- Mood changes, confusion, irritability, sadness
- Lack of motivation
- Fatigue

- Behavioural difficulties:
  - Slowed performance
  - Lack of coordination
  - Risk-taking
  - Reduced performance on monotonous tasks requiring extended concentration

Physiological effects
- Slower reflexes
- Hand tremors
- Difficulty focusing eyes
- Increased sensitivity to pain
- Headaches
- Reduced energy
- No change in heart rate, respiration, blood pressure or temperature

Loss of REM sleep
- REM sleep and memory – transfer of short-term memories into long-term
  - Inconclusive – a lack of REM sleep does not appear to lead to more memory problems
- REM and mood disturbances – REM interrupts the release of some neurotransmitters and therefore allows the brain to recover sensitivity to these neurotransmitters
  - Likely – scientific research seems to support this idea

Loss of stages 3 and 4 NREM sleep
- The brain is less active and the metabolism is lower during stages 3 and 4
  - Restoration of cells and waste removal?
- Growth hormone released
- Scientific findings are inconclusive about the effects of losing stages 3 and 4 NREM sleep

Partial sleep deprivation
- REM rebound: spending more time in the REM stage following sleep deprivation
- Microsleep: a short period of involuntary drowsiness or sleep which occurs while being awake
  - Lasts 3 – 15secs
  - Brain wave activity resembles early NREM sleep
  - Little or no recall

THE PURPOSE OF SLEEP

Why do we need to sleep?
- Two groups of theories:
  - Restorative
  - Adaptive
- A result of circadian rhythms (physiological functions operating on a 24hr cycle)

RESTORATION THEORIES

Arguments for restorative theories