Sleep disorders
Concepts of sleep

Sleep is biologically regulated, but the environment plays a role for example in winter people tend to sleep about one hour longer than in summer, stresses of the day, shift work, night time noise, room temperature, physical state like hunger or over eating, pains and aches, alcohol and drug abuse and other many external factors that affect the quality of sleep like decreasing the deep slow wave sleep and increase the light sleep.
Sleep physiology

People differ in how much amount of sleep they require with each age group, newborn infants require 16 hours of sleep a day and almost half of their sleep time is in REM but this time decrease as the child grow older, on average, 19-30 years old need around 8 hours of sleep per day while elderly adult may be satisfied with average of 6 hours, stage 3 and stage 4 durations tend to decrease with late adulthood, so an older person get little slow wave sleep. The important sign of good sleep is that the degree of satisfaction and rest which the individual get at awaking, some short sleepers feel satisfied with 5 hours and wake up refreshed, some are not.
Sleep deprivation

Sleep deprivation is a common phenomenon across the world for various reasons, it has a negative effect on physical and psychological well-being. Psychologists studied sleep deprivation to get more insight about the physiology of sleep in general. They conducted experiments on three groups of participants who volunteered to: stay awake for 45 hours (short term total sleep deprivation. Second group who volunteered to stay awake for more than 45 hours without sleep (long term total sleep deprivation). Sleep deprivation is a common phenomenon across the world for various reasons.
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Sleep deprivation

The circadian sleep models indicated that the sleep's main purpose is to increase a chance of survival in humans and animals, the stages of sleep among humans refer to certain needs to be fulfilled, for example the body needs REM sleep for the reason of that the high levels of brain activity produced in REM sleep may strengthen the neural circuit involved in remembering important information that learned during the day which may be called memory consolidation (Winson 1990) however the exact functioning
Sleep disorders

Sleep associated problems were studied well by many scientists by laboratory experiments and direct researches, sometimes an organic lesion in the responsible part in the brain can not function normally and lead to sleep disorders, insomnia is the most common sleep disorder, experienced by approximately 10-40% of population, it has a biological, psychological, genetic predisposition, medical and environmental causes, the most common cause is the daily stresses and general worrying which is treated by improving the sleep hygiene, or treat any sever state of anxiety and depression by medications.
A broad category of sleep disorders - **Dyssomnias** - characterized by either hypersomnolence or insomnia. The three major subcategories include intrinsic (i.e., arising from within the body), extrinsic (secondary to environmental conditions or various pathologic conditions), and disturbances of circadian rhythm.

- **Insomnia**
- Narcolepsy
- Obstructive sleep apnea
- Restless leg syndrome
- Periodic limb movement disorder
- **Hypersomnia**
Types of sleep disorders

- Kleine-Levin syndrome
- Recurrent hypersomnia - including
- Posttraumatic hypersomnia
- “Healthy” hypersomnia
- Circadian rhythm sleep disorders
  - Delayed sleep phase syndrome
  - Advanced sleep phase syndrome
  - Non-24-hour sleep-wake syndrome

A category of sleep disorders that - Parasomnias

involve abnormal and unnatural movements, behaviors, emotions, perceptions, and dreams in connection with sleep
REM sleep behaviour disorder  –  
Sleep terror  –  
)or somnambulism (Sleepwalking  –  
)Tooth-grinding (Bruxism  –  
or sleep enuresis Bedwetting  –  
or somniloquy (Sleep talking  –  
or sexesomnia (Sleep sex  –  
Waking up in - Exploding head syndrome  •  
the night
Causes
Insomnia and its causes

Most adults have experienced insomnia or sleeplessness at one time or another in their lives. An estimated 30%-50% of the general population are affected by insomnia, and 10% have chronic insomnia. Insomnia is a symptom, not a stand-alone diagnosis or a disease. By definition, insomnia is "difficulty initiating or maintaining sleep, or both" and it may be due to inadequate quality or quantity of sleep. Insomnia is not defined by a specific number of hours of sleep that one gets, since individuals vary widely in their sleep needs and practices. Although most of us know what insomnia is and how we feel and perform after one or more sleepless nights, few seek medical advice. Many people remain unaware of the behavioral and medical options available to treat insomnia.

Statistics on Insomnia
Insomnia affects all age groups. Among adults, insomnia affects women more often than men. The incidence tends to increase with age. It is typically more common in people in lower socioeconomic (income) groups, chronic alcoholics, and mental health patients. Stress most commonly triggers short-term or acute insomnia. If you do not address your insomnia, however, it may develop into chronic insomnia.

Sleep hygiene can play an important role in insomnia. Poor sleep hygiene includes physical factors such as:
- using the bedroom for things other than sleeping
- eating or exercising prior to sleep
- going to bed hungry
- sleeping in a room with too much noise or lighting, or
- doing work in bed

Medical and psychiatric conditions may also contribute to insomnia. Some:
- sleep walking
- restless leg syndrome: creeping sensations in the leg during sleep, relieved by leg movement
- sleep apnea
- involuntary repeated leg movement during sleep, or
- periodic limb movement disorder
- unusual sleep time due to disturbed biological
- circadian sleep disturbance
What to do

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Some of these common medical conditions may include:
- Breathing problems from chronic heart or lung disease (asthma, chronic obstructive pulmonary disease (COPD), congestive heart failure), sleep apnea obstructive,
- Obstructive sleep apnea,
- Obesity,
- Acid reflux,
- Hyperthyroidism,
- Urinary incontinence, frequent urination (urinary problems), chronic pain,
- Fibromyalgia,
- Chronic pain,
- Fibromyalgia,
- Or dementia, Parkinson's disease,
- Dementia.
Common psychiatric causes

Common psychiatric problems can be responsible for insomnia including:
- depression
- psychosis
- mania
- or, anxiety
- PTSD (posttraumatic stress disorder)

Some common physiologic conditions can lead to insomnia such as:
- menopause
- menstrual cycle
- problems, pregnancy

Medical or Psychiatric Conditions that may produce sleep disorders:

Schizophrenia such as (Psychoses – Mood disorders –)
- Depression
- Anxiety
- Panic
- Alcoholism

Sleeping sickness – a parasitic disease which can be transmitted by the Tsetse fly
- Snoring
- Not a disorder in and of itself, but it can be a symptom of deeper
- or, fever
Sleep disorders

;Narcolepsy and sleep apnea  •
People with sleep apnea repeatedly stop and restart  • breathing during sleep , stoppage last 20-40 seconds up to minute or two, commonly caused by obstruction in airways leading to gasp, loud snore and jerking body movements. While narcolepsy is a sudden, irresistible attacks of sleeping occur any time during the day even with sound night sleep, may last from minutes to an hour in which the person goes directly to REM sleep and some may have dreamlike visual images and sounds sometimes it is associated with cataplexy which is a sudden loss of muscle tones often triggered by laughter, excitement, and other strong emotions
Sleep walking

It occurs during stage 3 or 4 period of slow wave sleep, they show poor response to external verbal stimulation but they are aware of the mechanical obstructions like pieces of furniture. A tendency to sleep walk may be inherited in addition to the effects of alcohol, medications, and certain illnesses, treatment include psychotherapy, hypnosis, rearrange home furniture.
Nightmares and night terrors

Nightmares are frightening dreams and virtually everyone has them, like all dreams, they occur more often during REM and in the hours before wakening in which physiological arousal occurs, while night terror (sleep terrors) are more intense than night mares, the sleeper, usually a child, suddenly sit up and seems to awaken but terrified and screaming, unlike nightmares night terrors are more common during slow wave sleep (stage 3, 4) and involve elevated physiological arousal, it form 6% in children, .1% in adults.
Dreams, night mares

Dreams in general are the products of mental activity during the sleep cycles especially in the REM and at the final hours both in REM and NREM more than in the beginning or middle of night sleep. Researches about the nature and contents of dreams reflected that 80% of dreams involved negative emotions, almost half contained aggressive acts and frustrations, the cultural background, life experiences and current concerns shape dream content, for example children living in a violent atmosphere like in many regions in Iraq do have violent contents of their dreams like persecution and aggression more than children living in peaceful environment, students may have frequent dreams about the exam.
Guidelines in treatment

Treatments for sleep disorders generally can be grouped into four categories: behavioral/psychotherapeutic treatments, rehabilitation/management, medications, and other somatic treatments. None of these general approaches is sufficient for all patients with sleep disorders. Rather, the choice of a specific treatment depends on the patient's diagnosis, medical and psychiatric history, and preferences, as well as the expertise of the treating clinician. Often, behavioral/psychotherapeutic and pharmacological approaches are not incompatible and can effectively be combined to maximize therapeutic benefits.
Treatment of sleep disorders

Chronic sleep disorders in childhood, which affect some 70% of children with developmental or psychological disorders, are under-reported and under-treated. Sleep-phase disruption is also common among adolescents, whose school schedules are often incompatible with their natural circadian rhythm. Effective treatment begins with careful diagnosis using sleep diaries and perhaps sleep studies. Modifications in sleep hygiene may resolve the problem, but medical treatment is often warranted. Special equipment may be required for treatment of several disorders such as obstructive apnea, the circadian rhythm disorders and bruxism. In these cases, when severe, an acceptance of living with the disorder
Bruxism—teeth grinding

Sleep dentistry (bruxism, snoring and sleep apnea), while not recognized as one of the nine dental specialties, qualifies for board-certification by the American Board of Dental Sleep Medicine (ABDSM). The qualified dentists collaborate with sleep physicians at accredited sleep centers and can provide oral appliance therapy and upper airway surgery to treat or manage sleep-related breathing disorders.

Sleep Centre: "One problem is that there has been relatively little training in sleep medicine in this country – certainly there is no structured training for sleep physicians." The Imperial College Healthcare site shows attention to obstructive sleep apnea syndrome (OSA) and very few other sleep disorders.
Other sleeping disorders

**Arcolepsy** is a chronic sleep disorder, or dyssomnia, characterized by excessive daytime sleepiness (EDS) in which a person experiences extreme fatigue and possibly falls asleep at inappropriate times, such as while at work or at school. Narcoleptics usually experience disturbed nocturnal sleep and an abnormal daytime sleep pattern, which is often confused with insomnia. When a narcoleptic falls asleep they generally experience the REM stage of sleep within 10 minutes; whereas most people do not experience REM sleep until after 30 minutes. There is little evidence to suggest that narcoleptics tend to have a shorter life span.
Other types of sleep disorders

Some narcoleptics experience is cataplexy, a sudden • muscular weakness brought on by strong emotions (though many people experience cataplexy without having an emotional trigger. It often manifests as muscular weaknesses ranging from a barely perceptible slackening of the facial muscles to the dropping of the jaw or head, weakness at the knees, or a total collapse. Usually only speech is slurred, vision is impaired (double vision, inability to focus), but hearing and awareness remain normal. In some rare cases, an individual's body becomes paralyzed and muscles become stiff.
Facts about sleeping problems

There are wide variations in the development, severity, and order of appearance of cataplexy, sleep paralysis, and hypnagogic hallucinations in individuals. Only about 20 to 25 percent of people with narcolepsy experience all four symptoms. The excessive daytime sleepiness generally persists throughout life, but sleep paralysis and hypnagogic hallucinations may not.

Although these are the common symptoms of narcolepsy, many people with narcolepsy also suffer from insomnia for extended periods of time. The symptoms of narcolepsy, especially the excessive daytime sleepiness and cataplexy, often become severe enough to cause serious problems in a person's social, personal, and professional life. Normally, when an individual is awake, brain waves