

Sleeping to CHANGEpain – Session 4, Sleep Education – Summary Notes

Sleep Basics

- There are two basic types of sleep: rapid eye movement (REM) sleep and non-REM sleep (which has three different stages).
- The stages of sleep:
 - o Stage 1: a drowsy, relaxed state between waking and sleeping; heartbeat, breathing, and eye movements slow, and muscles relax with occasional twitches.
 - o Stage 2: a light phase of sleep that we are easily awakened; heartbeat and breathing slow, and muscles relax even further; body temperature drops and eye movements stop
 - o Stage 3: deep sleep, difficult to be awakened from; heartbeat and breathing slow to their lowest levels during sleep; body repairs muscles and tissues, stimulates growth and development, boosts immune function, and builds up energy for the next day; the period of deep sleep that you need to feel refreshed in the morning; occurs in longer periods during the first half of the night
 - o REM sleep: rapid eye movement; brain becomes more active; breathing becomes faster and irregular, and heart rate and blood pressure increase to near waking levels; where dreaming occurs; supports learning and memory function
- We progress from Stage 1 to 4 and then to REM sleep in about 90 minutes. A good sleeper will move through 4-6 of these 90-minute sleep cycles during the night (spending roughly 5% of the night in Stage 1, 50% in Stage 2, 20% in deep sleep, and 25% in REM sleep)
- Deep sleep periods are lengthier during the beginning of the night
- As the night proceeds, deep sleep periods grow shorter and the duration of REM periods increases, so we obtain most of our dream sleep during the first half of the night and the majority of our REM sleep in the second half
- Because sleep grows lighter as the night proceeds, we are more likely to be awakened in the second half of the night
- It is normal to wake up six or more times during the night, particularly when we shift from one sleep stage to another

Insomnia

- *Sleep onset insomnia*: difficulty falling asleep; poor sleep hygiene and mental/emotional stressors can be significant factors
- *Sleep maintenance insomnia*: difficulty staying asleep, including early wake-ups
- Insomnia is not defined solely by quantity of sleep; there must also be detrimental consequences from disturbed sleep, such as irritability, fatigue, drowsiness, impaired performance or productivity
- Sleeping difficulties are a normal reaction to stressful life events (only 5% of adults report that they have never experienced insomnia. This type of insomnia is known as *short-term insomnia*).

- *Chronic insomnia*, which endures for a month or longer, develops after short-term insomnia because of a combination of worry about sleep and developing habits that sustain insomnia. Some examples of maladaptive sleep habits are:
 - o Going to bed earlier, sleeping later (especially on weekends), and spending more time in bed in an effort to catch up on sleep
 - o Trying hard to sleep
 - o Attempting to relax in bed by reading or watching television
 - o Taking naps
 - o Using alcohol to promote sleep or caffeine to combat the daytime fatigue
 - o Reducing physical activity and exercise because of fatigue
- Studies consistently find that insomniacs underestimate how much sleep they get during the night because they overestimate the time it takes to fall asleep and overestimate awake time during the night. Stage 2 sleep is often incorrectly perceived as wakefulness

Cognitive Behavioural Therapy for Insomnia (CBT-i)

- Most sleep issues are strongly influenced by sleep thoughts (cognitions) and sleep habits (behaviours) and CBT-I addresses these underlying causes
- Even in cases of insomnia where sleep disorders such as sleep apnea or periodic limb movements are involved, behavioural factors may also play a significant role and behavioural techniques can bring about notable improvements in sleep

Sleep & Pain

- CBT-I not only reduces insomnia in patients with a variety of co-morbidities such as pain, fibromyalgia, depression, PTSD, and substance abuse, but it also produces improvements in these co-morbidities