

Managing Workplace Fatigue- Reducing Noise in the Workplace

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This summary and accompanying video presentation highlight the influence of workplace noise in terms of fatigue, motivation and performance levels (Jahncke, et al., 2011). In a fast-paced society, workplace noise is often an overlooked issue. Noise is defined as sound that is unwanted or causes physiological and/or emotional disturbance (Maxwell, 2005). Noise in the workplace has been identified as **one of the most common occupational hazards** (Canadian Centre for Occupational Health and Safety, 2014). Noise is commonplace in healthcare environments such as office spaces, clinics and hospital wards. This summary and accompanying video presentation focus on research regarding noise in open-plan offices where OTs often work.

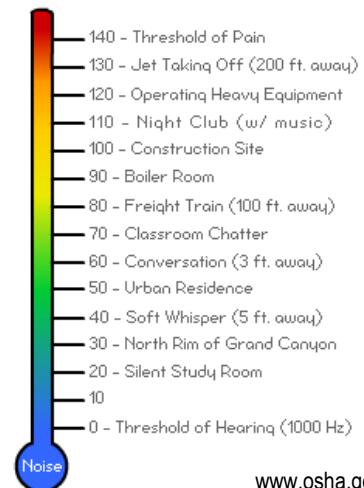
When introduced, **open-plan offices** were presumed to provide an environment that would increase work efficiency and facilitate communication (Felstead et al., 2009).

However, studies of open-plan offices have found numerous negative factors including:

- *a lack of privacy,*
- *distraction by noise,*
- *uncontrolled social interactions and*
- *interruptions* (Kaarlela-Tuomaala et al., 2009).

A decibel is a unit of measure to determine sound intensity, for example a soft whisper is approximately 30 dBA, 50 feet from a highway is 80 dBA, and operating a chainsaw is 110 dBA (Cepesiuik 2005). Studies have identified noise in open-plan offices ranging from 42 decibels (dBA) at the low end, to 60+ dBA, at the high end (Maxwell, 2005). With the increase in electronic devices and practice of increasingly dispersed healthcare teams it is probable, that for many, the workplace environment has grown even noisier since Maxwell's study 10 years ago. Additionally, as space in hospital settings becomes more limited, treatment areas may have to accommodate more clients in less space, which in turn, increases the over-all decibel level. Nighttime sound levels of 30 dBA or greater interfere with sleep and so also increase the risk of daytime fatigue in the workplace. Research indicates that ongoing exposure to decibel levels of 65+ will trigger the **release of stress hormones (like cortisol) and increase the risk of heart disease, other stress related physical and mental health conditions.**

Typical Sound Levels (dBA)



www.osha.gov

Occupational therapists can measure their own workplace decibel level with one of the several smart phone app available. A recent Centre for Disease Control (US government) review of smart phone apps concluded that "smartphone sound apps can serve to empower workers and help them make educated decisions about their work environments. They may be useful for industrial hygienists and OS&H managers to make quick spot measurements to determine if noise levels exist in a workplace that can harm workers" (<http://blogs.cdc.gov/niosh-science-blog/2014/04/09/sound-apps/>). As well, concerned therapists can work with their Workplace Health and Safety Committee and ask to have their workstation more objectively measured over a period of time. On an individual level, workplace noise can affect healthcare providers in the following ways: decreased productivity, increased illness, increased levels of stress, lower job satisfaction, lower morale, and fatigue (Maxwell, 2005). The effects of office workplace noise cannot be underestimated.

An experimental study was conducted to investigate the various effects of two office conditions (high and low noise) while working in a simulated open-plan office. The work period was followed by a restorative period where participants saw or heard one of the following: a river movie with sound, a river sound, silence or office noise. Results indicated that participants **remembered fewer words, rated themselves as more tired and were less motivated to work in the high noise**

environment compared to the low noise (Jahncke et al., 2011). The results from the restoration period indicated that the participants who saw the river movie with sound self-rated as having more energy compared those in the other conditions. Remaining in office noise during the restorative period had a negative impact on motivation (Jahncke et al., 2011). This study highlights the fact that the influence of workplace noise has far reaching implications for fatigue, memory, motivation and energy levels. The accompanying presentation concludes with some design solutions to workplace noise (e.g., sound absorbing materials and sound-masking systems), resources and future directions. In order to improve workplace noise, **employers are responsible to identify where noise** could be reduced and work with acoustic engineers and architects in designing healthier workplaces. The **employees have the responsibility to raise concerns** but they cannot resolve this significant health and fatigue risk at the individual level. Noise reduction strategies such as individual headphones (http://www.forbes.com/fdc/welcome_mjx.shtml), noise blocking software for personal workstations (e.g. ChatterBlocker <http://chatterblocker.com/>), and workplace ambient noise filters or white noise systems (e.g. <http://www.purewhitenoise.com/t-faq.aspx>) can be effective depending on the context. The links provided in the accompanying presentation can help identify the next steps to take when noise in the workplace is a significant problem.

Resources

- Canadian Centre for Occupational Health and Safety: Noise - Measurement of Workplace Noise
- http://www.ccohs.ca/oshanswers/phys_agents/noise_measurement.html
- Work Safe Alberta: Noise in the Workplace
- http://work.alberta.ca/documents/WHS-PUB_hs003.pdf
- No Noise Now Organization- <http://nonoisenow.com/resources/> numerous case studies and video clips to help stakeholders understand the importance of noise dampening acoustic design in the workplace.
- Free downloadable poster to raise workplace awareness of noise pollution - http://chatterblocker.com/quiet_please.pdf

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