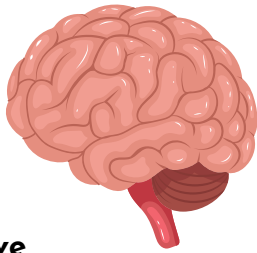


# HEALTH RISKS OF A NOISY SLEEP ENVIRONMENT



- Daytime sleepiness
- Mood changes
- Reduced cognitive performance
- Poorer concentration
- Slower reaction times
- Higher risk of depressive symptoms



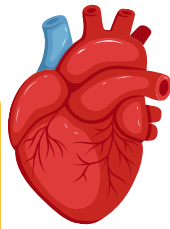
- Raised blood pressure
- High stress hormones

Night-time noise activates the stress response which prevents cardiovascular recovery during sleep

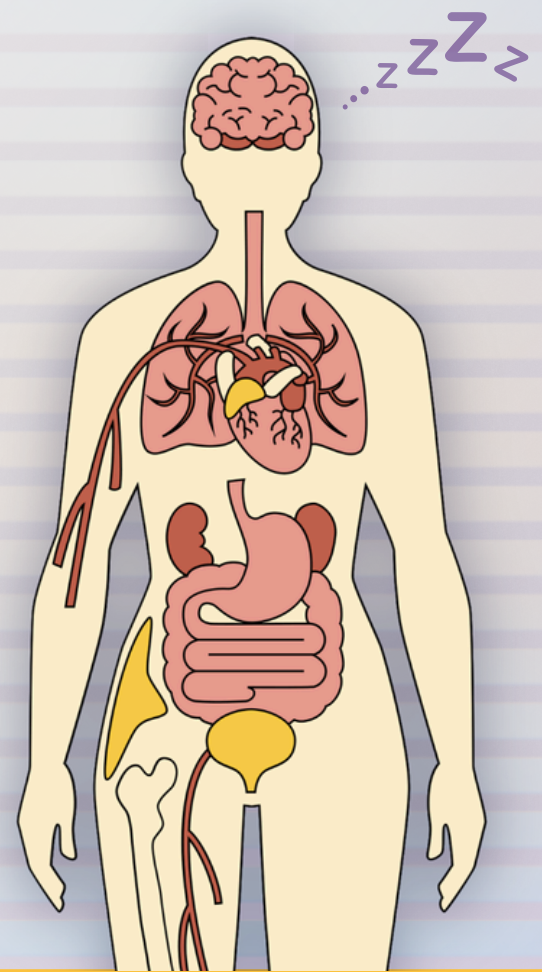


- Long-term adverse cardiometabolic outcomes

This includes **chronically increased heart rate** as the body struggles to recover from repeated noise-induced stress responses

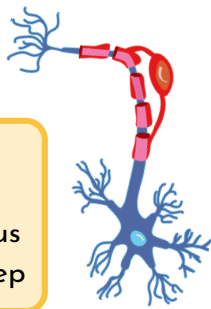


## WHAT'S GOING ON IN YOUR BODY?



- Increased finger pulse responses

This indicates that the body remains in a state of **heightened alertness** and sympathetic nervous system activation even during sleep



- Adverse metabolic outcomes
- Disrupted appetite regulation
- Impaired blood sugar control
- Increased risk of weight gain and insulin resistance



The minimum noise level to induce stress reactions are much lower during sleep than when awake

## WHY?

### NOISE REACTION MODEL

Auditory Signal During Sleep

Chronic Psychophysiological Stress

↑ blood pressure,  
↑ stress hormones,  
↑ blood glucose/lipids

This model conceptualises how **constant disruption** leads to **physiological and psychological stress**, which in turn, negatively impacts long-term health.

### NEURAL PATHWAYS

Auditory Signal During Sleep

Activation of the Amygdala and HPA axis

↑ Cortisol Release

Activation of the Sympathetic Nervous System

↑ Blood Pressure,  
↓ Cardiovascular Recovery

These biological pathways are responsible for **processing and responding to stressful stimuli**. Repeated noise activates these responses and keeps the body in a heightened state of stress that leads to adverse consequences.

### LONG-TERM EFFECTS

Physically and physiologically, there can be many adverse long-term effects of disrupted sleep, but the most considerable risks are **cardiovascular diseases**



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