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Johanne Martel-Pelletier, PhD, Professor of Medicine in the Department of Medicine at the University of Montreal (Quebec, Canada), Co-founder and Director of the Osteoarthritis Research Unit at the Notre-Dame Hospital of the University of Montreal Hospital Centre (Quebec, Canada), and titular head of the University Chair in Osteoarthritis at the University of Montreal.

Her research interests lie in the mechanisms involved in the etiology of osteoarthritis, such as joint tissue catabolism and cartilage repair, the molecular and biochemical mechanisms involved during the osteoarthritis process of certain proteases, pro- and anti-inflammatory factors and growth factors in humans and targeting new therapeutic strategies for the treatment of osteoarthritis. In addition, she is involved in developing systems using MRI technology to quantify structural tissue changes in the human knee and hip.

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Jean-Pierre Pelletier, MD, Professor of Medicine, Head of the Arthritis Centre of the University of Montreal, Chief of the Division of Rheumatology and Director and Co-founder of the Osteoarthritis Research Unit at the University of Montreal Hospital Research Centre. The Osteoarthritis Research Unit is one of the most highly renowned and respected facilities of its kind. He is also co-titular head of the Chair in Osteoarthritis at the University of Montreal.

His principal research interest lies in understanding the mechanisms involved in the pathophysiology of osteoarthritis in humans and animals, as well as in investigating and developing new therapeutic strategies to counteract the disease through preclinical and clinical studies. He also developed new MRI systems quantifying knee and hip structural alterations in humans and animals.

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Foreword

Addressing unmet needs in osteoarthritis

Johanne Martel-Pelletier &
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Osteoarthritis (OA), the most prevalent form of arthritis, is a leading cause of chronic disability worldwide and a major public health issue. This illness causes disabling pain and involves progressive joint destruction and loss of function. It is a slowly progressive condition that most commonly affects the knees, hips, fingers and spine. OA is responsible for significant morbidity, particularly in the second half of human life, a time in which the quality of life is of primary importance. Ageing, obesity, genetics and joint injuries are among the most well-known risk factors. As the baby boomer population ages and rates of obesity rise, this disease will become more prevalent and, as a result, it is a major sociological concern. The economic burden associated with OA is substantial in direct and, importantly, indirect costs attributable to healthcare expenditure and social outlay.

The aim of this book is to bring awareness to a large audience, including physicians, epidemiologists, scientists, graduate students and anyone who has an interest in expanding their knowledge of OA, and provide a comprehensive up-to-date overview of this disease. Each chapter highlights the most recent progress made with respect to the understanding of the different aspects of this disease. This book assembles major information on the fundamental and clinical aspects of OA, including nonpharmacological and current and future pharmacological therapies, as well as the new paradigms for disease management, guidelines, clinical practice and

benchmarking. The advancement of surgical procedures, including their risks and benefits, will be presented. Other dimensions of the disease such as the role of genetic factors and their influence on and clinical relevance to the disease process, biomarkers for diagnosis and alternative medicine for OA patients, have also been addressed and comprehensively reviewed.

The writing of this book was carried out by internationally renowned authors with multiple specialties, who gathered to analyze, dissect and provide an update on this disease, which should no longer be regarded as a common and relentless result of ageing or of passive wear and tear, but rather as a disease that affects and impacts the daily lives of the majority of people living on this planet.

We wish to sincerely thank all of the authors for their excellent contributions and their dedication. We greatly appreciate the honor of being entrusted with the responsibility of serving as the editors of this book.

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