

# Pneumonia vaccination for employees exposed to welding and metal fume

## Introduction

This information sheet has been developed jointly between EEF, HSE and CMF and in consultation with Unite to help those involved with welding or other processes where exposure to welding or metal fume may occur. This guidance may go further than the minimum you need to do to comply with the law. Its purpose is to give guidance to employers who are considering offering the pneumonia vaccine (PPV) for employees exposed to welding or metal fume who may be at risk of pneumococcal lobar pneumonia.

## Background

In October 2012 the Department of Health (DOH) issued the following revised guidelines,<sup>1</sup> which recommend that employers make arrangements for the vaccination of employees exposed to welding or metal fume against pneumonia:

*There is an association between exposure to metal fume and pneumonia and infectious pneumonia, particularly lobar pneumonia and between welding and invasive pneumococcal disease. PPV (single 0.5 ml dose in those who have not received PPV previously) should be considered for those at risk of frequent or continuous occupational exposure to metal fume (eg welders), taking into account the exposure control measures in place. Vaccination may reduce the risk of invasive pneumococcal disease but should not replace the need for measures to prevent or reduce exposure.*

## Control of welding and metal fume

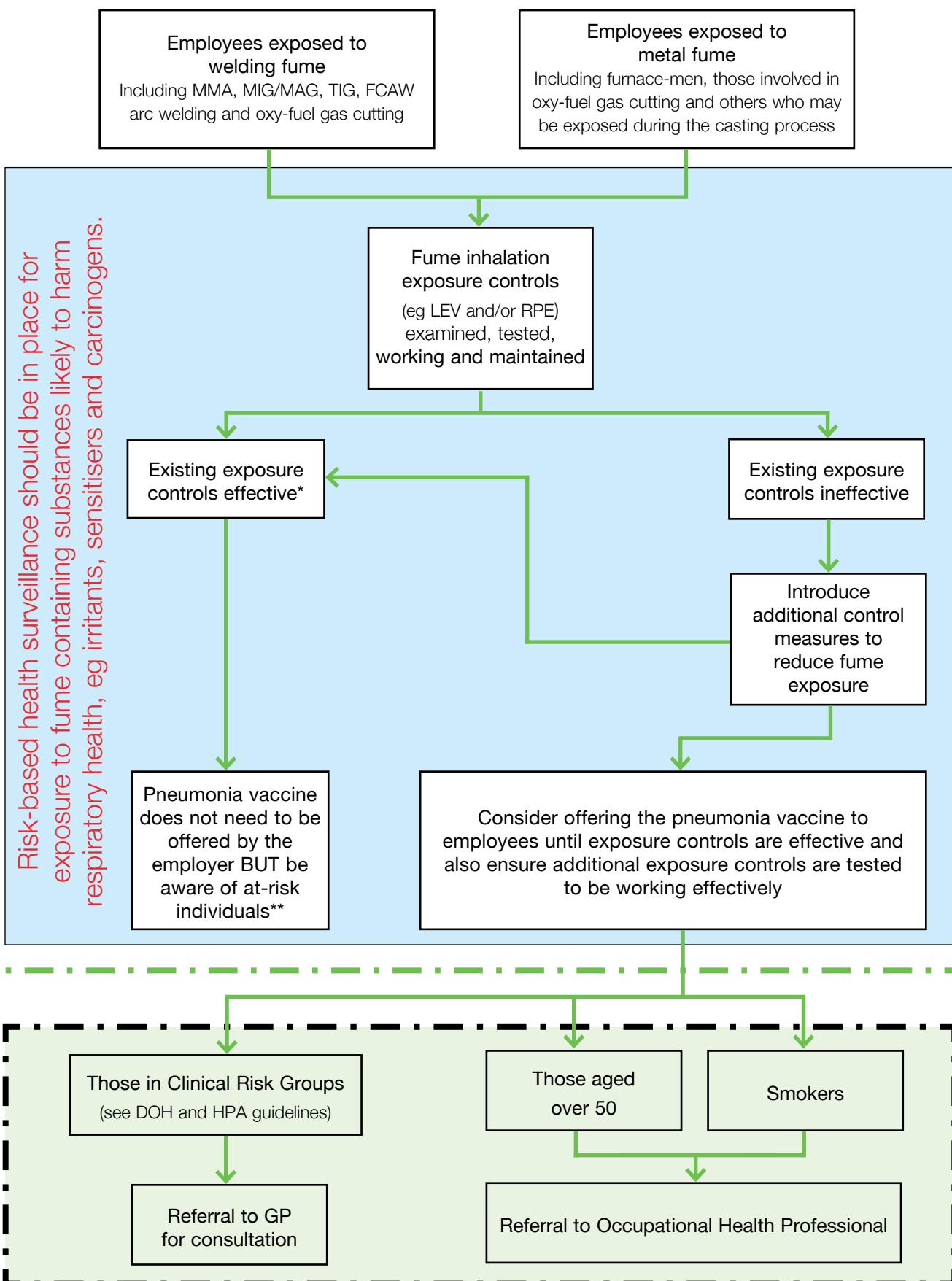
If fume is not properly controlled, workers exposed to welding fume and metal fume are at risk of developing metal fume fever, occupational asthma, lobar pneumonia, and cancer.<sup>2</sup> Current evidence suggests that exposure to welding fume may cause chronic obstructive pulmonary disease (COPD), however, there is insufficient evidence to prove a definite link.

Our guidance and that of the DOH make it clear that exposure control measures should be in place to prevent or reduce exposure to welding or metal fume.

Employers should first prioritise the control of exposure to welding and metal fume by adopting the hierarchy of control measures specified under Coshh 2002<sup>3,4,5</sup> **before** considering offering the pneumonia vaccine to their employees.

**Figure 1** is a simple pneumonia vaccine decision flowchart. Its purpose is to help employers who may want to consider providing the vaccine to their employees.

Figure 1 Pneumonia vaccination for employees exposed to welding and metal fume



## Why vaccinate employees against pneumonia?

While COSHH measures must be taken to reduce fume exposure, vaccination might be an appropriate further, or interim, step to manage the residual risk to a worker still exposed to welding or metal fume becoming more susceptible to pneumonia. It is estimated<sup>6</sup> that breathing metal fume at work leads to 40–50 welders each year being hospitalised due to any form of pneumonia. About two of these patients die each year from the disease.

Unfortunately, there are no research studies which specify how much exposure to welding or metal fume (dose) will result in an increased susceptibility to pneumonia (response).

It is therefore necessary to take the following factors into account in reaching a decision about whether or not vaccination should be offered:

- efficacy of COSHH control measures;
- quantity of welding or metal fume generated;
- duration of exposure;
- whether employee is  $\geq 50$ ;<sup>6</sup>
- whether employee is a smoker;
- whether employee has a pre-existing health condition, eg COPD.

If employees have a pre-existing health condition and they are in a clinical risk group recognised in the DOH and HPA<sup>7</sup> guidelines, eg COPD, they should already have been offered the PPV vaccine by their GP.

(\*/\*\* refer to flowchart)

\* Remember, make sure your exposure to fume is well controlled by properly assessing the work, installing engineering controls where required, ensuring the workers know how to use (and are using) them and that they are maintained. If control relies on respiratory protective equipment (RPE) it must be suitable, maintained and worn with a good face-fit. All this is NOT a once-only activity and checks may need to be repeated.

\*\* If fume exposure is well controlled then it is up to individual employers to decide whether or not they offer the vaccine. They may decide, for example, to limit the availability of the vaccine to exposed employees in 'high risk' groups such as smokers or older workers.

If fume exposure is not well controlled, employers cannot rely on the vaccine and must implement effective COSHH control measures.

## Implementing a pneumococcal pneumonia vaccination programme

The decision to offer the vaccination for pneumococcal pneumonia should be made by employers as an additional protective measure to the combination of fume exposure control measures already in place.

The vaccine is optional for employees, they should not be pressurised into having it, or discriminated against if they choose not to. In common with all other health and safety issues, you should consult with your employees and their representatives when considering such occupational health risks and ways to manage them.

Employers choosing to run a vaccination programme are advised to:

- make arrangements for vaccination with a reputable occupational health provider;
- explain to employees that:
  - the vaccine does not offer protection against other illnesses caused by welding or metal fume, such as asthma;
  - the vaccination does not guarantee them protection from pneumonia and that the vaccination may have a limited duration of effectiveness;
  - all the other control measures remain necessary.

## Enforcement

Vaccination is not a regulatory requirement. Enforcement action will not be taken against employers who have made the decision not to implement a vaccination programme based on a suitable and sufficient COSHH risk assessment and can demonstrate that fume exposure is effectively controlled.

## References

- 1 *Immunisation against infectious disease (The Green Book)* (Third edition) The Stationery Office 2006 ISBN 978 0 11 322528 6 updated by the Department of Health, October 2012 [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/216088/Green-Book-Chapter-25-v4\\_0.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216088/Green-Book-Chapter-25-v4_0.pdf)
2. [www.hse.gov.uk/aboutus/meetings/ias/acts/watch/230210/watch-february-2010-welding-annex2.pdf](http://www.hse.gov.uk/aboutus/meetings/ias/acts/watch/230210/watch-february-2010-welding-annex2.pdf)
- 3 *Control of substances hazardous to health. The Control of Substances Hazardous to Health Regulations 2002 (as amended). Approved Code of Practice and guidance L5* (Sixth edition) HSE Books 2013 [www.hse.gov.uk/pubns/books/L5.htm](http://www.hse.gov.uk/pubns/books/L5.htm)
- 4 [www.hse.gov.uk/welding/fume-welding.htm](http://www.hse.gov.uk/welding/fume-welding.htm)
- 5 *Control of fume arising from electric arc welding of stainless steels* Operational Circular OC 668/29 HSE 2001
- 6 Palmer KT and Cosgrove MP 'Vaccinating welders against pneumonia' *Occupational Medicine* 2012 **62** 325–330
- 7 Pneumococcal vaccination recommendations – Who should be vaccinated? Public Health England [www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/Pneumococcal/GuidelinesPneumococcal/pneumoRecommendations/](http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/Pneumococcal/GuidelinesPneumococcal/pneumoRecommendations/)

## **Further information**

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit [www.hse.gov.uk](http://www.hse.gov.uk). You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

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This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

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