

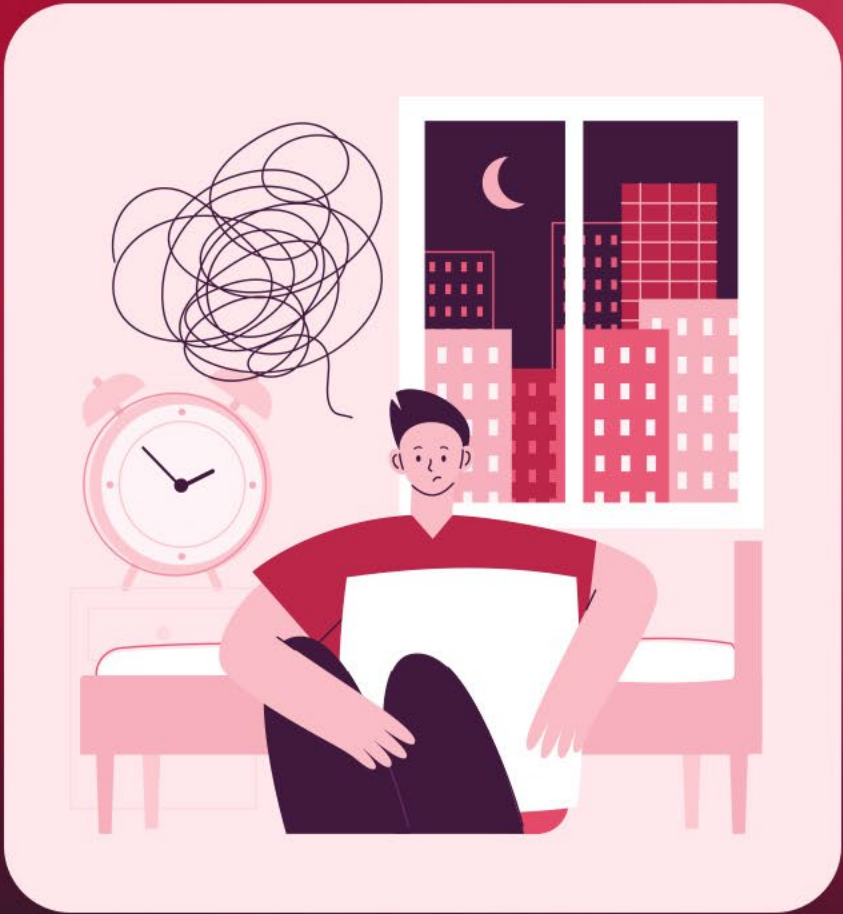
IN PARTNERSHIP WITH



More Than a Symptom:

Understanding and Assessing Sleep Disturbances in Psychiatric Practice

MasterClass



Supported by an educational grant from Harmony Biosciences.

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Faculty Disclosures

Chelsie Monroe, APN, PMHNP-BC: Consultant/Advisor—AbbVie, Axsome, Alkermes, Bristol Myers Squibb, Neurocrine Biosciences, Otsuka Pharmaceuticals, Teva Pharmaceuticals; Speakers Bureau—AbbVie, Alkermes, Axsome, Bristol Myers Squibb, Neurocrine Biosciences, Otsuka Pharmaceuticals, Teva

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- Applicable CME staff have no relationships to disclose relating to the subject matter of this activity.
- This activity has been independently reviewed for balance.

Learning Objectives

- Describe the overlap and bidirectional relationship between sleep/wakefulness and mental health, including SWDs and psychiatric disorders
- Utilize strategies and tools to improve the detection of insomnia, hypersomnia, and related SWDs in patients with psychiatric disorders
- Implement patient-centered, cross-disciplinary treatment plans for patients with comorbid SWDs and psychiatric disorders

Clinical Significance of Sleep in Psychiatric Practice

Sleep Is the Foundation of Mental Health



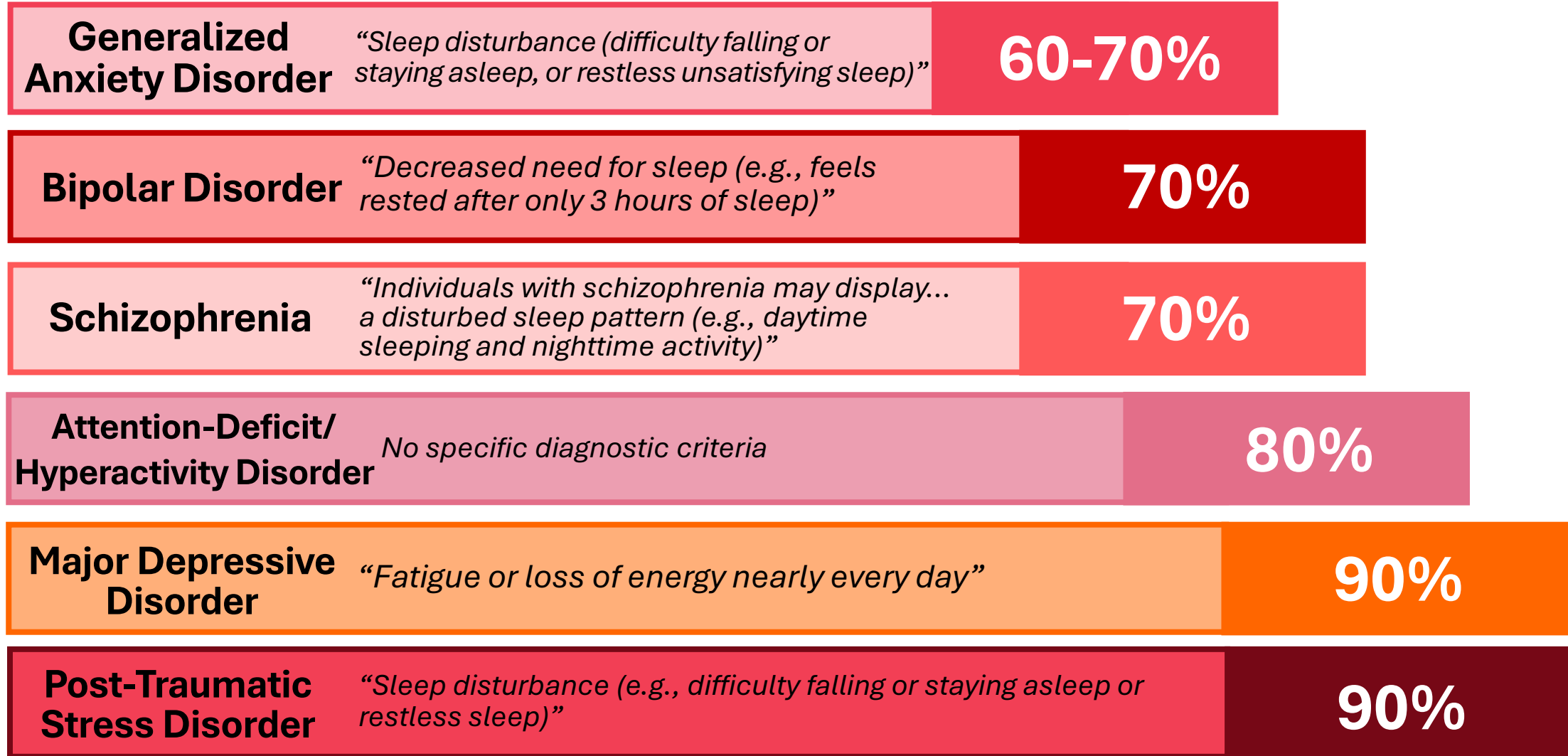
...and without a good foundation,
your whole house will crumble

Sleep disorders are often accompanied by **changes in mood, anxiety, and cognition** that must be addressed in treatment planning and management.

Furthermore, persistent sleep disturbances (both insomnia and excessive sleepiness) are established **risk factors** for the subsequent development of mental illnesses and substance use disorders.


They may also represent a **prodromal expression** of an episode of mental illness, allowing the possibility of early intervention to preempt or attenuate a full-blown episode.

Sleep Disturbances Are Highly Prevalent and Part of the Diagnostic Criteria for Most Psychiatric Conditions



Prevalence and Consequences of Sleep Disturbances...

In Major Depressive Disorder



In about 1/3, sleep difficulties do not resolve with antidepressant treatment

sleep difficulty occurs in as many as 90%

Those with **poor sleep** have:



Lower remission rates



Faster relapse



Slower improvement



Poorer quality of life

Independent of depression severity

At least **32 studies** (as of 2012) have identified that sleep disturbance is **significantly linked to suicidal ideation or completed suicide**, even when controlling for age, gender, diagnosis, and severity of depressive symptoms.

Prevalence and Consequences of Sleep Disturbances...

In Bipolar Disorder

Sleep-related functioning was assessed subjectively using data from interviews and 8 nights of sleep diaries, as well as objectively with actigraphy in individuals with:

Bipolar Disorder in euthymia, Insomnia Disorder, and in healthy volunteers with good sleep (N=20 in each group)

70% of those with bipolar disorder who were **euthymic** exhibited a clinically significant sleep disturbance.

Higher levels of anxiety and fear about poor sleep

Lower sleep efficiency

Compared with the other groups, the bipolar disorder group exhibited:

Lower daytime activity levels

A greater tendency to misperceive their sleep

In Schizophrenia

Insomnia
80%

Most people with schizophrenia experience **significant sleep problems**

Nightmare Disorder
48%

Circadian Rhythm Disruptions
40%

Sleep disruption significantly predicts the **onset and persistence of psychotic experiences**, such as paranoia and hallucinations

Prevalence and Consequences of Sleep Disturbances...

In Generalized Anxiety Disorder

About **60–70%** of patients with GAD and panic disorder reported prominent sleep disturbances

Up to **90%** of individuals with GAD report **insomnia symptoms**

Insomnia interacts with the **emotional, cognitive, and physiological** processes underlying anxiety

excessive worry

can lead to

poor sleep

perpetuates

In Post-Traumatic Stress Disorder

In the general population:

More sleep symptomology is associated with **greater PTSD symptom severity**



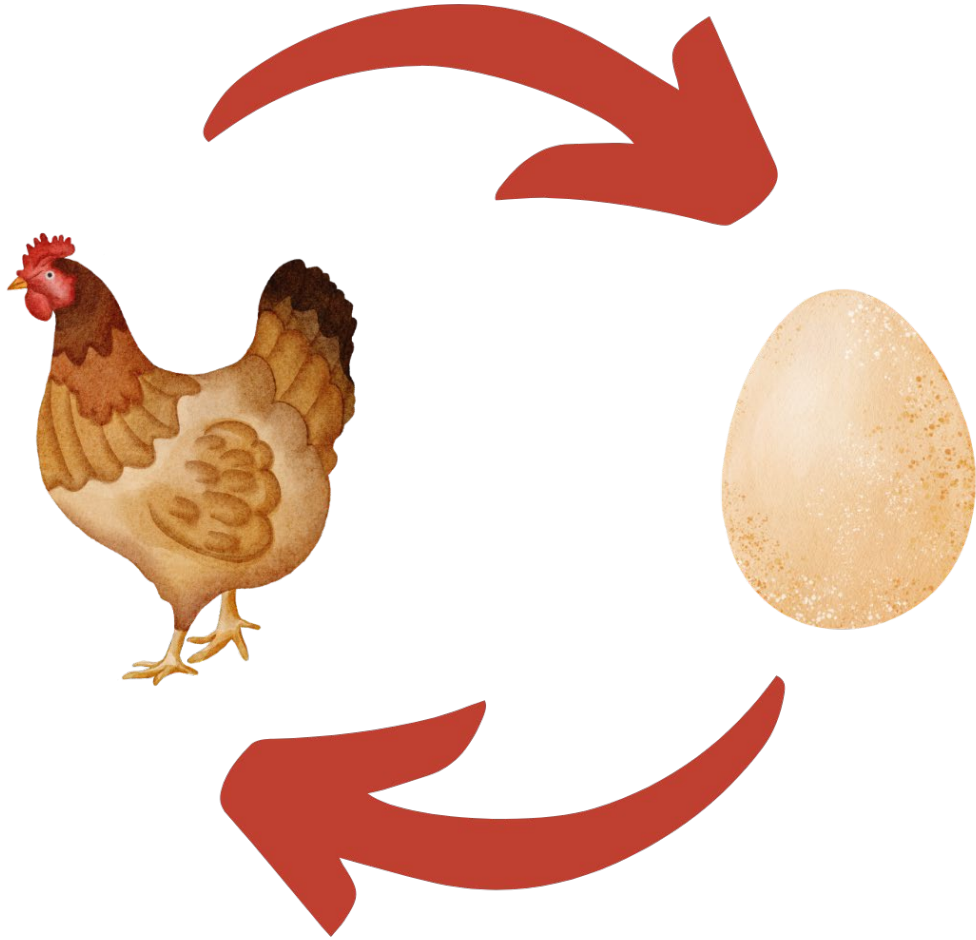
Nearly 40% of participants with PTSD had an insomnia disorder

Dangerous behaviors during sleep (punching, kicking, etc.) occur **10x more often in PTSD**

GAD=Generalized Anxiety Disorder; PTSD=Post-Traumatic Stress Disorder.

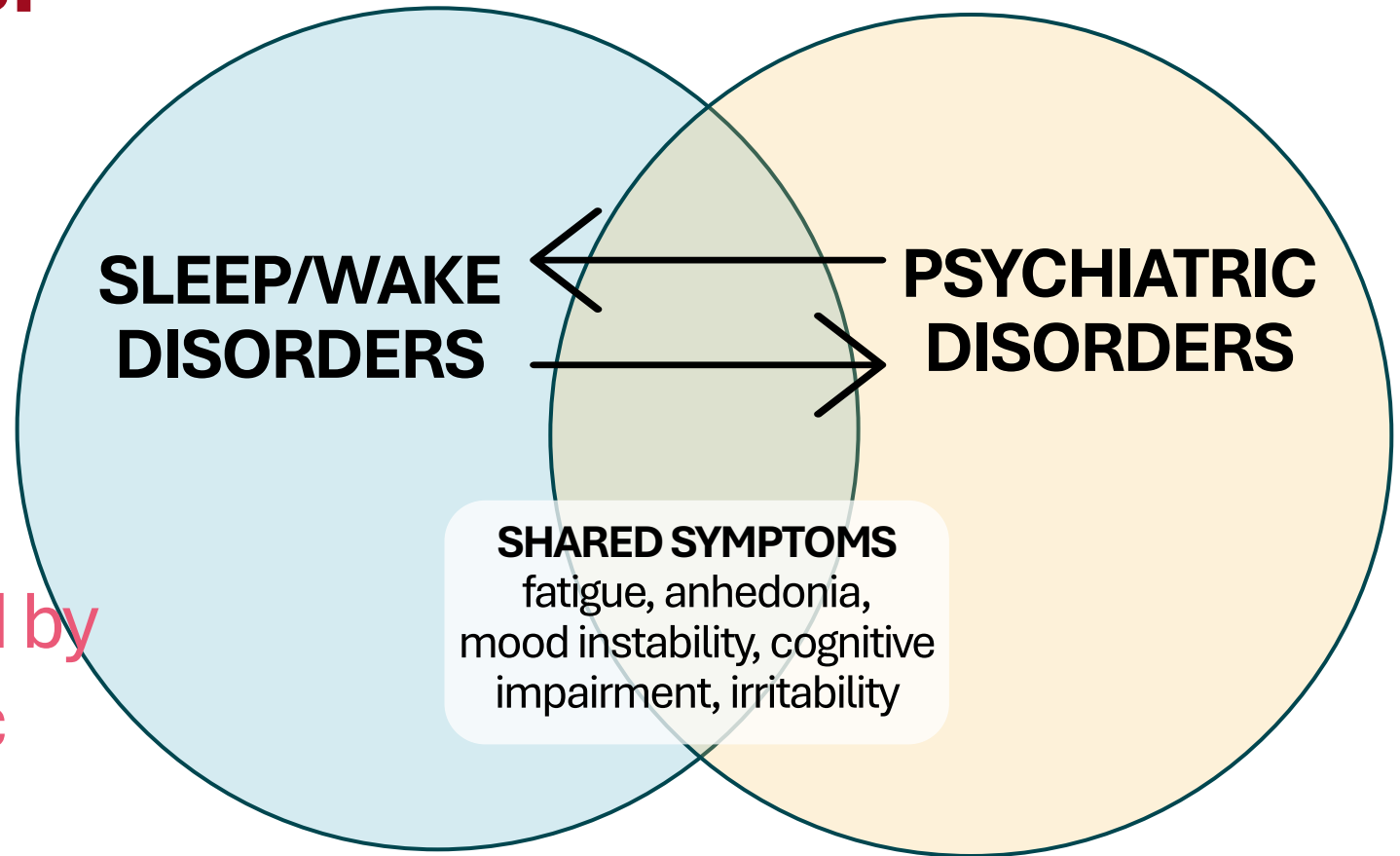
Monti JM, Monti D. *Sleep Med Rev.* 2000;4(3):263-276. Xue Y, et al. *Sleep Med.* 2025;132:106545. Slavish DC, et al. *Sleep Med.* 2023;101:269-277. Koffel E, et al. *Psychiatr Ann.* 2016;46(3):173-176. Ohayon MM, Shapiro CM. *Compr Psychiatry.* 2000;41(6):469-478.

Do Psychiatric Conditions Cause Sleep Disorders? ...or do Sleep Disorders Cause Psychiatric Conditions?



Sleep disturbances are both a **risk factor** and a **symptom** of psychiatric disorders

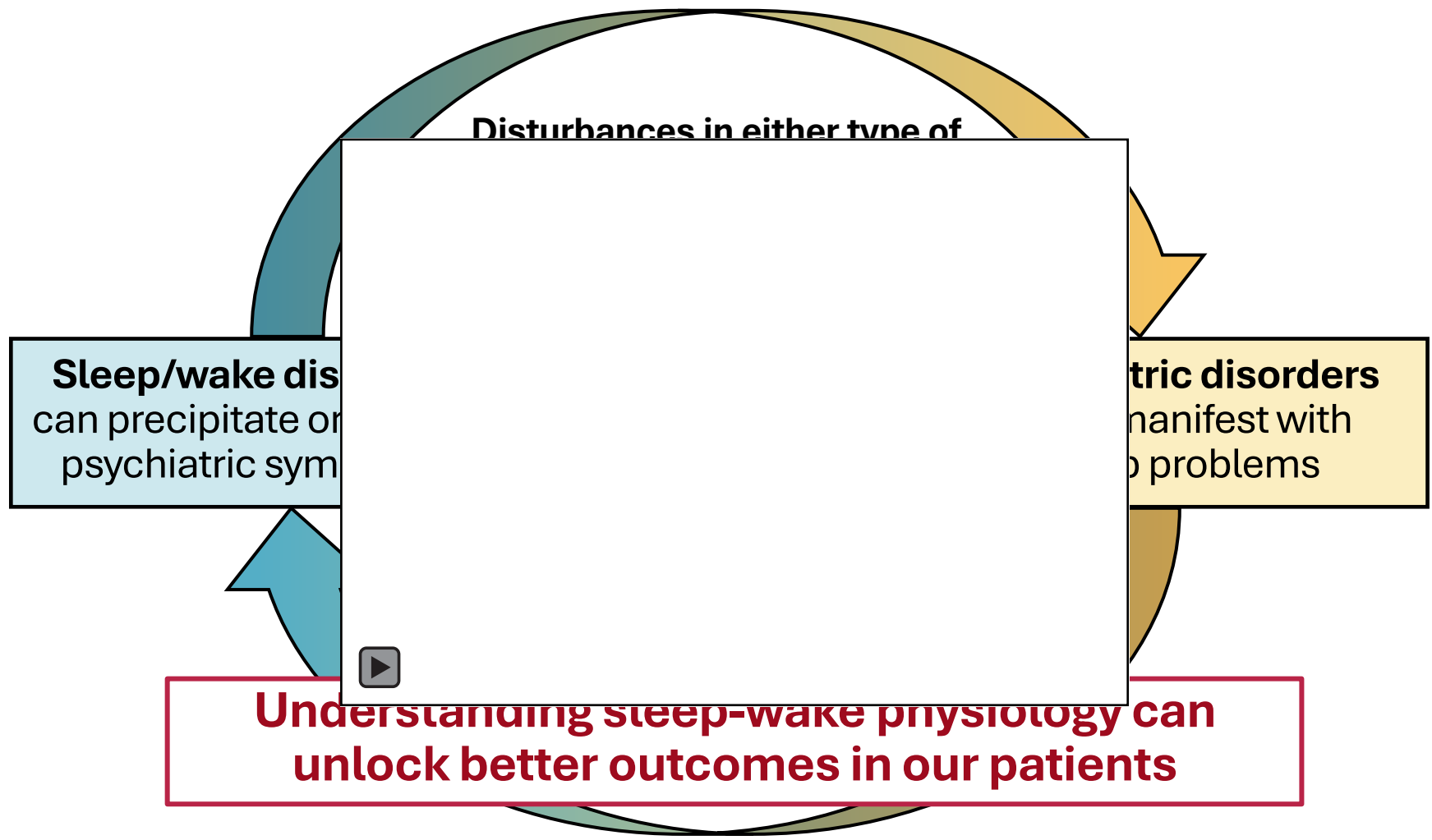
Also, Each May Exacerbate the Other



...and can be worsened by
common psychiatric
medications



Sleep/Wake and Psychiatric Disorders Are Bidirectional



Key Learning Points



- There is a bidirectional relationship between sleep-wake disorders and psychiatric disorders, so sleep symptoms can give us a glimpse into an individual's psychiatric status
- Sleep/wake disorders and psychiatric disorders are often **not mutually exclusive**, as they frequently co-occur and share overlapping symptoms that can exacerbate each other
 - Example: Sleep disturbances occur in approximately **90% of patients with MDD** and are significantly linked to suicidal ideation and completed suicide
- SWDs and psychiatric disorders may also be worsened by medications
 - Example: SSRIs are associated with insomnia at a rate of **3x greater than placebo**
- Sleep disturbances negatively impact an individual's mental health in various ways, regardless of their diagnosis

Normal Sleep and Wakefulness

Circadian Rhythm... More than What Meets the Eye?

2017 Nobel Prize in Physiology or Medicine

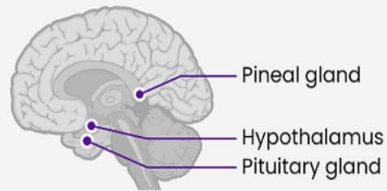
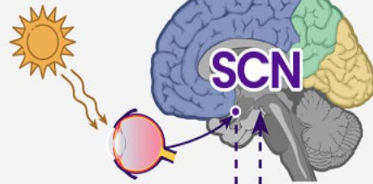
The Suprachiasmatic Nucleus (SCN) Our "Master Clock"

Suprachiasmatic Nucleus (SCN)
The Central or "Master" Clock

Light Zeitgeber

Zeitgeber comes from two German terms: *Zeit*, meaning "time," and *Geber*, which means "giver."

They are cues that help entertain our **Circadian Rhythm**.



Region of the brain that receive signals from the SCN and help regulate the circadian rhythm include **pineal gland, hypothalamus and pituitary gland**

Nonlight Zeitgeber

- Physical activity
- Eating
- Sleep-wake patterns
- Social interactions



Circadian rhythm is part of the body's **internal clock**; it follows a 24-hour schedule, and regulates the sleep-wake cycle, hormone production, other bodily functions and our behaviors.



Jeffrey C. Hall

Born: 1945, New York, NY, USA

Affiliation at the time of the award: University of Maine, Maine, ME, USA

Prize motivation: "for their discoveries of molecular mechanisms controlling the circadian rhythm"



Michael Rosbash

Born: 1944, Kansas City, MO, USA

Affiliation at the time of the award: Brandeis University, Waltham, MA, USA, Howard Hughes Medical Institute

Prize motivation: "for their discoveries of molecular mechanisms controlling the circadian rhythm"



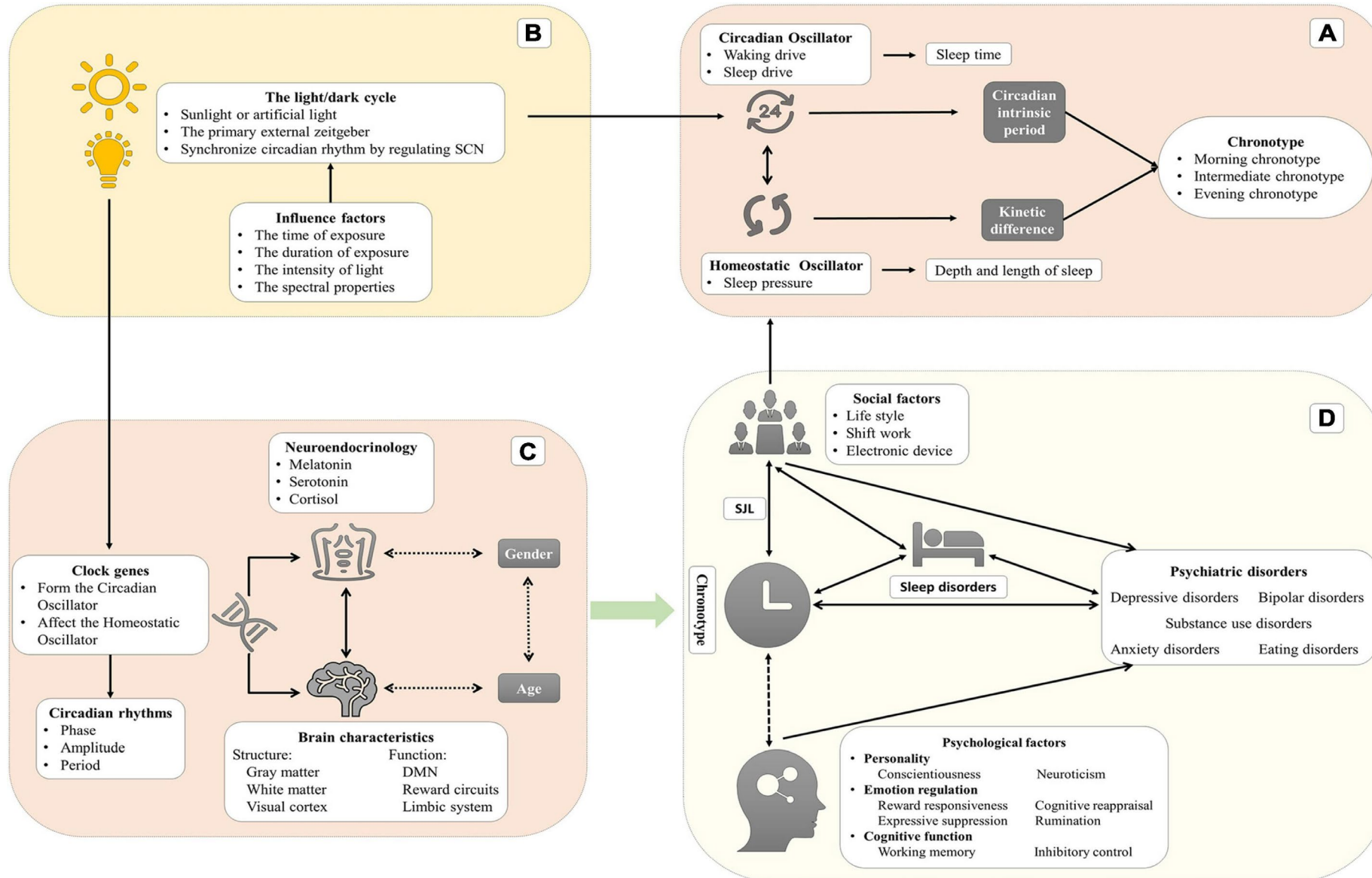
Michael W. Young

Born: 1949, Miami, FL, USA

Affiliation at the time of the award: Rockefeller University, New York, NY, USA

Prize motivation: "for their discoveries of molecular mechanisms controlling the circadian rhythm"

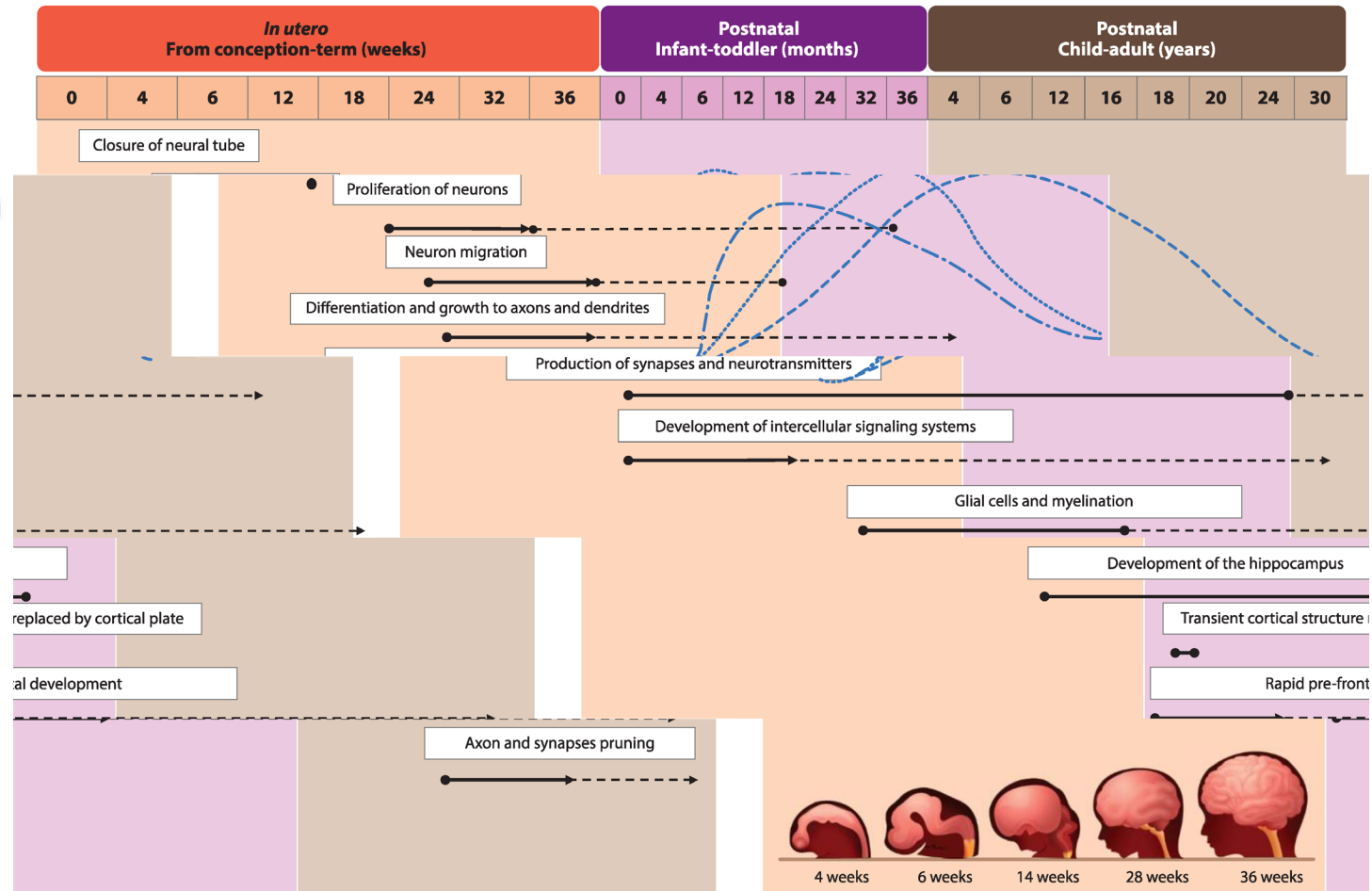
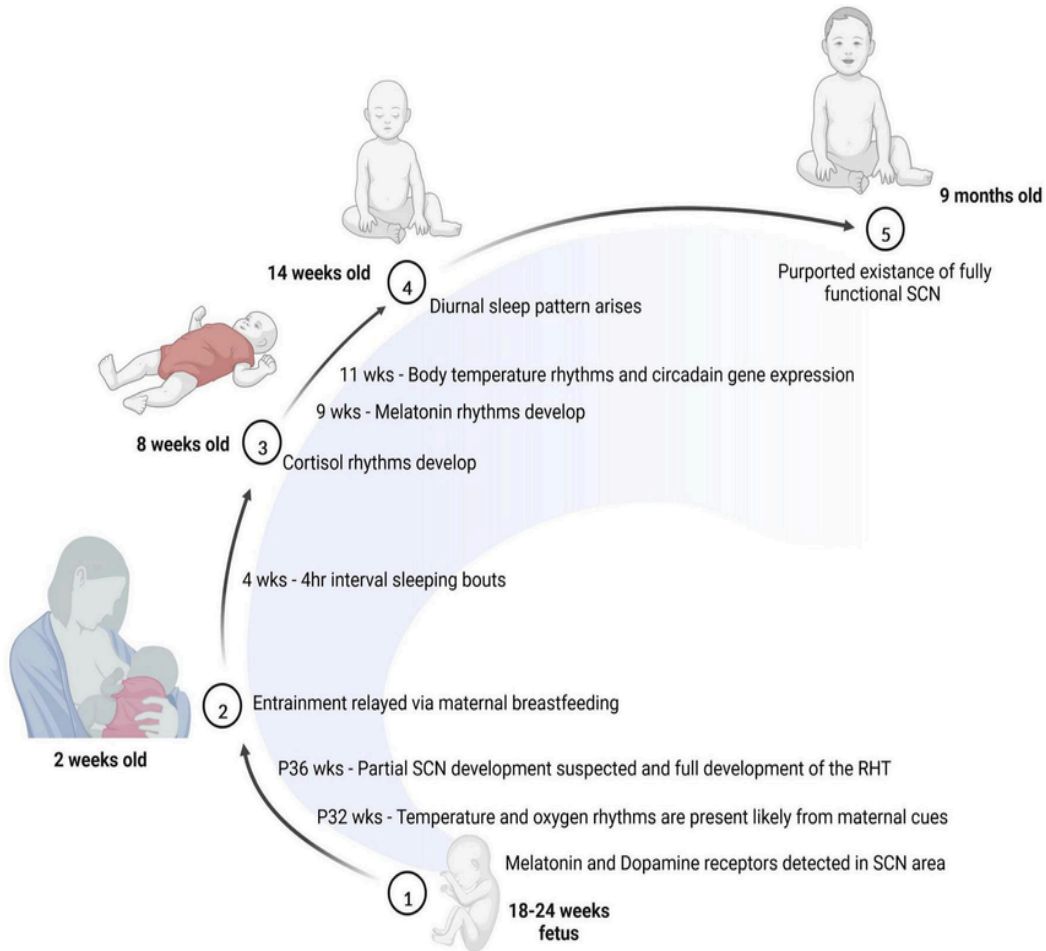
Circadian Health and Mental Health



You Have to Crawl Before You Can Walk



Developmental Sleep Needs



the timelines for experience-dependent synaptic development:

→ Rapid development - - - - - Prolonged development

Depicts approximate

→ Rapid development

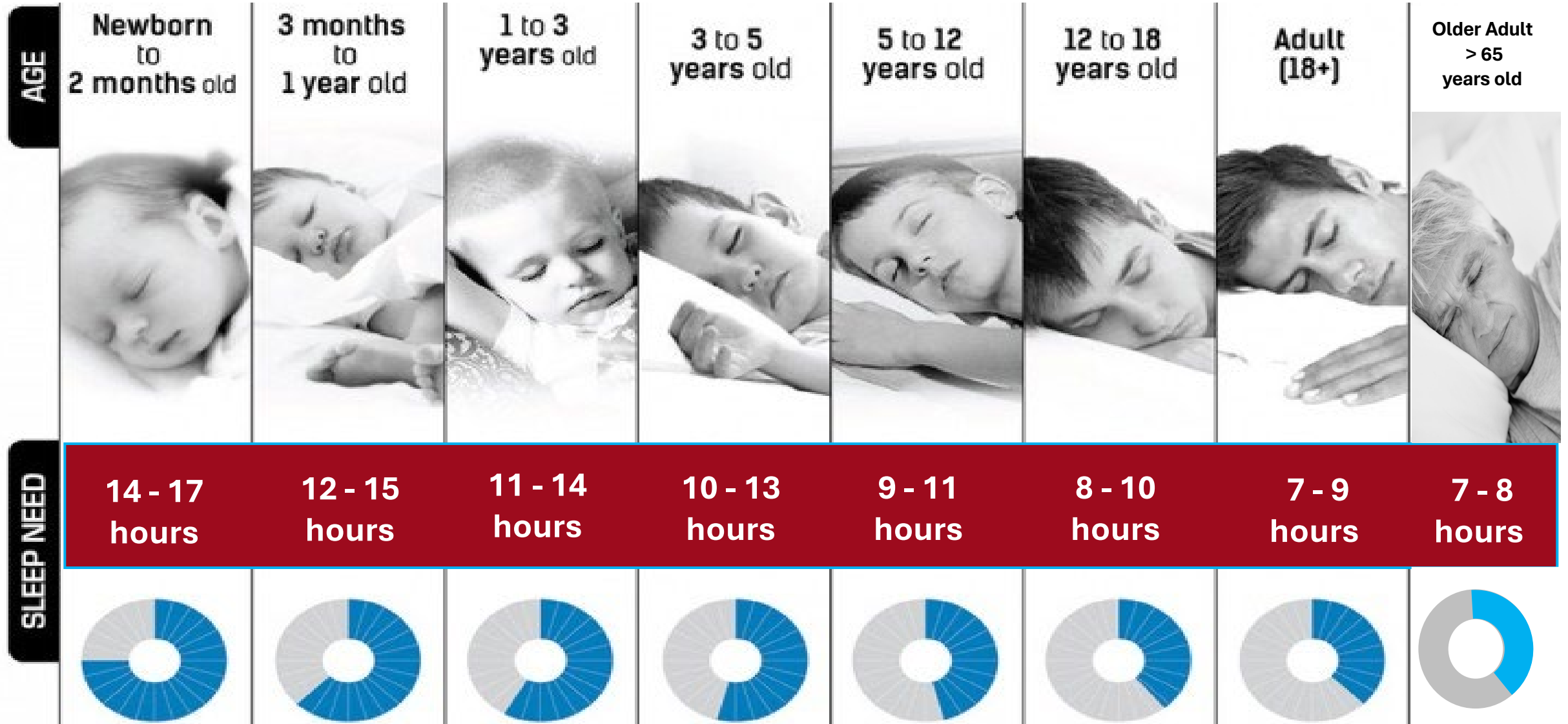
- - - - - Prolonged development

→ Rapid development - - - - - Prolonged development

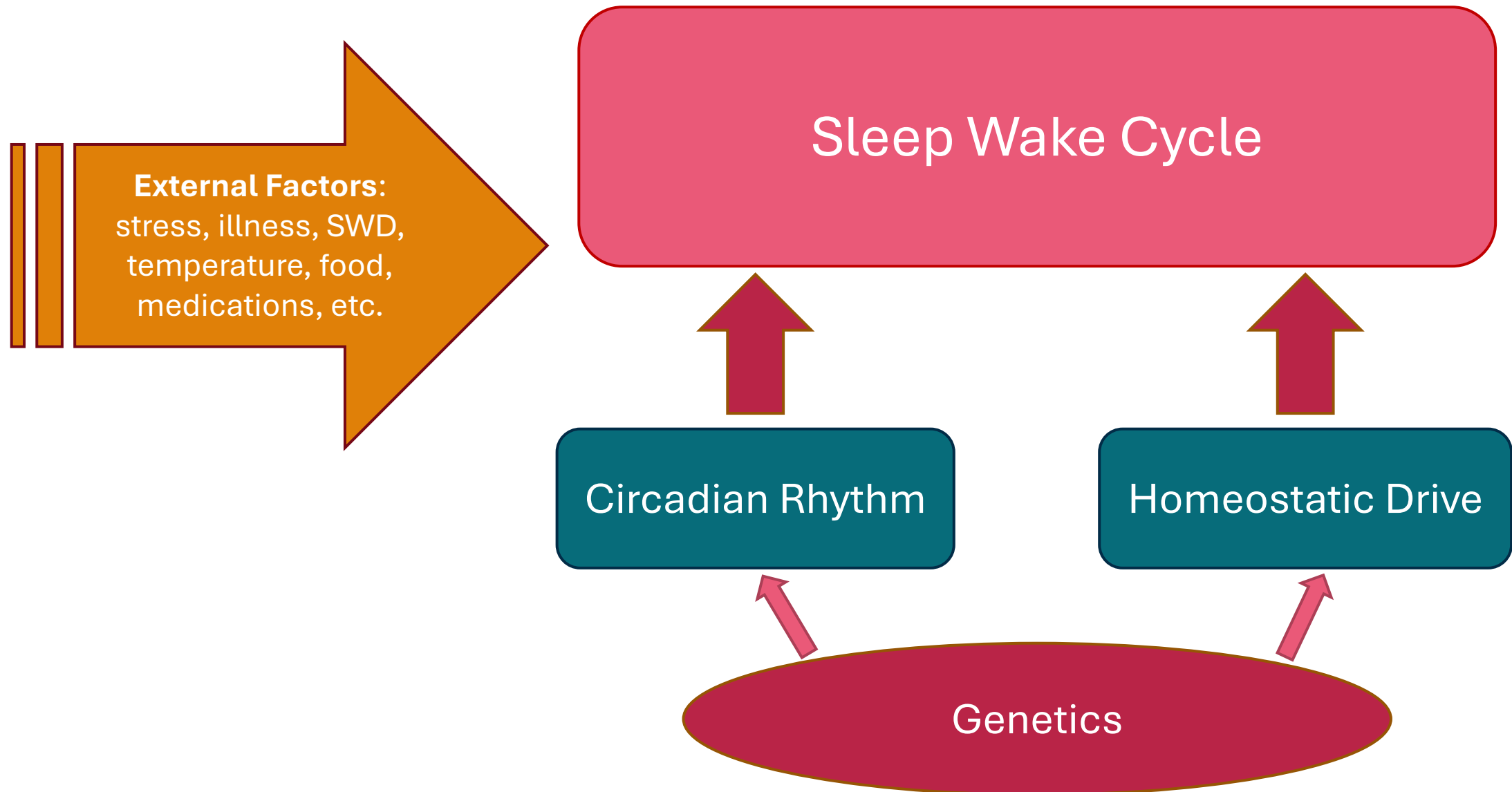
→ Rapid development - - - - - Prolonged development

→ Rapid development - - - - - Prolonged development

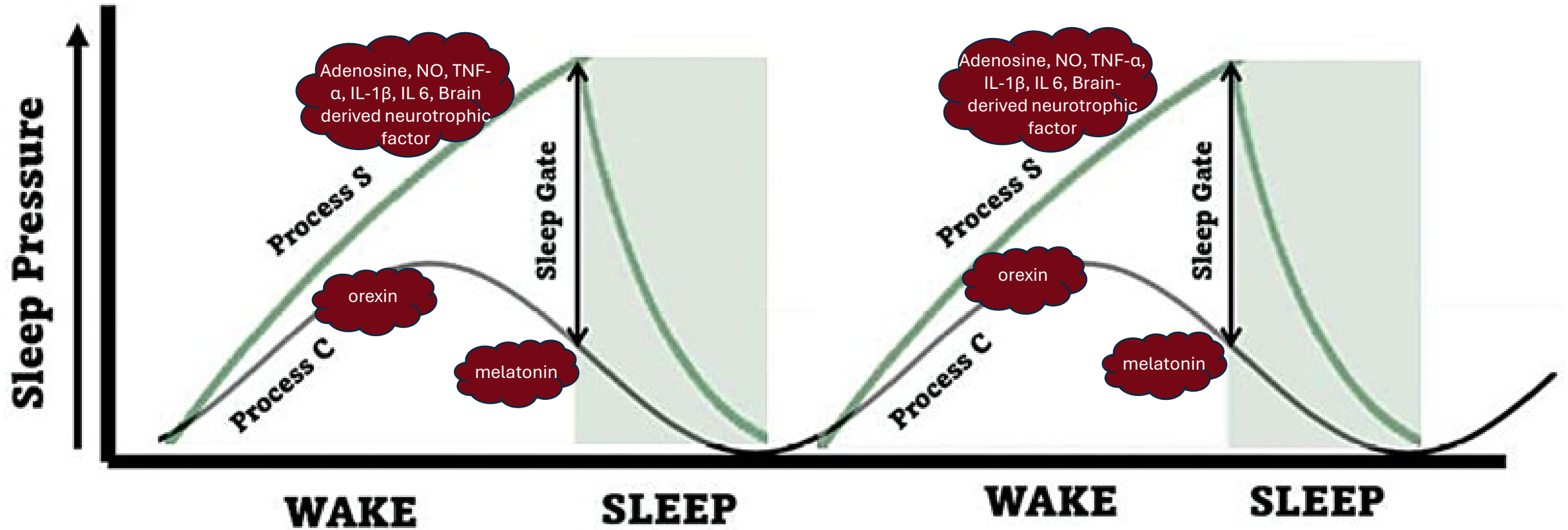
Developmental Sleep Needs



Sleep Wake and Circadian Regulation



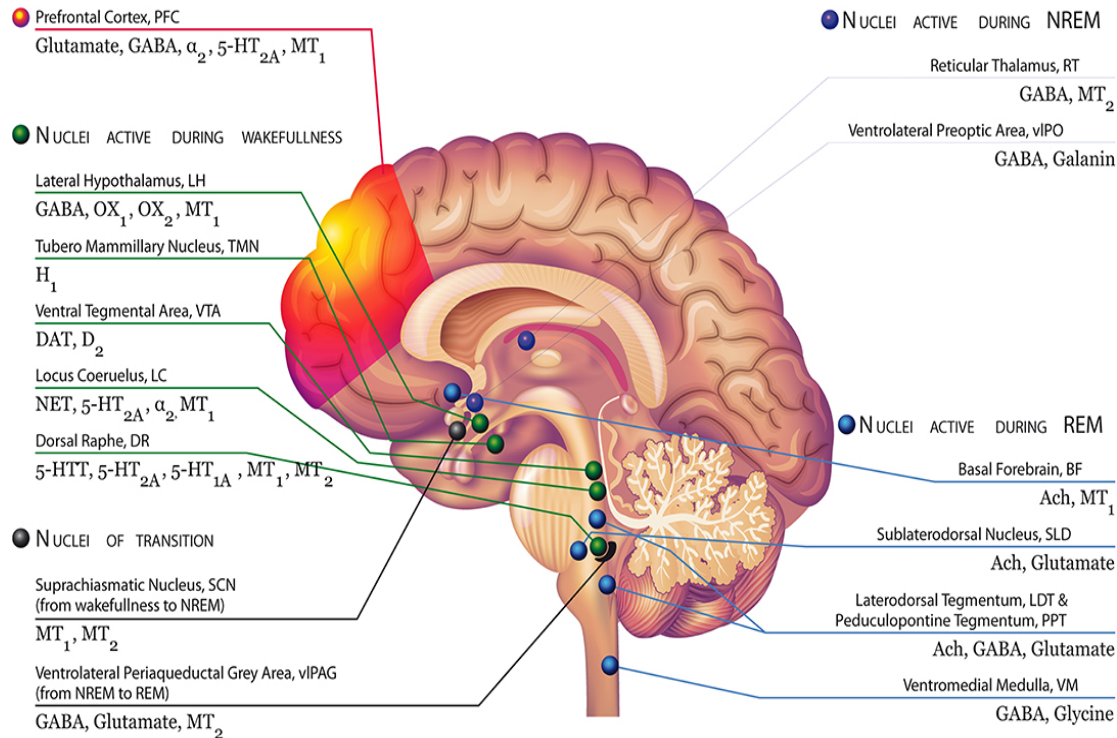
Process C and Process S Evolved?!



NO=Nitric Oxide; TNF- α =Tumor Necrosis Factor-Alpha; IL=Interleukin

Adapted from Morse, A.M., 2025, May. Enhancing the management of hypersomnia: Examining the role of the orexin system. In *Seminars in Neurology*.

Areas of the Brain in Which Wake- and Sleep-Promoting Neurotransmitters are Produced



Area of the Brain	Neurotransmitter	Side of the Sleep Switch
Ventrolateral Preoptic Nucleus	GABA Galanin	Sleep
Locus Coeruleus	Norepinephrine	Wake
Substantia Nigra	Dopamine	Wake
Dorsal Medial Nucleus	Serotonin	Wake
Tuberomammillary Nuclei	Histamine	Wake

The Orexin System: An Integrator of Sleep, Circadian, and Overall Health and Wellness

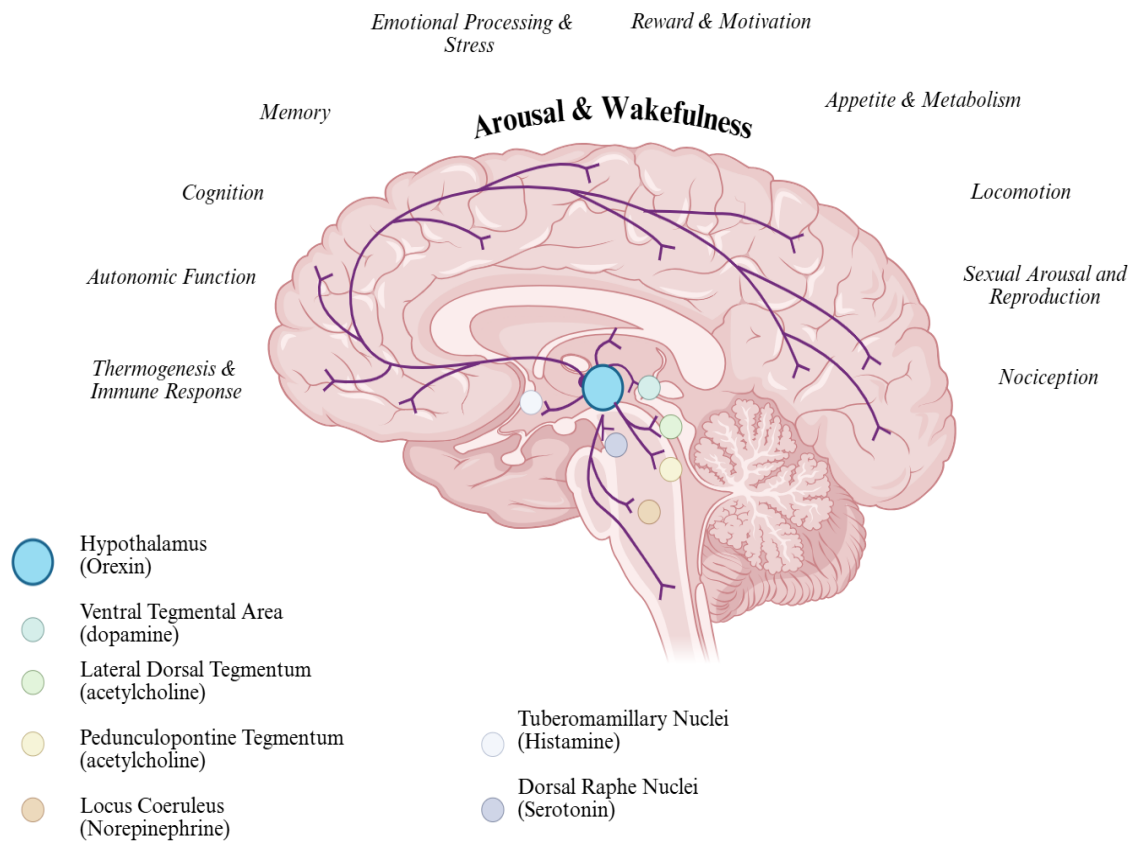


Image created by Dr. Morse and is part of a pending publication

Key Learning Points



- **Sleep and Circadian Health are Key Factors in Mental Health**, necessitating a 24-hour approach in management considerations
- The **Natural Ontogeny of Sleep** provides insight to evolving brain development and brain health
- The **Orexin system serves as an essential integrator** of sleep, circadian, and overall health and wellness, including mental health

Disorders of Sleep and Wakefulness

Sleep-Wake Disorders in DSM-5-TR

DSM-5 Sleep-Wake-Circadian Disorders/Groups

Insomnia Disorder

Hypersomnolence Disorder

Narcolepsy

Breathing-Related Sleep Disorder (eg, OSA)

Circadian Rhythm Sleep-Wake Disorders

Non-REM Sleep Arousal Disorders

Nightmare Disorder

REM Sleep Behavior Disorder

Parasomnias

Restless Legs Syndrome

Substance/Medication-Induced Sleep Disorder

Complaints are of dissatisfaction regarding the quality, timing, and amount of sleep.

However, resulting **daytime distress and impairment** are core features shared by all sleep-wake disorders.

Sleep disorders are often accompanied by **depression, anxiety, and cognitive changes** that must be addressed in treatment planning and management.

Furthermore, persistent sleep disturbances (both insomnia and excessive sleepiness) are established **risk factors** for the subsequent development of mental illnesses and substance use disorders.

They may also represent a **prodromal expression** of an episode of mental illness, allowing the possibility of early intervention to preempt or attenuate a full-blown episode.

OSA=obstructive sleep apnea; REM=rapid eye movement.

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition-Text Revision*. American Psychiatric Association Publishing; 2023.

Sleep-Wake Disorders in DSM-5-TR

- **Insomnia Disorder**

- Difficulty initiating or maintaining sleep or early morning awakenings
- Clinically significant distress or impairment
- At least 3 nights/week for at least 3 months
- Despite adequate opportunity for sleep
- Not better explained by other factors

Always assess ‘adequate opportunity for sleep’

Shift work, parenting, late-night screen use ≠ insomnia disorder

Chronic insomnia is a relapse predictor

Worsening sleep often precedes depressive or anxiety relapse

Sleep-Wake Disorders in DSM-5-TR

• Hypersomnolence Disorder

- Excessive sleepiness despite adequate sleep time – Idiopathic Hypersomnia
- At least one of the following:
 - Recurrent period of sleep during the day
 - Prolonged main sleep period (9 hours +)
 - Difficulty waking up
- At least 3 times/week for at least 3 months
- Clinically significant distress or impairment

**Long sleep time +
*nonrestorative sleep is a clue***

*Individuals can sleep 10–12 hours
and still feel exhausted*

**Rule out medical and
medication causes first**

*OSA, hypothyroidism, anemia, and
sedating psychotropics are far more
common than primary hypersomnolence*

OSA = Obstructive Sleep Apnea

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition-Text Revision*. American Psychiatric Association Publishing; 2023.

Sleep-Wake Disorders in DSM-5-TR



- **Narcolepsy**

- Recurrent period of irrepressible sleep need (Excessive daytime sleepiness)
- At least one of the following:
 - Episodes of cataplexy
 - CSF hypocretin deficiency
 - Sleep paralysis
 - Short REM latency on polysomnography or multiple sleep latency test

Ask directly about cataplexy

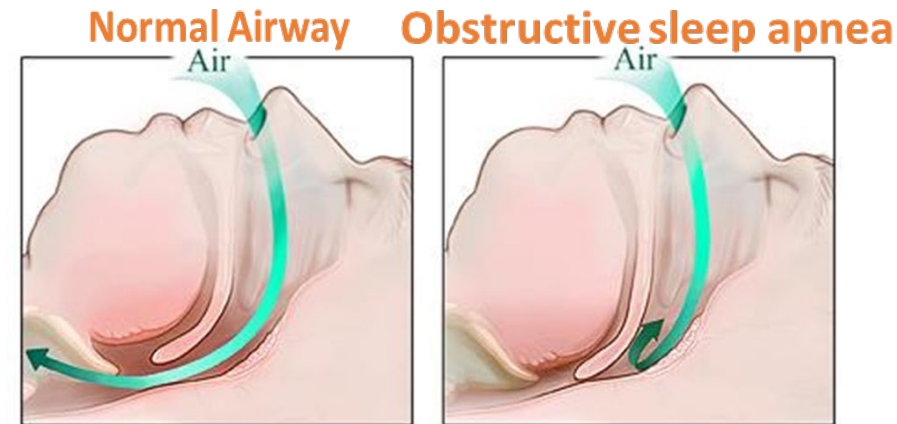
“Knees buckling with laughter” is highly suggestive and often not volunteered

Hallucinations at sleep onset are REM phenomena, not psychosis

Clarifying timing may prevent unnecessary antipsychotic treatment

Obstructive Sleep Apnea - OSA

- OSA is the most common type of sleep disordered breathing and is prevalent in **up to 20% of MDD patients**
- Excessive daytime sleepiness and fatigue
- Restless sleep and insomnia
- Snoring
- Intermittent hypoxia, which chronically cause neuronal damages and white matter changes
- Increasing age and BMI



~50% with OSA may have residual EDS despite any amount of PAP use

Sleep-Wake Disorders in DSM-5-TR

Circadian Rhythm Sleep-Wake Disorders

- Delayed sleep phase type
- Advanced sleep phase type
- Irregular sleep-wake type
- Non-24-hour sleep-wake type
- Shift work type

Sleep-Wake Disorders in DSM-5-TR

Restless Legs Syndrome (RLS)

- Urge to move the legs in response to uncomfortable sensations
 - Worse while resting / inactive
 - Relieved by movement
 - Worse in the evening or at night



Key Learning Points

- SWDs encompass a range of conditions, each with distinct diagnostic criteria and clinical implications
 - Example: “Knees buckling with laughter” (cataplexy) is **highly suggestive and often not volunteered**
- SWDs, especially insomnia and hypersomnia, are common in patients with psychiatric disorders, but they often go under-recognized and under-treated
- A thorough sleep history could help distinguish primary SWDs from psychiatric or medication-related sleep disturbances

Clinical Strategies to Detect SWDs in Psychiatric Practice

Optimal Use of Available Assessment Tools

Think about the DIMS and the DOES

- DIMS: Difficulty Initiating or Maintaining Sleep (ie, insomnia)
 - Useful questionnaires: Insomnia Severity Index, PROMIS Sleep Disturbance, Pittsburgh Sleep Quality Index, daytime functioning measure
- DOES: Disorders Of Excessive Sleepiness
 - Useful questionnaires: Epworth Sleepiness Scale, STOP-BANG to screen for sleep apnea

Optimal Use of Available Assessment Tools:

Sleep Diaries

Today's Date	3/15			
In total, how long did you nap or doze yesterday?	1:30-2:45 pm			
1. What time did you get into bed?	11:00 pm			
2. What time did you try to go to sleep?	11:30 pm			
3. How long did it take you to fall asleep?	40 min			
4. How many times did you wake up, not counting your final awakening?	2			
5. In total, how long did these awakenings last	1 hour, 5 min			
6a. What time was your final awakening?	<input checked="" type="checkbox"/> 6:30 am	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
6b. Did you wake up earlier than you planned/desired?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
6c. If yes, how many minutes earlier?	30 min			
7. What time did you get out of bed for the day?	7:15 am			
8. How would you rate the quality of your sleep?	Poor			
9. Comments (if applicable):	I have a cold			

Optimal Use of Available Assessment Tools:

Self-Report Scales

PSQI

- 19 self-reported items in 7 categories
- Score of 0-4 indicates good sleep, 5-21 indicates poor sleep
- 5 additional questions (unscored) completed by roommate/bed partner

ESS

- Self-reported rating of likeliness to doze off or fall asleep in 8 situations such as watching tv, as a passenger in a car, or while sitting and talking to someone
- Score >10 is abnormal for Excessive Daytime Sleepiness

ISI

- Self-reported Likert ratings of 5 questions related to the severity and interference of insomnia in daily functioning, as well as how noticeable to others or distressful to the patient their insomnia has become
- Score of 0-7 indicates no clinical significance, 8-14 indicates subthreshold insomnia, 15-21 moderate clinical insomnia, and 22-28 severe clinical insomnia

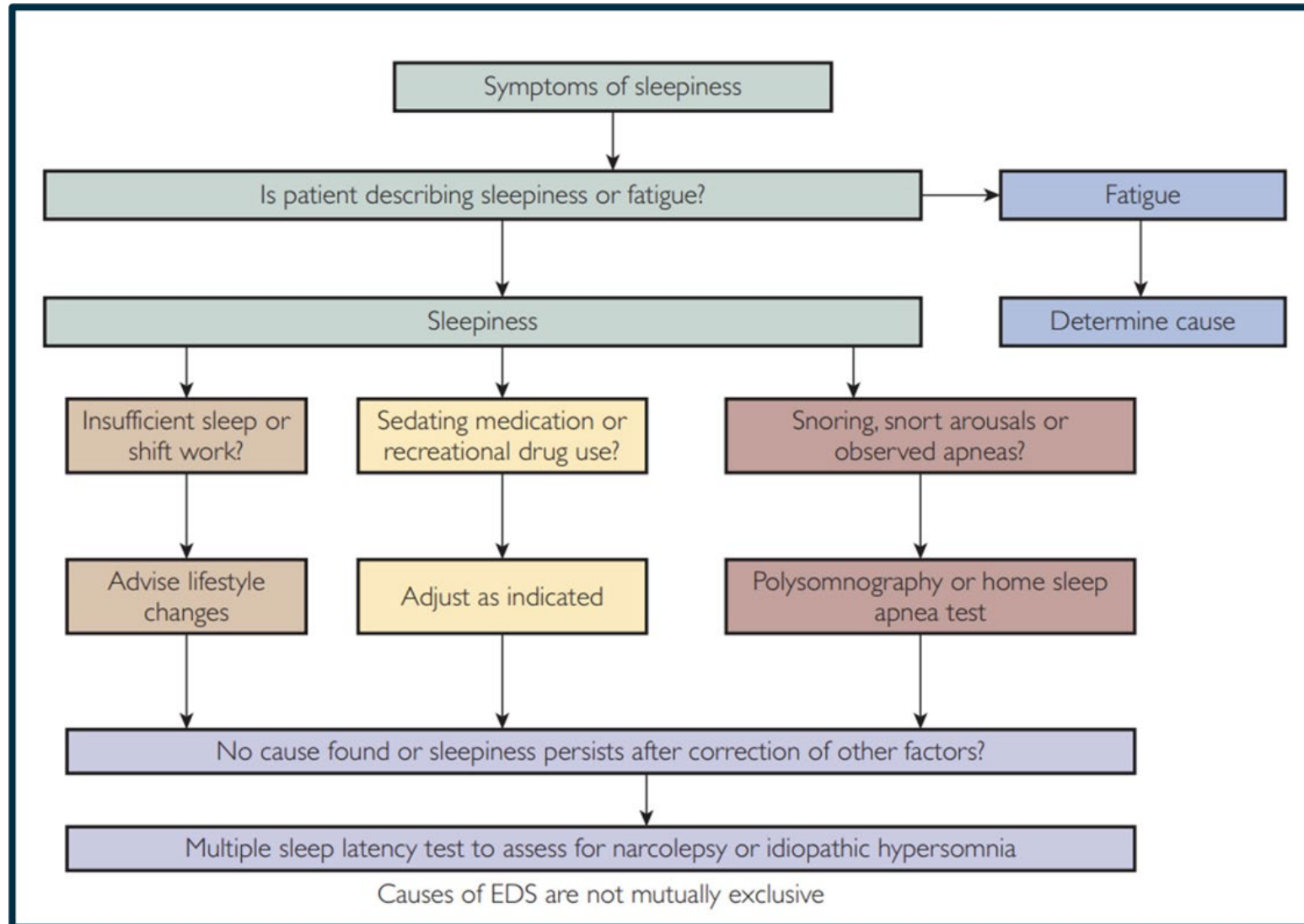
PROMIS-SD

- 27 total Likert scale questions, available in short form and computerized adaptive test (CAT)
- PROMIS measures are scored using the T-score metric, with 50 being the mean reference population
- Any score above 50 indicates a higher clinical significance—for example, a score of 60 would be one SD higher than the reference population

PSQI = Pittsburgh Sleep Quality Index; ESS = Epworth Sleepiness Scale; ISI = Insomnia Severity Index; PROMIS-SD = Patient-Reported Outcomes Measurement Information System-Sleep Disturbance; SD = standard deviation.

Buysse DJ, et al. *Psychiatry Research*. 1989;28:193-213. Johns MW. *Sleep*. 1991;14(6):540-545. Bastien CH, et al. *Sleep Medicine*. 2001;2:297-307. PROMIS. PROMIS Sleep Disturbance Scoring Manual. Available at: https://www.healthmeasures.net/images/PROMIS/manuals/PROMIS_Sleep_Disturbance_Scoring_Manual.pdf. Accessed October 25, 2024.

Evaluation of Excessive Daytime Sleepiness



Evaluating OSA – STOP BANG

- Risk factors of OSA
 - S**: Snoring?
 - T**: Tired? (daytime fatigue, sleepiness)
 - O**: Observed? (stopping breathing, choking, gasping)
 - P**: Pressure? (high blood pressure)
 - B**: BMI >35?
 - A**: Age >50?
 - N**: Neck size large? (Men >16 inches; Women >15 inches)
 - G**: Gender = male?
- Scoring: Risk for OSA
 - **Low**: 0–2; **Intermediate**: 3–4; **High**: 5–8

OSA = obstructive sleep apnea.

Chung F, et al. *Anesthesiology*. 2008;108(5):812-821. Nagappa M, et al. *PLoS One*. 2015;10(12):e0143697.

Utility and Limitations of Consumer Actigraphy

- **Actigraphy:** devices that measure movement (and heart rate, skin temp, etc) to estimate sleep/wake patterns
- Pros: objective, can collect data over long periods of time
- Cons: unknown validity, less accurate with worse sleep



When to Refer to a Sleep Specialist

- If you suspect sleep disorders that require specialized diagnostic assessment or non-mental health treatment (sleep apnea, narcolepsy, etc.)
- If a sleep disorder seems to be driving the psychiatric symptoms
- If treatment of the psychiatric disorder(s) does not lead to improvement in sleep

When to Refer to a Sleep Specialist

Further tests conducted by sleep specialists:

- Polysomnography (PSG) – i.e. a sleep study
- Multiple Sleep Latency Test (MSLT) and Maintenance of Wakefulness Test (MWT) – repeated opportunities to fall asleep or stay awake across the day

Often the first test performed to rule out other causes of excessive sleepiness (e.g., sleep apnea)

Developing Competence in Assessing SWDs

- Education in SWDs, and sleep more generally, is usually minimal in psychiatry education
- Develop connections with local sleep medicine providers
 - Most sleep docs have no idea how to manage patients with psychiatric disorders and have no mental health providers on staff
- Consider connecting with relevant organizations
 - Sleep Research Society
 - American Academy of Sleep Medicine

Key Learning Points

- Basic information about SWDs can be gathered in the clinical history and using self-report measures
- Integrating sleep-focused assessment and treatment into your practice can improve outcomes for your patients
- Refer to a sleep specialist for additional diagnostic testing (e.g. Polysomnography (PSG))

**Faculty Discussion:
Integration of Sleep Medicine
and Psychiatric Practice**

Case-Based Challenge: A Patient Who Can't Sleep

Case-Based Challenge: A Patient Who Feels Fatigued All the Time

Building a Support Network and Collaborating with Sleep Specialists

Accessing Further Education/Consultation in Sleep Medicine

American Academy of Sleep Medicine / Sleep Research Society

Accessing Further Education/Consultation in Sleep Medicine



Sleep
Research
Society
Foundation

The **Sleep Research Society Foundation** is committed to the growth and development of the field of sleep and circadian research through education and funding opportunities.

Learn more by visiting their website:

<https://sleepresearchsociety.org/foundation/>



Practical Take-Aways

- Sleep/wake disorders are common in individuals with psychiatric conditions, and each may worsen the other
- The neurobiology of sleep and wake is complex, and the orexin system is a key integrator of sleep, wake, circadian, and overall health and wellness
- Integrating sleep-focused assessment into your practice can improve outcomes for your patients; this can be done with a variety of screening tools, but a simple sleep diary can be very helpful as well!