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[\[PDF \(245K\)\]](#) [\[References\]](#)**Dental Erosion in Workers Exposed to Sulfuric Acid in Lead Storage Battery Manufacturing Facility**[Yuji Suyama](#)¹⁾, [Satoru Takaku](#)²⁾, [Yoshikazu Okawa](#)³⁾ and [Takashi Matsukubo](#)¹⁾

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Abstract: Dental erosion, and specifically its symptoms, has long been studied in Japan as an occupational dental disease. However, in recent years, few studies have investigated the development of this disease or labor hygiene management aimed at its prevention. As a result, interest in dental erosion is comparatively low, even among dental professionals. Our investigation at a lead storage battery factory in 1991 found that the work environmental sulfuric acid density was above the tolerable range (1.0mg/m³) and that longterm workers had dental erosion. Therefore, workers handling sulfuric acid were given an oral examination and rates of dental erosion by tooth type, rates of erosion by number of working years and rates of erosion by sulfuric acid density in the work environment investigated. Where dental erosion was diagnosed, degree of erosion was identified according to a diagnostic criterion. No development of dental erosion was detected in the maxillary teeth, and erosion was concentrated in the anterior mandibular teeth. Its prevalence was as high as 20%. Rates of dental erosion rose precipitously after 10 working years. The percentages of workers with dental erosion were 42.9% for 10-14 years, 57.1% for 15-19 years and 66.7% for over 20 years with 22.5% for total number of workers. The percentages of workers with dental erosion rose in proportion to work environmental sulfuric acid density: 17.9% at 0.5-1.0, 25.0% at 1.0-4.0 and 50.0% at 4.0-8.0mg/m³. This suggests that it is necessary to evaluate

not only years of exposure to sulfuric acid but also sulfuric acid density in the air in factory workers.

Key words: [Dental erosion](#), [Occupational health](#), [Battery manufacturing facility](#), [Sulfuric acid](#), [Oral health](#)

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