Sleep

WORKBOOK



COLUMBIA HEALTH
Alice! Health Promotion

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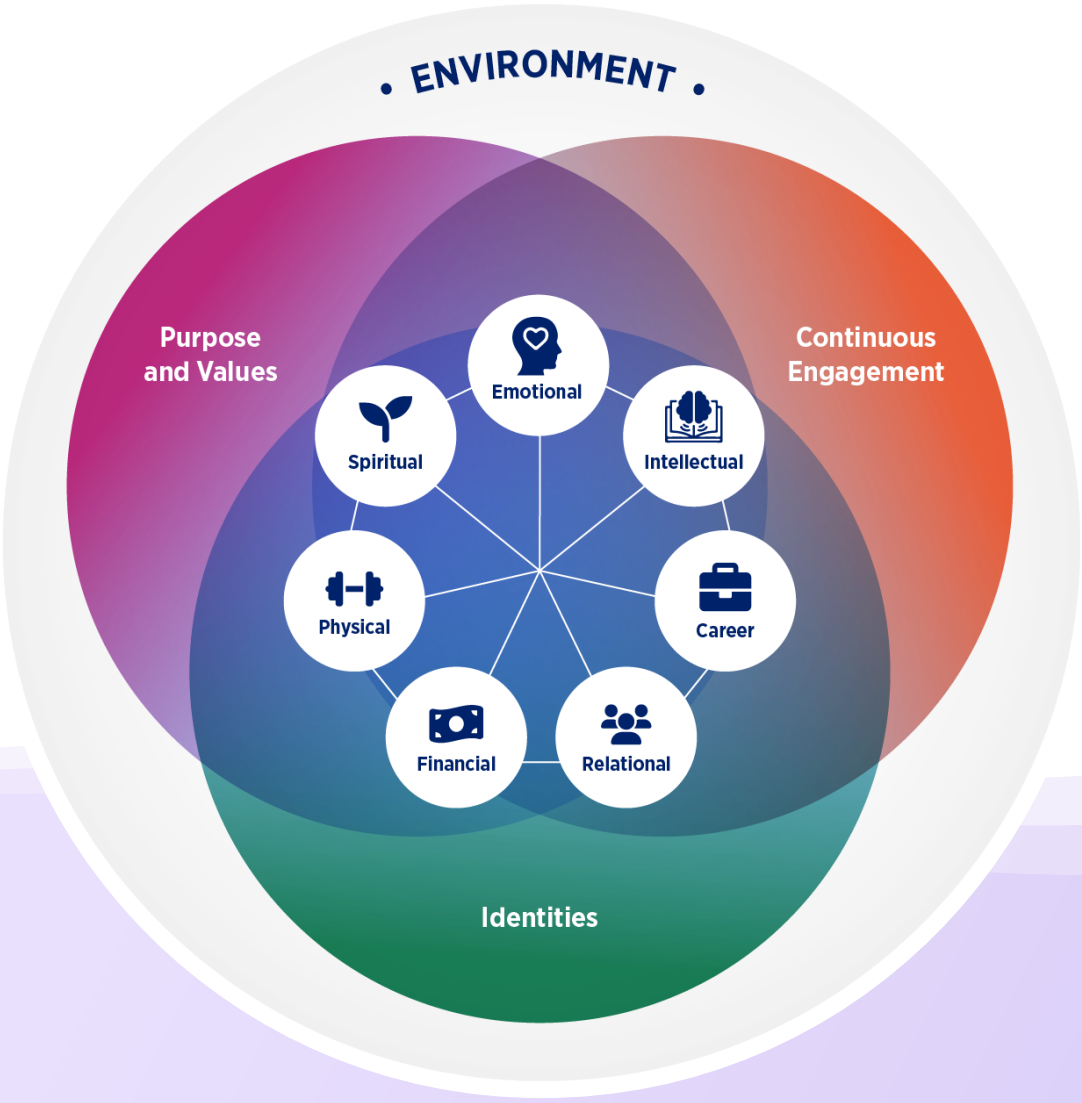
Dimensions of Well-being:

OVERVIEW



Well-being is individual to everyone, and it ebbs and flows.

It's dynamic and changes through your life and will be different for everyone. Well-being is not something you can achieve or an end goal.

What is Sleep?

Sleep is a restful state that the body goes into and is characterized by changes in:

- Brain wave activity
- Heart rate
- Breathing
- Body temperature
- Other physiological functions



It is recommended for adults to get at least seven hours of sleep a night to fully recharge for the day ahead!

Activity:

How does sleep influence other dimensions of your well-being?

Type here...

Physical well-being	*encourages...*	caring for your body.
Emotional well-being	*encourages...*	recognizing, expressing, and managing emotions; it also encourages the ability to adapt to changing environments.
Relational well-being	*encourages...*	developing social connections within your inner circles and broader communities to nurture a sense of belonging.
Financial well-being	*encourages...*	managing and navigating monetary resources to support current and future needs.
Spiritual well-being	*encourages...*	engaging in practices to connect to something beyond yourself.
Career well-being	*encourages...*	exploration of personal and professional growth throughout the ebbs and flows of one's work.
Intellectual well-being	*encourages...*	lifelong learning and exploration of passions to engage the mind.

Why Do We Need Sleep?

Cognition

- Helps with memory consolidation
- Increases ability to store memories and memorize more material after learning something new

Mood

- Supports problem solving skills
- Helps with stress coping
- Stabilizes mood
- Allows for better concentration
- Increases patience

Metabolism

- Stabilizes hunger hormones when you're sleeping
  - Leptin satiates hunger
  - Ghrelin stimulates appetite (when you're not sleeping enough these levels are higher)

Heart Health

- Regulates stress hormones
  - Regulated stress reduces the risk of high blood pressure

Safety

- Increases alertness, which helps keep you safe
  - Being alert on public transportation, more aware of your surroundings, and helps you make better decisions, etc.

Diabetes

- Regulates blood sugar levels
  - Less sleep can create more insulin resistance or higher blood sugar levels

Life Expectancy

- Contributes to better health outcomes and increases life expectancy

Activity:
What factors get in the way of your sleep?

Check all that apply:

- ☐ Light
- ☐ Noise
- ☐ Caffeine
- ☐ Irregular schedule
- ☐ Stress
- ☐ Screen time
- ☐ Staying up late to study
- ☐ Socializing
- ☐ Not sure
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

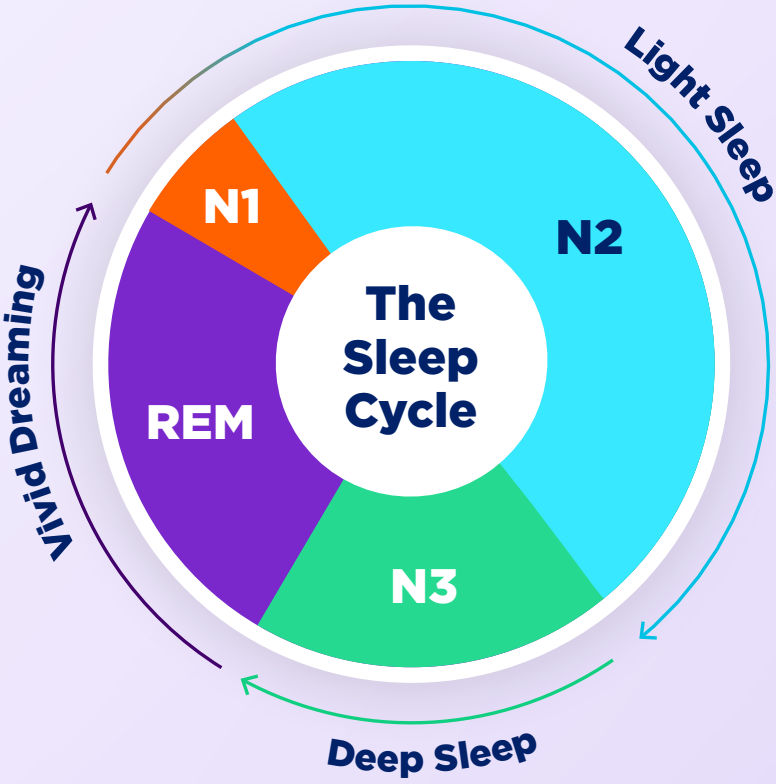
What are the Stages of Sleep?

Stage 1: Non-REM 1

This is the *lightest stage of sleep* and occurs as a person *first falls asleep*. During this short period of relatively light sleep, your heartbeat, breathing, and eye movements slow, and your muscles relax with occasional twitches. Your brain waves begin to slow from their daytime wakefulness patterns. This stage lasts about *1-7 minutes* on average.

Stage 2: Non-REM 2

This is where the body starts to *relax more deeply*. Body temperature drops, muscles relax, eye movements stop, and heart and breathing rate slow. Brain wave activity slows but is marked by brief bursts of electrical activity. It lasts about *10-25 minutes*.



Adults go through 4-6 sleep cycles a night!

Stage 4: REM Sleep

This is *where most dreaming occurs*, brain activity increases, and the body becomes temporarily paralyzed. Your eyes move rapidly from side to side behind closed eyelids. Mixed frequency brain wave activity becomes closer to that seen in wakefulness. Your breathing becomes faster and irregular, and your heart rate and blood pressure increase to near waking levels. It lasts about *10-60 minutes*.

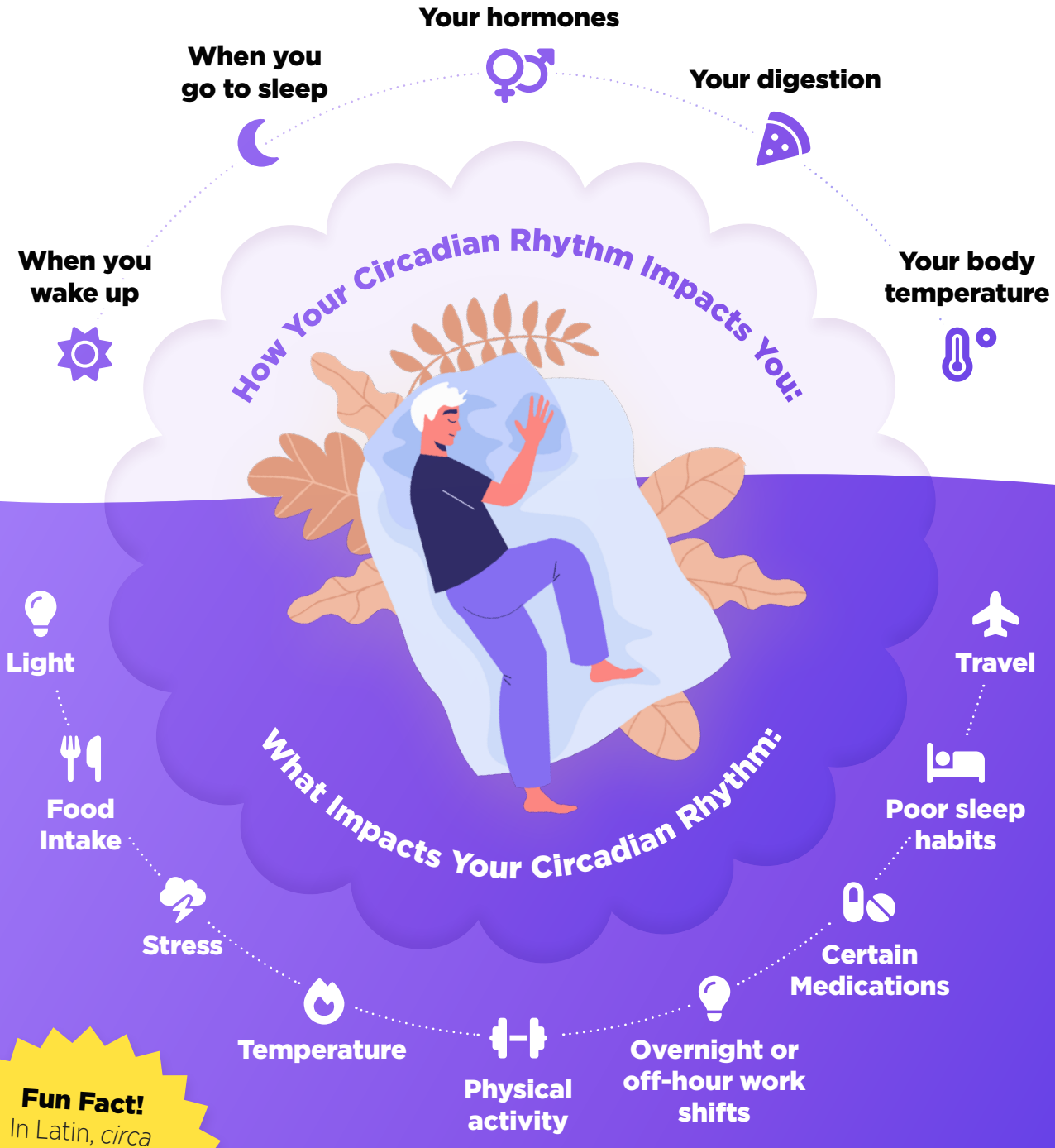
Stage 3: Non-REM 3 (Deep Sleep)

This is the deepest and more *restorative sleep*, allowing the body to *recover and grow*. Your muscles are relaxed and it may be difficult to wake you up. Brain waves become even slower. It lasts about *20-40 minutes*.

What is the Circadian Rhythm?

Circadian Rhythm is your body's natural 24-hour sleep/wake clock!

Your body's internal clock sends signals from a part of your brain called the suprachiasmatic nucleus or SCN. The SCN is sensitive to light and coordinates with it! This helps keep your circadian rhythm in check.



Fun Fact!
In Latin, *circa* means "around/approximately" and *diem* means "day."

What are other factors to consider about your sleep?

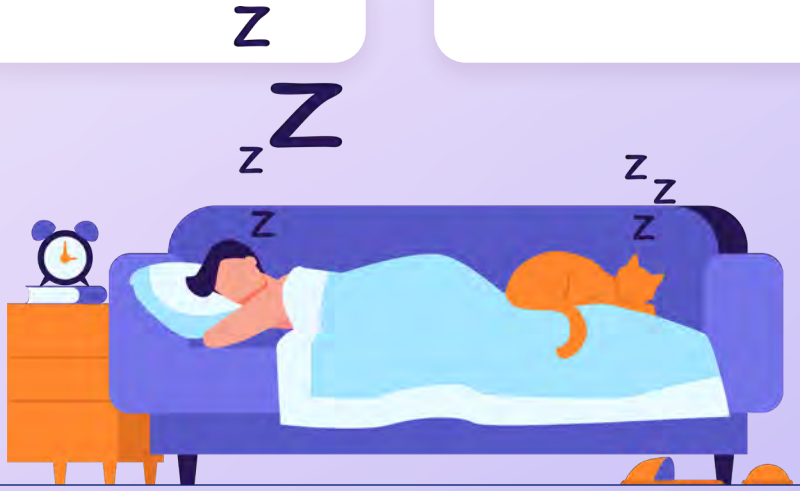
Sometimes you might find that you need a break in the middle of the day and turn to a nap! Naps can be a helpful way to keep tracking with your 7-9 hours of sleep for the day, but there are a few things to keep in mind.

Tips for Napping:

- Taking a 90-minute nap allows you to go through one full sleep cycle which reduces grogginess
- Avoid taking naps after 5pm because it could impact your night's sleep
- Naps can be beneficial but do not replace the sleep you've lost

Supplements:

Melatonin is a hormone that's produced naturally by a gland in your brain. *Melatonin supplements* can help you fall asleep but only for *short-term use (1-2 months)*. Take it 30-45 minutes before you want to fall asleep.*



**Don't use melatonin if you are pregnant, breastfeeding, have an autoimmune disorder, a seizure disorder, have depression or take medications that might interact with melatonin.*

**This is general information and is not medical advice as supplements are not regulated by the FDA. If you have any concerns, please consult your doctor!*

What happens when your body doesn't get enough sleep?

There are different levels at which a lack of sleep can influence your day to day! Read the following definitions to understand how these terms are defined and related.

Fun Fact!
After 17-19 hours without sleep, response speeds were 50% slower and there were poorer accuracy levels than having a BAC of 0.05% (Williamson & Feyer, 2000). This is higher than the legal limit to drive a car.

Sleep Deprivation:

- Acute or chronic sleep loss
- Sleeping no hours for one night or little hours for a few nights

Sleep Debt:

- Total hours of sleep loss
- It can take up to four days to recover from one hour of sleep loss

Sleep Insufficiency:

- When someone experiences less sleep than required
- When someone experiences low quality sleep on a regular basis



There are various ways in which a lack of sleep impacts the body, mind, and emotions. You'll often find that impacts to one area of the body can carry over into other area of your life.

Cognitive Performance:

- Attention deficits
- Slower reaction times
- Fatigue
- Restlessness
- Lack of coordination
- Poor decision making skills
- Increased errors

Physical Health:

- High blood pressure
- Heart attack
- Obesity
- Diabetes
- Hunger

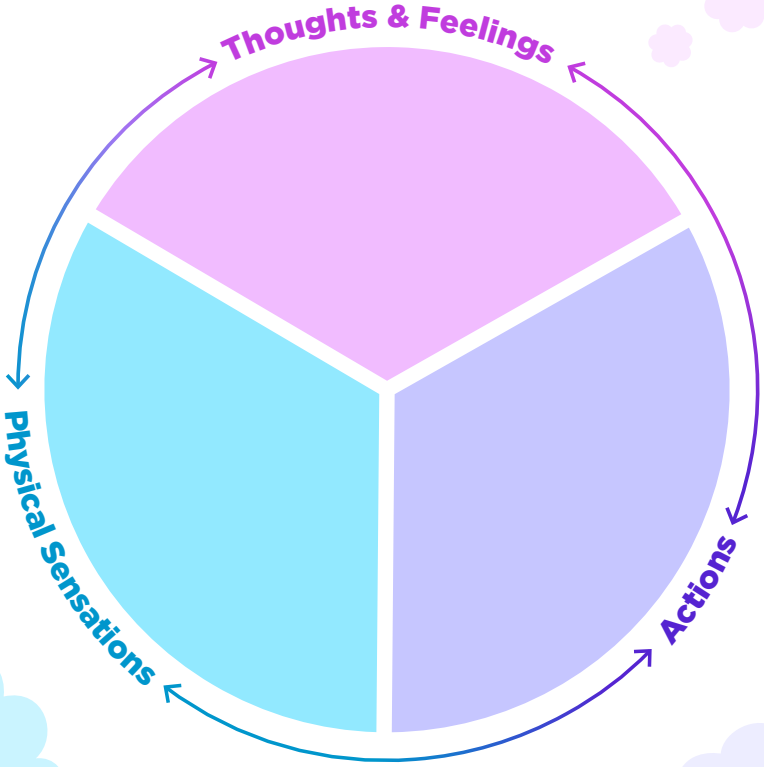
Mood and Behavior:

- Irritability
- Lack of motivation
- Anxiety
- Symptoms of depression

Activity:
Grounding exercise

If you're having trouble falling asleep, a grounding exercise may help! Both physical and mental ground techniques can help to "unstick" you from difficult feelings.
Let's try one now by filling in the graph!

How do you feel when you can't sleep? How do you feel the day after you've not slept well? What goes through your head?



What do you notice in your body?

What do you do when you can't sleep? What do you do to cope when you're tired?

My Situation:

Type here...

Impact:

Type here...

Sleep Hygiene: A variety of different practices and habits that are necessary to have a good nighttime sleep quality and full daytime alertness.

Sleep Routine: Having a set, consistent sleep routine will improve how you feel throughout the day. Find a routine that works for you.

Finding Your Sleep Routine: Go to bed at the same time for two weeks and allow yourself to wake up naturally (without an alarm clock). You'll eventually start waking up at the same time!

Fun Fact!
Those who can successfully function and thrive off of less than six hours of sleep only make up 1-3% of the population.

Activity:

Keep a record of your sleep for one week using the sleep diary provided

WEEK	Mon	Tues	Weds	Thurs	Fri	Sat	Sun
Please complete the section below in the morning:							
I went to bed last night at:							
I got up this morning at:							
I slept for a total of (hours):							
I woke up during the night (no. of hours):							
Please complete the section below in the evening:							
Number of caffienated drinks today:							
Number of alcoholic drinks today :							
Time of last caffienated drink:							
What I did in the hour before I fell asleep:							
Number of naps today:							

What are Sleep Trackers?

Sleep trackers monitor your sleep. They can be both wearable or non-wearable.

Depending on the device, they can:

- Track trends (Sleep stages/Habits/ Quality/Duration/Etc.)
- Record respiration and heart rate
- Detect movement/sounds
- Take temperature of room
- Pair with phones
- Pair with fitness apps

You may want to try out a sleep tracker if:

- We want to assume that people are coming from
- You want to learn more about your sleep patterns
- You feel tired during the day
- You have a hard time falling asleep
- You want to discuss the information with your doctor
- You want to be woken up with a smart alarm in a certain window of your sleep rather than a set time (It's easier to wake up when you're not in deep sleep!)



What else can help with your sleep?

Factors:

Sleep environment:

- Keep your space comfortable, at a cooler temperature and reduce outside noise with earplugs or white noise

Light:

- Darkness signals to the body that it's time to go to sleep
- Avoid your phone or computer when winding down to avoid the harmful effects of blue light, which can impact getting to sleep or sleeping deeply
  - *Tip: If you wake up in the middle of the night and can't get back to sleep in about 20 minutes, engage in a quiet, restful activity, like reading or listening to music. And remember to keep your room lights dim or off to keep your internal clock in check!*

Practicing stress management:

- Stress is the main cause of inability to sleep
- Practice basic stress-coping techniques, such as time management, seeking support, eating healthy, physical activity and relaxation techniques (deep breathing, drawing, etc.)

Establishing a bedtime ritual

- Helps to condition your body and mind to prepare for sleep
- Find something relaxing that isn't too stimulating and doesn't intensify emotions

(CDC, 2017) (Harvard Health, 2018) (Hershner & Chervin, 2014) (Hershner & Chervin 2014)

Activity:

What's the formula for quality sleep?

Habit Stacking: Habit stacking is when you take advantage of an existing habit by attaching a new habit along with it, so that you can incorporate it into your routine. This helps build consistency with the new behavior so that the habit becomes automatic. It can be difficult to create a habit! Habit stacking may help.

Part 1: Existing behaviors

Read through the chart and identify behaviors that already exist in your nighttime routine.

Type here...

Part 2: New habit

What is a habit that you would like to incorporate and better your sleep hygiene?

Type here...

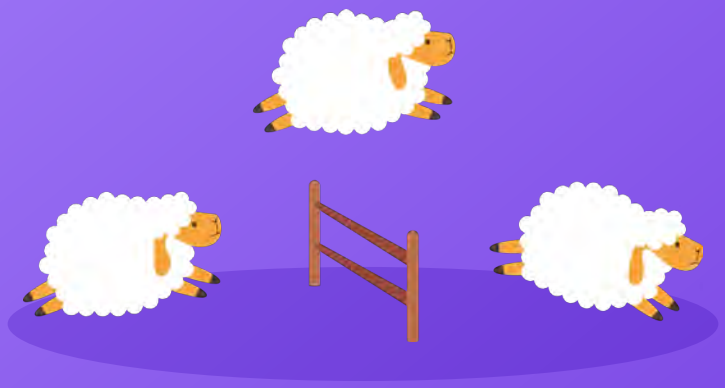
Timing:	• Set a constant bed time • Set a constant wake time • Do not take naps
Sleep Behavior:	• Have a pre-sleep ritual • Use the bed only for sleep • If unable to go to sleep for more than 15 minutes, get out of bed
Environment:	• Take a warm bath • Keep temperature of the room constant • Keep bedroom dark
Ingestion:	• Avoid caffiene, nicotine, and alcohol before bed • Eat a light snack before bed
Mental Control:	• Avoid stimulating activites; do mentally quiet tasks • Use relaxation techniques (breathing, imagery)

Part 3: Behavior stack

Reflect on what strategy you want to try and think about how to pair it with that existing behavior. Add it to this formula to create your perfect habit stack!

Existing Behaviors + New Habit = Behavior Stack!

Type here...



Remember, behavior change is not linear! You may be thinking about making this change, you may be ready to start as soon as possible, or somewhere in between. If you would like support around implementing your habit stack to get quality sleep, consider scheduling a Health Promotion Appointment or Wellness Coaching session.

Keep in mind that sleep is foundational for your well-being and is unique to you and your lifestyle. If you are trying these strategies and find that none are working for you, consider meeting with a health care professional to talk about other options that could support your sleep.

Resources

Columbia University

- **Alice! Health Promotion**
  - Health Promotion Appointments
  - Wellness Coaching
- **Counseling & Psychological Services**
- **Disability Services**
- **Nutritionist, Medical Services**
- **Dodge Fitness Center**

External Resources

- Review of helpful tips: https://jedfoundation.org/resource/goodnight-to-all-nighters-your-guide-to-actually-getting-sleep-in-college/
- Has resources and tools such as a Bedtime Calculator and Sleep Diary: https://sleepeducation.org
- Learn about sleep disorders: https://medlineplus.gov/sleepdisorders.html
- Recommended books, apps and wearables: https://kinwellhealth.com/blog/general-health/tools-for-a-better-sleep/
- Additional information: https://www.hopkinsmedicine.org/health/wellness-and-prevention/sleep

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