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SLEEP

THE WHATS, THE WHYS AND THE HOWS

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Beacon Hill Chiropractic and Massage

WHY DO WE NEED SLEEP?

- Sleep is the SECRET SAUCE for good health!
- Affects mental, emotional and physical health
- Regular sleep deprivation is catalyst for almost every chronic disease
- Quality vs Quantity
- According to CIHR 34% of Canadians either have trouble falling asleep or staying asleep

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Sleep Cycle

The Natural Bedding Company

REM
Stage 4
(dream and brain activity)
Rapid Eye Movement Phase. Most dreaming occurs. durig this phase. Your body will not be able to regulate its temperature. You may begin to feel hot or cold.

NREM 1
Stage 1
(light phase of sleep)
Non Rapid Eye Movement Phase. You are just startng to fall asleep. You are floating and your mind begins to drift. You can wake easily during this stage.

NREM 2
Stage 2
(light phase of sleep)
Your heart rate will slow down. Your body temperature will drop. Your eye movement stops. Your brain waves slow down. Almost 50% of your time asleep is in Stage 2.

NREM 3
Stage 3
(deeper phase of sleep)
Your breathing will become deeper. Your body will repair and regrow tissue, Also, your immune system will strengthen. You may feel disorientated if woken during this stage.

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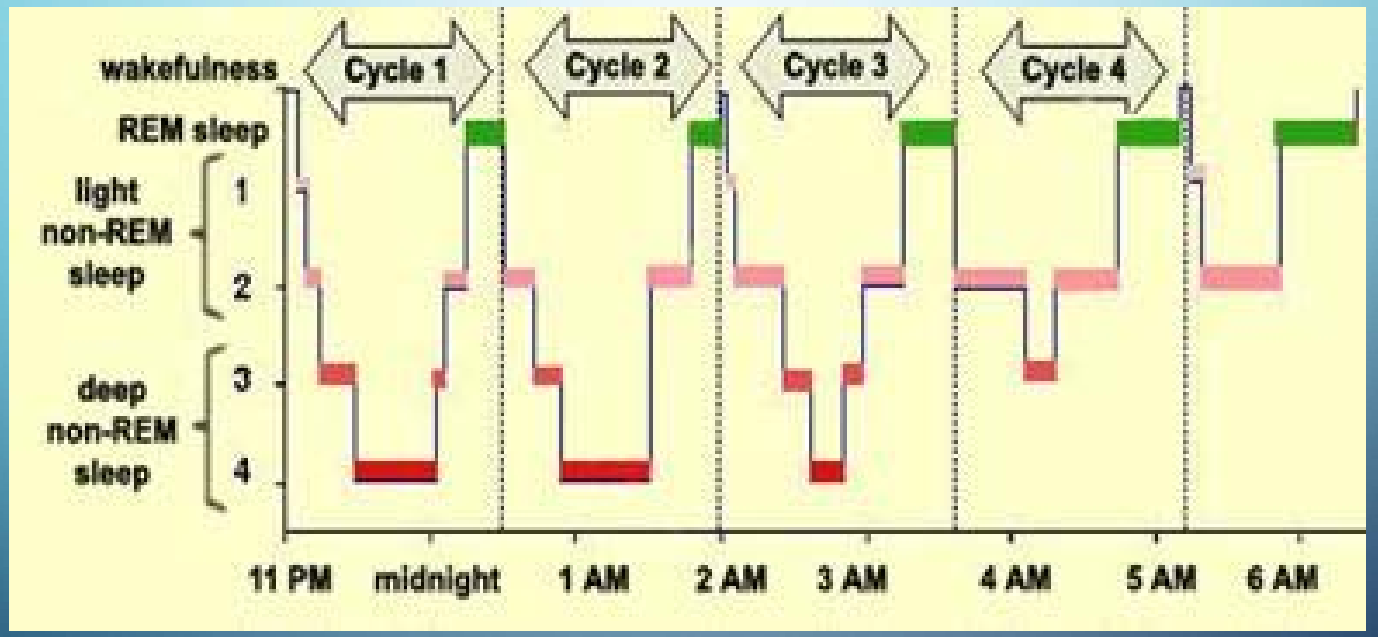
NORMAL SLEEP CYCLE



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SLEEP IS INFLUENCED BY:

- Stress
- Diet
- Caffeine
- Exercise (or lack of)
- Sunlight
- Shift work

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IMPORTANCE OF GOOD SLEEP

- Regulates hormone production
- Boosts metabolism
- Increases physical energy
- Aids in weight loss
- Improves function of brain
- Maintains blood sugar levels
- Boosts immune system

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REGULATES HORMONE PRODUCTION

- TSH levels were reduced by more than 30% following 6 days sleep deprevation
- 75% of human growth hormone is released during sleep (stage 3 and 4). Sleep deprivation/going to bed late significantly reduces time in this stage
- Less than 6 hours of sleep causes cortisol levels to be significantly elevated in the evening hours before bed

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AIDS IN WEIGHT LOSS.

- Loss of sleep affects glucose levels in pre-frontal cortex (descion maker)
- Sleep deprivation reduces willpower
- When you don't sleep well, your body STILL needs energy for next day
- Hormones that regulate appetite are profoundly influenced by sleep duration
- Two consecutive nights of sleep loss decreases **leptin** levels and increases **ghrelin** levels
- More sleep will give your body the tools it needs for impulse control

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IMPROVES FUNCTION OF BRAIN

- Brain cells are very active and produce a lot of waste – needs to be removed
- Brain has unique waste disposal system – Glympathic system (GS)
- Removing dead cells, getting rid of toxins and other waste is essential
- During sleep GS is 10x more active then during wakefulness
- If waste is not efficiently removed – increased risk of Alzheimers
- Consolidate memories and discards unnecessary information

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MAINTAINS BLOOD SUGAR LEVELS

- Sleep loss can lead to impairments in glucose metabolism and increases in insulin levels, which increases the risk of type 2 diabetes.
- Diabetics who suffer from insomnia have fasting blood glucose readings 23% higher than those who sleep normally
- Insulin resistance is up to 82% higher making is more difficult to keep BS levels under control

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BOOSTS IMMUNE SYSTEM

- Sleep deprivation supresses immune system function
- T-cells levels (fight off foreign antigens, repair damaged tissue) reduced - inflammatory cytokines go up
- Ability to mount a fever is reduced with chronic sleep loss
- Sleep loss leads to higher levels of CRP (marker of inflammation) – associated with heart disease
- Takes body longer to respond to vaccinations

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How do we get more sleep ???

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SOUND SLEEP STRATEGIES

- Get more sunlight during the day
- Avoid screen time before bed
- Have a caffeine curfew
- Be cool
- Get to bed at the right time
- Fix your gut to fix your sleep
- Create a sleep sanctuary

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SOUND SLEEP STRATEGIES

- Get it blacked out
- Train hard but smart!
- Go easy on the bottle
- Calm inner chatter
- Use smart supplementation

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GET MORE SUNLIGHT DURING DAY

- Circadian rhythm is strongly impacted by the amount of sunlight you get during day (6:30-8:00 am body is most receptive) 20-30 mins is optimal
- Daylight signals hypothalamus to release cortisol – the wake-up hormone!

  and serotonin (the feel good hormone)
- Too little sunlight during day and too much artificial light in the evening will throw off this cycle

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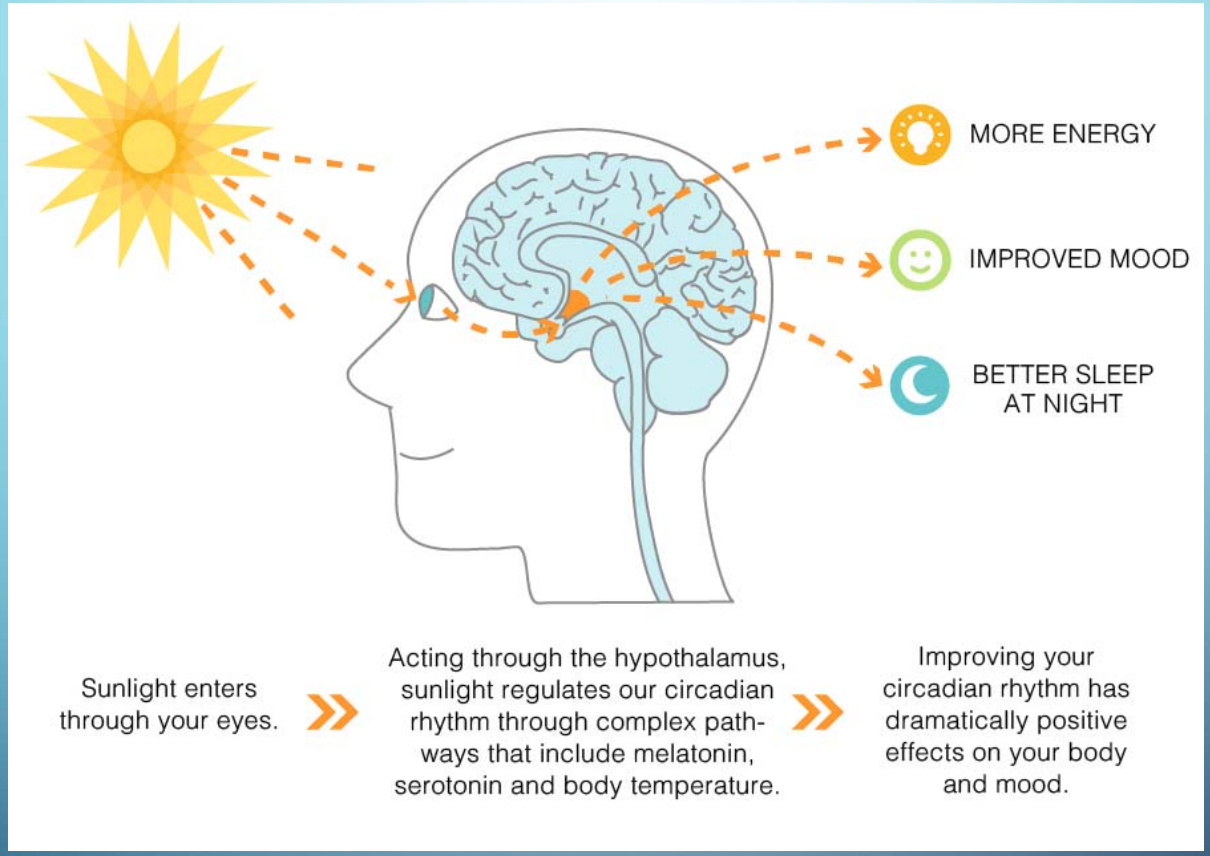

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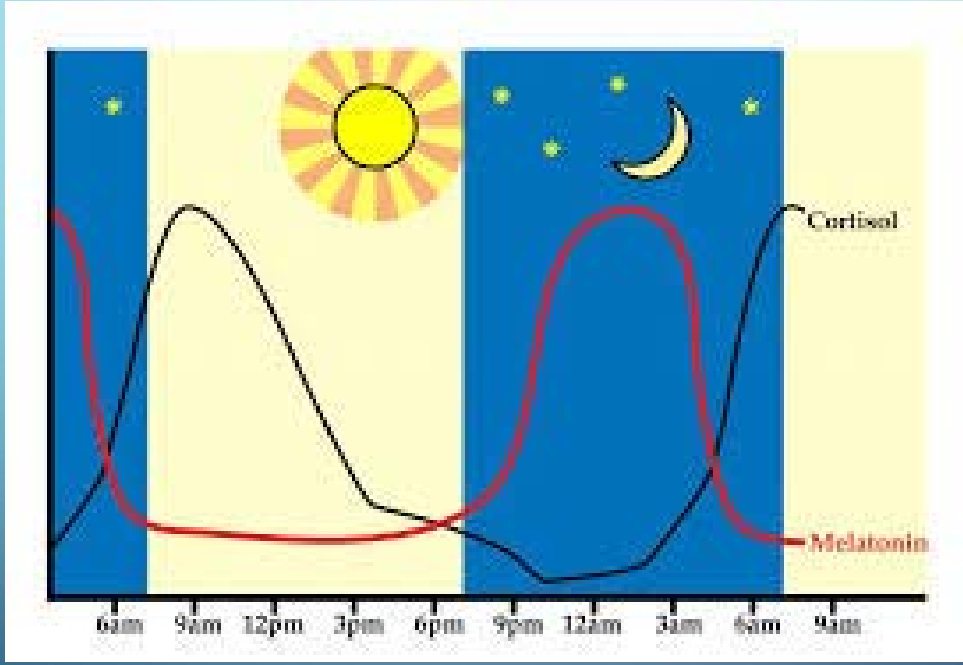
CORTISOL MELATONIN RELATIONSHIP



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AVOID SCREEN TIME BEFORE BED

- Laptops, IPADS, phones, TV all emit blue light that can cause major sleep problems.
- Blue light suppresses melatonin, **delays circadian rhythm, keeps you awake later and decreases the quality of the sleep you get**
- Blue light also boosts alertness, elevates mood, enhances memory and boosts cognitive functions
- LED and fluorescent lights also produce significant amount of blue light
- Cut out screens 1-1.5 hours before bed
- Use filters, Night Shift on all devices – helps, but not as good as abstinence!

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HAVE A CAFFEINE CURFEW

- Caffeine is a powerful CNS stimulant
- Induces adrenal glands to produce cortisol and adrenalin
- Has a half-life of approximately 5-8 hours
- Individuals are able to metabolize caffeine at different levels
- Can affect both stage 3 and 4 sleep
- Make curfew between 12-2 pm to remove the majority before bedtime

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TRAIN HARD BUT SMART

- Morning exercisers spend more time in the deepest stages of sleep, slept longer, and have more efficient sleep cycles.
- Morning exercisers have a 25% greater drop in blood pressure in the evening - correlated with activation of your parasympathetic system.
- Morning exercise resets your cortisol, upregulates your metabolism, and helps you sleep better.
- If you are awake at night and tired in the morning - you may be producing cortisol the wrong amount at the wrong time.
- Morning exercise boosts cortisol so it is elevated in the morning and drops gradually throughout the day.
- What type? Walk around block, tabata (20 seconds of exercise, 10 seconds of rest), 5 mins

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GO EASY ON THE BOTTLE

- Good news - alcohol can help you fall asleep faster
- Bad news – REM sleep is significantly disrupted– brain and body can't fully rejuvenate
- Adenosine levels rise in the body to encourage sleep – alcohol increases levels of this
- Women metabolize alcohol more quickly - consumption is more of a problem
- Causes relaxation of muscle tone in upper airway - increases sleep apnea symptoms
- Ideally, stop drinking

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CALM INNER CHATTER
TRAIN YOUR BRAIN

- Inner chatter is a result of the stress and business of the day
- Meditation – can be as little as 5 minutes
- Focus on breathing, use guided meditation, count steps walking around park
- The more frequently it is done during the day– the better able you are to control the chatter at night
- Chiropractic care lowers sympathetic N.S. tone and allows for deeper longer sleep.
- Meditation increases endorphins, serotonin, lowers cortisol, reduces inflammation, reduces chronic pain (and its free!)
- Advanced meditators have higher baseline melatonin levels than non-meditators

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CREATE A SLEEP SANCTUARY

- The only thing you should be doing in the bedroom is sleep and sex
- The brain looks for patterns – if the bedroom is seen as an entertainment center, there is no strong association to sleep
- It might light up – expecting to watch tv, scroll through social media, check likes on instagram
- Bringing office work to bed is one of the most offensive crimes you can commit

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SLEEP SANCTUARY

- Make sure there is fresh air in the room – open windows before bed
- Black out curtains – the darker the better
- White noise if necessary – earplugs are also helpful
- Cover alarm clock if you have one – any light will disturb sleep
- Phone should be on airplane mode if you MUST have it!
- Room should be cool

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FOCUSED BREATHING
THE 4-7-8 (RELAXING BREATH) EXERCISE

- Sit with your back straight
- Place tip of tongue just behind front teeth
- Exhale completely through mouth, making a whooshing sound.
- Close your mouth and inhale through your nose to a count of four – hold for count of 7 – exhale to count of 8
- Natural tranquilizer for the nervous system – start with 4-5 breathes

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USE SMART SUPPLEMENTATION

- Do not use supplementation as your first strategy!
- **Chamomile Tea-** contains a flavonoid (apogenin), which binds to GABA receptors in brain, calming the CNS; has significant anti-inflammatory properties
- **Valerian Root–** a moderate sedative, best for those who have difficultly falling asleep
- Passion flower – increases production of GABA – inhibitory neurotransmitter

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USE SMART SUPPLEMENTATION

- **5-HTP** is a neurotransmitter – precursor to serotonin – gets converted to melatonin, may take 6-12 weeks to be fully effective
- **GABA** – inhibitory neurotransmitter in brain – blocks action of excitatory brain chemicals
- **L-tryptophan** - pre-cursor to 5-HTP, available in some foods (turkey, pumpkin, collard greens)
- **Magnesium** – has calming affect on brain, increases time in stage 3 and 4, increases production of melatonin
- **Melatonin** – best for use during/after travelling especially if changing time zones. Can help sleep with shift workers

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BODY WORK

- **Massage** – has been show to increase relaxation, increase serotonin levels, activates the parasympathetic system, reduces cortisol, boosts immune system
- **Acupuncture – can directly stimulate the central nervous system and down regulate the sympathic NS. It can reduce pain, promote** relaxation and increase serotonin/melatonin level
- **Chiropractic Care -** one of the most direct and effective ways to lower sympathetic N.S. activity.

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ABDOMINAL MASSAGE

- **Abdominal Massage –** Stimulating vagus nerve is easiest to do through the gut
- Helps body "down regulate" the sympathetic NS – and up-regulate parasympathetic
- **How?** Using soccer-sized ball (but much softer) lie on stomach placing ball between stomach and floor.
- Take a deep breath in hold 5 sec and release.
- With each breath, the core muscles should relax more and ball will go deeper – putting more pressure on nerve, more relaxation

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QUESTIONS?

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DO YOU REMEMBER WHEN IT WAS SO EASY?

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