





Figure 2. Outline of the various effects of occupational noise exposure.

Effects of noise-induced hearing loss

Impairments

Reduced

- sensitivity
- frequency selectivity
- frequency discrimination
- temporal integration
- temporal resolution

Altered perception of loudness

Tinnitus

Disabilities

Reduced listening abilities

- environmental awareness
- listening to speech
television, radio, movie-theatres,
meetings, courses, church

Reduced communication abilities

- within background noise
groups, telephone, meetings,
parties, house (with TV, etc.)
- in quiet

Handicaps

Effort and fatigue
sustained attention +
speech reading

Stress and anxiety
worries, intolerance, irritation

Difficulties in family
relationships
misunderstandings, conflicts

Isolation
in groups, in the family

Negative self-image
social inadequacy + stigma

EFFECTS OF NOISE ON PERFORMANCE

- steady noises do not interfere with performance unless > 90 dBA (depending on the complexity of the task)
- irregular (unpredictable) noise bursts are more disruptive than steady noises
- high frequency components above 2000 Hz interfere more than low frequency components
- noise does not influence the overall rate of work, but may increase the variability of the work rate
- noise is more likely to reduce the accuracy of the work than the quantity
- complex tasks are more likely to be adversely affected than simple tasks
- may affect decision making and produce momentary lapses in efficiency
- immediately after a loud sound (startle reaction), efficiency may drop for a few seconds
- the effects of noise may be felt as an after-effect
- background music will improve productivity and morale
- social behaviour (e.g. helping, evaluating) adversely affected
- subjects who have perceived control over noise show greater tolerance for frustration, even if the control is not exercised

Joan Campbell: Ambient Stressors

Daily “hassles”

- stable rather than temporary (or continuous but varying in intensity)
- commonplace and non-urgent
- discrete, circumscribed instances which become salient
- immediate coping actions

Ambient Stressors:

- chronic background conditions (global rather than personal)
- negatively valued
- intractable
- non-urgent/tolerable
- gradual onset
- perceptible but unnoticed

They affect:

- motivation, emotions, attention, somatic health, behaviour (the effects of which will persist over time)

and the effects depend on mediating factors such as:

- cognitive appraisal and perceived control
- personal context (e.g. vulnerability) and resources
- experiential factors: salience, history, personality

Behavioural strategies: **adaptation** and **coping**

Adaptation:

- reappraisal as benign or toleration as a counter-balance (even though still negative); cognitive adaptation
- diminishing motivation to escape or avoid, and less attention
- probability of instrumental responses will diminish over time

Coping:

- direct action, information seeking; or palliative coping (e.g. denial, regulating emotions)
- restructuring one's relation to the stressor (acting on stressor or its context or on one's own reactions through denial, self-control)

Choice of the above depends on individual salience (degree of personal interference); duration of exposure (longer exposure leads to adaptation); personal resources (financial, social, institutional)