

Section 1: Basic Definitions, Advanced Methods, History

Chapter 1: Definitions and Basic Methods for Assessing Sleep

Chapter 2: Circadian Biology: Definitions and Fundamental Methods of Investigation

Chapter 3: Advanced Methods to Study Sleep

Chapter 4: Genetic and Omic Methods to Study Sleep and Circadian Rhythms

Chapter 5: History of Sleep Research

Section 2: Brain Mechanisms

Chapter 6: Neural Circuits and Neurotransmitter Systems Regulating Sleep-Wake Cycles

Chapter 7: Sensory-motor processing during sleep

Chapter 8: Fundamentals of the Circadian Clock System: Molecular Clock and Systems-Level Features

Chapter 9: Interactions of sleep-wake history and circadian rhythms in human sleep

Chapter 10: Genetics of sleep and its regulation

Chapter 11: The neurobiology of dreaming

Section 3: Physiology in Sleep

Chapter 12: Sleep and the Autonomic Nervous System

Chapter 13: Respiratory Physiology

Chapter 14: Sleep and Thermoregulation

Chapter 15: Sleep and Endocrinology

Chapter 16: Sleep and Immune Health

Section 4: Phylogeny and Ontogeny of Sleep

Chapter 17: The Evolution of Sleep: Using simple brains to study the complexity of sleep.

Chapter 18: Evolution of Vertebrate Sleep States

Chapter 19: Fundamental Features of Sleep in Early Development

Chapter 20: Sleep in Humans from Fetus through Adolescence

Chapter 21: Sleep in Humans - Older Adults

Section 5: Effects of Wake and Associated Hypothesized Functions of Sleep

Chapter 22: Influence of Behavioural States on Brain Energetics and Maintenance

Chapter 23: Learning, Memory, and Synaptic Plasticity

Chapter 24: Mood, Motivation, and Emotion Regulation

Section 6: Sleep Disorders and Sleep in Medical Conditions

Chapter 25: Sleep-related breathing disorders

Chapter 26: Insomnia Disorder

Chapter 27: Narcolepsy and Idiopathic Hypersomnia

Chapter 28: Circadian Rhythm Disorders

Chapter 29: Parasomnias

Chapter 30: Pharmacotherapy of Sleep Disorders

Chapter 31: Cognitive/Behavioural Approaches for Treating Sleep Disorders

Chapter 32. Sleep and circadian rhythms in psychiatric and neurological disorders
Chapter 33: Sleep in Medical Disorders

Section 7: Sleep and Society

Chapter 34: Population-Level Sleep, Sleep Disorders, and Sleep Disparities
Chapter 35: Impact of Sleep Loss on Alertness, Performance, and Safety
Chapter 36: Sleep health and policy