mclaren proton therapy center

mclaren proton therapy center represents a significant advancement in cancer treatment technology, offering patients a cutting-edge option for precise and effective radiation therapy. As one of the leading facilities specializing in proton therapy, the McLaren Proton Therapy Center provides innovative care designed to minimize damage to healthy tissues while targeting tumors with exceptional accuracy. This article explores the comprehensive services, technology, and benefits associated with the McLaren Proton Therapy Center. Readers will gain insights into how proton therapy works, the conditions it treats, and what patients can expect during treatment. Additionally, the article highlights the center's commitment to patient-centered care, clinical excellence, and ongoing research. Understanding these facets equips patients and healthcare professionals with valuable information to make informed decisions about cancer treatment options.

Overview of McLaren Proton Therapy Center

The McLaren Proton Therapy Center is a state-of-the-art facility dedicated to providing proton beam therapy, a highly precise form of radiation treatment for cancer patients. Located within the McLaren Health Care system, the center combines advanced technology with expert clinical teams to deliver personalized treatment plans. The center's mission focuses on improving patient outcomes while reducing side effects commonly associated with traditional radiation therapy. With a multidisciplinary approach, the center integrates oncologists, radiation therapists, physicists, and nursing staff to ensure comprehensive care.

History and Development

The McLaren Proton Therapy Center was established to address the growing need for advanced radiation oncology services. Over the years, it has expanded its capabilities to incorporate the latest innovations in proton therapy, reflecting McLaren's commitment to cutting-edge medical solutions. Continuous investments in technology and staff training have positioned the center as a regional leader in proton treatment.

Facility and Infrastructure

The center boasts modern treatment rooms equipped with sophisticated proton beam delivery systems. Comfortable patient areas and support services are designed to enhance the overall treatment experience. The infrastructure supports various types of proton therapy, including pencil beam scanning and intensity-modulated proton therapy, allowing for tailored treatment protocols.

Advanced Proton Therapy Technology

Proton therapy at the McLaren Proton Therapy Center utilizes the unique physical properties of protons to target cancer cells with high precision. Unlike conventional X-ray radiation, protons deposit the majority of their energy directly in the tumor, sparing surrounding healthy tissue. This precision reduces the risk of side effects and damage to critical organs.

How Proton Therapy Works

Proton therapy involves accelerating protons to high energies and directing them to the tumor site. The protons penetrate the body and release their maximum energy at a specific depth, known as the Bragg peak. This focused energy delivery allows oncologists to shape the radiation dose conformally around complex tumor geometries, improving treatment accuracy.

Equipment and Techniques

The McLaren Proton Therapy Center employs cutting-edge equipment, including cyclotrons or synchrotrons, to generate the proton beams. Advanced imaging and treatment planning software facilitate precise tumor mapping and dose calculations. Techniques such as pencil beam scanning enable fine control over beam intensity and direction, optimizing treatment efficacy.

Conditions Treated at McLaren Proton Therapy Center

The McLaren Proton Therapy Center treats a wide range of cancers, leveraging proton therapy’s strengths in managing tumors located near sensitive structures. The center’s expertise covers both adult and pediatric malignancies, offering hope for complex cases where conventional radiation may be limited.

Common Cancer Types Treated

- Brain and central nervous system tumors
- Head and neck cancers
- Prostate cancer

- Lung cancer
- Breast cancer
- Pediatric cancers
- Gastrointestinal tumors
- Spinal tumors

Patient Selection Criteria

Not all patients are candidates for proton therapy. The McLaren Proton Therapy Center evaluates each case carefully, considering factors such as tumor location, size, stage, and overall patient health. Multidisciplinary tumor boards collaborate to determine the most appropriate treatment modality, ensuring optimal outcomes.

Patient Experience and Care Approach

Patient comfort and support are integral components of care at the McLaren Proton Therapy Center. The center prioritizes clear communication, education, and individualized attention throughout the treatment journey. From initial consultation to post-treatment follow-up, patients receive comprehensive services aimed at enhancing quality of life.

Consultation and Treatment Planning

During the initial consultation, patients undergo detailed assessments, including imaging studies and medical evaluations. The care team develops a customized treatment plan outlining the proton therapy regimen, expected benefits, and potential side effects. Patient education materials and counseling sessions help patients understand the process.

Support Services

The center offers various support services, such as nutritional counseling, psychological support, and rehabilitation programs. These resources assist patients in managing treatment-related symptoms and maintaining overall well-being. Family involvement and caregiver support are also encouraged to provide a holistic care environment.

Research and Clinical Trials

The McLaren Proton Therapy Center actively participates in research initiatives to advance proton therapy and improve clinical outcomes. Collaboration with academic institutions and oncology networks fosters innovation and the development of new treatment protocols. Clinical trials available at the center provide patients access to emerging therapies under

expert supervision.

Ongoing Studies

Research efforts focus on expanding the indications for proton therapy, optimizing dose delivery, and reducing side effects. Studies also explore the combination of proton therapy with immunotherapy and chemotherapy to enhance treatment efficacy. Participation in multicenter trials ensures that the center remains at the forefront of oncologic advancements.

Outcomes and Data Collection

The center maintains robust data collection systems to monitor patient outcomes, treatment safety, and long-term effects. This data supports evidence-based practice improvements and contributes to the broader scientific understanding of proton therapy's role in cancer care.

Benefits and Advantages of Proton Therapy

Proton therapy offers several advantages over traditional radiation treatments, making it a preferred option for certain cancer patients. The McLaren Proton Therapy Center ensures that these benefits are maximized through expert application and patient-centered care.

Precision and Reduced Side Effects

Due to the precise targeting capabilities of proton therapy, there is a significant reduction in radiation exposure to nearby healthy tissues and critical organs. This precision lowers the risk of acute and long-term side effects, which is especially important for tumors located near sensitive structures.

Improved Quality of Life

By minimizing collateral tissue damage, proton therapy helps preserve normal function and reduces treatment-related complications. Patients often experience better quality of life during and after therapy, with fewer disruptions to daily activities.

Suitability for Pediatric Patients

Children are particularly vulnerable to the damaging effects of radiation on developing tissues. Proton therapy's targeted approach makes it an ideal treatment modality for pediatric cancers, reducing the likelihood of growth abnormalities and secondary malignancies.

Summary of Benefits

- Targeted tumor irradiation with minimal healthy tissue exposure
- Fewer side effects compared to conventional radiation
- Enhanced treatment options for difficult-to-treat tumors
- Potential for better long-term outcomes and survival rates
- Support for complex cases in both adult and pediatric oncology

Frequently Asked Questions

What is the McLaren Proton Therapy Center?

The McLaren Proton Therapy Center is a state-of-the-art medical facility specializing in proton therapy, an advanced form of radiation treatment for cancer that targets tumors with precision while minimizing damage to surrounding healthy tissue.

Where is the McLaren Proton Therapy Center located?

The McLaren Proton Therapy Center is located in Flint, Michigan, USA.

What types of cancer are treated at the McLaren Proton Therapy Center?

The center treats various types of cancer including brain tumors, prostate cancer, head and neck cancers, pediatric cancers, and other hard-to-treat tumors using proton therapy.

How does proton therapy at McLaren differ from traditional radiation therapy?

Proton therapy uses charged particles called protons to deliver radiation directly to the tumor with high precision, reducing damage to surrounding healthy tissues compared to traditional X-ray radiation therapy.

Is the McLaren Proton Therapy Center covered by insurance?

Yes, many insurance plans cover proton therapy treatments at the McLaren Proton Therapy Center, but coverage varies by provider and individual plans. Patients are advised to check with their insurance company and the center's billing department.

What are the benefits of receiving treatment at the

McLaren Proton Therapy Center?

Benefits include access to advanced proton therapy technology, experienced oncology specialists, personalized treatment plans, and reduced side effects due to the precision of proton therapy.

Does the McLaren Proton Therapy Center offer pediatric cancer treatments?

Yes, the center provides proton therapy for pediatric patients, offering a safer radiation option that minimizes exposure to healthy growing tissues and reduces long-term side effects.

How can patients schedule a consultation at the McLaren Proton Therapy Center?

Patients can schedule a consultation by contacting the McLaren Proton Therapy Center directly through their website or by calling their patient services department to discuss referrals and treatment options.

What technological equipment is used at the McLaren Proton Therapy Center?

The center uses advanced proton therapy equipment, including cyclotrons or synchrotrons to accelerate protons, and sophisticated imaging systems to accurately target tumors during treatment.

Additional Resources

1. *Advances in Proton Therapy: The McLaren Proton Therapy Center Experience*
This book offers an in-depth overview of the technological and clinical advancements made at the McLaren Proton Therapy Center. It covers the evolution of proton therapy, patient case studies, and the center's contributions to improving cancer treatment outcomes. Medical professionals and researchers will find valuable insights into cutting-edge radiation techniques and patient care protocols.

2. *Proton Therapy in Oncology: A Comprehensive Guide from McLaren*
Focusing on the application of proton therapy in oncology, this guide explains how the McLaren Proton Therapy Center has integrated proton therapy into cancer treatment regimens. It includes detailed discussions on tumor targeting, treatment planning, and side effect management, making it a useful resource for oncologists and radiation therapists.

3. *Precision Radiation: Innovations at McLaren Proton Therapy Center*
This volume explores the precision and accuracy of proton therapy as practiced at McLaren. It delves into the physics behind proton beam therapy, advanced imaging techniques, and how these innovations contribute to minimizing damage to healthy tissue. The book also highlights clinical trials and patient success stories.

4. *Patient-Centered Care in Proton Therapy: Insights from McLaren*
Highlighting the patient experience, this book discusses the holistic approach adopted by the McLaren Proton Therapy Center. It covers patient education, emotional support, and multidisciplinary care teams that ensure

comprehensive treatment. Testimonials and interviews provide a human perspective on proton therapy's impact.

5. *Clinical Protocols and Treatment Planning at McLaren Proton Therapy Center*
Designed as a practical manual for clinicians, this book details the clinical protocols used at the McLaren Proton Therapy Center. It addresses treatment planning software, dose calculations, quality assurance, and safety standards. The text serves as a guide for radiation oncologists and medical physicists.

6. *Emerging Technologies in Proton Therapy: McLaren's Role in Innovation*
This book focuses on the latest technological breakthroughs in proton therapy pioneered or adopted by McLaren. Topics include adaptive therapy, real-time imaging, and integration of artificial intelligence. It provides a forward-looking perspective on how technology is shaping the future of cancer treatment.

7. *Radiobiology of Proton Therapy: Research from McLaren Proton Therapy Center*
Offering a scientific exploration of the radiobiological effects of proton therapy, this book compiles research conducted at McLaren. It discusses DNA damage mechanisms, cellular response, and comparative studies with traditional radiation therapy. Researchers and graduate students will find this a valuable resource.

8. *Integrative Cancer Care: Combining Proton Therapy with Complementary Treatments at McLaren*
This book examines how McLaren Proton Therapy Center incorporates complementary therapies alongside proton therapy to enhance patient outcomes. Topics include nutritional support, physical therapy, and psychosocial interventions. The integrative approach aims to optimize recovery and quality of life.

9. *Building a Proton Therapy Center: Lessons from McLaren*
A practical guide for healthcare administrators and planners, this book outlines the steps involved in establishing a proton therapy center, drawing from McLaren's experience. It covers facility design, equipment procurement, staff training, and regulatory compliance. The book serves as a roadmap for institutions aiming to develop similar centers.

Mclaren Proton Therapy Center

mclaren proton therapy center: Proton Therapy Physics Harald Paganetti, Ph.D., 2025-03-20 Expanding on the highly successful previous two editions, this third edition of Proton Therapy Physics has been updated throughout and includes several new chapters on "Adaptive Proton Therapy," Imaging for Planning," "Flash Proton Therapy," and "Outcome Modeling for Patient Selection." Suitable for both newcomers in medical physics and more seasoned specialists in

radiation oncology, this book provides an in-depth overview of the physics of this radiation therapy modality, eliminating the need to dig through information scattered across medical physics literature. After tracing the history of proton therapy, this book explores the atomic and nuclear physics background necessary for understanding proton interactions with tissue. The text then covers dosimetry, including beam delivery, shielding aspects, computer simulations, detector systems, and measuring techniques for reference dosimetry. Important for daily operations, acceptance testing, commissioning, quality assurance, and monitor unit calibrations are outlined. This book moves on to discussions of imaging for planning and image guidance as well as treatment monitoring. Aspects of treatment planning for single- and multiple-field uniform doses, dose calculation concepts and algorithms, and precision and uncertainties for nonmoving and moving targets are outlined. Finally, the biological implications of using protons from a physics perspective as well as outcome modeling are discussed. This book is an ideal practical guide for physicians, dosimetrists, radiation therapists, and physicists who already have some experience in radiation oncology. It is also an invaluable reference for graduate students in medical physics programs, physicians in their last year of medical school or residency, and those considering a career in medical physics. Key Features: • Updated with the latest technologies and methods in the field, covering all delivery methods of proton therapy, including beam scanning and passive scattering. • Discusses clinical aspects, such as treatment planning and quality assurance. • Offers insight into the past, present, and future of proton therapy from a physics perspective. Dr. Harald Paganetti is a distinguished figure in the field of radiation oncology, serving as Professor of Radiation Oncology at Harvard Medical School and Director of Physics Research at Massachusetts General Hospital. He earned his PhD in experimental nuclear physics from the Rheinische-Friedrich-Wilhelms University in Bonn, Germany, in 1992.

mclaren proton therapy center: *Low Energy Particle Accelerator-Based Technologies and Their Applications* Vlado Valković, 2022-06-22 Low Energy Particle Accelerator-Based Technologies and Their Applications describes types of low energy accelerators, presents some of the main manufacturers, illustrates some of the accelerator laboratories around the globe and shows examples of successful transfers of accelerators to needed laboratories. Key Features: Presents new trends and the state of the art in a field that's growing Provides an overview of numerous applications of such accelerators in medicine, industry, earth sciences, nuclear non-proliferation and oil Fills a gap, with the author drawing on his own experiences with transporting such relatively large machines from one lab to the other that require a tremendous amount of planning, technical and engineering efforts This is an essential reference for advanced students as well as for physicists, engineers and practitioners in accelerator science. About the Author Dr. Vladivoj (Vlado) Valković, a retired professor of physics, is a fellow of the American Physical Society and Institute of Physics (London). He has authored 22 books (from Trace Elements, Taylor & Francis, 1975, to Radioactivity in the Environment, Elsevier, 1st Edition 2001, 2nd Edition 2019), and more than 400 scientific and technical papers in the research areas of nuclear physics, applications of nuclear techniques to trace element analysis in biology, medicine and environmental research. He has lifelong experience in the study of nuclear reactions induced by 14 MeV neutrons. This research has been done through coordination and works on many national and international projects, including US-Croatia bilateral, NATO, IAEA, EU-FP5, FP6 and FP7 projects. Cover photo credit: 3SDH 1 MV Pelletron system with RF source and analysis endstation designed with the intended purpose of aiding in fusion research. It is capable of Ion Beam Analysis (IBA) techniques such as RBS, ERD, PIXE and NRA. Further detectors could be added to the endstation to allow for other techniques. Installed in Japan in 2014. Courtesy of National Electrostatics Corp.

mclaren proton therapy center: Clinical Radiation Oncology William Small, Jr., Nancy J. Tarbell, Min Yao, 2017-03-23 This fully updated and enhanced third edition offers a highly practical, application-based review of the biological basis of radiation oncology and the clinical efficacy of radiation therapy. Revised edition of the classic reference in radiation oncology from Dr. C.C. Wang, whose practical approach to clinical application was legendary Includes the latest developments in

the field: intensity modulated radiation therapy (IMRT), image guided radiation therapy, and particle beam therapy Includes two brand new chapters Palliative Radiotherapy, and Statistics in Radiation Oncology Features a vibrant and extremely comprehensive head and neck section Provides immediately applicable treatment algorithms for each tumor

mclaren proton therapy center: Particle Therapy Technology for Safe Treatment Jay Flanz, 2022-01-18 The path from clinical requirements to technical implementation is filtered by the translation of the modality to the technology. An important part of that filter is that the modality be safe. For that to be the case, it is imperative to understand what clinical parameters affect the safety of a treatment and then determine how the technology can affect those parameters. This book provides a practical introduction to particle therapy. It provides a thorough introduction to the technological tools and their applications and then details the components that are needed to implement them. It explains the foundations of beam production and beam delivery that serve to meet the necessary clinical requirements. It emphasizes the relationship between requirements and implementation, including how safety and quality are considered and implemented in the solution. The reader will learn to better understand what parameters are important to achieve these goals. Particle Therapy Technology for Safe Treatment will be a useful resource for professionals in the field of particle therapy in addition to biomedical engineers and practitioners in the field of beam physics. It can also be used as a textbook for graduate medical physics and beam physics courses. Key Features Presents a practical and accessible journey from application requirements to technical solutions Provides a pedagogic treatment of the underlying technology Describes how safety is to be considered in the application of this technology and how safety and quality can be factored into the overall system Author Bio After receiving his PhD in nuclear physics, Dr. Jacob Flanz was the Accelerator Physics Group leader and Principal Research Scientist at the Massachusetts Institute of Technology (MIT), USA, where he designed the recirculator and the GeV stretcher/storage ring. He joined Massachusetts General Hospital (MGH) and Harvard and became project and technical director of proton therapy, with responsibility for specifications, integration, and commissioning ensuring safe clinical performance. He invented the universal nozzle and led the design and implementation of beam scanning at MGH in 2008, including quality assurance. Dr. Flanz has been involved in several FDA applications for particle therapy. He developed and taught the US Particle Accelerator School course Medical Applications of Accelerators and Beams. He was cochair of education and is currently the president of the Particle Therapy Co-Operative Group. Exercise solutions to accompany this book can be accessed via the 'Instructor Resources' tab on the book webpage.

mclaren proton therapy center: *Cancer, Radiation Therapy, and the Market* Barbara Bridgman Perkins, 2017-08-16 Appraising cancer as a major medical market in the 2010s, Wall Street investors placed their bets on single-technology treatment facilities costing $100-$300 million each. Critics inside medicine called the widely-publicized proton-center boom crazy medicine and unsustainable public policy. There was no valid evidence, they claimed, that proton beams were more effective than less costly alternatives. But developers expected insurance to cover their centers’ staggeringly high costs and debts. Was speculation like this new to health care? Cancer, Radiation Therapy, and the Market shows how the radiation therapy specialty in the United States (later called radiation oncology) coevolved with its device industry throughout the twentieth-century. Academic engineers and physicians acquired financing to develop increasingly powerful radiation devices, initiated companies to manufacture the devices competitively, and designed hospital and freestanding procedure units to utilize them. In the process, they incorporated market strategies into medical organization and practice. Although palliative benefits and striking tumor reductions fueled hopes of curing cancer, scientific research all too often found serious patient harm and disappointing beneficial impact on cancer survival. This thoroughly documented and provocative inquiry concludes that public health policy needs to re-evaluate market-driven high-tech medicine and build evidence-based health care systems.

mclaren proton therapy center: Radiation Therapy Dosimetry Arash Darafsheh,

2021-03-09 This comprehensive book covers the everyday use and underlying principles of radiation dosimeters used in radiation oncology clinics. It provides an up-to-date reference spanning the full range of current modalities with emphasis on practical know-how. The main audience is medical physicists, radiation oncology physics residents, and medical physics graduate students. The reader gains the necessary tools for determining which detector is best for a given application. Dosimetry of cutting edge techniques from radiosurgery to MRI-guided systems to small fields and proton therapy are all addressed. Main topics include fundamentals of radiation dosimeters, brachytherapy and external beam radiation therapy dosimetry, and dosimetry of imaging modalities. Comprised of 30 chapters authored by leading experts in the medical physics community, the book: Covers the basic principles and practical use of radiation dosimeters in radiation oncology clinics across the full range of current modalities. Focuses on providing practical guidance for those using these detectors in the clinic. Explains which detector is more suitable for a particular application. Discusses the state of the art in radiotherapy approaches, from radiosurgery and MR-guided systems to advanced range verification techniques in proton therapy. Gives critical comparisons of dosimeters for photon, electron, and proton therapies.

mclaren proton therapy center: My Quest For Boston and beyond Rick Otey, 2016-02-14 Rick shares his story of overcoming a childhood disease and finishing the 95th Boston Marathon. Rick also ran in a 465 mile run and beat cancer. He later celebrated 10 years as a survivor by completing a 250 mile/12 day walk.

mclaren proton therapy center: *Commissioning of McLaren Proton Therapy System* Biniam Tesfamicael, 2017 Introduction: McLaren Proton Therapy Center (MPTC) is equipped with a Radiance 330TM synchrotron which is capable of pencil beam delivery (70-330 MeV). The treatment rooms are equipped with a robotic couch for patient positioning and half gantry for beam delivery. The in-room imaging system is capable of acquiring planar and CBCT images while mounted from an independent x-ray gantry. Methods and Material: The ionization depth doses for 70 to 250 MeV were measured using PTW water tank and Bragg peak chambers. An IBA Lynx was used to measure the beam sigma at isocenter as well as at four different positions relative to isocenter. The IAEA TRS 398 protocol was used to calibrate the delivered dose. The dose distribution was verified using gamma index analysis. The dose calibration and dose distribution were verified by IROC Houston for a prostate phantom. The gantry mechanical isocentricity was measured using an in-house fabricated device. Isocentricity shifts are accommodated by correcting the treatment couch positions for gantry sag for various gantry angles. Results: The ranges of proton beams are verified to be within 0.5 mm of the tabulated CSDA values. The spots circularity is verified to be within 10% in X and Y axis. The positional accuracy of the spots is within 1.5% of the planned map. The gantry isocentricity is within 0.5 mm radius after couch correction.Conclusion: The gamma analysis of dose distributions had a passing rate of >95% for 2%/2mm. Independent verification by IROC has verified our beam delivery calibration and accuracy.

mclaren proton therapy center: Daily Offline Range Verification of Proton Beams at the McLaren Proton Therapy Center Using a Commercial Mutli-Layer Faraday Cup Biniam Tesfamicael, 2017 ObjectiveTo study the use of a Multi-Layer Faraday Cup (MLFC) for a quick and precise daily range verification of proton beams at McLaren Proton Therapy Center.MethodsDepth dose measurements were performed at room iso-center using a water tank and Bragg Peak ion chamber. The IBA Giraffe was used to measure the water equivalent thickness (WET) of the sample copper plates used in the MLFC. The WET measurements provided the range calibration factors for the MLFC. To establish a baseline for in-room measurements, ranges were measured using the MLFC for energies from 70 to 250 MeV in steps of 10 MeV. Daily range verification measurements are performed for five representative beam energies (70, 100, 150, 200 and 250 MeV) with the MLFC, which is permanently placed at the end of the beam line inside the accelerator vault. Data collected over a period of more than 100 days are analyzed and presented.ResultsThe centroid channel number in the MLFC where the protons stop was calculated and converted to depth in water and compared to the depth of distal 80% measured in the water tank. The depths agreed to

within 2 mm. The daily variation in ranges measured by the MLFC was within u00b10.5 mm. The total measurement time is less than 5 minutes. ConclusionBased on the measurement results, the MLFC can be used for a daily range constancy check with submillimeter accuracy. It is a quick and simple method to perform range constancy verification on a daily basis.

mclaren proton therapy center: Advances in Particle Therapy Manjit Dosanjh, Jacques Bernier, 2018-05-11 Hadron therapy is a groundbreaking new method of treating cancer. Boasting greater precision than other therapies, this therapy is now utilised in many clinical settings and the field is growing. More than 50 medical facilities currently perform (or are planned to perform) this treatment, with this number set to double by 2020. This new text covers the most recent advances in hadron therapy, exploring the physics, technology, biology, diagnosis, clinical applications, and economics behind the therapy. Providing essential and up-to-date information on recent developments in the field, this book will be of interest to current and aspiring specialists from a wide range of backgrounds. Features: Multidisciplinary approach: explores the physics, IT (big data), biology, clinical applications from imaging to treatment, clinical trials, and economics associated with hadron therapy Contains the latest research and developments in this rapidly evolving field, and integrates them into the current global challenges for radiation therapy Edited by recognised leaders in the field, including the co-ordinator of ENLIGHT (the European Network for Light Ion Hadron Therapy), with chapter contributions from international leading experts in the field

mclaren proton therapy center: DeVita, Hellman, and Rosenberg's Cancer: Principles & Practice of Oncology Vincent T. DeVita Jr., Theodore S. Lawrence, Steven A. Rosenberg, 2015-01-07 DeVita, Hellman, and Rosenberg's Cancer: Principles & Practice of Oncology, 10th edition has garnered universal acclaim as the world’s definitive, standard-setting oncology reference. More than 400 respected luminaries explore today’s most effective strategies for managing every type of cancer by stage of presentation - discussing the role of all appropriate therapeutic modalities as well as combined-modality treatments. This multidisciplinary approach will help your cancer team collaboratively face the toughest clinical challenges and provide the best possible care for every cancer patient. Access the complete contents online or on your mobile device, with quarterly updates reflecting late-breaking developments in cancer care, free for the first year on LWW Health Library. Take full advantage of the latest advances with brand-new chapters on Hallmarks of Cancer, Molecular Methods in Cancer, Oncogenic Viruses, Cancer Screening, and new sections on Genetic testing and counseling for cancer, plus comprehensive updates throughout – including coverage of the newest biologic therapies. Make optimal, well-coordinated use of all appropriate therapies with balanced, multidisciplinary advice from a surgeon, a medical oncologist, and a radiation oncologist in each major treatment chapter. Review the latest molecular biology knowledge for each type of cancer and its implications for improved management. Make the best decisions on cancer screening and prevention, palliative care, supportive oncology, and quality-of-life issues

mclaren proton therapy center: Performance of 2D and CBCT Imaging for Patient Positioning at McLaren Proton Therapy Center Biniam Tesfamicael, 2017 Background: The characteristics of proton beams allow for steep dose fall off between normal tissue and target. Evaluating the accuracy of patient positioning is important to ensure correct dose delivery. The McLaren Proton Therapy System (MPTS) is equipped with a kV-imaging system capable of orthogonal and CBCT imaging from an independent gantry. Methods and Materials: The system was tested according to requirements outlined in TG-142 and TG-179. The CIRS Isocube device and anthropomorphic phantom were simulated with a slice thickness of 1mm. Orthogonal and CBCT imaging fields were planned for image registration evaluation. The accuracy was assessed by placing the phantoms at a known offset from isocenter and imaging at three couch angles 0, 180 and 270 degrees with both modalities. The imaging hardware is controlled by EhmetDx XIS (X-ray Imaging Software) and the image registration is done with MIM Software. Results: Deviations from expected values were below 1 mm and 1 degree. Average deviations for orthogonal imaging in all three couch positions were 0.25, 0.29 and 0.16 mm for x, y, z and 0.07, 0.00 and 0.00 degrees for yaw, pitch, and roll. Average deviations for CBCT in all three couch positions were -0.05, -0.11 and 0.02 mm for x, y, z and -0.06, 0.11 and

-0.22 degrees for yaw, pitch, and roll.Conclusion: The use of both modalities with a static solid phantom yielded comparable results with repositioning after image registration and all tested couch angles within 1 mm. The imaging system has had an excellent and stable performance during clinical use and routine quality assurance testing.

mclaren proton therapy center: Modern Healthcare , 2008

mclaren proton therapy center: Complications in Bariatric Surgery Diego Camacho, Natan Zundel, 2018-04-26 This text focuses on the complications following bariatric surgery. The focus is on the immediate and long term complications that would be important to both the general surgeon and those surgeons with specialty experience in bariatric surgery. Sections address the nutritional deficiencies following bariatric surgery with specific attention to Roux en Y gastric bypass and pancreatico-biliary diversion as well as the correction of these deficiencies with medical intervention as well as the indications for surgical revision or reversal. The text reviews the work-up of a bariatric patient with abdominal pain including the appropriate imaging and threshold for operative intervention and the techniques to achieve optimal visualization during this difficult situation. This section focuses on the operative management of anastomotic and staple line leaks and how to definitively manage these surgical emergencies as well as achieve source control and stabilization. Later chapters focus on specific complications following bariatric surgery with specific focus on RYGB, vertical sleeve gastrectomy (VSG), biliary pancreatic diversion, and gastric band. Complications include gastric fistula, gastric staple line disruption following VSG, gastro-jejunal leak following RYGB, relux following bariatric surgery, and failure of weight loss following bariatric surgery. These sections are written by experts in the field of bariatrics and include evidence based medicine as well as expert opinion on the management of bariatric complications. The sections provide a review of the literature and references at the close of each section. Complications in Bariatric Surgery will serve as a resource for both the general surgeon who handles bariatric emergencies as well as the bariatric specialist.

mclaren proton therapy center: Hematology Ronald Hoffman, Edward J. Benz, Jr., Leslie E. Silberstein, Helen Heslop, John Anastasi, Jeffrey Weitz, 2013-01-01 This leading text reflects both the new direction and explosive growth of the field of hematology. Edited and written by practitioners who are the leaders in the field, the book covers basic scientific foundations of hematology while focusing on its clinical aspects. This edition has been thoroughly updated and includes ten new chapters on cellular biology, haploidentical transplantation, hematologic manifestations of parasitic diseases, and more. The table of contents itself has been thoroughly revised to reflect the rapidly changing nature of the molecular and cellular areas of the specialty. Over 1,000 vivid images, now all presented in full color for the first time, include a collection of detailed photomicrographs in every chapter, selected by a hematopathology image consultant. What's more, this Expert Consult Premium Edition includes access to the complete contents of the book online, fully searchable and updated quarterly by Dr. Hoffman himself. - Publisher.

mclaren proton therapy center: Nathan and Oski's Hematology and Oncology of Infancy and Childhood E-Book Stuart H. Orkin, David G. Nathan, David Ginsburg, A. Thomas Look, David E. Fisher, Samuel Lux, 2014-11-14 Written by the leading names in pediatric oncology and hematology, Nathan and Oski's Hematology and Oncology of Infancy and Childhood offers you the essential tools you need to overcome the unique challenges and complexities of childhood cancers and hematologic disorders. Meticulously updated, this exciting full-color set brings together the pathophysiology of disease with detailed clinical guidance to provide you with the most comprehensive, authoritative, up-to-date information for diagnosing and treating children. - Form a definitive diagnosis and create the best treatment plans possible with comprehensive coverage of all pediatric cancers, including less-common tumors, as well as all hematologic disorders, including newly recognized ones. - Develop a thorough, understanding of the underlying science of diseases through summaries of relevant pathophysiology balanced with clear, practical clinical guidance. Nathan and Oski's is the only comprehensive product on the market that relates pathophysiology in such depth to hematologic and oncologic diseases affecting children. - Quickly and effortlessly

access the key information you need with the help of a consistent organization from chapter to chapter and from volume to volume. - Stay at the forefront of your field thanks to new and revised chapters covering topics such as paroxysmal nocturnal hemoglobinuria, lysosomal storage diseases, childhood genetic predisposition to cancer, and oncology informatics. - Learn about the latest breakthroughs in diagnosis and management, making this the most complete guide in pediatric hematology and oncology. - Discover the latest in focused molecularly targeted therapies derived from the exponential growth of knowledge about basic biology and genetics underlying the field. - Rely on it anytime, anywhere! Access the full text, images, and more at Expert Consult.

mclaren proton therapy center: Nuclear Science Abstracts , 1970 NSA is a comprehensive collection of international nuclear science and technology literature for the period 1948 through 1976, pre-dating the prestigious INIS database, which began in 1970. NSA existed as a printed product (Volumes 1-33) initially, created by DOE's predecessor, the U.S. Atomic Energy Commission (AEC). NSA includes citations to scientific and technical reports from the AEC, the U.S. Energy Research and Development Administration and its contractors, plus other agencies and international organizations, universities, and industrial and research organizations. References to books, conference proceedings, papers, patents, dissertations, engineering drawings, and journal articles from worldwide sources are also included. Abstracts and full text are provided if available.

mclaren proton therapy center: *Hematology E-Book* Leslie E. Silberstein, John Anastasi, 2012-11-05 Hematology, 6th Edition encompasses all of the latest scientific knowledge and clinical solutions in the field, equipping you with the expert answers you need to offer your patients the best possible outcomes. Ronald Hoffman, MD, Edward J. Benz, Jr., MD, Leslie E. Silberstein, MD, Helen Heslop, MD, Jeffrey Weitz, MD, John Anastasi, MD, and a host of world-class contributors present the expert, evidence-based guidance you need to make optimal use of the newest diagnostic and therapeutic options. Consult this title on your favorite e-reader with intuitive search tools and adjustable font sizes. Elsevier eBooks provide instant portable access to your entire library, no matter what device you're using or where you're located. Make confident, effective clinical decisions by consulting the world's most trusted hematology reference. Access the complete contents online at www.expertconsult.com, with a downloadable image collection, regular updates, case studies, patient information sheets, and more. Apply all the latest knowledge on regulation of gene expression, transcription splicing, and RNA metabolism; pediatric transfusion therapy; principles of cell-based gene therapy; allogeneic hematopoietic stem cell transplantation for acute myeloid leukemia and myelodysplastic syndrome in adults; hematology in aging; and much more, thanks to 27 brand-new chapters plus sweeping updates throughout. Find the information you need quickly and easily thanks to a completely reworked organization that better reflects today’s clinical practice. Visualize clinical problems more clearly with new and updated images that reflect the pivotal role of hematopathology in modern practice. Benefit from the experience and fresh perspective of new editor Dr. Jeffrey Weitz, Professor of Medicine at McMaster University School of Medicine and Executive Director of the Thrombosis and Atherosclerosis Research Institute in Ontario.

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