



# Sleep disorder

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# Sleep physiology

Sleep : Temporary state of decrease consciousness characterized by reduced wakefulness , inhibition of most incoming sensory information and lowered muscular activity.

## **Circadian rhythm**

Is the daily of alternating between periods of sleep and wakefulness , regulated by melatonin ( secreted at dark from pineal gland ) and a light it stopped where cortisol at peak

- The two stages of normal sleep are rapid eye movement (REM) sleep and non-rapid eye movement (NREM) sleep which has 3 stages (N1,N2,N3) , Normal sleep-wake cycle is defined in terms of characteristic changes in several physiological parameters, including brain wave activity, eye movements, and motor activity .
- About every 90 minutes, NREM sleep alternates with REM sleep , most people has 4-6 sleep cycle at night



# Sleep physiology

## Circadian Rhythm –

- **Definition:** 24-hour internal biological clock controlling sleep–wake cycle, hormones, and body temperature.
- **Main Control Center: Suprachiasmatic Nucleus (SCN)** in the hypothalamus = *body's master clock*.

## •Light Pathway:

Retina (melanopsin cells) → Retinohypothalamic tract → SCN → Pineal gland.

## •Pineal Gland Function:

Darkness → ↑ Melatonin → Sleep

Light → ↓ Melatonin → Wakefulness

## •Key Hormonal Rhythms:

- **Melatonin:** Peaks at night
  - **Cortisol:** Peaks early morning
  - **GH:** Increases during deep sleep
- **Peripheral Clocks:** Present in organs (liver, heart, etc.) → synchronized by SCN.



# Sleep Regulation Overview

Sleep is mainly controlled by the balance between:

- **Wake-promoting systems (ARAS)**
- **Sleep-promoting system (VLPO in hypothalamus)**

These two systems **inhibit each other** like an on–off switch.

## 1. NREM Sleep

### ◆ **Main Controller – VLPO (Ventrolateral Preoptic Nucleus)**

- Located in the **anterior hypothalamus**.
- When it activates, it releases **inhibitory neurotransmitters**:
  - **GABA**
  - **Galanin**

These suppress the **Ascending Reticular Activating System (ARAS)**, which normally keeps us awake

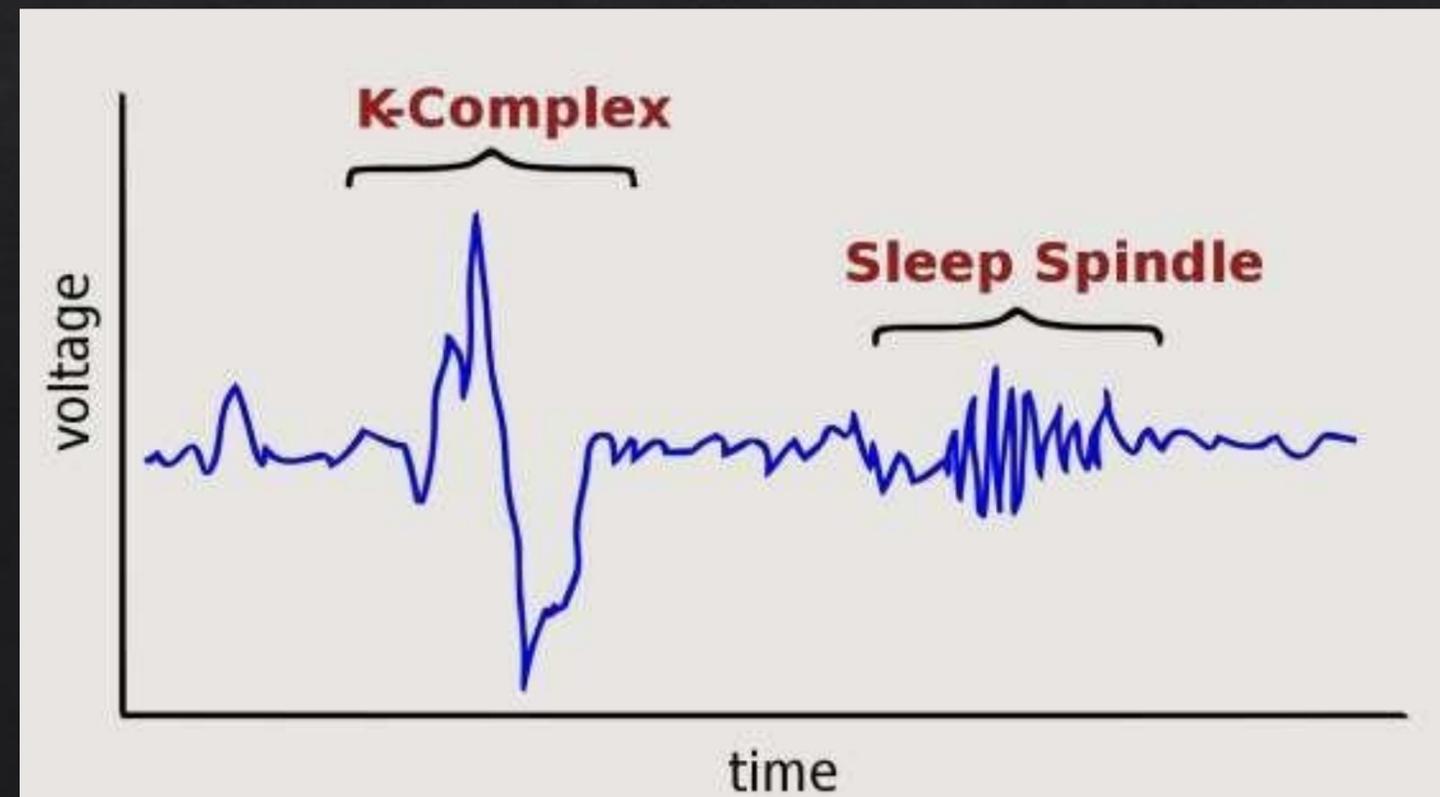
**During NREM:**

- VLPO **inhibits** all these → ↓ NE, ↓ 5-HT, ↓ histamine, ↓ orexin.
- **Cortex becomes less active**, sensory input is blocked by **thalamus**, and **EEG slows** (theta → delta waves).
- **Autonomic tone:** Parasympathetic dominance → ↓ HR, ↓ BP, ↓ temperature.



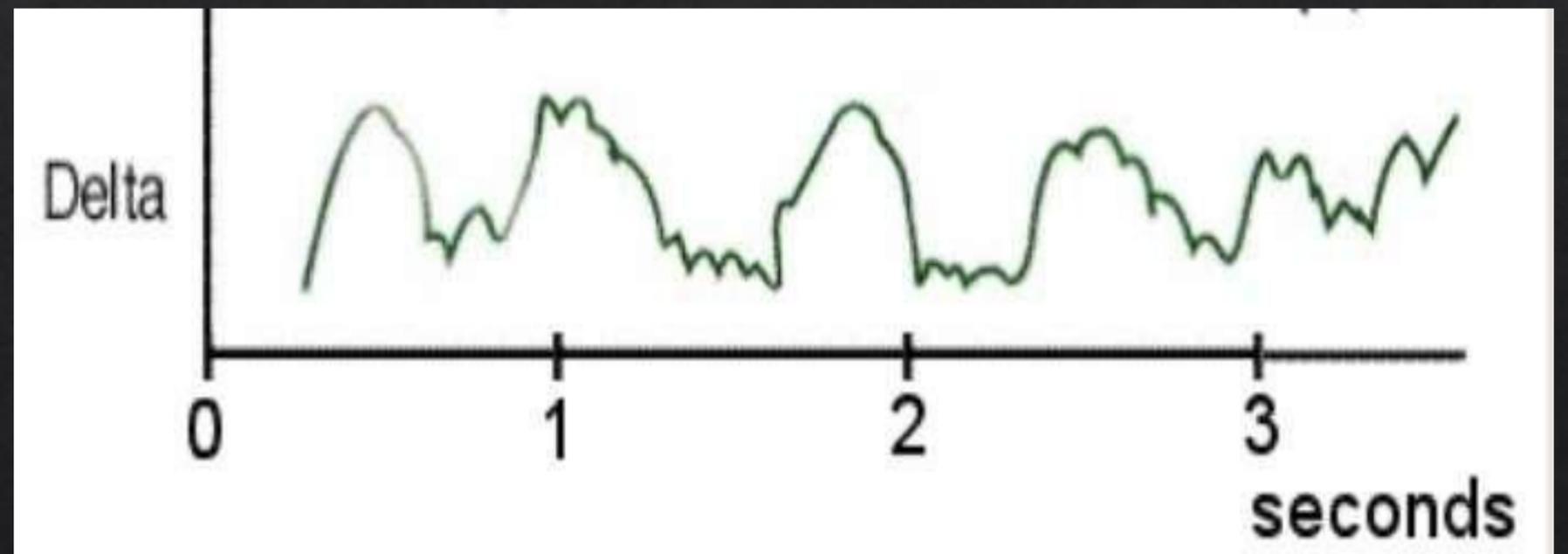
# normal sleep cycle

- **N1**
  - Lightest sleep ( easy to wake up ).
  - Theta waves.
  - Smallest percentage ( 5% - 10% ).
- 
- **N2**
  - Theta waves.
  - K complexes ( sudden increase in amplitude ).
  - Sleep spindles ( sudden increase in frequency ).
  - Largest percentage ( 50% ).



## •N3

- Slow waves.
- Delta waves.
- Lowest frequency.
- Last phase before REM
- Highest amplitude.
- Deepest sleep



# Sleep physiology

## **NREM → REM Sleep**

As **monoamines (norepinephrine and serotonin) gradually decline** throughout NREM sleep, they eventually reach their **lowest or nearly zero activity level.**

Once this happens, their **inhibitory control** over the **cholinergic neurons** in the **pons (PPT/LDT — pedunculo pontine and laterodorsal tegmental nuclei)** is released.

This allows the **cholinergic “REM-on” neurons** to become **active**, initiating **REM sleep.**

•EEG: Desynchronized, low-amplitude, high-frequency (like wakefulness)

EOG: Rapid eye movements

EMG: Muscle atonia (complete paralysis except eyes & diaphragm)

Dreams: Vivid, story-like, emotional dreams

Autonomic activity: Irregular HR, BP, and respiration

Neurotransmitters: ↑ ACh (pons), ↓ NE & 5-HT  
Brain metabolism: Increased (similar to wakefulness)

Occurs every ~90 min, duration increases toward morning



# Rem sleep

- Rapid eye movements.
- PPRF ( paramedian pontine reticular formation ) During REM sleep, the PPRF is activated by cholinergic REM-on neurons from the PPT/LDT. It generates rapid horizontal eye movements, which are the hallmark of REM sleep..
- Low voltage pattern.
- Often appears “ saw toothed “.
- Loss of muscle tone
- Dreaming , nightmares.



# Wakefulness cellular mechanisms



<b>Brainstem nuclei</b>	<b>Neurotransmitter</b>	<b>Activity state of brainstem neurons</b>
<b>Cholinergic nuclei of pons-midbrain junction</b>	<b>Acetylcholine</b>	<b>Active</b>
<b>Locus coeruleus</b>	<b>Norepinephrine</b>	<b>Active</b>
<b>Raphe nuclei</b>	<b>Serotonin</b>	<b>Active</b>
<b>Tuberomammillary nuclei</b>	<b>Histamine</b>	<b>Active</b>
<b>Lateral hypothalamus</b>	<b>Orexin</b>	<b>Active</b>



## Non-REM sleep cellular mechanisms

<b>Brainstem nuclei</b>	<b>Neurotransmitter</b>	<b>Activity state of brainstem neurons</b>
<b>Cholinergic nuclei of pons-midbrain junction</b>	<b>Acetylcholine</b>	<b>Decreased</b>
<b>Locus coeruleus</b>	<b>Norepinephrine</b>	<b>Decreased</b>
<b>Raphe nuclei</b>	<b>Serotonin</b>	<b>Decreased</b>



# Stages Of Sleep

Brain activity can be recorded in the form of electroencephalogram, which measures electrical activities in the superficial layers of the cerebral cortex. Different stages of consciousness correspond to different types of brain waves.

Alert brain produces high-frequency low-voltage beta-waves. As consciousness decreases, brain waves become progressively slower in frequency and higher in voltage.



# TYPES OF WAVES

## Brain Wave Frequencies



Type & Range

What it Does

**Gamma Waves**  
HIGHER THAN 30 Hz



While concentrating, focusing and learning

**Beta Waves**  
30 - 13 Hz



During most activities while awake

**Alpha Waves**  
8 - 12.99 Hz



While relaxed or sleepy

**Theta Waves**  
4 - 7.99 Hz



During stage 2 & 1 (light) sleep

**Delta Waves**  
1 - 3.99 Hz



During stage 3 (deep) sleep



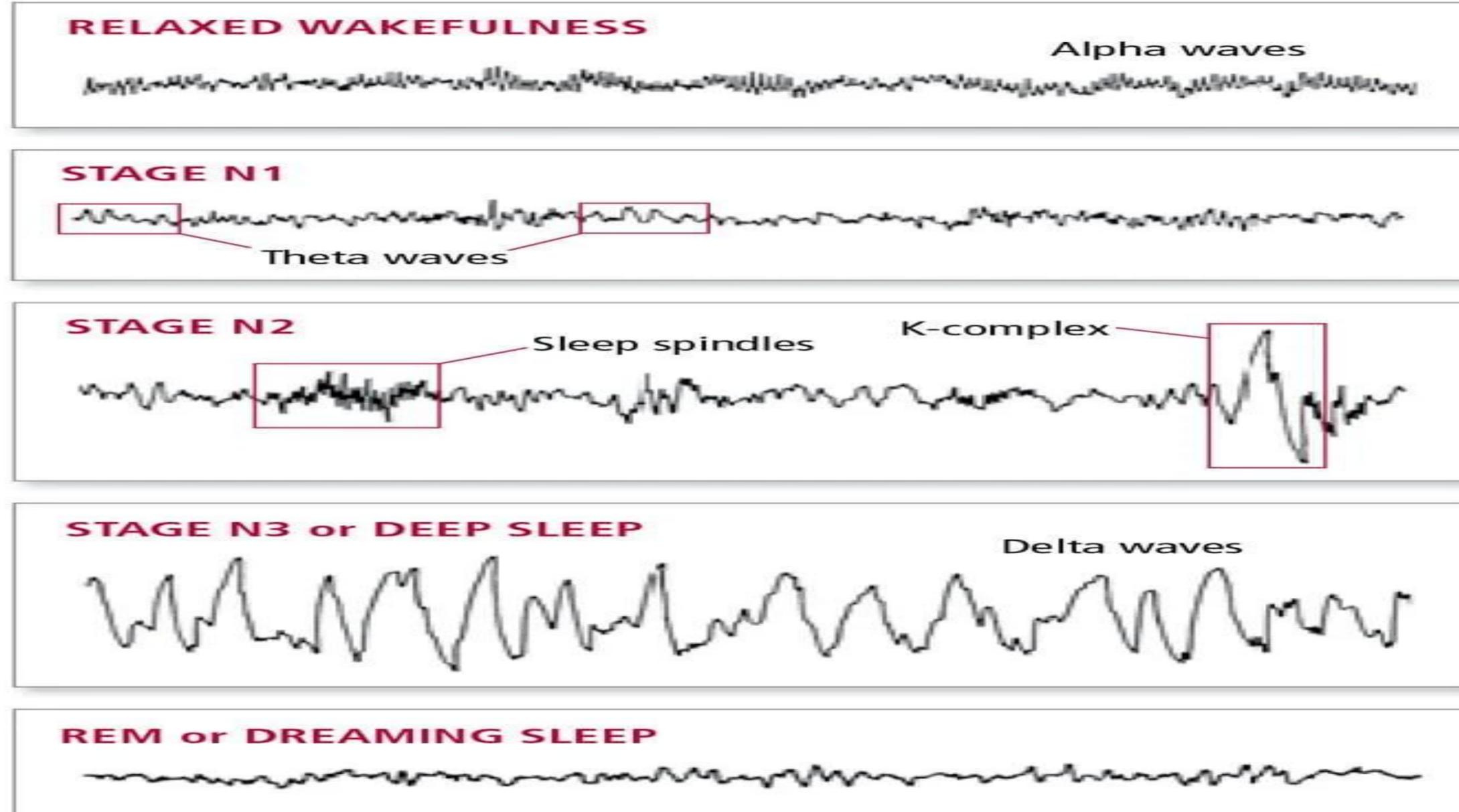
# TYPES OF WAVES

Sleep Stage	EEG Pattern / Waves	Key Features
Wake (eyes open)	Beta waves	Alert, active mental state
Wake (eyes closed)	Alpha waves	Relaxed wakefulness
N1 (Light sleep)	Theta waves	Slow eye movements, easily awakened, transition phase
N2	Sleep spindles + K-complexes	Reduced awareness, heart rate & temperature drop, memory consolidation
N3 (Deep sleep / <b>SLOW-WAVE</b> sleep)	Delta waves	Difficult to wake, growth hormone release,
REM sleep	Beta-like / Sawtooth waves	Active brain, vivid dreaming, muscle atonia, irregular HR & respiration



# TYPES OF WAVES

**Figure 1: EEG brain wave patterns during sleep**



Brain waves change dramatically during the different stages of sleep.





# Sleep hygiene :

1. **Avoid napping during the day to strengthen the sleep drive at night.**
  2. **Limit stimulants such as caffeine and nicotine, especially in the evening.**
  3. **Exercise regularly, but not right before bedtime**
  4. **Mind your food intake—don't go to bed hungry or overly full.**
  5. **Get adequate natural light exposure during the day to regulate your circadian rhythm.**
  6. **Establish a consistent bedtime routine to signal your body that it's time to sleep.**
  7. **Manage emotional stress before sleep; avoid upsetting discussions or activities.**
  8. **Associate your bed with sleep only—avoid using it for work, TV, or phone.**
  9. **Make your sleep environment pleasant and relaxing: comfortable mattress, quiet, dark, and cool room.**
- 



## Average amount of sleep per day :

Newborn	Up to 18 hours
1 – 12 months	14 – 18 hours
1 – 3 years	12 – 15 hours
3 – 5 years	11 – 13 hours
5 – 12 years	9 – 11 hours
Adolescents	9 – 10 hours
Adults , elderly	7 – 8 hours
Pregnant women	8 + hours



# Sleep disorders :

**Sleep Disorders :** Sleep disorders are a category of conditions that disrupt the normal sleep–wake cycle.

## **Clinical Significance:**

**High comorbidity with psychiatric illnesses (e.g., depression, anxiety, bipolar disorder).**

**Sleep disturbances can worsen psychological distress and exacerbate mental illnesses.**

## **Classification of Sleep Disorders :**

**1. Primary Sleep Disorders Definition:** Arise due to intrinsic problems with the sleep–wake cycle, not caused by another medical or psychiatric condition.

### **Subtypes:**

**1. Dyssomnias – Disorders affecting the quantity, quality, or timing of sleep.**

### **Examples:**

**Insomnia – difficulty falling or staying asleep**

**Hypersomnia – excessive sleepiness**

**Narcolepsy – sudden sleep attacks, cataplexy**

**2. Parasomnias – Abnormal behaviors or experiences during sleep. Examples:**

**. Sleepwalking (somnambulism)**

**. Sleep talking (somniloquy)**

**. Night terrors**

**. REM sleep behavior disorder**

**. Bedwetting (nocturnal enuresis)**



# Sleep disorders :

## 2. Secondary Sleep Disorders

•**Definition:** Sleep disturbances caused by an **underlying medical, psychiatric, or environmental condition**.

•**Common Causes:**

- **Psychiatric:** Depression, anxiety, bipolar disorder, schizophrenia
- **Medical:** Thyroid disease, stroke, arthritis, asthma, chronic pain
- **Medications or substances:** Corticosteroids, stimulants, alcohol

•**Mechanism:** The underlying condition **disrupts the normal sleep–wake cycle**, either by causing insomnia, hypersomnia, or abnormal sleep behaviors.



## When taking a sleep history, ask about:

1. **Pre-bedtime activities:** Anything that interferes with restful sleep (screen time, exercise, work).
2. **Bedpartner input:** Observations about snoring, movements, breathing pauses, etc.
3. **Sleep consequences:** Daytime function, fatigue, mood, and quality of life.
4. **Frequency and duration:** How often sleep problems occur and how long they last.
5. **Medications and substances:** Prescription drugs, over-the-counter medications, alcohol, caffeine, nicotine, illicit drugs, hypnotics.
6. **Exacerbating or relieving factors:** Stress, sleep environment, routine.
7. **Family history / genetic factors:** Family tendency for insomnia, narcolepsy, or sleep apnea



# Dyssomnia

## Dyssomnias

**Definition:** Disorders of sleep characterized by **difficulty falling asleep, staying asleep, or excessive daytime sleepiness.**

## Types of Dyssomnias

- 1. Insomnia** – Difficulty initiating or maintaining sleep.
- 2. Hypersomnolence** – Excessive sleepiness during the day.



# INSOMNIA DISORDER:

## Insomnia Disorder

### Definition:

• Persistent difficulty sleeping despite adequate opportunity, leading to impaired daytime function.

### Symptoms:

- Difficulty initiating sleep (**sleep-onset insomnia**)
- Difficulty maintaining sleep (**middle insomnia**)
- Early morning awakenings (**sleep-offset insomnia**)
- Nonrestorative sleep (waking up unrefreshed or fatigued)

### Types:

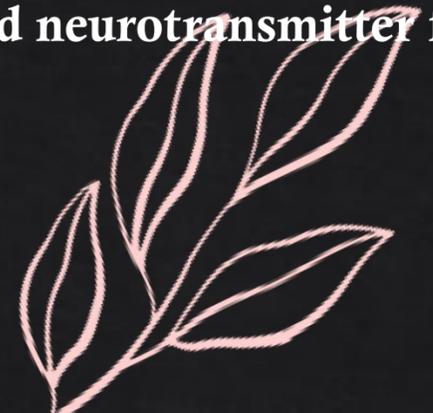
**1. Acute insomnia:** <3 months, often triggered by stress or schedule changes, usually resolves spontaneously.

**2. Chronic insomnia:**  $\geq 3$  months, associated with reduced quality of life and increased risk of psychiatric disorders.



# Causes of Insomnia

- 1. Medical / Pulmonary conditions: Asthma, COPD, chronic pain, thyroid disorders**
- 2. Psychiatric conditions: Depression, anxiety, subclinical mood disorders, bipolar disorder**
- 3. Substances / Medications: Stimulants (caffeine), depressants (alcohol), certain medications (corticosteroids, SSRIs, beta-blockers)**
- 4. Behavioral / Environmental factors: Poor sleep hygiene, irregular sleep schedules, shift work, newborn care**
- 5. Stress: Work-related, relationship stress, environmental stressors**
- 6. Biological / Hormonal factors:**
  - 1. Heightened cortisol → increased wakefulness sensitivity**
  - 2. Reduced progesterone/estrogen → insomnia during menopause**
- 7. Genetic factors: Family history increases susceptibility; certain gene variants affect circadian rhythm regulation and neurotransmitter function**
- 8. Idiopathic: No identifiable cause**



# DSM-5 Criteria for Insomnia Disorder

1. Difficulty initiating, maintaining sleep, or early-morning awakening **with inability to return to sleep.**
2. Occurs  $\geq 3$  nights per week for  $\geq 3$  months.
3. Causes **significant distress or impairment** in social, occupational, or other important areas.
4. Occurs **despite adequate opportunity to sleep.**
5. **Not better explained** by another sleep–wake disorder.
6. **Not due to substance or medication effects.**
7. Coexisting mental or medical disorders **do not fully explain** the insomnia.



## TREATMENT

### \* GOOD SLEEP HYGIENE

- ↳ SLEEPING/WAKING at SAME TIME EVERY DAY
- ↳ EXERCISING (NOT before bed)
- ↳ REDUCE **ALCOHOL**
- ↳ AVOID DAYTIME NAPS
- ↳ AVOID **CAFFEINE & SMOKING** in evening
- ↳ DON'T GO TO SLEEP HUNGRY



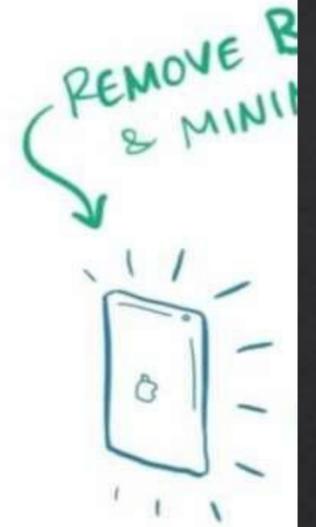
## TREATMENT

### \* STIMULUS CONTROL

BED → SLEEPING  
\* → TV + PHONE

DON'T FORCE SLEEP  
AWAKE AFTER 20 MIN?

↓  
LEAVE BED, COME BACK WHEN READY



## TREATMENT

### \* BEHAVIOR THERAPY

- ↳ RELAXATION TECHNIQUES
- ↳ COGNITIVE BEHAVIOR THERAPY

### (+) \* MEDICATIONS

- ↳ MELATONIN AGONISTS
- ↳ NON-BENZODIAZEPINE SEDATIVES (Zolpidem)
- ↳ (occasionally) BENZODIAZEPINES

Better manage PROBLEMS  
& LIFE STRESSORS



# hypersomnia

Defined as increased quantity of sleep and reduced quality of wakefulness (sleep drunkenness) and it causes decreased function and alertness after waking up Equal frequency in men and women.

## Classification

Acute: < 3 months

Chronic:  $\geq$  3 months

## Clinical features :

Excessive sleep (with decreased sleep quality)

Difficulty awakening from sleep

Sleep inertia (impaired alertness or excessive fatigue after waking)

Automatic behaviors (with no memory of the episode after waking)

MIND  HELP

## Types And Stages Of Hypersomnia (Excessive Sleepiness)

<p><b>1</b></p> <h3>Primary Hypersomnia</h3> <p>It occurs when there are no other medical conditions present.</p> 	<p><b>2</b></p> <h3>Secondary Hypersomnia</h3> <p>This occurs due to pre-existing medical conditions.</p> 
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# causes

- 1) Obstructive sleep apnea (the most common cause).
- 2) Side effect from drugs: BNZ
- 3) Bad sleep routine : staying awake online or playing games.
- 4) Chronic physical illness.
- 5) Insufficient nighttime rest
- 6) Narcolepsy.
- 7) Circadian rhythm disorder.
- 8) Kleine-Levin syndrome (recurrent episodes of excessive sleep with cognitive and behavioral changes. The patient may sleep up to 20h per episode).
- 9) Psychiatric disorder(it's a form of major depressive disorder characterizes by persistent feeling of sadness and hopelessness).
- 10) Genetic—May have autosomal dominant mode of inheritance in some individuals.



# Dsm-5 criteria

Excessive sleepiness despite at least 7 hours of sleep, with at least one of the following: recurrent periods of sleep within the same day; prolonged, nonrestorative sleep more than 9 hours; difficulty being fully awake after awakening.

Occurs at least three times per week for at least 3 months.

Causes clinically significant distress or impairment in functioning.

Does not occur exclusively during the course of another sleep-wake disorder.  
Not due to the physiologic effects of a substance or medication.

Coexisting mental and medical disorders do not adequately explain the hypersomnolence.





# Treatment

- Life-long therapy with **modafinil** (first-line) or stimulants such as methylphenidate; amphetamine-like antidepressants such as atomoxetine are second-line therapy.
- Pitolisant (Wakix) and sodium oxybate (Xyrem) have shown benefit as well
- . ■ Scheduled napping.



# Obstructive sleep apnea

## Obstructive sleep apnea :

chronic breathing disorder characterized by repetitive collapse of the upper airway's muscles during sleep.

### ❖ Risk factors :

- 1) Obesity .
- 2) Increased neck circumference.
- 3) Narrowing of the airways.

❖ Prevalence: • Most common in middle-aged men and women. • Male to female ratio ranges from 2:1 to 4:1.  
• It occur more in the elderly then middle age group and the least affected group are children.

❖ Treatment: • Positive airway pressure: continuous (CPAP) and in some cases bilevel (BiPAP). • Behavioral strategies such as weight loss and exercise. • Surgery.

### ❖ Characteristics of sleep apnea:

- 1) Excessive day time sleepiness.
- 2) Patient having episodes of apnea(cessation of breathing) or hypopnea (decreased airflow).
- 3) Sleep fragmentation.
- 4) Snoring(due to narrowed airways).
- 5) Frequent awaking where the patient feels like gasping or choking.
- 6) Non-refreshing sleep and waking up with fatigue.
- 7) Morning headache.
- 8) Hypertension.



# Narcolepsy

Its excessive sleepiness in daytime and in inappropriate places or time, with impaired ability to regulate sleep-wake cycle.

Causes:

1) HLA-DR2 is the gene which is mainly responsible for this condition.

2) Decreased hypocretin1 and hypocretin2 in patient with narcolepsy

.(hypocretin is a hypothalamic neuropeptide neurotransmitter which regulate the sleep-wake cycle)

Clinical symptoms:

➤ Cataplexy (sudden brief episode of paralysis due to loss of muscle tone).

➤ Excessivesleepiness.

➤ Hallcinations: - Hypnagogic hallucination →Waking up (less common). - Hypnopompic hallucination →Falling asleep.

➤ Sleepparalysis.



# Dsm5 criteria

- Recurrent episodes of need to sleep, lapsing into sleep, or napping during the day, occurring at least three times per week for at least 3 months associated with at least one of the following:
  - Cataplexy (brief episodes of sudden bilateral loss of muscle tone, most often associated with intense emotion).
  - Hypocretin deficiency in the CSF.
  - Reduced REM sleep latency on polysomnography
- Hallucinations and/or sleep paralysis at the beginning or end of sleep episodes are common (but not necessary for diagnosis in the DSM-5).





# Treatment

❑ Sleep hygiene - Use the bed only for sleep. - Avoid alcohol, caffeine, and nicotine close to bedtime. - Exercise regularly, but not within 3-4 hours before bedtime. - Avoid large meals and fluid intake in the evenings. - Avoid bright lights before bedtime.

❑ Scheduled daytime naps ❑ Avoidance of shiftwork ❑ For excessive daytime sleepiness: - Amphetamines (d-amphetamine, methamphetamine) - Non-amphetamines such as methylphenidate, modafinil, and sodium oxybate

❑ For cataplexy - Sodium oxybate (drug of choice) - Tricyclic antidepressants (TCAs) - (SSRI)/ (SNRI): Fluoxetine, duloxetine, atomoxetine, venlafaxine; have also been used to help reduce cataplexy. These drugs are indicated for usage in treatment as they have a tendency to help in suppressing REM.



# CIRCADIAN RHYTHM SLEEP WAKE DISORDERS

Recurrent patterns of sleep disruption due to an alteration of the circadian system or misalignment between the endogenous circadian rhythm and sleep-wake schedule required by an individual's environment or schedule.

## Symptoms:

1. Excessive daytime sleepiness.
2. Insomnia.
3. Sleep inertia.
4. Headaches.
5. Difficulty concentrating.
6. ↑ reaction times and frequent performance errors.
7. Irritability.
8. Waking up at inappropriate

## Causes:

- 1) Time zone changes.
- 2) Work shifts (ex : medical field workers) .
- 3) Irregular sleep-wake pattern.



**TABLE 15-1. Circadian Rhythm Sleep Wake Disorders**

DISORDERS	DEFINITIONS	RISK FACTORS	TREATMENTS
Delayed sleep phase disorder (DPSD)	Chronic or recurrent delay in sleep onset and awakening times with preserved quality and duration of sleep	<ul style="list-style-type: none"> <li>■ Puberty (secondary to temporal changes in melatonin secretion)</li> <li>■ Caffeine and nicotine use</li> <li>■ Irregular sleep schedules</li> </ul>	<ul style="list-style-type: none"> <li>■ Timed bright light phototherapy during early morning</li> <li>■ Administration of melatonin in the evening</li> <li>■ Chronotherapy (delaying bedtime by a few hours each night)</li> </ul>
Advanced sleep phase disorder	Normal duration and quality of sleep with sleep onset and awakening times earlier than desired	Older age	<ul style="list-style-type: none"> <li>■ Timed bright light phototherapy prior to bedtime</li> <li>■ Early morning melatonin not recommended (may cause daytime sedation)</li> </ul>
Shift-work disorder (SWD)	Sleep deprivation and misalignment of the circadian rhythm secondary to nontraditional work hours	<ul style="list-style-type: none"> <li>■ Night shift work</li> <li>■ Rotating shifts</li> <li>■ Shifts &gt;16 hours</li> <li>■ <i>Being a medical/psychiatry resident</i></li> </ul>	<ul style="list-style-type: none"> <li>■ <u>Avoid risk factors</u></li> <li>■ <u>Bright light phototherapy</u> to facilitate rapid adaptation to night shift</li> <li>■ <u>Modafinil</u> may be helpful for patients with severe SWD</li> </ul>
Jet lag disorder	Sleep disturbances (insomnia, hypersomnia) associated with travel across multiple time zones	Recent sleep deprivation	<ul style="list-style-type: none"> <li>■ Disorder is usually self-limiting.</li> <li>■ Sleep disturbances generally resolve 2–3 days after travel.</li> </ul>

# Management

- Non-pharmacological
  - (Sleep education) educating the patient about the sleep stages and making them develop good sleep habits and regulating their naps .
- pharmacological:
  - Agomelatine or melatonin to reset circadian rhythm.
  - Hypnotic ex: short acting benzodiazapins





# Parasomnia





It's a sleep disorder that cause abnormal behaviors while being a sleep or in the sleep- wake transtion .

This condition includes walking , talking and doing other activities while falling a sleep and this lead to decrease the restful sleep and its dangerous because the patient don't know what is he doing or where he is.

It can happen as an isolated episodes during childhood or in the adolescence



# Types of parasomnia

Type	Key Features	Sleep Stage
<b>Sleepwalking</b>	Walking or performing actions while asleep; no memory	<b>NREM (Stage 3)</b>
<b>Sleep Talking</b>	Talking during sleep (mumbling → full sentences)	<b>REM or NREM</b>
<b>Sleep-Related Groaning</b>	Groaning during slow exhalation; may mimic snoring	<b>REM</b>
<b>Nightmares</b>	Frightening dreams, person wakes & recalls	<b>REM</b>
<b>Night Terrors</b>	Sudden terror, screaming, sweating, no recall	<b>NREM (Stage 3)</b>
<b>Bedwetting</b>	Involuntary urination during sleep (kids)	<b>NREM</b>
<b>REM Sleep Behavior Disorder</b>	Acting out dreams (kicking, jumping), recalls dream	<b>REM</b>



## Parasomnia

### Characteristic

### Sleep terror

### Nightmare

Time of night

First third

Last third

Movements

Common

Rare

Severity

Severe

Mild

Vocalisation

Common

Rare

Autonomic discharge

Severe and intense

Mild

Amnesia

Present

Absent

State on waking

Disoriented/confused

Oriented

Leave the bed

Common

Very rare

## •Causes of parasomnia

- 1) Stress .
- 2) Anxiety.
- 3) Depression.
- 4) Substance use.
- 5) Side effect of some medication.
- 6) Irregular sleep (night shifts).
- 7) Other sleep disorders(insomnia).
- 8) Sleep deprivation.

## Symptoms:

- 1)Wake up confused or disoriented
- 2) wake up wondering where you are
- 3) not remember doing certain activities
- 4) find unfamiliar cuts on your body
- 5) have difficulty sleeping throughout the night





# restlessness leg syndrom



Motor –sensory NEUROLOGICAL SLEEP  
DISORDER CHARACTERIZED BY UNCOMFORTABLE  
SENSATIONS IN THE LOWER EXTREMITIES THAT  
ARE ACCOMPANIED BY AN ALMOST IRRESISTIBLE  
URGE TO MOVE THE LEGS OR ARMS. THESE  
UNCOMFORTABLE EXPERIENCES ARE TYPICALLY  
DESCRIBED AS CREEPING,





# Diagnostic criteria

A) An urge to move the legs, characterized by all the following:

The urge to move the legs begins or worsens during periods of rest or  
inactivity

2) The urge to move the legs is partially or totally relieved by movement.

3) The urge to move the legs is worse in the evening or at night than  
during

the day, or occurs only in the evening or at night

.B) Symptoms occur at least 3 times per week and have persisted for at  
least 3 months.



# Diagnostic criteria

C) Significant distress or impairment in social or occupational areas of functioning.

D) Symptoms are not attributable to another mental disorder or medical condition.

❖ The mnemonic URGE can be used to remember the core features of RLS:

Urge to move limbs

Rest worsens the sensation

Getting up to move offers temporary relief

Evening is worse for symptoms

