Functional Neurosurgery

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Functional Neurosurgery - Jeffrey A. Brown - 2019-09-06

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Neurosurgical Operative Atlas - Philip A. Starr - 2009

Comprehensive coverage of the latest techniques in functional neurosurgery Part of the second edition of the classic Neurosurgical Operative Atlas series, Functional Neurosurgery provides step-by-step guidance on the innovative and established techniques for managing epilepsy, pain, and
Performing a thermal procedure? What do I need to bear in mind when performing procedures. Answers practical questions such as "What do I need when performing a thermal procedure?", "What do I need to bear in mind when assembling a device?", and "What do I need to remember with regards to voltages, electrodes, percutaneous leads, RF generators, imaging, and micro instruments?" Consolidates today's available information and guidance in this timely area into one convenient resource. Functional Neurosurgery and Neuronavigation provides a comprehensive coverage of these areas with proven effect for pain relief, memory loss, addiction, and much more. This practical resource by Drs. Kim J. Burchiel and Ahmed Raslan brings you up to date with what's new in the field and how it can benefit your patients.

This book covers stereotactic principles as well as functional stereotaxis, covering the history and uses of the techniques, treatments for specific conditions, and future developments. Includes a DVD demonstrating surgical procedures.

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Advances in Stereotactic and Functional Neurosurgery 10 - Björn A. Meyerson - 2013-06-29
These proceedings from the Xth Congress of the European Society for Stereotactic and Functional Neurosurgery in Stockholm reflect the growing interest in these fields of neurosurgery. It is the most extensive volume in this series of publications and it contains a large number of original articles pertaining to the most recent advances in stereotactic and functional neurosurgery. Not long ago stereotactic neurosurgery was considered an esoteric sub speciality practised only by those involved in treating movement disorders. The introduction and development of radiosurgery is closely linked to the advancement of stereotactic technique. Radiosurgical treatment of tumors and cerebrovascular diseases is one of major achievements in modern neurosurgery. This publication contains several original reports illustrating the efficacy of radiosurgery in problematic neurological diseases.

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Stereotactic and Functional Neurosurgery - Nader Pouratian - 2020-02-28
This text presents a comprehensive and state-of-the-art approach to stereotactic and functional neurosurgery. Overarching sections include achieving stereotactic precision, defining trajectories and targets, the biophysics of stereotactic therapies, diseases and targets, and the future of functional neurosurgery. Each section is designed to be inclusive of all relevant topics, serving as an unbiased resource to new clinicians in this field or established clinicians that are aiming to better understand complementary methods. Importantly, each section and the associated chapters can be used by basic and translational scientists as well as engineers and industry to better understand and deliver innovation to the field. Chapters within each section methodically analyze traditional and recently emerging concepts and techniques; address underlying principles with examples drawn from specific diseases and applications; and cover patient selection, target selection, available stereotactic methods, nuanced surgical methods, and clinical evidence across treatment options. Written by experts in each area, Stereotactic and Functional Neurosurgery is a definitive guide to the latest developments in stereotactic targeting, electrode implantation, surgical treatment of neurological and psychiatric disorders, the renaissance of stereotactic lesions, and the frontier of restorative neurosurgery for a variety of disorders that have no other therapeutic options.

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Advances in Stereotactic and Functional Neurosurgery 12 - Christoph B. Oertertag - 2012-10-08
Neurosurgery of the Future: Computers and Robots in Clinical Neurosurgical Practice and in Training - a Philosophical Journey into the Future Many present day neurosurgeons believe that they already obtain good results in operative surgery with the benefit of the operating microscope and other aids which have become available in the last three decades and that the introduction of computers and robots to the operating theatre is superfluous. However, it is clear from analogy with the function of the airline pilot, another profession where there are great demands on manual skill and on spatial awareness, that these devices do have much to offer neurosurgery. Classical neurosurgery, in the time of Cushing, Dandy and Scarff, was based on a three dimensional picture of the patient’s brain formed in the surgeon’s mind and often illustrated in elegant drawings. Such pictures were based on neuroradiological studies by pneumoencephalography, ventriculography or by angiography. Generally these studies showed the presence and position of a lesion by displacement of normal brain structures and the picture was built up by interference. This was then converted by the experienced neurosurgeon into a plan for the craniotomy site and the trajectory of the surgical approach. Once the brain was exposed further pre-operative information was obtained by visual inspection and by palpation with the brain needle. These classical forms of neuroradiology have largely been superseded by computerised tomography and by magnetic resonance imaging.

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A state-of-the-art guide to evolving functional neurosurgery approaches from world-renowned innovators Functional neurosurgery focuses on improving the lives of patients with epilepsy, movement disorders, pain, and psychiatric illnesses. In recent years, approaches ranging from open surgery to minimally invasive techniques have been leveraged to improve daily functioning and quality of life in people struggling with painful, highly disruptive, and/or treatment-resistant symptoms. These approaches focus on reducing or eliminating seizures, alleviating pain, decreasing abnormal movements or lessening debilitating symptoms associated with specific
neurosurgery to the most modern molecular and restorative strategies to treat diseases of the human nervous system. They clearly demonstrate that the discipline is still young and dynamic with alternative and sometimes competing strategies whose evaluation is underway. They also document that operative lesioning techniques such as thalamotomies, though still chosen under certain circumstances, have been succeeded by novel neuromodulation techniques such as deep brain stimulation in the great majority of clinical cases.

**Stereotactic and Functional Neurosurgery** - Guido Nikkhah - 2014-07-08

Since its introduction about sixty years ago, stereotactic and functional neurosurgery has evolved into a fascinating and interdisciplinary endeavor that combines modern neurosurgery, neurobiology, and neuroimaging with innovative diagnostic and treatment strategies. In this collection, acknowledged experts from Europe and North and South America present their scientific and clinical experience in stereotactic and functional neurosurgery for movement disorders and brain tumors. The contributions present a wide range from the beginnings of human stereotactic neurosurgery to the most modern molecular and restorative strategies to treat diseases of the human nervous system. They clearly demonstrate that the discipline is still young and dynamic with alternative and sometimes competing strategies whose evaluation is underway. They also document that operative lesioning techniques such as thalamotomies, though still chosen under certain circumstances, have been succeeded by novel neuromodulation techniques such as deep brain stimulation in the great majority of clinical cases.

** Advances in Stereotactic and Functional Neurosurgery** - F.J. Gillingham - 2012-12-06

**Handbook of Stereotactic and Functional Neurosurgery** - Michael Schuler - 2003-02-05

This volume offers a comprehensive discussion of the stereotactic frames, frameless systems, and radiosurgical procedures utilized in the treatment and control of movement and neurological disorders, Parkinson’s disease, chronic pain, spasticity, tumours, epilepsy, and arteriovenous malformations.

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**Functional Rehabilitation in Neurosurgery and Neurotraumatology** - M. Lipovsek - 2012-12-06

The important issue of rehabilitation is usually not reflected in the neurosurgical literature but left to publications on neurological rehabilitation or neuropsychological literature. However, it is the neurosurgeon who should care for the functional rehabilitation of patients who are disabled by movement disorders, spasticity, epilepsy, pain, and disorders of the vegetative state as they suffer from acute or chronic central nervous system, spinal cord and peripheral nerve lesions. The papers in this volume highlight the state of the art, basic research, and clinical as well social-medical application of neurorehabilitation around the world, depending on different socio-cultural and economic situations as they were reported and discussed at recent international conferences and workshops of the World Federation of Neurosurgical Societies Committee on Neurorehabilitation and the Euroacademia Multidisciplinaria Neurotraumatologica.

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The last ten years has witnessed a resurgence of interest in stereotactic surgery although this has been mainly in the field of the comparatively simple stereotactic biopsy of intracranial tumours. There is also evidence of a returning interest in functional neurosurgery other than pain which has always sustained high levels of endeavour. The present work comprises selected papers from a much larger group of interesting and important communications to the European Society for Stereotactic and Functional Neurosurgery. They represent modern views on a wide variety of stereotactic surgical topics from internationally acclaimed experts in this field. The neurosurgeon who has little or no acquaintance with this fruitful sub-specialty will be surprised to find very broad applications of the technique which is gradually replacing many conventional neurosurgical procedures. This is particularly evident in the papers on tumours but there is also a section on the treatment of vascular disease which marks an extension of neurosurgical practice. The Society has always regarded technical advances as important and some of the most recent developments appear in this book. Finally, an exciting new development of neural transplantation marks the beginning of what may be an important part of neurological surgery in the future. Advances in Stereotactic and Functional Neurosurgery 12 - Christoph B. Ostergart - 1997-06-23

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**Advances in Stereotactic and Functional Neurosurgery 11** - Björn A. Meyerson - 2012-12-06

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**From Bench to Bedside: Trauma, Tumors, Spine, Functional Neurosurgery** - Francesco Signorelli - 2016-09-28

This book is written for graduate students, researchers, and practitioners who are interested in learning how the knowledge from research can be implemented in clinical competences. The first section is dedicated to deep brain stimulation, a surgical procedure which is the paramount example of how clinical practice can take advantage from fundamental research. The second section gathers four chapters on four different topics and illustrates how significant is the challenge to translate scientific advances into clinical practice because the route from evidence to action is not always obvious. It is hoped that this book will stimulate the interest in the process of translating research into practice for a broader range of neurosurgical topics than the one covered by this book, which could result in a forthcoming more comprehensive publication.

**Advances in Stereotactic and Functional Neurosurgery 4** - F.J. Gillingham - 2012-12-06

Thus instead of being synonymous with specific procedures performed at the level of the basal ganglia, stereotaxis is in fact a general diagnostic and therapeutic concept, which has as its aim the precise three-dimensional representation of the patient’s brain in its entirety. This three-dimensional representation is based on anatomical, neuro radiological and other localization information, the spatial integration Prof. Jean Talairach with friends and co-workers at the congress dinner in the Rojaumont Abbey near Paris. (From left to right: Drs. Bancaud, N.T. Zervas, B. Nashold.) Talairach, G. Szikla, F. Mundinger, P. Tournoux.) Peekler) of which allows a more precise "anatomical" approach to the human brain and to the surgical management of localized pathologic proces ses. Literally, stereotaxis means "orientation in space". Taken in this general sense, all surgical procedures obviously should be stereo tactic, at least in their principle! Two of the main themes of our meeting, namely the topic of the first day, "Surgery of Epilepsy" and that of the second "Stereotactic Cerebral Irradiation" of small brain tumours correspond to this evolution toward a global "whole brain" concept of stereotaxis. The same philosophy inspired the scientific efforts of the stereotactic group Introduction 3 of the Sainte Anne Hospital, under the leadership of its promoter, Professor Jean Talairach. This is the reason why the present Meeting is dedicated in honor of his scientific work.

**Principles of Neurological Surgery E-Book** - Richard G. Ellenbogen - 2017-12-13

Perfect for anyone considering or training in this challenging specialty. Principles of Neurological Surgery, 4th Edition, by Drs. Richard G. Ellenbogen, Laligam N. Sekhar, and Neil Kitchen, provides a clear, superbly illustrated introduction to all aspects of neurosurgery—from general principles to specific techniques. Thorough updates from leading authors ensure that you’ll stay abreast of the latest advances in every area of neurosurgery, including pre- and post-operative patient care, neuroradiology, pediatric neurosurgery, neurovascular surgery, trauma surgery, spine surgery, oncology, pituitary adenomas, cranial base neurosurgery, image-guided neurosurgery, treatment of pain, epilepsy surgery, and much more.

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**Acta Neurochirurgica - European Society for Stereotactic and Functional Neurosurgery, Meeting - 1950**
Advances in Functional and Reparative Neurosurgery - Jinhoo Cho - 2012-01-25
Neurorehabilitation together with functional neurosurgery are steadily growing fields. In order to encapsulate such concepts, the fourth official scientific meeting of the Neurorehabilitation and Reconstructive Neurosurgery Committee of the World Federation of Neurosurgical Societies (WFNS) was held in Seoul. This volume is the fourth in a new series of proceedings covering the most important advancements in this field.

Advances in Functional and Reparative Neurosurgery - Jinhwoo Chang - 2007-01-25
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Neurosurgical Neuropsychology - Caleb M. Pearson - 2018-11-15
Neurosurgical Neuropsychology: The Practical Application of Neuropsychology in the Neurosurgical Practice comprehensively explains the use of neuropsychology in neurosurgical settings. The book covers various preparative techniques that may benefit neurosurgeons, such as functional neuroimaging (fMRI, SPECT, MEG) for presurgical cognitive mapping, as well as more traditional methods to predict outcomes after surgery, including neuropsychological testing and the Wada procedure. The book's editors discuss why neuropsychologists add considerable value to the neurosurgical team. A wide range of patient populations are covered, ranging from deep brain stimulation candidates for Parkinson's disease, to adult and pediatric epilepsy candidates and neuro-oncology cases. This book is ideal for neurosurgeons, neuropsychologists, neuro-oncologists, epileptologists, general neurologists, and others who want to know more about the use of neuropsychology as a tool in the presurgical and postoperative phases of neurosurgery. Comprehensively explains the use of neuropsychology in neurosurgical settings. Written for researchers and clinical practitioners focusing on neurosurgery, neuropsychology, clinical neurosciences, and neurology. Discusses various techniques that may be of benefit to neurosurgeons, including presurgical and postoperative choices like functional neuroimaging (fMRI, SPECT, MEG) for presurgical cognitive mapping, neuropsychological testing, and the Wada procedure.

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Advances in Stereotactic and Functional Neurosurgery - Edward R. Hitchcock - 2012-12-06
The book gives the most up-to-date information for the expanding field of stereotactic and functional neurosurgery from European and international experts. The newest developments in neural transplantation and stereotactic irradiation are included together with the reports on extensive trials of analgesic surgery and new techniques used in the treatment of a variety of functional disorders.

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Image-Guided Neurosurgery - Alexandra J. Golby - 2015-05-05
Image-Guided Neurosurgery provides readers with an update on the revolutionary improvements in imaging and visualization relating to neurosurgery. From the development of the pneumonencapahologam, to the operating microscope, to cross sectional imaging with CT and later MRI, to stereotaxy and neuronavigation, the ability to visualize the pathology and surrounding neural structures has been the driving factor leading surgical innovation and improved outcomes. The book provides a comprehensive reference on the application of contemporary imaging technologies used in neurosurgery. Specific techniques discussed include brain biopsies, brain tumor resection, deep brain stimulation, and more. The book is ideal for neurosurgeons, interventional radiologists, neurologists, psychiatrists, and radiologists, as well as technical experts in imaging, image analysis, computer science, and biomedical engineering. A comprehensive reference on image-guided neurosurgery includes coverage of neuronavigation in cranial surgery and advanced imaging, including functional imaging, adoption of intra-operative MRI and emerging technologies. Covers all image-guided neurosurgery tools, including robotic surgical devices. Ideal reference for topics relating to neurosurgery, imaging, stereotaxis, radiosurgery, radiology, epilepsy, MRI, the use of medical robotics, lasers, and more.

Advances in Stereotactic and Functional Neurosurgery - J. G. Gybels - 2012-01-22
These collected papers represent only a small part of the large amount of new work in the field of stereotaxy. The number of contributions to the Birmingham meeting was such that only selected papers, chosen as representative of advances in the field, could be printed. These papers present the most up to date accounts of major advances in stereotactic imaging and the renewed interest in the stereotactic treatment of movement disorders.

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Advances in Stereotactic and Functional Neurosurgery 6 - J. Gybels -

Local interstitial radiation therapy of intrinsic and inaccessible brain tumors is confronted with two major problems: 1. The tolerance of normal brain tissue, which is usually involved in local tumor irradiation, i.e. perifocal white matter edema and demyelinating effects, is crucial. 2. Data on radiation effects of implanted radioactive sources on neoplastic tissue, i.e. data on the radiosensitivity and on the biology of tumors, are still widely unavailable. In clinical practice the dose with which to achieve a given volume of tumor necrosis is roughly estimated. This report deals with the experimental findings of iodine-125 and iodine-192 permanent implants in healthy and neoplastic brain tissue. Our own experimental findings are correlated with experimental data on Yttrium-90 irradiation from the literature. The study is directed to collect data on the tolerance non-tumoral brain tissue and to attempt to establish a dose-response relationship. Morphologic Changes in the Dog Brain Following Interstitial Iodine-125 Irradiation Iodine-125 seeds (manufactured by 3 M Company, St. Paul, M. N.) with an activity of 3.55 mCi were permanently implanted under stereotactic conditions into the subcortical white matter of the gyrus coronalis of the left hemisphere in 6 beagle dogs. One animal with a non-radioactive seed implanted under similar operative conditions served as a control. The animals were allowed to survive 25, 46, 71, 94, 248, 368 days, respectively, after the implantation. The control animal survived 46 days. A detailed description of the experimental procedure is given elsewhere 16. 17.

Functional Neurosurgery - 2004

Advances in Stereotactic and Functional Neurosurgery 8 - Giovanni Broggi - 1989-01-01

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Neurosurgery Fundamentals - Nitin Agarwal - 2018-10-22

The quintessential guide providing a one-stop roadmap to a neurosurgical career! Neurosurgical is a complex, highly selective specialty. For medical students and residents, navigating a huge array of neurosurgical information can be overwhelming. Neurosurgery Fundamentals by Nitin Agarwal is a portable reference enabling swift assimilation of neurosurgical care essentials. The book starts with a roadmap to a career in neurosurgery. It concludes with Advice from the Masters, featuring invaluable resources and insights from prominent neurosurgeons. Comprehensive technical overviews are provided on the neurosurgical exam, neuroanatomy, neuroradiology, neurosurgical care, traumatic brain and spinal cord injury, degenerative and deformity spine, neurovascular surgery, neurosurgical oncology, pediatric neurosurgery, functional neurosurgery, stereotactic radiosurgery, neurologic infections diseases, and interdisciplinary care. Socioeconomic topics include training, licensure, credentialing, and advocacy. Key Features Fundamental diseases, tests, and operative approaches are summarized. Top Hits feature the most salient questions, aided in retention of knowledge. High-yield resources are highlighted to augment reader identification. Neurosurgical Pearls offer advice from the masters relevant to each chapter. High-quality illustrations, photographs,
Stereotactic and Functional Neurosurgery - 2020

This text presents a comprehensive and state-of-the-art approach to stereotactic and functional neurosurgery. Overarching sections include achieving stereotactic precision, defining trajectories and targets, the biophysics of stereotactic therapies, diseases and targets, and the future of functional neurosurgery. Each section is designed to be inclusive of all relevant topics, serving as an unbiased resource to new clinicians in this field or established clinicians that are aiming to better understand complementary methods. Importantly, each section and the associated chapters can be used by basic and translational scientists as well as engineers and industry to better understand and deliver innovation to the field. Chapters within each section methodically analyze traditional and recently emerging concepts and techniques; address underlying principles with examples drawn from specific diseases and applications; and cover patient selection, target selection, available stereotactic methods, nuanced surgical methods, and clinical evidence across treatment options. Written by experts in each area, Stereotactic and Functional Neurosurgery is a comprehensive guide to the latest developments in stereotactic targeting, electrode implantation, surgical treatment of neurological and psychiatric disorders, the recent advances in stereotactic neurosurgery, and the complementary methods.

Advances in Stereotactic and Functional Neurosurgery 12 - Christoph B. Ostergart - 2012-12-06

Neurosurgery o/the Future: Computers and Robots in Clinical Neurosurgical Practice and in Training - a Philosophical Journey into the Future Many present day neurosurgeons believe that they already obtain good results in operative surgery with the benefit of the operating microscope and other aids which have become available in the last three decades and that the introduction of computers and robots to the operating theatre is superfluous. However, it is clear from analogy with the function of the airline pilot, another profession where there are great demands on manual skill and on spatial awareness, that these devices do have much to offer neurosurgery. Classical neurosurgery, in the time of Cushing, Dandy and Scarff, was based on a three dimensional picture of the patient's brain formed in the surgeon's mind and often illustrated in elegant drawings. Such pictures were based on neuroradiological studies by pneumoencephalography, ventriculography or by angiography. Generally these studies showed the presence and position of a lesion by displacement of normal brain structures and the picture was built up by inference. This was then converted by the experienced neurosurgeon into a plan for the craniotomy site and the trajectory of the surgical approach. Once the brain was exposed further pre-operative information was obtained by visual inspection and by palpation with the brain needle. These classical forms ofneuoradiology have largely been superseded by computerised tomography and by magnetic resonance imaging.

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Functional Neurosurgery - Dr. Ahmed Raslan - 2019-11-04

Part of the Neurosurgery by Example series, this volume on functional neurosurgery presents exemplary cases in which renowned authors guide readers through the assessment and planning, decision making, surgical procedure, after care, and complication management of common and uncommon disorders. The cases explore the spectrum of clinical diversity and complexity within functional neurosurgery, including essential tremor, thalamotomy, parkinson's disease, epilepsy, dystonia, and more. Each chapter also contains 'pivot points' that illuminate changes required to manage patients in alternate or atypical situations, and pearls for accurate diagnosis, successful treatment, and effective complication management. Containing a focused review of medical evidence and expected outcomes, Functional Neurosurgery is appropriate for neurosurgeons who wish to learn more about a subspecialty, and those preparing for the American Board of Neurological Surgery oral examination.

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