

## LETTER

## Allergic chromate dermatitis to cement in Australia: an ongoing problem

Occupational allergic contact dermatitis (ACD) caused by sensitisation to hexavalent chromium in wet cement has a notoriously poor prognosis. The ensuing dermatitis can be debilitating and persistent postoccupational dermatitis is common.<sup>1</sup> Furthermore, there are significant adverse effects on quality of life, as well as marked economic consequences.<sup>2</sup> Over the past four decades, several European countries have introduced legislation to limit the amount of hexavalent chromium in cement, which has successfully reduced the number of cases of cement related occupational ACD.<sup>3</sup> Despite advances in Europe, no similar legislation exists in Australia and occupational ACD to chromium in cement still occurs, despite it being a preventable condition elsewhere.

We previously reported a study estimating the annual incidence of occupational ACD to chromium in cement from 1993 to 2013 in Australia.<sup>4</sup> We extrapolated the number of cases based on the estimate that our tertiary referral centre assessed approximately 66%–80% of cases in the state of Victoria. We estimated that between 5 and 6 cases of occupational ACD to chromium from cement, or cement or leather (when the source of exposure was not clear), occurred annually in Victoria. Using 2011 Census data, we extrapolated that there would be a minimum of 20–24 annual cases of occupational ACD to chromium from cement in Australia at this time.

We have recently repeated this methodology to estimate the number of cases of ACD to chromium in cement over a 5-year period from January 2014 to December 2018. During this period, a total of 740 patients were patch tested to chromium, with 36 relevant positive reactions (4.9%). There were 10 cases (27.8%) where the exposure to chromium was clearly attributed to cement, and 12 cases (33.3%) whereby it was unable to conclude whether leather or cement caused sensitisation. In 14 cases (38.9%), the exposure was caused by leather. Overall, from 2014 to 2018, the mean number of annual cases of ACD to chromium caused by cement, and cement or leather, was 4.4 cases (total 22 cases). Using the same methodology as in our previous study, we estimated that there were now between 6 and 7 cases of chromium occupational ACD in Victoria, and a minimum of 24–28 cases in Australia annually over this time period. This represents a slight increase in the estimated national annual cases compared with our previous 21-year data. It is very important to acknowledge that this is likely to be an underestimate. The majority of construction workers are peripatetic and many are unlikely to visit a general practitioner or present to dermatology services, instead assuming their skin condition is 'part of the job'.<sup>5</sup>

Despite a successful preventive solution being implemented elsewhere, Australia has been left behind internationally and an inappropriately high number of workers develop occupational ACD from chromium in cement. The relevant authorities should be alerted by our findings and undertake the necessary cost–benefit analyses, which will no doubt justify Australia following in Europe's successful footsteps, by implementing legislation to add ferrous sulphate to cement.

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#### REFERENCES

- 1 Cahill J, Keegel T, Nixon R. The prognosis of occupational contact dermatitis in 2004. *Contact Dermatitis* 2004;**51**:219–26.
- 2 Halbert AR, Gebauer KA, Wall LM. Prognosis of occupational chromate dermatitis. *Contact Dermatitis* 1992;**27**:214–9.
- 3 Bregnbak D, Johansen JD, Jellesen MS, et al. Chromium allergy and dermatitis: prevalence and main findings. *Contact Dermatitis* 2015;**73**:261–80.
- 4 Wong CC, Gamboni SE, Palmer AM, et al. Occupational allergic contact dermatitis to chromium from cement: estimating the size of the problem in Australia. *Australas J Dermatol* 2015;**56**:290–3.
- 5 Health and safety executive. appendix 5 to HSC paper HSC/04/14: Annex F, 2004. Available: <http://www.hse.gov.uk/aboutus/meetings/hscarchive/2004/100204/c14f.pdf> [Accessed 4 Dec 2019].