

# HOSPITAL PHYSICIAN®

## ENDOCRINOLOGY BOARD REVIEW MANUAL

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## Osteomalacia

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#### INTRODUCTION

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Osteomalacia is a disorder of adult lamellar bone caused by the abnormal mineralization of bone matrix. Osteomalacia is not a specific disease but is the skeletal manifestation of several systemic and genetic disorders. Rickets is a similar disorder of growing bone, which is characterized by the abnormal mineralization of matrix. Like osteomalacia in adults, rickets involves newly formed trabecular and cortical bone. Unlike osteomalacia, rickets occurs in children and also involves the growth plates.

Osteomalacia often remains asymptomatic for months to years. The signs and symptoms of osteomalacia do not become clinically manifest until completion of multiple bone remodeling cycles, each several months in duration.

Clinical osteomalacia, therefore, takes months to years to evolve. The initial clinical presentation often is dominated by the underlying disorder, and the diagnosis frequently remains unrecognized for a prolonged period of time. A diagnosis of osteomalacia can be confirmed only by bone biopsy using undecalcified bone histomorphometry after double tetracycline labeling, although in advanced cases the diagnosis can be made on clinical grounds.

The accurate diagnosis and treatment of osteomalacic bone disease are highly dependent on an awareness of the conditions that lead to abnormal mineralization and a thorough understanding of bone and mineral homeostasis. Thus, this review focuses on normal bone metabolism as well as the pathogenesis of the most commonly encountered forms of acquired osteomalacia.