. Reasons for not being vaccinated against pneumonia other than "my doctor has never offered it to me" include "I don't believe I'm at risk" (28%), "I don't think it's meant for people like me" (18%), "there are better ways to protect against pneumonia" (11%) and "pneumonia is not very common" (10%).

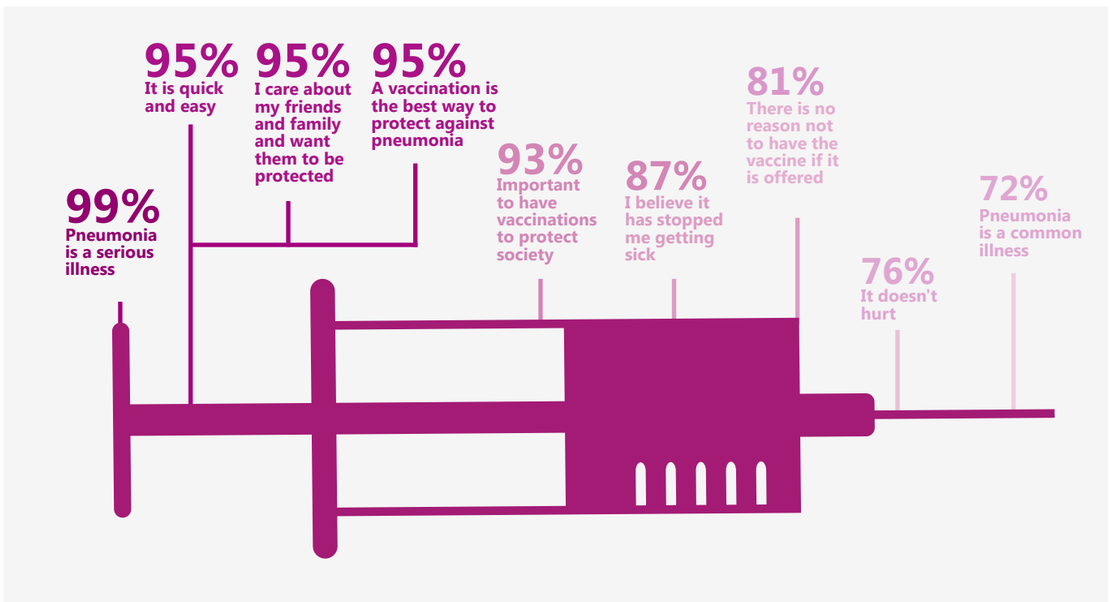
Fears over safety also feature, although to a lesser extent than in other countries. Among those who are aware of the pneumonia vaccine but have not had it, 15% are "worried about having a bad reaction" and 11% are "concerned it would make them ill". This issue is not specific to pneumonia vaccination with 11% of older adults agreeing that they "try to avoid vaccines because I think they are not safe."

Reasons for not being vaccinated against pneumonia



The majority (91%) of those who have had a pneumonia vaccination would recommend it. The main reasons for this are both the practical and more emotional. On the practical side there is the belief "pneumonia is a serious illness" (99%), "vaccination is the best way to protect against pneumonia" (95%) and "it is quick and easy" (95%). On a more emotional level there is "I care about family and friends and want them to be protected" (95%) and "it is important to have vaccinations to protect society" (93%).

Reasons for recommending the pneumonia vaccine



Information needs

Despite the UK showing relatively high levels of pneumonia knowledge and vaccination awareness, a high proportion do not feel well informed about the disease.

In the UK, only 1 in 10 older adults feel very well informed about "pneumonia as a disease in general" (11%) or "risk factors for catching pneumonia" (8%). When it comes to vaccination against pneumonia, results are slightly better with 15% feeling very well informed.

As a result of having pneumonia, people tend to feel better informed about "pneumonia as a disease in general" (73% very or fairly well informed compared with 58% for those with no personal experience of pneumonia) and about "risk factors for catching pneumonia" (63% very or fairly well informed compared with 49% of those with no personal experience of pneumonia). They also claim to be better informed about "vaccination against pneumonia" (50% very or fairly well informed compared with 37%).

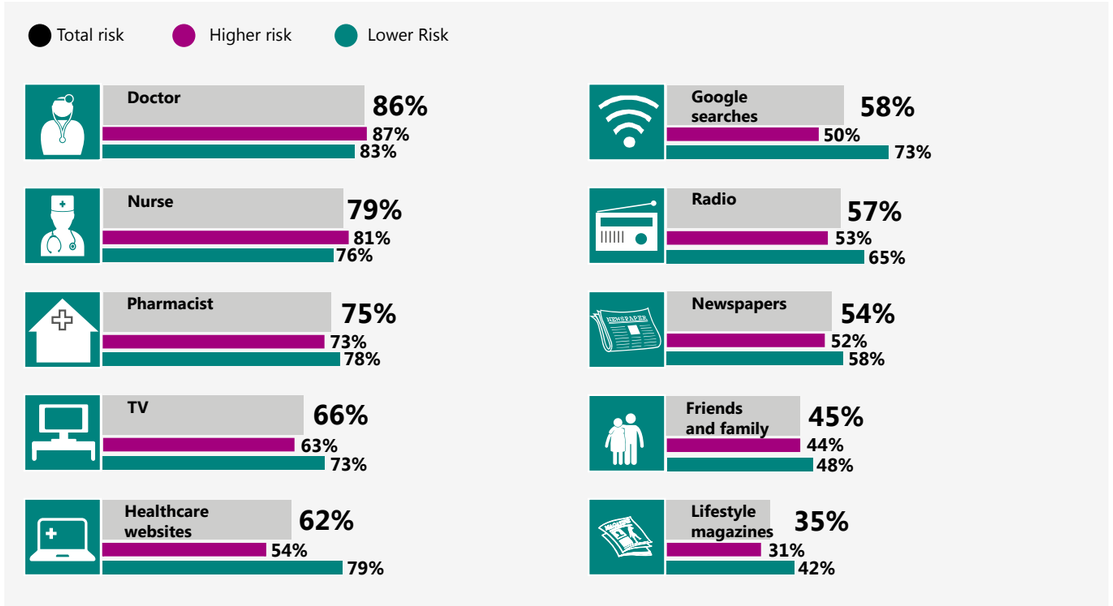
Interestingly, while more past sufferers have been vaccinated against pneumonia (42% compared with 26%), they are just as likely to believe it is true that "pneumonia can only be treated and not prevented" (43% for those with experience of pneumonia compared with 46% for those without).

The majority of adults think that there is a need for more information on pneumonia (76%), risk factors (80%) and vaccination (83%). While the doctor is the most popular source, pharmacists and nurses are also seen as important. Older adults also display an openness to multiple channels of information. For a general information campaign, popular media is felt to have a role to play. However, for more targeted communication the higher risk group appear less receptive to the internet, TV, radio and lifestyle magazines as sources of further information.

Levels of knowledge

	Total sample (all 9 countries)	UK total
Pneumonia in general		
Very well informed	8%	11%
Fairly well informed	37%	49%
Not very well informed	42%	33%
Not at all informed	12%	7%
Risk factors for catching pneumonia		
Very well informed	7%	8%
Fairly well informed	35%	42%
Not very well informed	43%	39%
Not at all informed	14%	9%
Vaccination against pneumonia		
Very well informed	7%	15%
Fairly well informed	15%	24%
Not very well informed	25%	29%
Not at all informed	52%	30%

Sources of information older adults would like to use to find out more about pneumonia



Next steps from the research

The results of this study show that, while results from the UK are among the highest when it comes to knowledge of pneumonia and pneumonia vaccination levels, it is important not to lose momentum. There is still a considerable proportion of those at higher risk of pneumonia who are unvaccinated and older adults express a desire for more information on all aspects of the disease. In particular, educating older adults on the risk it could pose to them personally.

Renewed efforts are needed to clearly communicate the following key messages:

- Some forms of pneumonia may be contagious
- Pneumonia poses a real risk to those aged 65 years and older, or suffering from certain medical conditions
- Pneumonia can be prevented as well as treated

Physicians, and allied health professional such as nurses and pharmacists have a key role to play in pneumonia education and prevention. They can be better supported through wider awareness campaigns in popular media, as well as the provision of better patient orientated materials to distribute. However, older adults should also be encouraged to be more proactive in understanding their personal risk of pneumonia and steps that can be taken to protect themselves.

All those with an interest in pneumonia and pneumonia prevention are encouraged to make use of the study's findings to drive debate and inform future policy.

*"Don't underestimate the power of this new data. We can use this to speak to healthcare professionals, but also politicians and public he*alth authorities. Think creatively how to get this out to the public." Dr Jane Barratt, Secretary General of the International Federation on Ageing

Please see the appendix for details on how to reference the PneuVUE® study or find out more.

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Appendix

Appendix A – Biographies of the expert panel

Professor Antoni Torres
Chief of the Respiratory Intensive Care Unit,
Hospital Clinic of Barcelona,
Barcelona, Spain

Antoni Torres received his medical degree in 1977 from the Faculty of Medicine at the University of Barcelona. He then received his Doctorate in 1983, with a thesis entitled "Transtracheal aspirative puncture and protected specimen brush in the diagnosis of respiratory infections". He is currently Chief of the Respiratory Intensive Care Unit and coordinator for all ICUs for the Clinical Institute of the Thorax.

Professor Torres' previous posts have included Director of the Clinical Institute of Pneumology and Thoracic Surgery (2000–2004) and Head of the Department of Pneumology and Respiratory Allergy of the Hospital Clinic of Barcelona (2004–2010). He is also Professor of Medicine in the Faculty of Medicine at the University of Barcelona.

Professor Torres is a national and international physician of reference in the following areas: Pulmonary infections: pneumonia, COPD, bronchiectasis and immunosuppression. Weaning from mechanical ventilation, non-invasive mechanical ventilation and acute respiratory distress syndrome. He is Associate Editor of the journals Thorax, European Respiratory Journal and Frontiers in Pharmacotherapy of Respiratory Diseases and Intensive Care Medicine and he sits on the Editorial Boards of many other journals dedicated to respirology and infectious diseases. He is also the author of more than 350 original articles and has directed 24 Doctoral Theses.

Professor Tobias Welte
Head of the Department of Pulmonary and Infectious Diseases
Hannover University , Germany

Prof Tobias Welte is Professor of Pulmonary Medicine and Head of the Department of Pulmonary and Infectious Diseases at Hannover University School of Medicine. Since 2004 Tobias Welte, Professor of Pulmonology at the MHH and one of the leaders of the competence center for infectious diseases. He received his doctorate in respiratory medicine from Hannover University in 1994. He was previously Professor of Pneumology and Intensive Care Medicine, and a specialist in infectious diseases at the University of Magdeburg.

He is Past President of the German Society of Pneumology (DGP) and current Vice-President of the German Society of Sepsis.

He also serves on the executive board of the German Center of Lung Research (DZL), the internal board of the German Center of Infectious Diseases (DZIF) and on the board of 'Atemwegsliga', and is a member of the working group on mechanical ventilation for the German Society of Critical Care (DIVI) and the spokesman of the review panel of the German Research Foundation (DFG). In addition, he is the chairman of the German Network for Community-acquired Pneumonia (CAPNET) Foundation and an advisory board member of the German Sepsis Network (SEPNET).

Professor Welte has published around 500 papers in peer-reviewed journals and contributed chapters to over 100 books.

Dr Jane Barratt
Secretary General, International Federation on Ageing
BSc, MSc, PhD

Dr Barratt is the Secretary General of the International Federation on Ageing (IFA) comprising government, industry, academia and non-governmental members in 62 countries and representing some 50 million older people. She has extensive international experience across sectors and disciplines in the cross cutting fields of ageing and disability and has been pivotal in the IFAs growth and position over the last 12 years.

Dr Barratt has direct responsibility for the IFAs global operational performance, quality and strategic implementation and business development including representation at the United Nations in New York, Geneva and Vienna and the formal relations with the Ageing and Life Course Department of the World Health Organization. She is a member of the Executive Committee for the World Health Organization (WHO) Global Network of Age-friendly cities and communities which is responsible for setting the global strategic direction.

Dr Barratt is a Churchill Fellow, and honored to receive the Queen Elizabeth II Diamond Jubilee Medal in Canada in recognition of her commitment and passion to enhance the understanding of issues relating to ageing and engaging in dialogue with governments and the private sector to improve the quality of life of older people.

Dr Barratt serves on several national and international boards both public and private sectors and is an advisor of international studies related to the care of older people. She is Chair, Monitoring Committee of the Canadian National Centers of Excellence and Deputy Chair, Selection Committee, National Centers of Excellence. She is also currently a member of the Global Agenda Council on Ageing of the World Economic Forum.

Dr Barratt strives to strengthen the roles and relationships between government, NGOs, academia and industry in order to help shape and influence policy to improve the quality of life of older people. In many leadership positions she has facilitated changes in organizational management and the analysis of governance and management leading to improvements in policies, programs and client outcomes across sectors and disciplines.

Jane is an accomplished international speaker and facilitator on a broad range of global ageing and disability related topics and presents them in a way that simplifies the most complex, captivates, entertains and stimulates audiences.

Appendix B – Referencing the PneuVUE® study

You are welcome to make use of the data in the PneuVUE® study and further information is available on request at: PneuVUE@ipsos.com

When doing so, please ensure that the following description of the study is included:

Ipsos MORI, working with sub-contractors Kudos Research, conducted quantitative fieldwork between 23rd November 2015 and 15th February 2016 on behalf of Pfizer. A total of 9,029 adults aged 50 and over were surveyed across nine EU countries (c. 1000 interviews in each of United Kingdom, Germany, France, Portugal, Spain, Italy, Greece, Austria and Czech Republic) via 20 minute computer assisted telephone interviews. Quotas were set on age, gender, location and employment status to achieve broadly representative samples. Total level results have been weighted to reflect the number of people aged 50 years and above in each country, and ensure the sample is nationally representative within country (based on 2011 Eurostat census data).

For any questions relating to data analysis or interpretation, please contact Ipsos MORI at: PneuVUE@ipsos.com

Appendix C - Sample details

	Total		Higher risk of pneumonia		Lower risk of pneumonia	
	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted
Total	9,029		6,356	6,315	2,673	2,714
Austria	1000	208	139	333	69	208
Czech Republic	1,002	253	182	281	71	253
France	1,001	1,571	1,080	313	491	1,571
Germany	1,001	2,221	1,622	270	599	2,221
Greece	1,000	280	216	227	64	280
Italy	1,008	1,625	1,132	306	493	1,625
Portugal	1,001	271	193	286	77	271
Spain	1,016	1,120	761	325	358	1,120
UK	1,000	1,481	989	332	492	1,481

Austria - regional breakdown		
	Unweighted	Weighted
Total	1000	208
Burgenland	38	8
Niederösterreich	174	36
Wien	156	32
Kärnten	85	18
Steiermark	164	34
Oberösterreich	194	40
Salzburg	69	14
Tirol	72	15
Vorarlberg	48	10

Czech Republic- regional breakdown		
	Unweighted	Weighted
Total	1002	253
Praha	139	35
Strední Cechy	117	30
Jihozápad	131	33
Severozápad	128	32
Severovýchod	151	38
Jihovýchod	72	18
Strední Morava	128	32
Moravskoslezsko	136	34

France - regional breakdown		
	Unweighted	Weighted
Total	1001	1571
Île De France	157	246
Bassin Parisien	176	276
Nord - Pas-De-Calais	55	86
Est	87	137
Ouest	141	221
Sud-Ouest	119	187
Centre-Est	113	177
Méditerranée	132	207
Départements D'Outre-Mer	21	33

Germany - regional breakdown		
	Unweighted	Weighted
Total	1001	2221
Baden-Württemberg	111	246
Bayern	162	359
Berlin	38	84
Brandenburg	37	82
Bremen	10	22
Hamburg	20	44
Hessen	80	178
Mecklenburg-Vorpommern	24	53
Niedersachsen	87	193
Nordrhein-Westfalen	196	435
Rheinland-Pfalz	55	122
Saarland	15	33
Sachsen	62	138
Sachsen-Anhalt	30	67
Schleswig-Holstein	40	89
Thüringen	34	75

Greece - regional breakdown		
	Unweighted	Weighted
Total	1000	280
Anatoliki Makedonia, Thraki	65	18
Kentriki Makedonia	142	40
Dytiki Makedonia	33	9
Thessalia	73	20
Ipeiros	26	7
Ionia Nisia	15	4
Dytiki Ellada	70	20
Sterea Ellada	53	15
Peloponnisos	58	16
Attiki	373	104
Voreio Aigaio	21	6
Notio Aigaio	26	7
Kriti	45	13

Italy - regional breakdown		
	Unweighted	Weighted
Total	1008	1625
Piemonte	91	147
Valle D'Aosta/Vallée D'Aoste	2	3
Liguria	31	50
Lombardia	163	263
Abruzzo	26	42
Molise	7	11
Campania	73	118
Puglia	58	94
Basilicata	12	19
Calabria	34	55
Sicilia	87	140
Sardegna	31	50
Provincia Autonoma Di Bolzano/Bozen	4	6
Provincia Autonoma Di Trento	11	18
Veneto	76	123
Friuli-Venezia Giulia	20	32
Emilia-Romagna	85	137
Toscana	66	106
Umbria	18	29
Marche	29	47
Lazio	84	135

Portugal - regional breakdown		
	Unweighted	Weighted
Total	1001	271
Norte	313	85
Algarve	34	9
Centro	259	70
Lisboa	260	70
Alentejo	90	24
Região Autónoma Dos Açores	24	6
Região Autónoma Da Madeira	21	6

Spain - regional breakdown		
	Unweighted	Weighted
Total	1016	1120
Galicia	65	72
Principado De Asturias	35	39
Cantabria	16	18
País Vasco	42	46
Comunidad Foral De Navarra	18	20
La Rioja	11	12
Aragón	31	34
Comunidad De Madrid	148	163
Castilla Y León	77	85
Castilla-La Mancha	54	60
Extremadura	30	33
Cataluña	145	160
Comunidad Valenciana	92	101
Illes Balears	26	29
Andalucía	151	166
Región De Murcia	31	34
Ciudad Autónoma De Ceuta	3	3
Ciudad Autónoma De Melilla	1	1
Canarias	40	44

UK - regional breakdown		
	Unweighted	Weighted
Total	1000	1481
North East	43	64
North West	114	169
Yorkshire And The Humber	84	124
East Midlands	76	113
West Midlands	92	136
East Of England	97	144
London	95	141
South East	141	209
South West	90	133
Wales	53	78
Scotland	89	132
Northern Ireland	26	38

Appendix D - Details of Pfizer sponsored pneumonia awareness campaigns

During the fieldwork period, or immediately before, pneumonia awareness campaigns sponsored by Pfizer were running in seven out of the nine markets.

No direct references were made to the campaigns in the survey but all respondents were asked if they had seen any material promoting or raising awareness of pneumonia or the pneumonia vaccine in the past 3 months (not necessarily sponsored by Pfizer).

	Campaign dates	Format	Key message	% having seen <u>any</u> promotional material
Austria	Oct-Nov	Print, TV, lay media, gadgets, 3rd party website	Risk factors	14%
Czech Republic	Oct-Dec	TV (Branded), Print, Advertorials, Website	Talk to your doctor about vaccination	8%
France	n/a			2%
Germany	Nov-Feb	TV, lay media, Print, Website, Advertorials	Risk factors (age)	6%
Greece	Nov-Feb	TV documentary, Radio, lay media, website, marathon,	Vaccination saves lives	10%
Italy	Nov-Feb	Print, Risk App, celebrity endorsement activities	Risk factors (age)	5%
Portugal	Oct-Dec	TV, PR event, lay media	Pneumonia death rates	13%
Spain	n/a			4%
UK	Oct-Dec 2015	Radio, Website, lay media, Print & PR	Prevalence of pneumonia	9%