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Basal Ganglia Structure And
Function

Handbook Of Basal Ganglia Structure And Function

*Handbook of Basal
Ganglia Structure and*

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Academic Press

*Clinical neuropsychology
remains one of the
fastest growing
specialities within
clinical psychology,
neurology, and the*

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*psychiatric disciplines.
This second edition
provides a practical
guide for those
interested in the
professional application
of neuropsychological*

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*approaches and
techniques in clinical
practice.*

*Handbook of Basal
Ganglia Structure and
Function, Second
Edition, offers an*

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*integrated overview of
the structural and
functional aspects of
the basal ganglia,
highlighting clinical
relevance. The basal
ganglia, a group of*

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*forebrain nuclei
interconnected with the
cerebral cortex,
thalamus, and brainstem,
are involved in numerous
brain functions, such as
motor control and*

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learning, sensorimotor integration, reward, and cognition. These nuclei are essential for normal brain function and behavior, and their importance is further

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*emphasized by the
numerous and diverse
disorders associated
with basal ganglia
dysfunction, including
Parkinson's disease,
Tourette's syndrome,*

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*Huntington's disease,
obsessive-compulsive
disorder, dystonia, and
psychostimulant
addiction. This updated
edition has been
thoroughly revised to*

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provide the most up-to-date account of this critical brain structure. Edited and authored by internationally acclaimed basal ganglia

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researchers, the new edition contains ten entirely new chapters that offer expanded coverage of anatomy and physiology, detailed accounts of recent

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*advances in
cellular/molecular
mechanisms and
cellular/physiological
mechanisms, and
critical, deeper
insights into the*

File Type PDF Handbook Of
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*behavioral and clinical
aspects of basal ganglia
function and
dysfunction. Synthesizes
widely dispersed
information on the
behavioral neurobiology*

File Type PDF Handbook Of
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*of the basal ganglia,
including advances in
the understanding of
anatomy,
cellular/molecular and
cellular/physiological
mechanisms, and*

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*behavioral and clinical
aspects of function and
dysfunction Written by
international authors
who are preeminent
researchers in the field
Explores, in full, the*

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*clinically relevant
impact of the basal
ganglia on various
psychiatric and
neurological diseases
Neural Circuit and
Cognitive Development,*

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Second Edition, the latest release in the Comprehensive Developmental Neuroscience series, provides a much-needed update to underscore the

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*latest research in this
rapidly evolving field,
with new section editors
discussing the
technological advances
that are enabling the
pursuit of new research*

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on brain development.

*This volume is devoted
mainly to anatomical and
functional development
of neural circuits and
neural systems and
cognitive development.*

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*Understanding the
critical role these
changes play in
neurodevelopment
provides the ability to
explore and elucidate
the underlying causes of*

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neurodevelopmental disorders and their effect on cognition. This series is designed to fill the knowledge gap, offering the most thorough coverage of

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this field on the market today and addressing all aspects of how the nervous system and its components develop. Features leading experts in various subfields as

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*section editors and
article authors Presents
articles that have been
peer reviewed to ensure
accuracy, thoroughness
and scholarship Includes
coverage of mechanisms*

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*that control the
assembly of neural
circuits in specific
regions of the nervous
system and multiple
aspects of cognitive
development*

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*Adenosine Receptors in
Neurodegenerative
Diseases covers the role
of adenosine receptors
in brain function, also
focusing on related
methodologies and*

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*perspectives in
therapeutics. The book
provides an up-to-date
overview by the best
specialists in the
field, helping readers
consider the importance*

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*of adenosine and expand
the global impact and
visibility of adenosine
research in the CNS
field. Chapters include
adenosine biology and
signaling, gene*

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*regulation, control of
motor function, and
novel adenosine-based
therapies in the CNS. It
is an ideal resource for
researchers, advanced
graduate students,*

File Type PDF Handbook Of
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*clinicians, and industry
scientists working in
the fields of clinical
neuroscience and
molecular and cellular
neuroscience.*

Comprehensive reference

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*that details adenosine
receptors in
neurodegenerative
disorders, with details
on brain function and
possible therapeutics
Gives insights on how*

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*these receptors modulate
the neurodegenerative
outcomes in different
disorders Edited by two
of the leading
researchers in the field
regarding adenosine role*

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*in the brain in aging
and neurodegenerative
conditions*

Neural Organization

Textbook of Movement

Disorders

Structure, Function, and

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Dynamics

The Basal Ganglia

*Anatomy Descriptive And
Surgical*

Neuroanatomy: Draw It to Know It,
Third Edition teaches neuroanatomy in
a purely kinesthetic way. In using this

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book, the reader draws each neuroanatomical pathway and structure, and in the process, creates memorable and reproducible schematics for the various learning points in Neuroanatomy in a hands-on, enjoyable and highly effective manner. In addition to this unique method,

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Neuroanatomy: Draw It to Know It also provides a remarkable repository of reference materials, including numerous anatomic and radiographic brain images and illustrations from many other classic texts to enhance the learning experience. In the third edition of this now-classic text, the

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author completely reorganized the book based on user-feedback, taking a more intuitive and easy-to-use approach. For the first time, the illustrations are in full color. No other text in neuroanatomy engages the reader in as direct a manner as this book and none covers the advanced

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level of detail found while retaining the simplistic approach to the learning which has become the cornerstone of the text. Neuroanatomy: Draw It to Know It is singular in its ability to engage and instruct without overwhelming any level of neuroanatomy student.

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Neurobiology of Language explores the study of language, a field that has seen tremendous progress in the last two decades. Key to this progress is the accelerating trend toward integration of neurobiological approaches with the more established understanding of language within

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cognitive psychology, computer science, and linguistics. This volume serves as the definitive reference on the neurobiology of language, bringing these various advances together into a single volume of 100 concise entries. The organization includes sections on the field's major subfields, with each

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section covering both empirical data and theoretical perspectives.

"Foundational" neurobiological coverage is also provided, including neuroanatomy, neurophysiology, genetics, linguistic, and psycholinguistic data, and models.

Foundational reference for the current

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state of the field of the neurobiology of language Enables brain and language researchers and students to remain up-to-date in this fast-moving field that crosses many disciplinary and subdisciplinary boundaries Provides an accessible entry point for other scientists interested in the area, but

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not actively working in it – e.g., speech therapists, neurologists, and cognitive psychologists Chapters authored by world leaders in the field – the broadest, most expert coverage available

In Neural Organization, Arbib, Erdi, and Szentagothai integrate structural,

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functional, and dynamical approaches to the interaction of brain models and neurobiological experiments. Both structure-based "bottom-up" and function-based "top-down" models offer coherent concepts by which to evaluate the experimental data. The goal of this book is to point out the

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advantages of a multidisciplinary, multistrategied approach to the brain. Part I of Neural Organization provides a detailed introduction to each of the three areas of structure, function, and dynamics. Structure refers to the anatomical aspects of the brain and the relations between

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different brain regions. Function refers to skills and behaviors, which are explained by means of functional schemas and biologically based neural networks. Dynamics refers to the use of a mathematical framework to analyze the temporal change of neural activities and synaptic connectivities

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that underlie brain development and plasticity--in terms of both detailed single-cell models and large-scale network models. In part II, the authors show how their systematic approach can be used to analyze specific parts of the nervous system--the olfactory system, hippocampus, thalamus,

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cerebral cortex, cerebellum, and basal ganglia--as well as to integrate data from the study of brain regions, functional models, and the dynamics of neural networks. In conclusion, they offer a plan for the use of their methods in the development of cognitive neuroscience."

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The discovery of dopamine in 1957-1958 was one of the seminal events in the development of modern neuroscience, and has been extremely important for the development of modern therapies of neurological and psychiatric disorders. This publication captures current progress and

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excitement in this dynamic research field

Spasmodic torticollis, also known as cervical dystonia, affects about three people in 10,000, or an estimated 85,000 individuals in the United States alone. Despite this, there has been until now a lack of information outside

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of the professional medical literature for use by individuals with this disorder and their families. This book provides comprehensive information on the disorder for people with spasmodic torticollis and those close to them. Medical terms and concepts are introduced sequentially and then used

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as building blocks for the later discussion. Beginning with a clear definition of the disorder, opening chapters categorize this neurologic disease as one of the broader category of movement disorders, and differentiate it from other conditions with which it is often confused. The

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authors then present a stepwise introduction to the relevant anatomy and physiology of the nervous system and neck. They draw on the experiences of their patients to build a progressive depiction of the experiences an individual might have as he or she goes through the initial

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onset of symptoms, progression of the disorder, seeking medical care, diagnosis, treatment, and subsequent outcome. Personal vignettes from the experiences of selected patients are provided where they illustrate particular points in the discussion. Subsequent chapters discuss various

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modes of treatment for spasmodic torticollis. Prior to the mid-1980's, there were no specific treatments for this disorder. Nearly all treatment consisted of using oral medications that were primarily intended for other medical conditions. Since most of these medications are still in use, and

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a few new ones have been added, a chapter is devoted to detailing them and discussing the general principles of medication therapy. During the past decade, chemodenerivation using botulinum toxin has become the primary and most effective treatment for spasmodic torticollis. For those few

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patients who require surgery, a description is provided of the neurosurgical techniques developed during the last twenty years specifically for its treatment. The final chapter is a manual of therapeutic rehabilitation exercises designed to alleviate the symptoms of spasmodic

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torticollis. These exercises can be performed by most patients with no assistance and a bare minimum of equipment. Since each person's case of spasmodic torticollis is different, only certain of the exercises may be appropriate for any given individual. They should be undertaken only after

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discussion with your physician. These exercises are accompanied by detailed illustrations that emphasize the particular muscles relevant to each posture or movement. About the Authors: Dr. Pathak is a neurologist with a special interest in the neurologic rehabilitation of movement disorders,

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especially spasmodic torticollis. Dr. Frei is a neurologist specialized in the field of neurogenetics, and has conducted clinical trials on a number of movement disorders, including spasmodic torticollis. Dr. Truong is a neurologist and movement disorders specialist. He has conducted active

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research in the management of movement disorders, including spasmodic torticollus. He was one of the pioneers in the use of botulinum toxin to manage this condition, and has lectured worldwide on the management of movement disorders.

The Myth of Executive Functioning

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Handbook of Neuroimaging Data
Analysis

The Handbook of Behavior Change

The Synaptic Organization of the Brain

Handbook of Functional MRI Data
Analysis

**Improved diagnostic sophistication is
increasingly enabling neurologists to**

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differentiate between Parkinson's disease and other atypical parkinsonism (AP), such as multiple system atrophy, progressive supranuclear palsy, corticobasal degeneration, and dementia with Lewy bodies. The Handbook of Atypical Parkinsonism is a comprehensive survey of all diseases

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of this category, providing an authoritative guide to the recognition, diagnosis and management of these disorders. Each chapter follows a common structure, commencing with the full basic science of the disorder under consideration, followed by descriptions of the clinical picture and

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differential diagnosis. Subsequent chapters discuss current and future therapeutic approaches to these difficult conditions. Written and edited by leading practitioners in the field, clinicians in neurology and other specialties will find this book essential to the understanding and diagnosis of

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this complex group of disorders.

**Functional and Clinical Neuroanatomy:
A Guide for Health Care Professionals**
is a comprehensive, yet easy-to read,
introduction to neuroanatomy that
covers the structures and functions of
the central, peripheral and autonomic
nervous systems. The book also focuses

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on the clinical presentation of disease processes involving specific structures. It is the first review of clinical neuroanatomy that is written specifically for nurses, physician assistants, nurse practitioners, medical students and medical assistants who work in the field of neurology. It will

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also be an invaluable resource for graduate and postgraduate students in neuroscience. With 22 chapters, including two that provide complete neurological examinations and diagnostic evaluations, this book is an ideal resource for health care professionals across a wide variety of

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disciplines. Written specifically for "mid-level" providers in the field of neurology Provides an up-to-date review of clinical neuroanatomy based on the latest guidelines Provides a logical, step-by-step introduction to neuroanatomy Offers hundreds of full-color figures to illustrate important

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**concepts Highlights key subjects in
"Focus On" boxes Includes Section
Reviews at critical points in the text of
each chapter**

**Comprehensive guide to movement
disorders for practising neurologists
and trainees. In-depth coverage of
Parkinson's disease.**

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Over the past 25 years the amount of data pertaining to the GABAergic function in the basal ganglia has increased dramatically. GABA and the Basal Ganglia - From Molecules to Systems is a comprehensive review of the current state-of-the-art of knowledge about the neuroanatomy,

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neuropharmacology and neurophysiology of the basal ganglia, focusing on its GABAergic microcircuitry. It serves as a complete reference to the body of knowledge about the basal ganglia, its constituent neurons, and their interconnections. This volume is designed to serve as a

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convenient all-in-one review and reference for experienced basal ganglia researchers as well as an introduction to the functional organization of the basal ganglia and its GABAergic circuitry for students and researchers new to the field. * Reviews the anatomy, physiology and pharmacology of the

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**basal ganglia itself in addition to
focusing on the GABAergic circuitry of
the basal ganglia * Authors of each
chapter leading internationally
acclaimed experts in basal ganglia
research**

**This book discusses the state of the
research and cutting-edge practice with**

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regard to chronic illnesses and rehabilitation in older adults. It emphasizes biopsychosocial and culturally appropriate rehabilitation approaches to reduce the degree of disability and maximize independence in the activities of daily living among the burgeoning aging population.

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Organized in four sections—Introduction and Overview, Major Illnesses and Problems in Aging Populations, Evaluation of Functional Rehabilitation Approaches for Aging Populations, and Future Clinical Research Needs—the book includes chapters on the “graying” of the West

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with implications for increased chronic illnesses and disabilities; a review of biopsychosocial rehabilitation approaches; important “aging” issues such as slips-and-falls, musculoskeletal pain, chronic disabling conditions such as cancer and cardiovascular disease, and work-related factors to maintain

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work engagement in older workers. The US Census Bureau projects that by the year 2030, about 20% of the U.S. population will be 65 or older, contributing to the increased concern about healthcare and rehabilitation issues among older adults. /div This work will be of interest to healthcare,

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rehabilitation, vocational, human resource and disability management professionals, policy makers as well as researchers in areas of aging, gerontology, chronic illness, disability, rehabilitation, social work, medicine and psychology.

Spasmodic Torticollis Handbook

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**The Oxford Handbook of Attention
A Guide to Treatment and
Rehabilitation**

Draw It to Know It

Balance, Gait, and Falls

*The Basal Ganglia comprise a
group of forebrain nuclei that are
interconnected with the cerebral*

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cortex, thalamus and brainstem.

Basal ganglia circuits are involved in various functions, including motor control and learning, sensorimotor integration, reward and cognition.

The importance of these nuclei for normal brain function and behavior

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is emphasized by the numerous and diverse disorders associated with basal ganglia dysfunction, including Parkinson's disease, Tourette's syndrome, Huntington's disease, obsessive-compulsive disorder, dystonia, and psychostimulant

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addiction. The Handbook of Basal Ganglia provides a comprehensive overview of the structural and functional organization of the basal ganglia, with special emphasis on the progress achieved over the last 10-15 years. Organized in six parts,

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the volume describes the general anatomical organization and provides a review of the evolution of the basal ganglia, followed by detailed accounts of recent advances in anatomy, cellular/molecular, and

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cellular/physiological mechanisms, and our understanding of the behavioral and clinical aspects of basal ganglia function and dysfunction. Synthesizes widely dispersed information on the behavioral neurobiology of the basal

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*ganglia, including advances in the understanding of anatomy, cell-molecular and cell-physiological mechanisms, and behavioral/clinical aspects of function and dysfunction
Features a truly international cast of the preeminent researchers in the*

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field Fully explores the clinically relevant impact of the basal ganglia on various psychiatric and neurological diseases

Using the most well-studied behavioral analyses of animal subjects to promote a better

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understanding of the effects of disease and the effects of new therapeutic treatments on human cognition, Methods of Behavior Analysis in Neuroscience provides a reference manual for molecular and cellular research scientists in

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*both academia and the
pharmaceutic*

*The definitive guide to 21st century
investigations of multilingual
neuroscience The Handbook of the
Neuroscience of Multilingualism
provides a comprehensive survey of*

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*neurocognitive investigations of
multiple-language speakers.*

Prominent scholar John W.

*Schwieter offers a unique collection
of works from globally recognized
researchers in neuroscience,
psycholinguistics, neurobiology,*

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psychology, neuroimaging, and others, to provide a multidisciplinary overview of relevant topics.

Authoritative coverage of state-of-the-art research provides readers with fundamental knowledge of significant theories and methods,

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language impairments and disorders, and neural representations, functions, and processes of the multilingual brain. Focusing on up-to-date theoretical and experimental research, this timely handbook explores new

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directions of study and examines significant findings in the rapidly evolving field of multilingual neuroscience. Discussions on the bilingual advantage debate, recovery and rehabilitation patterns in multilingual aphasia, and the

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neurocognitive effects of multilingualism throughout the lifespan allow informed investigation of contemporary issues. Presents the first handbook-length examination of the neuroscience and neurolinguistics of

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multilingualism Demonstrates how neuroscience and multilingualism intersect several areas of research, such as neurobiology and experimental psychology Includes works from prominent international scholars and researchers to provide

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global perspective Reflects cutting-edge research and promising areas of future study in the dynamic field of multilingual neuroscience The Handbook of the Neuroscience of Multilingualism is an invaluable resource for researchers and

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scholars in areas including multilingualism, psycholinguistics, second language acquisition, and cognitive science. This versatile work is also an indispensable addition to the classroom, providing advanced undergraduate and

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*graduate students a thorough
overview of the field.*

*Several excellent monographs exist
which deal with axons. These,
however, focus either on the cellular
and molecular biology of axons
proper or on network organization of*

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connections, the latter with only an incidental or abstract reference to axons per se. Still relatively neglected, however, is the middle ground of terminations and trajectories of single axons in the mammalian central nervous system.

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This middle level of connectivity, between networks on the one hand and local, in vitro investigations on the other, is to some extent represented by retrograde tracer studies and labeled neurons, but there have so far been many fewer

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of the complementary anterograde studies, with total visualization of the axonal arborization. The present volume brings together in one source an interrelated treatment of single axons from the perspective of microcircuitry and as substrates of

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larger scale organization (tractography). Especially for the former area - axons in microcircuitry - an abundance of published data exists, but these are typically in specialty journals that are not often accessed by the broader

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community. By highlighting and unifying the span from microcircuitry to tractography, the proposed volume serves as a convenient reference source and in addition inspires further interactions between what currently tend to be separate

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communities. The volume also redresses the imbalance between in vitro/local connectivity and long-distance connections. Focusing on mammalian systems, Part 1 of this book is devoted to anatomical investigations of connections at the

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single axon level, drawing on modern techniques and classical methods from the 1990s. A particular emphasis is on broad coverage of cortical and subcortical connections from different species, so that common patterns of

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divergence, convergence, and collateralization can be easily appreciated. Part 2 addresses mechanisms of axon guidance, as these seem particularly relevant to pathways and branching patterns. Part 3 covers axon dynamics and

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functional aspects; and Part 4 focuses on tractography, notably including comparisons between histological substrates and imaging. A novel innovative reference on the axon as a connectional unit, encompassing microcircuitry, axon

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guidance, and function Featuring chapters from leading researchers in the field Full-colour text that includes both an overview of axon function and the multiple underlying molecular mechanisms The only volume to bring together the

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configuration of individual axons at a circuit level and to relate the histological geometry of axons and axon bundles to in vivo tractography imaging studies

Balance, Gait, and Falls, Volume 159 presents the latest information

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on sensorimotor anatomy, sensory integration, gravity and verticality, standing balance, balance perturbations, voluntary stepping and gait initiation, gait and gait adaptability, disorders of balance and gait that result from aging and

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neurological diseases. The book provides a brief overview of age-related changes in the structure and function of sensorimotor and central processes, with sections specifically devoted to Parkinson's disease, parkinsonism, cerebellar ataxia,

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*stroke, corticobasal degeneration,
multiple sclerosis, Huntington's
disease, dystonia, tremor,
Alzheimer's disease, frontotemporal
dementia, cerebral palsy, polio,
motor neuron disease, brainstem
lesions, spinal lesions, peripheral*

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nerve disease, and psychogenic conditions. Diseases covered have a common structure comprising background and epidemiology, pathology, balance disorders, gait disorders, falls, therapies (including fall prevention), and future

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directions. Covers all aspects of basic and clinical research on disorders of balance and gait in neurological disease Presents a multidisciplinary review of balance and gait physiology, the epidemiology and natural history of

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balance and gait impairments in aging, and a broad range of neurological diseases Addresses impairments of balance and gait for basic and clinical researchers in neuroscience, human movement science, physiotherapy and

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exercise physiology

*The New Anatomy of the Basal
Forebrain and Its Implications for
Neuropsychiatric Illness
Functional and Clinical
Neuroanatomy
An Encyclopedic Reference*

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Missing Elements in

*Conceptualization, Evaluation, and
Assessment*

*Neural Circuit and Cognitive
Development*

Brain Mapping: A Comprehensive
Reference offers foundational

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information for students and researchers across neuroscience. With over 300 articles and a media rich environment, this resource provides exhaustive coverage of the methods and systems involved in brain mapping, fully links the data to

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disease (presenting side by side maps of healthy and diseased brains for direct comparisons), and offers data sets and fully annotated color images. Each entry is built on a layered approach of the content - basic information for those new to the

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area and more detailed material for experienced readers. Edited and authored by the leading experts in the field, this work offers the most reputable, easily searchable content with cross referencing across articles, a one-stop reference for students,

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researchers and teaching faculty.
Broad overview of neuroimaging
concepts with applications across
the neurosciences and biomedical
research Fully annotated color
images and videos for best
comprehension of concepts
Layered content for readers of

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searchable entries for quick
access of reputable information
Live reference links to
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Anatomy of Neuropsychiatry
presents the anatomical systems

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that take part in the scientific and clinical study of emotional functions and neuropsychiatric disorders. It discusses the limbic system—the cortical and subcortical structures in the human brain involved in emotion, motivation, and emotional

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association with memory—at length and how this is no longer a useful guide to the study of psychiatric disorders. The book provides an understanding of brain anatomy, with an emphasis on the new anatomical framework which has emerged during the

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last quarter century. The goal is to help the reader develop an understanding of the gross anatomical organization of the human forebrain. A re-evaluation of brain anatomy, with an emphasis on the new anatomical framework which has emerged

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during the last quarter century A compellingly expanded conceptualization of Broca's famous limbic lobe Clinical and basic science boxes highlighting specific concepts, structures, or neuronal circuits from a clinical perspective

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Updated and revised, the second edition of Handbook of Brain Microcircuits covers the functional organization of 50 brain regions. This now-classic text uses an interdisciplinary approach to examine the integration of structure, function,

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electrophysiology, pharmacology, brain imaging, and behavior.

Through uniquely concise and authoritative chapters by leaders in their fields, the Handbook of Brain Microcircuits synthesizes many of the new principles of microcircuit organization that are

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defining a new era in understanding the brain connectome, integrating the major neuronal pathways and essential microcircuits with brain function. New to the Second Edition: · Insights into new regions of the brain through

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canonical microcircuit diagrams for each region · Latest methodology in optogenetics, neurotransmitter uncaging, computational models of neurons and microcircuits, serial ultrastructure reconstructions, cellular and regional imaging ·

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Extrapolated data from new genetic tools and understandings applied to microcircuits in the mouse and *Drosophila* · Common principles across vertebrate and invertebrate microcircuit systems, one of the key goals of modern neuroscience

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Neuroscientific research on emotion has developed dramatically over the past decade. The cognitive neuroscience of human emotion, which has emerged as the new and thriving area of 'affective neuroscience', is rapidly

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rendering existing overviews of the field obsolete. This handbook provides a comprehensive, up-to-date and authoritative survey of knowledge and topics investigated in this cutting-edge field. It covers a range of topics, from face and voice perception to

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pain and music, as well as social behaviors and decision making. The book considers and interrogates multiple research methods, among them brain imaging and physiology measurements, as well as methods used to evaluate

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behavior and genetics. Editors Jorge Armony and Patrik Vuilleumier have enlisted well-known and active researchers from more than twenty institutions across three continents, bringing geographic as well as methodological breadth

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to the collection. This timely volume will become a key reference work for researchers and students in the growing field of neuroscience.

Updated and revised, the second edition of Handbook of Brain Microcircuits covers the functional



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organization of 50 brain regions. This now-classic text uses an interdisciplinary approach to examine the integration of structure, function, electrophysiology, pharmacology, brain imaging, and behavior. Through uniquely concise and


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authoritative chapters by leaders in their fields, the Handbook of Brain Microcircuits synthesizes many of the new principles of microcircuit organization that are defining a new era in understanding the brain connectome, integrating the

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major neuronal pathways and essential microcircuits with brain function. New to the Second Edition:  Insights into new regions of the brain through canonical microcircuit diagrams for each region  Latest methodology in optogenetics,

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neurotransmitter uncaging,
computational models of neurons
and microcircuits, serial
ultrastructure reconstructions,
cellular and regional imaging 
Extrapolated data from new
genetic tools and understandings
applied to microcircuits in the

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mouse and Drosophila 

Common principles across
vertebrate and invertebrate
microcircuit systems, one of the
key goals of modern neuroscience

The Handbook of the
Neuroscience of Multilingualism
The Neuropathology of

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Huntington's Disease: Classical Findings, Recent Developments and Correlation to Functional Neuroanatomy
Neuroanatomy
Adenosine Receptors in Neurodegenerative Diseases

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Cingulate Cortex, Volume 166 summarizes research on the cingulate cortex, including its structure and function in health and how it is compromised in disease or trauma. Chapters

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***discuss the cingulate
organization by region and
area, cover its function in
consciousness, attention,
social cognition and spatial
orientation, review
neurological disorders with***

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***cingulate involvement,
including
neurodegenerative
disorders, movement
disorders, Parkinson's,
ADHD, Cognitive
impairment, Palsy,***

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***Tourette's Syndrome,
chronic pain, seizures, and
more. Final sections discuss
the relationship between
the cingulate cortex, stress
and psychiatric disorders.
Coverage here includes***

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***PTSD, anxiety, depression,
and evidence-based
treatment for same.***

***Identifies the structure and
function of all areas and
regions of the cingulate
cortex Discusses its role in***

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***sensory-motor, cognitive
and emotional processing
Covers cingulate-mediated
neurological and
psychiatric disorders
Supplies evidence-based
treatment for cingulate***

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mediated disorders

Social problems in many domains, including health, education, social relationships, and the workplace, have their origins in human behavior.

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The documented links between behavior and social problems have compelled governments and organizations to prioritize and mobilize efforts to develop effective, evidence-

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***based means to promote
adaptive behavior change.
In recognition of this
impetus, The Handbook of
Behavior Change provides
comprehensive coverage of
contemporary theory,***

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***research, and practice on
behavior change. It
summarizes current
evidence-based approaches
to behavior change in
chapters authored by
leading theorists,***

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***researchers, and
practitioners from multiple
disciplines, including
psychology, sociology,
behavioral science,
economics, philosophy, and
implementation science. It***

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***is the go-to resource for
researchers, students,
practitioners, and policy
makers looking for current
knowledge on behavior
change and guidance on
how to develop effective***

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***interventions to change
behavior.***

***Synthesizing coverage of
sensation and reward into a
comprehensive systems
overview, Neurobiology of
Sensation and Reward***

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presents a cutting-edge and multidisciplinary approach to the interplay of sensory and reward processing in the brain. While over the past 70 years these areas have drifted apart, this

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book makes a case for reuniting sensation and reward by highlighting the important links and interface between the two. Emphasizing the role of reward in reinforcing

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behaviors, the book begins with an exploration of the history, ecology, and evolution of sensation and reward. Progressing through the five senses, contributors explore how

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the brain extracts information from sensory cues. The chapter authors examine how different animal species predict rewards, thereby integrating sensation and

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***reward in learning,
focusing on effects in
anatomy, physiology, and
behavior. Drawing on
empirical research,
contributors build on the
themes of the book to***

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present insights into the human sensory rewards of perfume, art, and music, setting the scene for further cross-disciplinary collaborations that bridge the neurobiological

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***interface between sensation
and reward.***

***This book explores various
state-of-the-art aspects
behind the statistical
analysis of neuroimaging
data. It examines the***

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***development of novel
statistical approaches to
model brain data. Designed
for researchers in statistics,
biostatistics, computer
science, cognitive science,
computer engineering,***

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***biomedical engineering,
applied mathematics,
physics, and radiology, the
book can also be used as a
textbook for graduate-level
courses in statistics and
biostatistics or as a self-***

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***study reference for Ph.D.
students in statistics,
biostatistics, psychology,
neuroscience, and
computer science.
This monograph describes
the progress in***

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***neuropathological HD
research made during the
last century, the
neuropathological
hallmarks of HD and their
pathogenic relevance.
Starting with the initial***

***descriptions of the
progressive degeneration of
the striatum as one of the
key events in HD, the
worldwide practiced
Vonsattel HD grading
system of striatal***

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neurodegeneration will be outlined. Correlating neuropathological data with results on the functional neuroanatomy of the human brain, subsequent chapters will highlight

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recent HD findings: the neuronal loss in the cerebral neo-and allocortex, the neurodegeneration of select thalamic nuclei, the affection of the cerebellar cortex and nuclei, the

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***involvement of select
brainstem nuclei, as well as
the pathophysiological
relevance of these
pathologies for the clinical
picture of HD. Finally, the
potential***

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pathophysiological role of neuronal huntingtin aggregations and the most important and enduring challenges of neuropathological HD research are discussed.

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***Comprehensive
Developmental
Neuroscience
The Cambridge Handbook
of Human Affective
Neuroscience
A Guide for Health Care***

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Professionals

***Handbook of Reward and
Decision Making***

Dopamine Handbook

**This is a thorough
revision of the standard
text on local circuits in**

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the different regions of the brain. In this fifth edition, the results of the mouse and human genome projects are incorporated for the first time. Also for the first

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time, the reader is oriented to supporting neuroscience databases. Among the new advances covered are 2-photon confocal laser microscopy of dendrites and dendritic

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**spines, biochemical
analyses, and dual patch
and multielectrode
recordings, applied
together with an
increasing range of
behavioral and gene-**

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targeting methods.

**This groundbreaking text
takes current knowledge
of the basal ganglia far
from well-known motor-
based models to a more
inclusive understanding**

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**of deep-brain structure
and function.**

**Synthesizing diverse
perspectives from across
the brain-behavioral
sciences, it tours the
neuroanatomy and**

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circuitry of the basal ganglia, linking their organization to their controlling functions in core cognitive, behavioral, and motor areas, both normative and

disordered. Interactions between the basal ganglia and major structures of the brain are identified in their contributions to a diverse range of processes, from language

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processing to decision-making, emotion to visual perception, motivation to intent. And the basal ganglia are intimately involved in the mechanisms of

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dysfunction, as evinced by chapters on dyskinesia, Parkinson's disease, neuropsychiatric conditions, and addictions. Included in the coverage: Limbic-

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**basal ganglia circuits:
parallel and integrative
aspects. Dopamine and its
actions in the basal
ganglia system.
Cerebellar-basal ganglia
interactions. The basal**

**ganglia contribution to
controlled and automatic
processing. The basal
ganglia and decision
making in
neuropsychiatric
disorders. The circuitry**

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**underlying the
reinstatement of cocaine
seeking: modulation by
deep brain stimulation.
The basal ganglia and
hierarchical control in
voluntary behavior. Its**

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**breadth and depth of
scholarship and data
should make The Basal
Ganglia a work of great
interest to cognitive
psychologists and
neuroscientists,**

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**neuropsychologists,
neurologists,
neuropsychiatrists, and
speech-language
pathologists.**

**This book has been
considered by**

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**academicians and
scholars of great
significance and value to
literature. This forms a
part of the knowledge
base for future
generations. So that the**

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the same form as it was
originally first published.
Hence any marks or
annotations seen are left**

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**intentionally to preserve
its true nature.**

**Functional magnetic
resonance imaging
(fMRI) has become the
most popular method for
imaging brain function.**

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**Handbook of Functional
MRI Data Analysis**
provides a comprehensive
and practical introduction
to the methods used for
fMRI data analysis. Using
minimal jargon, this book

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**explains the concepts
behind processing fMRI
data, focusing on the
techniques that are most
commonly used in the
field. This book provides
background about the**

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**methods employed by
common data analysis
packages including FSL,
SPM and AFNI. Some of
the newest cutting-edge
techniques, including
pattern classification**

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analysis, connectivity modeling and resting state network analysis, are also discussed.

Readers of this book, whether newcomers to the field or experienced

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researchers, will obtain a deep and effective knowledge of how to employ fMRI analysis to ask scientific questions and become more sophisticated users of

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**fMRI analysis software.
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text covers the dramatic
developments that have
occurred in basic
neuroscience and clinical
research in cognitive**

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**neurology and dementia.
The text is based on the
clinical approach to the
patient, and provides
essential knowledge that
is fundamental to clinical
practice.**

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**Handbook of Atypical
Parkinsonism
Methods of Behavior
Analysis in Neuroscience
GABA and the Basal
Ganglia
Oxford Textbook of**

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**Cognitive Neurology and
Dementia
Handbook of
Rehabilitation in Older
Adults**

This new book is a practical guide
to integrated, multidisciplinary care

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for people with Parkinson's. Written by experts in Parkinson's care, the book explains the common symptoms at each stage of Parkinson's and describes pharmacological and non-pharmacological interventions. The

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role of each discipline within the multidisciplinary team (MDT) is outlined and the perspectives of individuals with Parkinson's and their caregivers are explored.

Parkinson's Disease: A
Multidisciplinary Guide to

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Management is ideal for all health care professionals who want to deliver the best care for people with Parkinson's. It explains the concepts of multidisciplinary working in Parkinson's and offers evidence-based, practical guidance

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to support health care professionals in delivering the best patient outcomes. Evidence-based advice to ensure best practice Top tips in every chapter for practical guidance Person-centred approach that orders information according to

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Parkinson's stage rather than by discipline Contributions from many members of the MDT including neurologists, geriatricians, nurses, physiotherapists, occupational therapists, speech and language therapists and psychologists

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Insights from people with
Parkinson's Latest challenges
affecting Parkinson's care,
including remote management,
bone health and exercise
Developing a multidisciplinary
Parkinson's service Atypical

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Parkinsonian syndromes including
progressive supranuclear palsy,
corticobasal degeneration and
multiple system atrophy

The Human Nervous System is a
definitive account of human
neuroanatomy, with a

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comprehensive coverage of the brain, spinal cord, and peripheral nervous system. The cytoarchitecture, chemoarchitecture, connectivity, and major functions of neuronal structures are examined by

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acknowledged authorities in the field, such as: Alheid, Amaral, Armstrong, Beitz, Burke, de Olmos, DiFiglia, Garey, Gerrits, Gibbins, Holstege, Kaas, Martin, McKinley, Norgren, Ohye, Paxinos, Pearson, Pioro, Price, Saper, Sasaki,

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Schoenen, Tadork, Voogd,
Webster, Zilles, and their
associates. Large, clearly designed
8-1/2" x 11" format 35 information-
packed chapters 500
photomicrographs and diagrams
6,200 bibliographic entries Table of

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contents for every chapter

Exceptionally cross-referenced

Detailed subject index Substantial
original research work Mini atlases
of some brain regions

During the last three decades, there
have been enormous advances in

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our understanding of the neural mechanisms of selective attention at the network as well as the cellular level. The Oxford Handbook of Attention brings together the different research areas that constitute contemporary attention

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research into one comprehensive and authoritative volume. In 40 chapters, it covers the most important aspects of attention research from the areas of cognitive psychology, neuropsychology, human and

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animal neuroscience, computational modelling, and philosophy. The book is divided into 4 main sections. Following an introduction from Michael Posner, the books starts by looking at theoretical models of attention. The

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next two sections are dedicated to spatial attention and non-spatial attention respectively. Within section 4, the authors consider the interactions between attention and other psychological domains. The last two sections focus on attention-

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related disorders, and finally, on computational models of attention. Aimed at both scholars and students, the Oxford Handbook of Attention provides a concise and state-of-the-art review of the current literature in this field.

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This book addresses a fundamental question about the nature of behavior: how does the brain process reward and makes decisions when facing multiple options? The book presents the most recent and compelling lesion,

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neuroimaging, electrophysiological and computational studies, in combination with hormonal and genetic studies, which have led to a clearer understanding of neural mechanisms behind reward and decision making. The neural bases

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of reward and decision making processes are of great interest to scientists because of the fundamental role of reward in a number of behavioral processes (such as motivation, learning and cognition) and because of their

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theoretical and clinical implications for understanding dysfunctions of the dopaminergic system in several neurological and psychiatric disorders (schizophrenia, Parkinson's disease, drug addiction, pathological gambling,

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...). Comprehensive coverage of approaches to studying reward and decision making, including primate neurophysiology and brain imaging studies in healthy humans and in various disorders, genetic and hormonal influences on the reward

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system and computational models. Covers clinical implications of process dysfunction (e.g., schizophrenia, Parkinson's disease, eating disorders, drug addiction, pathological gambling) Uses multiple levels of analysis, from

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molecular mechanisms to neural systems dynamics and computational models. " This is a very interesting and authoritative handbook by some of the most outstanding investigators in the field of reward and decision making ",

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Professor Edmund T. Rolls, Oxford
Center for Computational
Neuroscience, UK

Executive functioning: we measure
it, assess it, document its
development in youth, track its
decline in age and use it as a basis

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for diagnoses, treatment planning and-of course-theories. Could it be possible that science has spent decades chasing a cognitive phantom? Noting the lack of consensus concerning definition, component skills, and location

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within the brain, The Myth of Executive Functioning calls basic assumptions, prominent theories, commonly used test methods, and even the phrase executive functioning into question. The book's deceptively simple argument

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takes an evolutionary/neuroscience look at the cornerstones of cognitive organization, including memory, planning, decision-making and adaptation to novel circumstances. From there, gaps are identified between systems of

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cognitive control and those behaviors that are evaluated in neuropsychological testing-gaps that contribute to the disconnect between how science views mind and body, brain and behavior. The author's problem-solving metaphor

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places new emphasis on stimulus processing and on the relationship between movement and thought as he offers thought-provoking perspectives on: The limits of neuropsychological constructs. The components of adaptive thinking.

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The automatic aspects of problem solving. The left-brain/right-brain dichotomy. Problems with the domain approach to cognition. New paradigms for testing cognitive functioning. A controversial presentation with the potential to

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change clinical practice and training, The Myth of Executive Functioning will be read, debated and learned from by neuropsychologists, clinical psychologists, psychiatrists, cognitive neuroscientists and

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rehabilitation specialists.

Anatomy of Neuropsychiatry

Axons and Brain Architecture

The Handbook of Clinical

Neuropsychology

Parkinson's Disease: A

Multidisciplinary Guide to

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Management

Novel Perspectives on Motor and
Cognitive Functions

This comprehensive reference is
clearly destined to become the
definitive anatomical basis for all
molecular neuroscience

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research. The three volumes provide a complete overview and comparison of the structural organisation of all vertebrate groups, ranging from amphioxus and lamprey through fishes, amphibians and birds to

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mammals. This thus allows a systematic treatment of the concepts and methodology found in modern comparative neuroscience. Neuroscientists, comparative morphologists and anatomists will all benefit from: *

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1,200 detailed and standardised neuroanatomical drawings * the illustrations were painstakingly hand-drawn by a team of graphic designers, specially commissioned by the authors, over a period of 25 years *

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functional correlations of
vertebrate brains * concepts and
methodology of modern
comparative neuroscience * five
full-colour posters giving an
overview of the central nervous
system of the vertebrates, ideal

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for mounting and display This monumental work is, and will remain, unique; the only source of such brilliant illustrations at both the macroscopic and microscopic levels.

The Human Nervous System

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Cingulate Cortex

Handbook of Brain Microcircuits

Neurobiology of Language

The Central Nervous System of
Vertebrates