



PRODUCT STEWARDSHIP PROGRAMMES (PSP) CAN HAVE A POSITIVE IMPACT ON OCCUPATIONAL HEALTH AND ARE ESSENTIAL TOOLS TO SUPPORT OSH REQUIREMENTS

AUTHORS AND AFFILIATIONS: DAWN WEBSTER, Unifrax | NICOLA ROBINSON, Morgan Thermal Ceramics | CHRISTOPHER KLUTHE, Rath GmbH

ECFIA

ECFIA, the European Association representing the High Temperature Insulation wool Industry, founded in 1979, has as its key objective to improve Occupational Health and Safety. Initiating and promoting research and disseminated information on Health, Safety and Environmental aspects related to HTIW.

PRODUCT STEWARDSHIP PROGRAMME

Product Stewardship programmes (PSP) offer the ability to look at a range of functions to support exposure assessment and evaluate health impacts.

PSP developed by ECFIA does after 21 years, demonstrates that using exposure data can positively benefit occupational health.

The programme, which continues to be implemented today, follows well established principles of risk assessment and risk management. Its components are science based, with human health effects research as a priority. PSP was initiated by Industry and preceded any regulatory drivers.

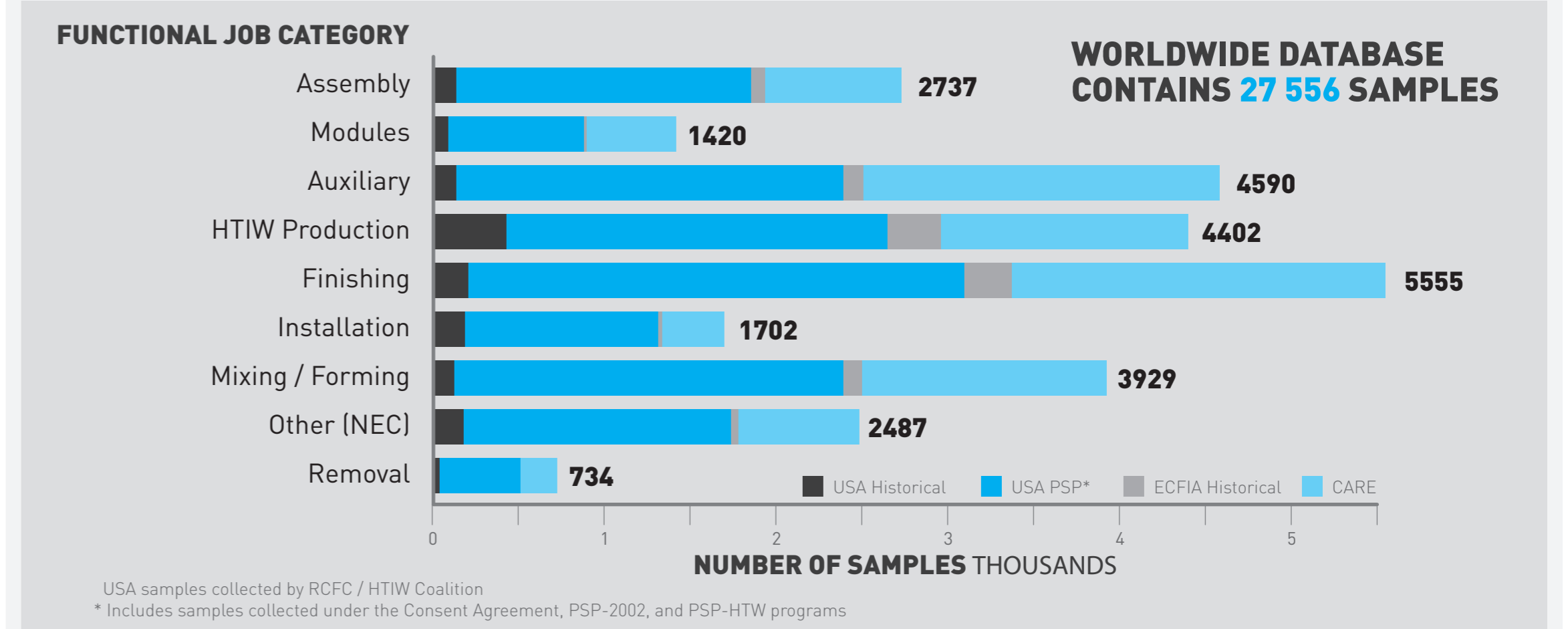


CARE

Controlled and Reduced Exposure Programme, the OH aspect of our PSP, is used to identify, evaluate and look at controls for HTIW uses. Workplace measurements, using PCOM and SEM analysis techniques, are taken within the European HTIW manufacturer and customer facilities. Our PSP is worldwide in scope and has collected over 27,000 TWA measurements since it began.

WORLDWIDE ASW/AES EXPOSURE

DATABASE: EXCEEDS 27,500 SAMPLES



HEALTH STUDIES

Another aspect of our PSP has been a number of epidemiology studies, a cross sectional study on workers in Europe and a cross sectional longitudinal study, which tracked the effect of exposure to HTIW on the working population of HTIW producers for over 40 years.

The longitudinal study is discussed in more detail below and followed current and past workers at manufacturing plants in the USA. The morbidity portion of this study concluded in 2016 after 30 years. The mortality portion of the study is ongoing.

Data collected included occupational monitoring and detailed information on work areas and worker movements. This established cumulative exposure groups for each identified workstation, allowing extrapolation for individual worker cumulative exposure.

Health monitoring included:

- Chest x-rays, read by NIOSH certified B-readers, looking for both pleural and interstitial changes
- Spirometry evaluated changes in pulmonary function.

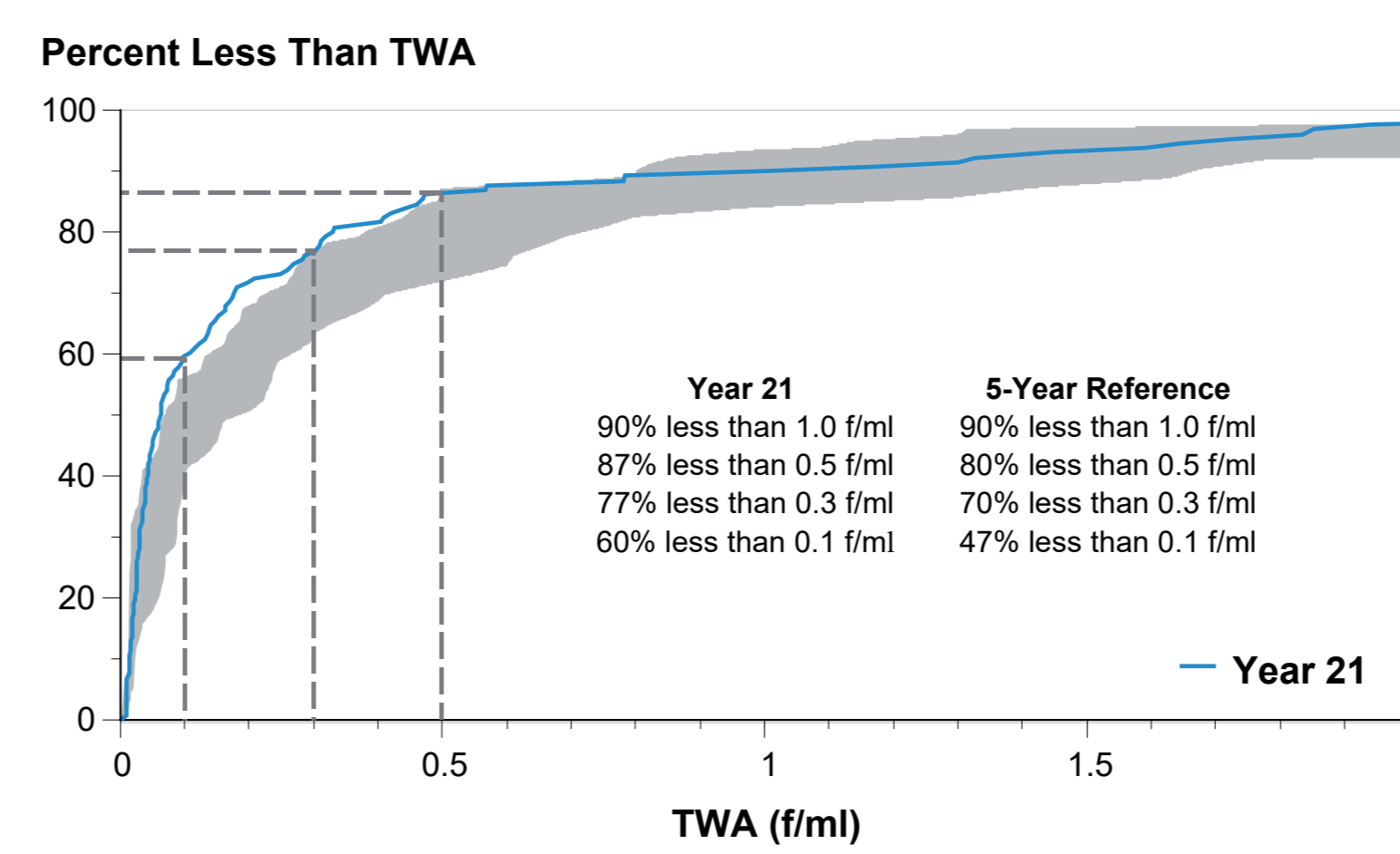
At the start of the study, and when new hires were incorporated into the cohort, a comprehensive worker history was obtained via questionnaire and personal interviews either in person or by phone.

RESULTS

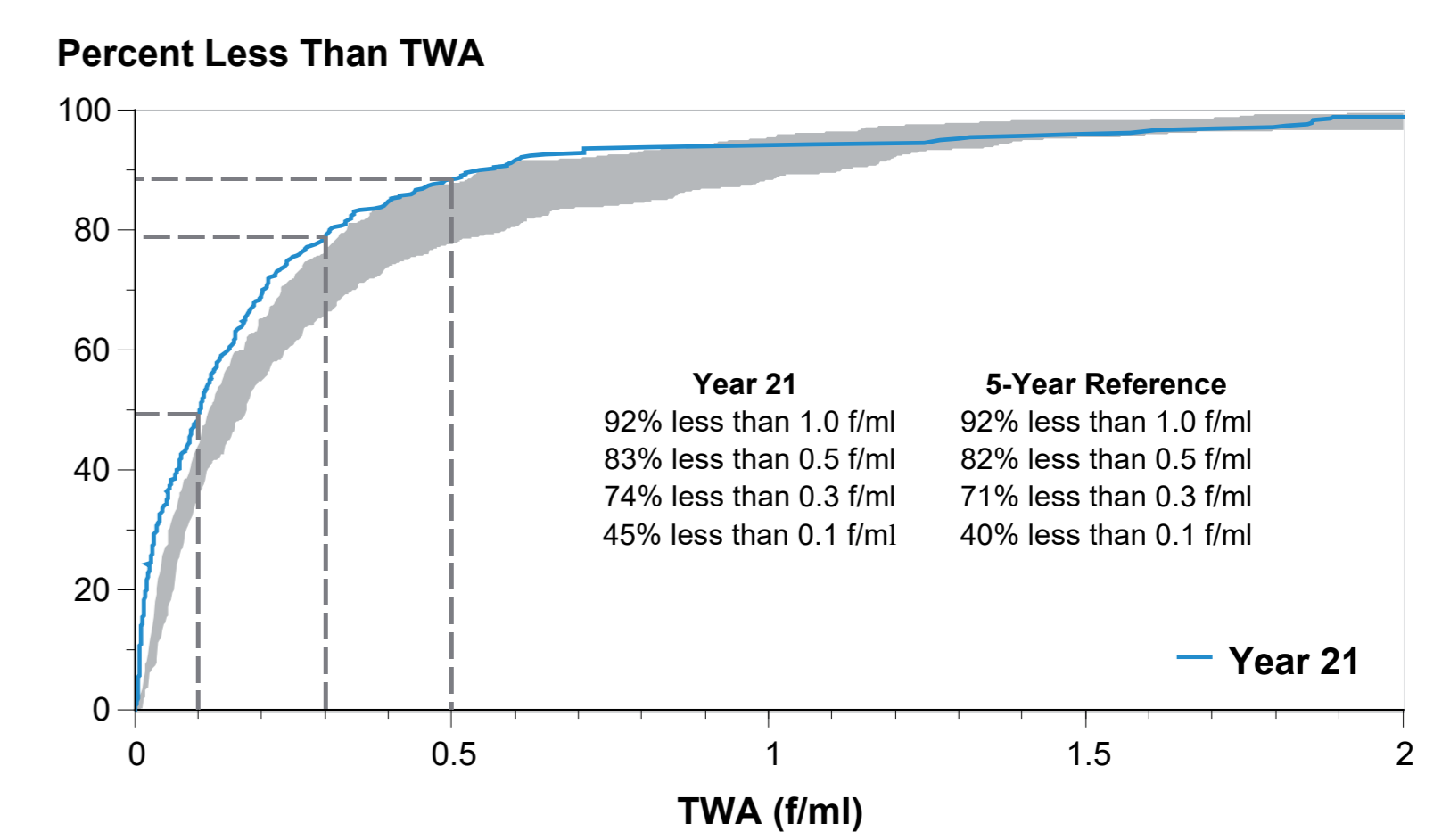
Effective PSP has improved occupational health and facilitated the gathering of reliable exposure data. Exposure at EU manufacturers and EU customers sites has improved year on year, based on analysis of cumulative distribution function (CDF).

Repeat visits to customer facilities has shown a reduction in exposures over time.

CDF FOR CUSTOMERS, YEAR 21 VS. 5 YEAR REFERENCE PERIOD (YEARS 16-20)



CDF FOR MANUFACTURERS, YEAR 21 VS. 5 YEAR REFERENCE PERIOD (YEARS 16-20)



RESULTS OF THE HEALTH STUDIES

Pleural changes (pleural plaques with no clinical significance) demonstrate the exposure response relationship, as the two highest exposure groups were found to have increased odds ratio (OR) compared to general population of developing pleural changes.

For those exposure groups, with no previous asbestos exposure, pleural changes are significantly linked to latency; for those with >20-30 years latency (OR =7.3) and in the >30 years latency (OR =7.8) groups. New employees, after 1985, with exposure levels that are considerably lower than historical levels, indicate pleural changes in line with general population.

In the 2017 Masters et al paper (A 30-year mortality and respiratory morbidity study of refractory ceramic fiber workers) it was concluded that: After 30 years of follow-up, no excess of lung cancers in the mortality study and no significant association with radiographic findings of interstitial fibrosis were found in this group of workers... continued reduction in exposure to RCF is prudent in both manufacturing and end-user settings.

KEY FINDINGS

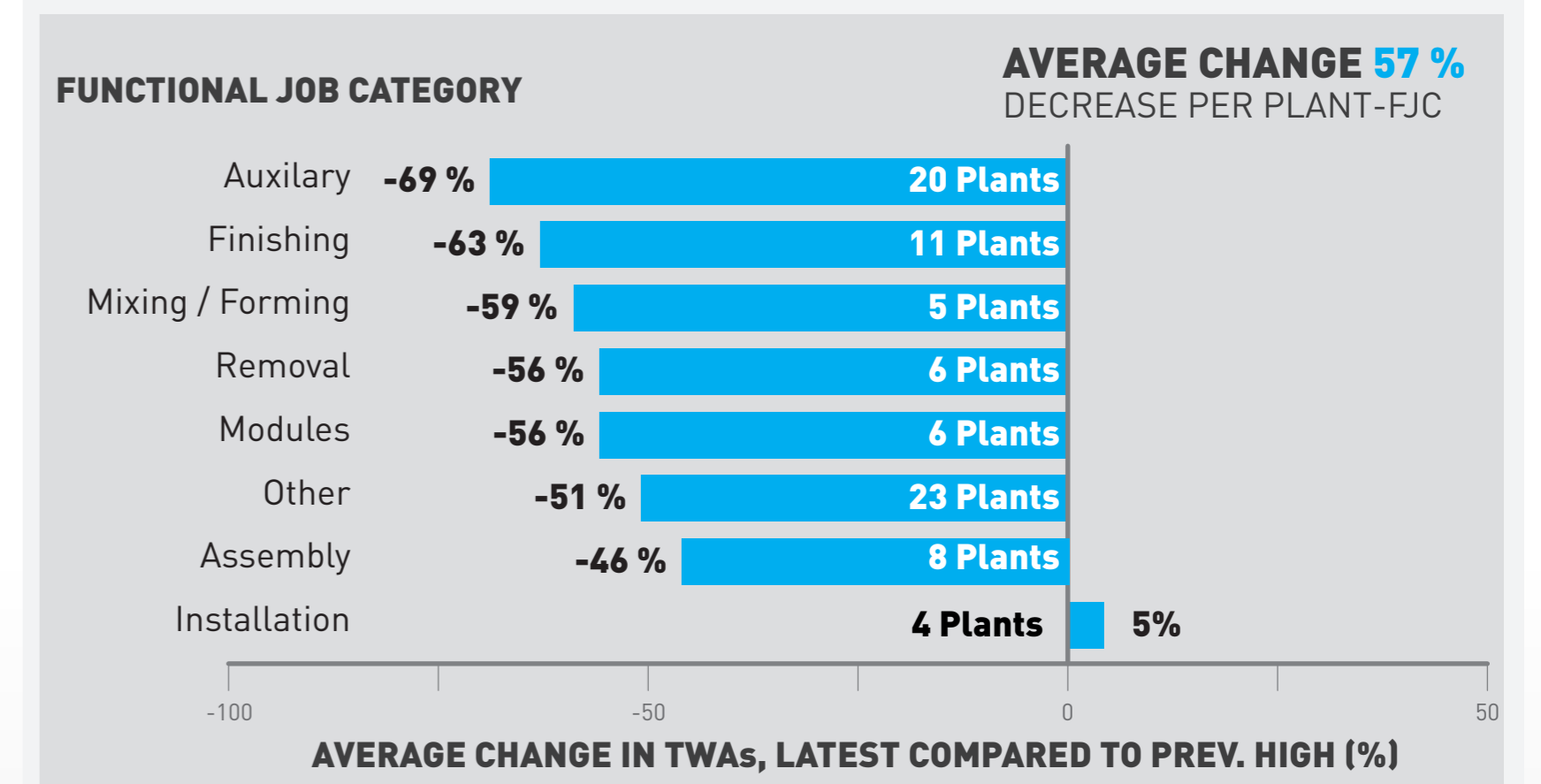
Overall no significant associations were identified between latency, cumulative fibre exposure and interstitial changes.

In contrast with animal studies, there are no associated lung cancer findings in this study. Radiography findings show no significant associations with interstitial changes, but did show an exposure response relationship for pleural changes.

The reduction in exposure, over time with the advent of PSP (CARE), have had a positive influence on pleural changes.

Exposures have reduced with weighted arithmetic mean (f/ml) concentrations now <0.2 f/ml. The other aspects of PSP such as guidance and communication have been shown to drive down exposure as demonstrated with the repeat visit analysis.

REPEAT VISIT ANALYSIS



For further information on the epidemiology studies please scan QR code.

<https://www.tandfonline.com/doi/full/10.1080/08958378.2018.1448019>

CONCLUSION

THE EPIDEMIOLOGY STUDY DEMONSTRATES THAT WHERE OCCUPATIONAL EXPOSURE IS CONTROLLED NO PLEURAL CHANGES OCCUR, HIGHLIGHTING THE CONTINUED IMPORTANCE OF A ROBUST PSP ENCOMPASSING OCCUPATIONAL MONITORING AND COMMUNICATION ACROSS THE SUPPLY CHAIN.

WWW.ECFIA.EU
INFO@ECFIA.EU