1. Record Nr. UNINA9910163017203321 Calcium and bone disorders in children and adolescents / / volume **Titolo** editors, Jeremy Allgrove, Nick J. Shaw Pubbl/distr/stampa Basel, Switzerland:,: Karger,, 2015 ©2015 **ISBN** 3-318-05467-4 Edizione [Second, revised edition.] 1 online resource (444 p.) Descrizione fisica Collana Endocrine Development, , 1421-7082 ; ; Volume 28 Disciplina 618.92/71 Soggetti Bone diseases in children Calcium metabolism disorders in children Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references at the end of each chapters and indexes. Nota di contenuto ""Cover ""; ""Front Matter ""; ""Contents""; ""Foreword""; ""Preface""; ""Voyages of Discovery""; ""Abstract""; ""Introduction""; ""Vitamin D and Rickets""; ""Parathyroid Hormone""; ""Calcitonin""; ""Parathyroid Hormone-Related Peptide""; ""Fibroblast Growth Factor 23""; ""References"": ""Physiology of Calcium, Phosphate, Magnesium and Vitamin D""; ""Abstract""; ""Introduction""; ""Calcium Physiology""; ""Control of Plasma Calcium""; ""Transmembrane Calcium Transport""; ""Transcellular Calcium Transport""; ""Magnesium Metabolism""; ""Paracellular Mechanisms of Cation Transport"" ""Phosphate Metabolism""""The Calcium Cascade""; ""The Calcium-Sensing Receptor Complex""; ""The Calcium-Sensing Receptor""; ""The G-Protein Second Messenger""; ""The Adaptor Protein""; ""The Parathyroid Glands""; ""The Parathyroid Hormone Receptors""; ""Intracellular Signalling""; ""The Target Organs""; ""Parathyroid Hormone-Related Peptide""; ""Calcitonin""; ""Alkaline Phosphatase""; ""Vitamin D Metabolism""; ""Summary and Conclusions""; ""References""; ""Physiology of Bone""; ""Abstract""; ""Introduction""; ""Skeletal Development""; ""Osteoblast Differentiation and Function"" ""Bone and Cartilage Matrix Collagens and Their Modifying Enzymes""" Glycoproteins and Proteoglycans in Bone"; ""Bone Mineralisation"";

""Osteocytes and Bone Lining Cells""; ""Hormones and Mineral

Homeostasis""; ""The Nervous System and Bone""; ""Functional Adaptation of Bone to Load Bearing""; ""Healthy Bones for Life: Nutrition and Exercise in Bone Physiology""; ""Conclusions""; ""References""; ""Radiology of Osteogenesis Imperfecta, Rickets and Other Bony Fragility States""; ""Abstract""; ""Introduction""; ""Radiological Assessment of Bone Density and Quality"" ""Radiological Findings in Osteogenesis Imperfecta"""Overview of Features [8]""; ""Specific Features of Osteogenesis Imperfecta""; ""Spinal Disease in Osteogenesis Imperfecta""; ""Rickets and Related Disorders""; ""Basis for Radiological Findings in Vitamin D-Deficient Rickets""; ""Other Types of Rickets""; ""Radiology Findings in Other Bony Fragility States""; ""Conclusions""; ""References""; ""Bone Densitometry: Current Status and Future Perspective""; ""Abstract""; ""What is Bone Mineral Density?""; ""Assessment of Bone Density""; ""Measurement Principles"" ""Dual-Energy X-Ray Absorptiometry"""Volumetric Bone Density for Age""; ""Bone Mineral Content for Height""; ""Allometric Approach""; ""Regression Models""; ""Mechanostat Functional Model""; ""Diagnostic Potential of Dual-Energy X-RayAbsorptiometry"; ""Vertebral Fracture Assessment""; ""Quantitative Computed Tomography""; ""Diagnostic Potential of QuantitativeComputed Tomography""; ""Magnetic Resonance Imaging"": ""Summary and Guidelines"": ""References"": ""A Practical Approach to Hypocalcaemia in Children""; ""Abstract""; ""Introduction""; ""Physiological Response to Hypocalcaemia"" ""Signs and Symptoms of Hypocalcaemia""

## Sommario/riassunto

There has been a rapid expansion of knowledge in the field of paediatric calcium and bone disorders over the past twenty years. Advances have been made in the underlying genetic basis for many conditions in conjunction with progress in bone density and geometry imaging and the development of new treatment options. The 2nd revised edition of 'Calcium and Bone Disorders in Children and Adolescents' presents up-to-date information on many aspects included in the 1st edition such as the physiology, pathology, diagnosis and management of numerous conditions including a chapter of case histories illustrating clinical aspects. New chapters on skeletal dysplasias, the genetics of osteoporosis, radiological imaging of bone and a practical approach to a child with recurrent fractures are included. Providing a comprehensive update, this book is a useful clinical resource for paediatricians and specialists in endocrinology, metabolic bone disease, nephrology, rheumatology, radiology, orthopaedics and clinical genetics who may be faced with a child with a calcium and/or bone disorder.