

Health and Safety Executive advice on pneumonia jabs for welders 'flawed,' say experts

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Over the past 20 years, a growing body of evidence has linked exposure to metal fumes with a heightened risk of developing, and dying from, bacterial lobar pneumonia.

It is not clear exactly why this happens, but there are indications that the [tiny particles](#) in welding fumes boost the stickiness of [pneumococcal bacteria](#) to the cells lining the airways of the lungs.

The scientific evidence was sufficient to prompt the government's independent advisory body, the Joint Committee on Vaccination and Immunisation (JCVI), to recommend in 2011 that employers offer [welders](#) a jab to protect them against the infection.

But, on the advice of the UK Health & Safety Executive, which aims to safeguard the health of the working population, the Department of Health in England decided that a blanket recommendation was not required.

Vaccination should be considered in the light of measures taken to curb the amount of exposure to metal fumes, it said.

Subsequently, the Health and Safety Executive (HSE) published guidance for employers, urging them to prioritise controls on exposure, and emphasising that vaccination was not a regulatory requirement,

provided that adequate steps had been taken to address fume levels.

But, write the authors: "A fundamental flaw of this approach is that, as the HSE's guidance acknowledges, '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)'."

As a result, it is impossible to tell what threshold of exposure is critical, and what limits are needed to curb the risk, irrespective of whether the HSE feels it knows what constitute effective controls on exposure, they say.

Using new data from the Office for National Statistics on deaths by occupation in England and Wales during 2001-2010, the authors checked whether welders still had a higher risk of pneumonia than people in other jobs. They compared their calculations with a similar analysis for the period 1991-2000.

Between 2001 and 2010, 2863 men aged 16-74 died from pneumococcal and unspecified lobar pneumonia across all job categories compared with 3234 between 1991 and 2000.

But, just as in 1991-2000, deaths from pneumonia among welders in 2001-2010 were significantly more common than in other workers. In particular, welders of working age were more than 3.5 times as likely to die from pneumococcal pneumonia as men in other jobs.

Based on these figures, the authors estimate that there were 11 excess deaths nationally among welders from pneumonia in 2001-10. And while this is around half of what it was in 1991-2000 (19), it still means that "welders continued to experience significant excess mortality from pneumococcal and unspecified lobar pneumonia during 2001-2010," they write.

"Deaths are only the tip of the iceberg," points out lead author Professor David Coggon in an accompanying podcast. "For every excess death there will be many more cases of ill health, some of which will be quite serious," he says, adding: "Pneumonia is not just a disease of old people, it can strike at all ages."

The calculations prompt the authors to conclude that regulatory bodies around the globe should consider making the offer of vaccination for welders mandatory, and they suggest that the HSE should reconsider its position on the job.

"Controls on exposure are important, but as currently applied in the UK, they appear not to provide adequate protection," they say, adding that the situation in the UK is unlikely to be unique.

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