Metered Dose Inhaler Treatment Via Ventilator

Neonatal and Pediatric Respiratory Care - E-Book
Biomaterials and Medical Tribology
Benumof and Hagberg's Airway Management E-Book
From Design to Applications
Basic Principles and Clinical Practice
Small Animal Critical Care Medicine - E-Book
Research and Development
Physical and Biological Basis for Therapy, Third Edition
Kendig and Chernick's Disorders of the Respiratory Tract in Children E-Book
Metered Dose Inhaler Technology
Recent Advances in Novel Drug Carrier Systems
A Survey at Tsing Yi Town Clinic
Fundamentals, Design and Drug Delivery
Inhaler Devices
Understand and Control Your Asthma
Understanding of Metered Dose Inhaler Therapy by GOPC Patients
What to Do For The Most Common Health Problems
Surgical Tools and Medical Devices
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Anesthetic Pharmacology
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How to Use Your Metered-Dose Inhaler the Right Way
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Neonatal and Pediatric Respiratory Care - E-Book Elsevier Health Sciences
Metered Dose Inhaler TechnologyCRC Press
Biomaterials and Medical Tribology BoD – Books on Demand
Nanostructures for Drug Delivery extensively covers the various nanostructured products that have been tested as carriers in target drug delivery systems. In addition, the book analyses the advantages of, and issues related to, using nanostructured materials in drug delivery systems, also detailing various nanocarrier preparation techniques. As delivering the drug to the target site is a major problem in providing effective treatment for many diseases, this book covers the latest advancements in numerous nanotechnological products that are being used in disease detection, controlled drug delivery, as biosensors, and in tissue engineering that have been developed for more efficient patient healthcare. Due to the versatility of nanostructured materials, it is now possible to deliver a drug at its target site in a more accurate and efficient way. This volume is an up-to-date, state-of-the-art work that highlights the principal mechanistic aspects related to the delivery of active nanoscale therapeutic agents (natural or synthetic) and their release profile in different environmental media. It highlights nanoscale encapsulation strategies and discusses both organic and inorganic nanomaterials as carriers and delivery platforms. Demonstrates how nanostructures are successfully employed in drug delivery stems and as drug delivery agents, allowing biomaterials scientists and biochemists to create more effective drug delivery systems Offers an overview of recent research into the use of nanostructures in drug delivery techniques in a cogent, synthesized way, allowing readers to quickly familiarize themselves with this area Includes examples of how the application of nanostructures have improved the efficiency of drug delivery systems, showing medical scientists how they are beneficial
Benumof and Hagberg's Airway Management E-Book William Andrew
Small Animal Critical Care Medicine is a comprehensive, concise guide to critical care, encompassing not only triage and stabilization, but also the entire course of care during the acute medical crisis and high-risk period. This clinically oriented manual assists practitioners in providing the highest standard of care for ICU patients. More than 150 recognized experts offer in-depth, authoritative guidance on clinical situations from a variety of perspectives. Consistent, user-friendly format ensures immediate access to essential information. Organ-system, problem-based approach incorporates only clinically relevant details. Features state-of-the-art invasive and non-invasive diagnostic and monitoring procedures, as well as an extensive section on pharmacology. Appendices provide conversion tables, continuous rate infusion determinations, reference ranges, and more.
From Design to Applications CRC Press
Advancements in pulmonary drug delivery technologies have improved the use of dry powder inhalation therapy to treat respiratory and systemic diseases. Despite remarkable improvements in the development of dry powder inhaler

devices (DPIs) and formulations in the last few years, an optimized DPI system has yet to be developed. In this work, we hypothesize that Thin Film Freezing (TFF) is a suitable technology to improve inhalation therapies to treat lung and systemic malignancies due to its ability to produce brittle powder with optimal aerodynamic properties. Also, we developed a performance verification test (PVT) for the Next Generation Cascade Impactor (NGI), which is one of the most important in vitro characterization methods to test inhalation. In the first study, we used TFF technology to produce amorphous and brittle particles of rapamycin, and compared the in vivo behavior by the pharmacokinetic profiles, to its crystalline counterpart when delivered to the lungs of rats via inhalation. It was found that TFF rapamycin presented higher in vivo systemic bioavailability than the crystalline formulation. Subsequently, we investigated the use of TFF technology to produce triple fixed dose therapy using formoterol fumarate, tiotropium bromide and budesonide as therapeutic drugs. We investigated applications of this technology to powder properties and in vitro aerosol performance with respect to single and combination therapy. As a result, the brittle TFF powders presented superior properties than the physical mixture of micronized crystalline powders, such as excellent particle distribution homogeneity after in vitro aerosolization. Lastly, we developed a PVT for the NGI that may be applicable to other cascade impactors, by investigating the use of a standardized pressurized metered dose inhaler (pMDI) with the NGI. Two standardized formulations were developed. Formulations were analyzed for repeatability and robustness, and found not to demonstrate significant differences in plate deposition using a single NGI apparatus. Variable conditions were introduced to the NGI to mimic operator and equipment failure. Introduction of the variable conditions to the NGI was found to significantly adjust the deposition patterns of the standardized formulations, suggesting that their use as a PVT could be useful and that further investigation is warranted.

Basic Principles and Clinical Practice Elsevier Health Sciences

In recent years our understanding of molecular mechanisms of drug action and interindividual variability in drug response has grown enormously. Meanwhile, the practice of anesthesiology has expanded to the preoperative environment and numerous locations outside the OR. Anesthetic Pharmacology: Basic Principles and Clinical Practice, 2nd edition, is an outstanding therapeutic resource in anesthesia and critical care: Section 1 introduces the principles of drug action, Section 2 presents the molecular, cellular and integrated physiology of the target organ/functional system and Section 3 reviews the pharmacology and toxicology of anesthetic drugs. The new Section 4, Therapeutics of Clinical Practice, provides integrated and comparative pharmacology and the practical application of drugs in daily clinical practice. Edited by three highly acclaimed academic anesthetic pharmacologists, with contributions from an international team of experts, and illustrated in full colour, this is a sophisticated, user-friendly resource for all practitioners providing care in the perioperative period.

Small Animal Critical Care Medicine - E-Book Elsevier Health Sciences

Many common health problems can be treated with simple remedies you can do at home. Even if the steps you take don't cure the problem, they can relieve symptoms and allow you to go about your daily life, or at least help you until you're able to see a doctor. Some remedies, such as changing your diet to deal with heartburn or adapting your home environment to cope with chronic pain, may seem like common sense. You may have questions about when to apply heat or cold to injuries, what helps relieve the itch of an insect bite, or whether certain herbs, vitamins or minerals are really effective against the common cold or insomnia. You'll find these answers and more in Mayo Clinic Book of Home Remedies. In situations involving your health or the health of your family, the same questions typically arise: What actions can I take that are immediate, safe and effective? When should I contact my doctor? What symptoms signal an emergency? Mayo Clinic Book of Home Remedies clearly defines these questions with regard to your health concerns and guides you to choose the appropriate and most effective response.

Research and Development Elsevier Metered Dose Inhaler Technology explores the technologies of pressurized metered dose inhalation (MDI) delivery systems and provides practical, easy-to-use guidance to effective product formulation. With contributions from an international panel of authors, the book addresses the global phase-out of chloroflurocarbon chemicals (CFCs), the generation of propellant systems to replace them, and their associated new medications and therapies. Topics include the manufacture of metered dose inhalers, particle size analysis in inhalation therapy, development and testing, pharmcokinetics and metabolism of propellants, toxicology, and more.

Physical and Biological Basis for Therapy, Third Edition McGill-Queen's Press - MQUP

Medical tribology can be defined as the science of tribological phenomena in the human body, both those that naturally occur in the tissues or organs and those that arise after implantation of an artificial device, while biomaterials are inert substances designed to be incorporated into living systems. Biomaterials and medical tribology brings together a collection of high quality articles and case studies focussing on new research and developments in these two important fields. The book provides details of the different types of biomaterial available and their applications, including nanoparticles for biomedical applications, synergism effects during fiction and fretting corrosion experiments, application of biomedical-grade titanium alloys in trabecular bone and artificial joints, fatigue strengthening of an orthopaedic Ti6Al4V alloy, wear determination on retrieved metal-on-metal hip arthoplasty, natural articular joints, the importance of bearing porosity in engineering and natural lubrication, tribological characterization of human tooth enamel, and finally, liposome-based carrier systems and devices used for pulmonary drug delivery. Biomaterials and medical tribology is an essential reference for materials scientists, engineers, and researchers in the field of medical tribology. The title also provides an overview for academics and clinicians in this area.

Kendig and Chernick's Disorders of the Respiratory Tract in Children E-

Book CRC Press
Edited by Antonio Anzueto, Yvonne Heijdra and John R. Hurst COPD is one of the most common diseases worldwide and is projected to be the third leading cause of death by 2020. But that does not mean it is easy to understand or manage. In everyday practice, pulmonologists face areas of controversy in COPD, for which evidence-based medicine is often unavailable. This ERS Monograph considers where the current controversies in COPD lie, discussing areas such as screening, premature birth, asthma–COPD overlap syndrome, treatment, rehabilitation and palliative care. This book will be of great interest to both clinicians and scientists, and aims to stimulate further discussion about this diverse and fascinating disease. "...contains a vast amount of information on the disease, its prevalence, signs and symptoms, diagnositc tests and treatment options. The book's format makes it quick and simple to find out what you need to know, and its size would make it easy to take to work for use in practice [...] invaluable for anyone working with patients with the disease." Emma Vincent, Nursing Standard
Metered Dose Inhaler Technology Academic Press
Kendig, Chernick’s Disorders of the Respiratory Tract in Children is the definitive medical reference book to help you confront critical challenges using the latest knowledge and techniques. You’ll get the state-of-the-art answers you need to offer the best care to young patients. Tackle the toughest challenges and improve patient outcomes with coverage of all the common and rare respiratory problems found in newborns and children worldwide. Get a solid foundation of knowledge to better understand and treat your patients through coverage of the latest basic science and its relevance to clinical problems. Get comprehensive, authoritative coverage on today’s hot topics, such as interstitial lung disease, respiratory disorders in the newborn, congenital lung disease, swine flu, genetic testing for disease and the human genome, inflammatory cytokines in the lung, new radiologic techniques, diagnostic imaging of the respiratory tract, and pulmonary function tests. Learn from the experts with contributions from 100 world authorities in the fields of pediatrics, pulmonology, neurology, microbiology, cardiology, physiology, diagnostic imaging, anesthesiology, otolaryngology, allergy, and surgery.
Recent Advances in Novel Drug Carrier Systems Elsevier Health Sciences
Contents: definition; epidemiology; risk factors; mechanisms of asthma; diagnosis and classification; prevention; a six-part asthma management program (educate patients to develop a partnership in asthma management; assess and monitor asthma severity; avoid or control asthma triggers; establish medication plans for long-term management; establish plans for managing exacerbations; provide regular follow-up care); socioeconomics; education and the delivery of care; recommendations; glossary. Extensive references. Charts and tables.
A Survey at Tsing Yi Town Clinic John Wiley & Sons
Features patient information on inhaler use for the treatment of asthma, provided by the University of Illinois McKinley Health Center. Discusses the medications used, and includes step by step instructions. Contains diagrams.

Fundamentals, Design and Drug Delivery CRC Press
The book will serve as a good reference for practising and academic physician dealing with children with asthma by providing evidence-based management strategies. The book also throws ample light on the pathophysiologic basis on the steps in management. The chapters include besides background on increasing prevalence asthma, pharmacological aspects, drug therapy, scientific basis of immunotherapy as well as strategies to improve adherence to treatment.
Inhaler Devices CRC Press
The pace of new research and level of innovation repeatedly introduced into the field of drug delivery to the lung is surprising given its state of maturity since the introduction of the pressurized metered dose inhaler over a half a century ago. It is clear that our understanding of pulmonary drug delivery has now evolved to the point that inhalation aerosols can be controlled both spatially and temporally to optimize their biological effects. These abilities include controlling lung deposition, by adopting formulation strategies or device technologies, and controlling drug uptake and release through sophisticated particle technologies. The large number of contributions to the scientific literature and variety of excellent texts published in recent years is evidence for the continued interest in pulmonary drug delivery research. This reference text endeavors to bring together the fundamental theory and practice of controlled drug delivery to the airways that is unavailable elsewhere. Collating and synthesizing the material in this rapidly evolving field presented a challenge and ultimately a sense of achievement that is hopefully reflected in the content of the volume.
Understand and Control Your Asthma McGraw Hill Professional
Drug therapy via inhalation route is at the cutting edge of modern drug delivery research. There has been significant progress on the understanding of drug therapy via inhalation products. However, there are still problems associated with their formulation design, including the interaction between the active pharmaceutical ingredient(s) (APIs), excipients and devices. This book seeks to cover some of the most pertinent issues and challenges of such formulation design associated with industrial production and desirable clinical outcome. The chapter topics have been selected with a view to integrating the factors that require consideration in the selection and design of device and formulation components which impact upon patient usability and clinical effectiveness. The challenges involved with the delivery of macromolecules by inhalation to both adult and pediatric patients are also covered. Written by leading international experts from both academia and industry, the book will help readers (formulation design scientists, researchers and post-graduate and specialized undergraduate students) develop a deep understanding of key aspects of inhalation formulations as well as detail ongoing challenges and advances associated with their development.
Understanding of Metered Dose Inhaler Therapy by GOPC Patients Elsevier
This second edition has been fully revised to provide trainees and clinicians with the most recent information on childhood asthma. Beginning with

symptoms, diagnosis, pathophysiology and pharmacotherapy, the following sections examine the management of different aspects of childhood asthma, including acute and persistant bronchial asthma, wheezing, allergic rhinosinusitis, and more. The final chapters examine education of both patients and parents, and prognosis. Key learning points are highlighted for each chapter and more than seventy images and illustrations enhance learning. Key points New edition bringing trainees and clinicians up to date with recent advances in management of childhood bronchial asthma Covers treatments for different aspects of childhood asthma Includes key learning point summaries for each chapter and more than seventy images and illustrations Previous edition published in 2002
Cambridge University Press
Pressurized metered-dose inhalers (pMDIs) are the most widely-prescribed inhaler devices for therapeutic aerosol delivery in the treatment of lung diseases. In spite of its undoubted therapeutic and commercial success, the propellant flow mechanics and aerosol formation by the pMDIs is poorly understood. The process involves a complex transient cavitating turbulent fluid that flashes into rapidly evaporating droplets, but details remain elusive, partly due to the difficulty of performing experiments at the small length scales and short time scales. The objective of the current work is the development of a numerical model to predict the internal flow conditions (pressure, temperature, velocity, void fraction, quality, etc.) and provide deeper insight into the atomization process and fluid mechanics involved in the twin-orifice of pMDIs. The main focus is propellant metastability, which has been identified by several past authors as a key element that is missing in accounts of pMDI performance. First the flashing propellant flow through single orifice systems (both long and short capillary tubes) was investigated using three different models : homogeneous equilibrium model (HEM), delayed equilibrium model (DEM) and improved delayed equilibrium model (IDEM). Both, the pure propellants and the propellant mixtures were used as working fluid. The numerical results were compared with the experimental data. For long capillary tubes the three models gave reasonable predictions, but the present results showed that DEM predicts the mass flow rate well for pure propellants and IDEM predicts the mass flow rate well for propellant mixtures. For short capillary tubes, the present results showed that DEM predicts the mass flow rate and pressure distribution along the short tube better compared to HEM and IDEM. The geometry of the twin-orifice system of a pMDI is complex and involves several singularities (sudden enlargements and sudden contractions). Various assumptions were made to evaluate their effect on the vaporisation process and to evaluate the flow variables after the shock at the exit of the spray orifice when the flow is choked. Also, three different propellant flow regimes were explored at the inlet of the valve orifice. A specific combination of assumptions, which offers good agreement with the experimental data was selected for further computations. Numerical investigations were carried out using delayed equilibrium model (DEM) with these new assumptions to validate the two-phase metastable flow through twin-orifice systems with continuous flows of various propellants studied previously by

Fletcher (1975) and Clark (1991). A new correlation was developed for the coefficient in the relaxation equation. Along with this correlation a constant coefficient was used in the relaxation equation to model the metastability. Both the coefficients showed good agreement against the Fletcher's experimental data. The comparison with the Clark s experimental data showed that the new correlation coefficient predicted the mass flow rate well in compare to that of the constant coefficient, but over predicted the expansion chamber pressure. The DEM with both the coefficients for continuous discharge flows were applied to investigate the quasi-steady flashing flow inside the metered discharge flows at various time instants. The DEM results were compared with the Clark s metered discharge experimental data and the well established homogeneous equilibrium model (HEM). The comparison between the HEM and DEM with Clark s (1991) experimental data showed that the DEM predicted the mass flow well in compare to that of HEM. Moreover, both the models underpredicted the expansion chamber pressure and temperature. The findings of the present thesis have given a better understanding of the role played by the propellant metastability inside the twin-orifice system of pMDIs. Also, these have provided detailed knowledge of thermodynamic state, void fraction and critical velocity of the propellant at the spray orifice exit, which are essential step towards the development of improved atomisation models. Improved understanding of the fluid mechanics of pMDIs will contribute to the development of next-generation pMDI devices with higher treatment efficacy, capable of delivering a wider range of therapeutic agents including novel therapies based around.

What to Do For The Most Common Health Problems CRC Press

This thoroughly revised and expanded reference provides authoritative discussions on the physiologic, pharmacologic, metabolic, molecular, cellular and physicochemical factors, influencing the efficacy and utilization of pharmaceutical aerosol. It analyzes the latest science and developments in the generation, administration and characterization of these compounds, showcasing current clinical applications, the efficiency and limitations of major aerosol products and emerging aerosol therapies impacting the field.

Surgical Tools and Medical Devices

Metered Dose Inhaler Technology

A comprehensive text on respiratory care for neonates, infants, and children, Neonatal and Pediatric Respiratory Care, 4th Edition provides a solid foundation in the assessment and treatment of respiratory care disorders. Clear, full-color coverage emphasizes clinical application of the principles of neonatal/pediatric respiratory care. New to this edition is coverage of the latest advances in clinical practice, a chapter devoted to quality and safety, and summary boxes discussing real-world clinical scenarios. From author Brian Walsh, an experienced educator and respiratory therapist, this text is an excellent study tool for the NBRC’s Neonatal/Pediatric Specialty exam! A comprehensive, evidence-based approach covers all of the major topics of respiratory care for neonates, infants, and children, including both theory and application. Case studies help you master the more difficult areas of care for neonatal and pediatric disorders. Logical, streamlined organization makes

it easier for students to master the material and prepare for an entry-level BS degree and the national Neonatal/Pediatric Specialty credentialing exam. Learning objectives at the beginning of each chapter highlight the "take-aways" by breaking down key content into measurable behaviors, criteria, and conditions. Complete test preparation is provided through coverage of all the content in the matrix for the NPS exam. NBRC exam-style assessment questions test your comprehension of the material in each chapter. Answers to assessment and case study questions are provided on the Evolve companion website. New Quality and Safety chapter addresses quality care for the neonatal/pediatric patient. New Clinical Highlights boxes discuss realistic scenarios to help you apply your knowledge to clinical practice. UPDATED! Over 400 full-color illustrations — plus clear tables and graphs— make it easier to visualize key concepts. New! Key point summary at end of each chapter highlights essential content in a bulleted format. New! Glossary provides easy access to key terms and their definitions. New! Key terms at the beginning of each chapter highlight important terminology.

Pulmonary Drug Delivery Academic Press

This contribution book collects reviews and original articles from eminent experts working in the interdisciplinary arena of novel drug delivery systems and their uses. From their direct and recent experience, the readers can achieve a wide vision on the new and ongoing potentialities of different drug delivery systems. Since the advent of analytical techniques and capabilities to measure particle sizes in nanometer ranges, there has been tremendous interest in the use of nanoparticles for more efficient methods of drug delivery. On the other hand, this reference discusses advances in the design, optimization, and adaptation of gene delivery systems for the treatment of cancer, cardiovascular, pulmonary, genetic, and infectious diseases, and considers assessment and review procedures involved in the development of gene-based pharmaceuticals.

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