



PERSPECTIVE



## Various Studies on Workplace Related Health Possibilities

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### Description

Every day, dental professionals and their teams are exposed to a variety of occupational dangers. Their health suffers as a result of these occupational exposures, especially if they are long-term. Occupational noise is any unpleasant sound that is present in the workplace. The international standard for the eight-hour daily occupational exposure should not be higher than 85 decibels (dBA), and anything above this could result in noise-induced hearing loss, according to OSHA, when working five days a week in any workplace. Noise-induced hearing loss is the term used to describe hearing loss caused by continuous, cumulative exposure to loud noises that results in irreparable inner ear damage (NIHL). Tinnitus, a buzzing and ringing sound in the ear, as well as decreased hearing, are signs of NIHL. Overexposure to loud noises can lead to a number of health issues, including stress; disturbed sleep patterns, cardiovascular issues, anxiety, exhaustion, and depression. Overexposure to loud noises can lead to a number of health issues, including stress; disturbed sleep patterns, cardiovascular issues, anxiety, exhaustion, and depression.

Dental practitioners are exposed to the noise produced by a range of tools, including air rotor handpieces, suction, and ultrasonic scalers. 85 dBA is the suggested upper limit of sound exposure for an 8-hour workday. According to a study, the noise levels of unobstructed suction ranged from 75 to 79 dBA, while obstructed suction had a noise level of 96 dBA. It was advised that professionals should not spend more than an hour working in such an environment. Ultrasonic scalers produce loud noises that are between 69 and 84 dBA in the safe 8-hour occupational noise limit. The use of an ultrasonic scaler results in threshold shift, which reduces hearing due to decreased sensitivity levels of the ears as a result of noise exposure. Although this is observed to

last between 16 hours and almost 2 days, it may result in irreversible damage. In a survey done at the dentistry school of Prince of Songkla University in Thailand, 80% of dental students complained about noise disturbance in the dental clinic. Pediatric patient clinics had the highest percentage of noise exposure.

Today, inhalational anaesthetics including isoflurane, sevoflurane, desflurane, and halothane are utilised in dentistry. However, the gaseous sedative nitrous oxide is what has us most worried. Nitrous oxide exposure for an extended period of time may have harmful effects on human health, including infertility, blood diseases, neurologic disorders, and spontaneous abortion. Researchers believe that when operating rooms without suitable ventilation systems have large non-scavenged gas exposures, the probability of spontaneous abortion increases. It has been discovered that even with intact scavenging systems, nitrous oxide exposure at dentistry offices occasionally exceeds the NIOSH-recommended limit of 25 ppm by a factor of more than 40. To combat excessive nitrous oxide exposure, NIOSH encourages dental professionals to employ more ventilation or improve air circulation in the operating rooms. The release of mercury during dental amalgam restorations is the most likely source of elemental mercury exposure for dental workers. There is a substantial amount of mercury exposure among professionals as a result of extensive activity in the field of dentistry and working with amalgam. Evidence suggests that dental practitioners have higher urine mercury levels because inhaling Hg causes its absorption in the lungs and accumulation in the kidneys. A health screening programme during the annual ADA meeting in San Francisco, California, revealed that between 84.9 and 200 dental amalgam restorations were performed by dental professionals per week, with 4.2 percent performing at least 50 amalgam fillings.