



Effects of Noise on the Health and Welfare of the San Francisco Community



We can close our eyes, but our ears are always working. Hearing provides us with the ability to communicate, verbally and musically, and can enhance our enjoyment of the environment. At the same time, hearing alerts us to the activities in our surroundings warning us of dangers and risks. Sounds can rapidly affect our psychological well being and can rapidly trigger stress responses. The blasting of a horn, the blaring of sirens or the sudden slamming of a door can all result in a psychological stress response and an increase of adrenaline in the bloodstream. Increased heart rate, blood pressure, and changes in blood circulation are all potential consequences of these changes. According to the Environmental Protection Agency, noise-induced stressors cause chronic elevated blood pressure, coronary disease, ulcers, colitis and migraine headaches. (EPA, Noise Effects Handbook, 1979) This document summarizes some of the most frequent noise-related health impacts and our agency's actions to control noise.

Hearing Loss

The association between noise and hearing loss is well documented. Although workers are most often exposed to high levels of noise, non-workers experience significant noise exposure from traffic, mechanical equipment, work in the home, and noisy play and hobbies. Excessively noisy music is undoubtedly a significant source of exposure as demonstrated by hearing loss in the night club crowd and among users of personal music players. It is not uncommon for musicians to have significant hearing loss by age 40 and nightclubs regularly provide earplugs for patrons who desire to protect their hearing.

Sleep Deprivation

Talk to any new parent and the consequences of sleep deprivation become immediately apparent. The body feels lethargic and performance is severely limited. Chronic noise exposure results in poor quality, interrupted sleep that may cause both physical and psychological problems. Whether the problem is barking dogs, noisy air conditioning, or loud parties, sleep deprivation is the number one cause of noise complaints in San Francisco.

SAN FRANCISCO
DEPARTMENT OF
PUBLIC HEALTH

Environmental
Health Section

1390 Market Street,
Suite 210
San Francisco, CA
94102
(415) 252-3800

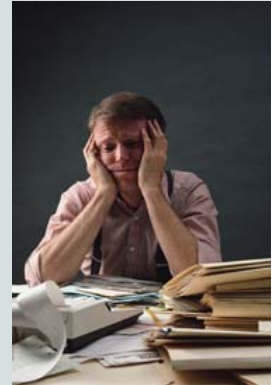


Psychological Stress

Noise coupled with sleep deprivation often results in extreme annoyance and anger. Noisy environments give individuals and their community the feeling of powerlessness, because they cannot even control the environment within their own home. Occasionally, noise problems result in rage and associated violent outcomes.

Interference with communication and concentration

Noise has been shown to interfere with communication in the workplace and in such important settings as schoolrooms where efficient communications is necessary for learning. In tasks that require a high level of concentration noise interferes with the ability of people to perform their work. Such problems as broken ventilation systems and construction related pile driving often prevent office workers, accountants, and dentists from focusing on their work. In addition noise can mask sound borne safety communication and result in increased risks to the general population. The drone of traffic noise often prevents pedestrians from hearing cars approaching dangerously from the side or behind.



What is the Department of Public Health Doing About Noise?



The San Francisco Health Department is working with the Building and Planning Department to create an updated Noise Element and Noise Map for the City's General Plan. The task is to define the current noise level throughout San Francisco with special emphasis on understanding the effects of traffic volumes on the acoustical environment. This information will be used to make planning and building decision related to siting and insulating on new residential construction. As the demand for new residential housing continues, the available locations for development are frequently found in the noisiest locations (e.g., residential developments directly below the Bay Bridge).

In addition, the Department investigates noise levels associated with increased mechanical ventilation and air conditioning equipment in high residential density neighborhoods. Increased use of mechanical equipment is required by modern building code and fire codes, however, acoustical impacts must be anticipated and protection for exposed residents and communities incorporated into the design of these new systems. This problem is especially acute in neighborhoods where residents do not complain about noise problems due to their unfamiliarity with the law and their poor language skills.

The enforcement of our local San Francisco Noise Control Ordinance (Article 29, MPC) provides a safety net for individual and communities negatively affected by noise. The Department responds to complaints regarding excessive noise associated with fixed mechanical equipment such as a restaurant ventilation system or a compressor in an automobile body shop. Although remediation is no substitute for good planning, it does help to prevent some of the many physical and psychological health consequences of noise exposure.