

Ready to learn: Why you need sleep and how to do it better!

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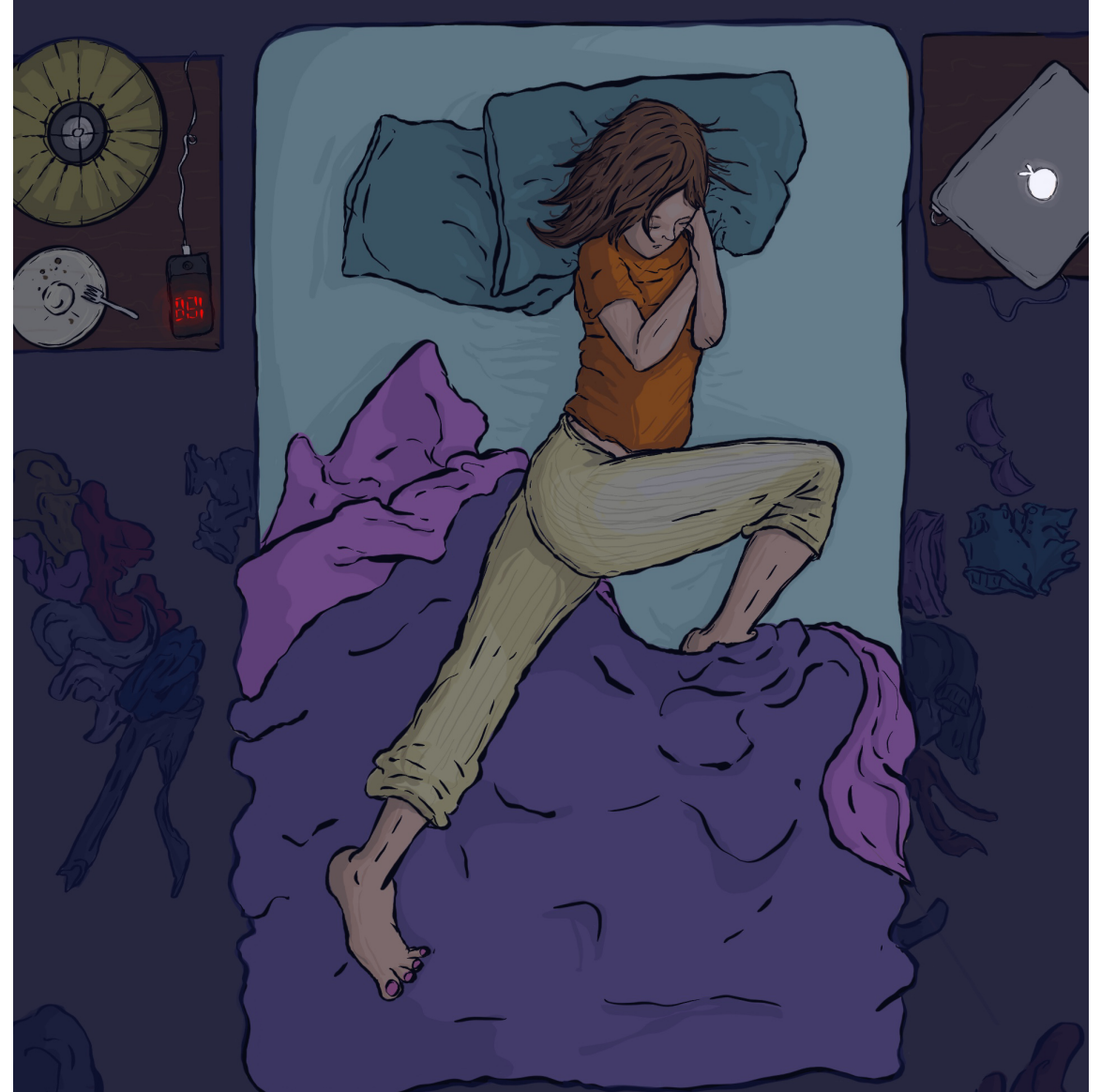
Why Care About Sleep?

- People don't get enough sleep
 - WHO finds that over half of adults in the developed world are getting less than the recommended sleep
- Sleep is as essential to life as food, water, and oxygen
- Too little sleep has significant negative consequences including death



Why as a teen should you care about sleep?

- Sleep impacts emotional regulation
- Kids brains are organizing more rapidly than adults (Synaptic proliferation and pruning)
- You need more sleep than adults
- Getting a good sleep is hard!
- CDC in US found that almost 60% of students grades 6-8 and almost 75% of students grades 9-12 were getting too little sleep



Understanding Sleep

- 3 Key Principles:
 - Circadian Rhythms
 - Sleep Pressure
 - Calming



Circadian Rhythms

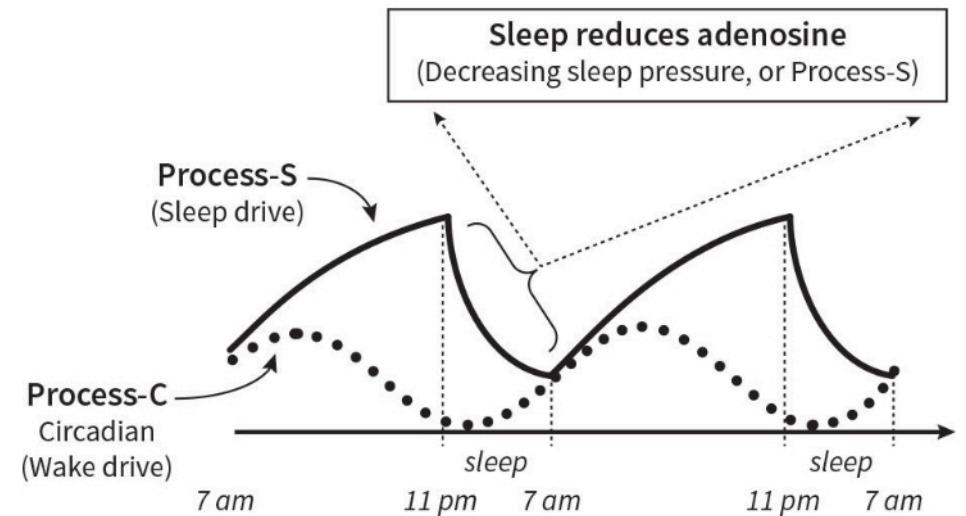
- Humans have a 24-hour clock sitting in the middle of your brain in an area called the Suprachiasmatic nucleus
- This dictates your daily wake and sleep pattern known as your *Circadian Rhythm*
- Light/temp are essential in setting this clock
- The clock influences neuro messengers like melatonin and basic body functions such as temperature and heart rate
- Variation between people in sleep clock with some brains adapting easier to later bedtimes and some earlier (Chronotype)



Sleep Pressure

- Your brain uses lots of energy- as it breaks down that energy adenosine is created
- When that adenosine reaches a certain level it influences the feeling of “sleepiness”
- Adenosine blockers, such as caffeine, or things that reduce adenosine, such as naps, influence how sleepy you feel and may make it harder to fall asleep
- The ideal neurological condition for sleep is the rise of adenosine correlating with the melatonin increase from circadian rhythms.

Figure 4: The Two Factors Regulating Sleep and Wakefulness

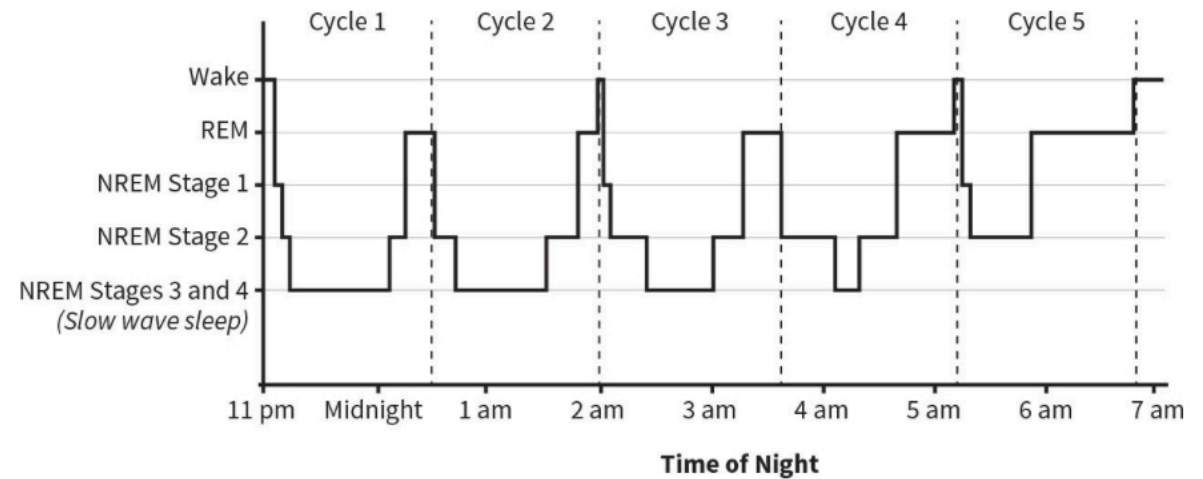


Walker, M. (2018). *Why we sleep*. Penguin Books.

Getting a “Good Sleep”

- Being “asleep” and getting a “good sleep” can be different things
 - Alcohol? (Sedation vs. Sleep)
- We need sleep not just as a rest from the day but as critical construction and caretaking periods for our advanced brains
- Sleep consists of Rapid Eye Movement (REM) sleep and Non-REM

Figure 8: The Architecture of Sleep



Walker, M. (2018). *Why we sleep*. Penguin Books.

What is happening when you sleep?

- Phase 1
 - Transition to sleep
 - Heart rate and breathing slow
 - Muscles begin to relax
- Phase 2
 - Further slowing of breathing/HR
 - Body temperature drops
- Phase 3/4
 - Deep sleep! (Hard to wake)
 - Muscle tissue repair/ cell regeneration
 - Neuro-cleaning
 - Immune system strengthens
 - Neurogenesis
- REM Sleep
 - Similar brain activity to wakefulness but muscle paralysis
 - Processing and storage of information in the brain



Sleep is hard for teens!

- Circadian rhythms shift back about two hours in teenage years
- Average sleep onset latency between 30 and 90 minutes
- More challenges with calming related to social media



How much Sleep is Enough Sleep

- Generally 8 hours is believed to be the optimal amount of sleep
- Less than 7 has been found to have serious physical and mental health consequences
- Children need more sleep than adults (8-11)
 - 9-11 hrs. 5-13 years old
 - 8-10 hrs. 14-17

(Tremblay et al., 2016)



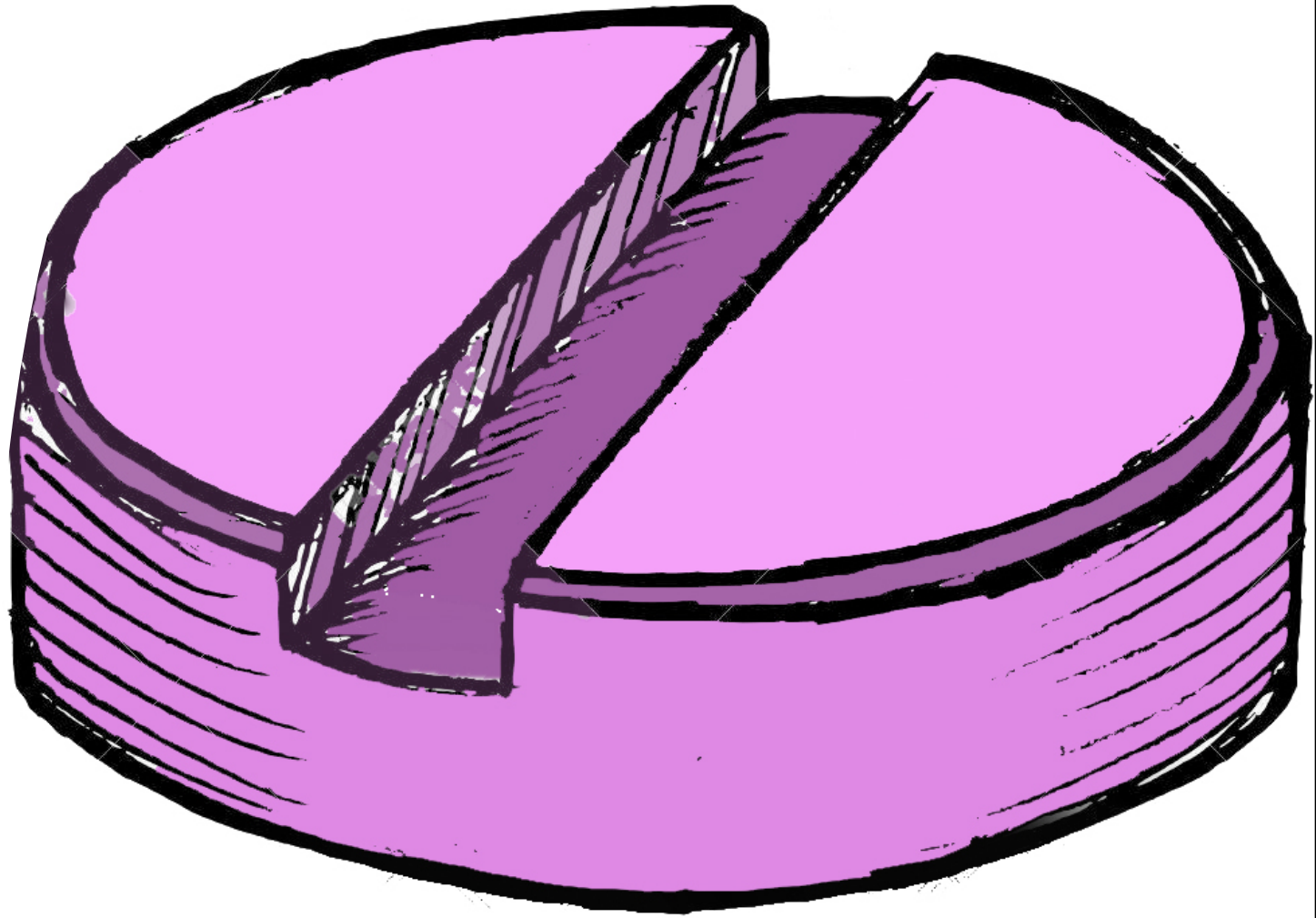
Anxiety and Sleep

- Nighttime anxiety is one of the biggest and most common concerns in children falling asleep and staying asleep
- Anxiety increases arousal and negatively impacts sleep onset and quality
- An anxious brain does not want to sleep as it may be seen as unsafe to do so
- NOT GETTING ENOUGH SLEEP INCREASES ANXIETY



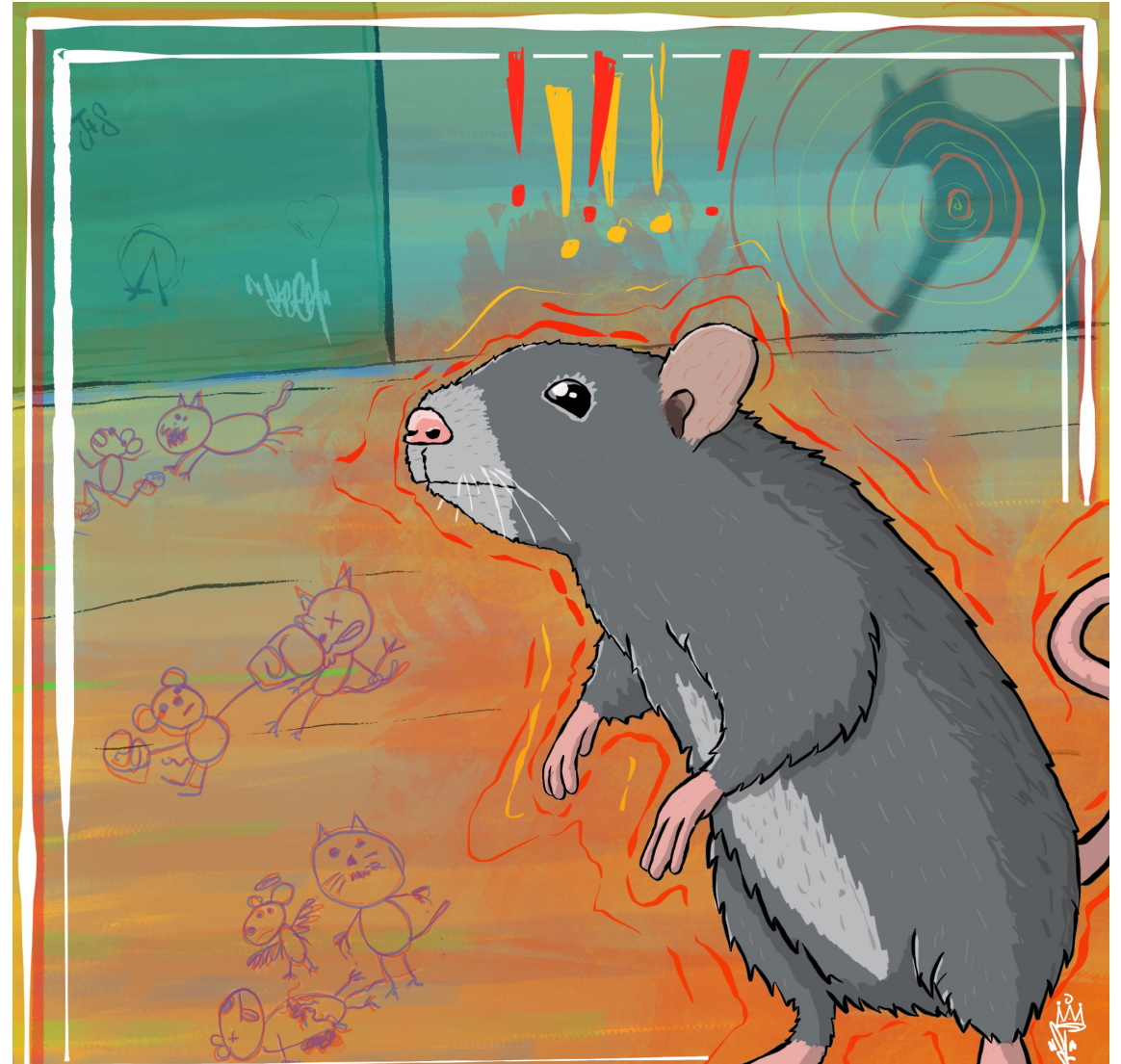
WHAT IF YOU HAD NO ANXIETY?

- what if you could take a magical pill right now that would get rid of all anxiety?
 - Would you take it?



Anxiety Briefly Explained

- Anxiety is an emotion
- Anxiety directs us towards behaviours typically associated with safety
- As anxiety increases, the nervous system is increasingly activated
- Exposure is key to overcoming anxiety and avoidance strengthens it overtime



How to get a good sleep!

- Go to bed at the same time each night!
 - Know how long it takes you to settle and incorporate this into your timing
 - Try not to change your sleep time too dramatically on weekends or holidays
 - If your routine does shift, like during summer break, know that it will take a few weeks to change it back





The bed is for sleep!

- Only use the bed for sleep
- Leave the bed and do a calming activity if you cannot sleep
- Do not eat or use media in the bed
- Do not do homework on the bed

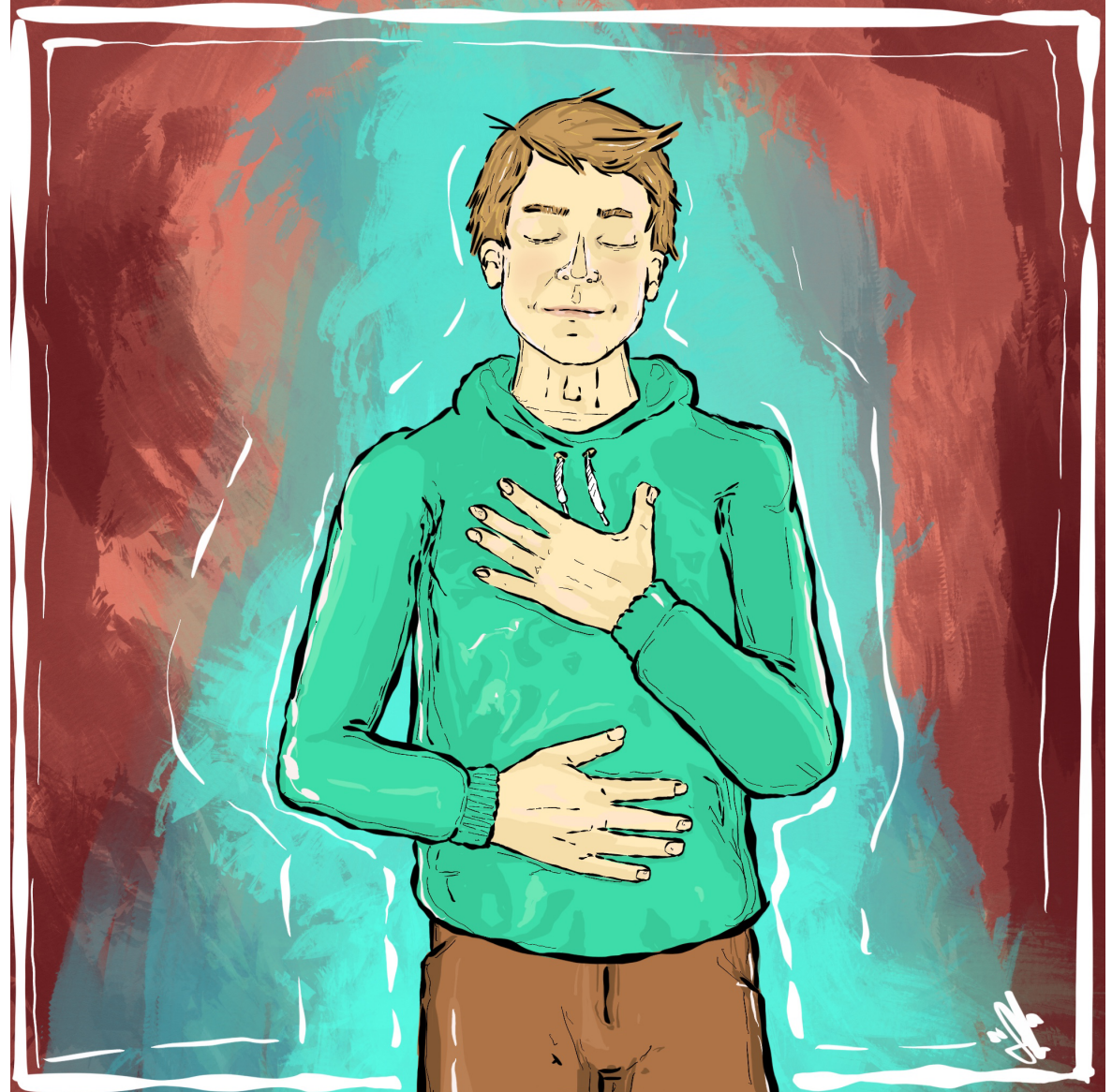
Practice calming activities before bed

- Digital media is not calming!
 - Digital media can look like calm as it is distracting—but it is also highly stimulating
 - If sleep is a problem shut off digital media 1.5 hours prior to bed
- Calming takes time!
- If transitioning from high stimulation activities—plan steps to help them calm (For example: from usual activity to a card game to reading to bed)
- Be cautious with exercise directly before bed



Practice Relaxation and Mindfulness

- Breathing
- Mindfulness/Meditation
- Muscle Relaxation
- Grounding



Creating a positive sleep environment

- **Lights**
 - As much natural light exposure during the day as possible with regular outside activity
 - The darker the sleep environment the better the sleep
 - Blue light or artificial light can influence sleep onset and quality
- **Temperature**
 - The ideal sleep temperature is about 18.5 C
 - Avoid tight fitting or overly warm sleep clothing and clothing that covers feet
 - Activities that allow a rapid calm- such as going from a bath to the bed or having a warm, non-caffeinated tea before bed- can help with falling asleep
- **Avoid clock watching**
 - Move the clock out of view or out of their room
- **Make the room a calming space**
 - Make it visually smaller (tent on the bed, dividers etc.)
 - Less clutter- a clean room leads to less guess work at night
 - Add static noise like a fan or sound generator
- **Problem solve outside of the bed**
 - The bed is for sleeping and calm



Drugs and Sleep

- Caffeine
 - Adenosine blocker
 - Stimulant
- Alcohol
 - Sedative
 - Decreases the quality/duration of sleep
- Pot
 - Increases anxiety over time
 - Might make falling asleep easier but the sleep you get is worse quality



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