PHOTOBIOMODULATION IN THE REHABILITATION OF KNEE OSTEOARTHRITIS

MOHD AZZUAN AHMAD ASHRIL YUSOF MOHAMAD SHARIFF A. HAMID

Penerbit Universiti Kebangsaan Malaysia Bangi • 2024 www.ukm.my/penerbit

Cetakan Pertama / First Printing, 2024 Hak Cipta / Copyright Universiti Kebangsaan Malaysia, 2024

Hak cipta terpelihara. Tiada bahagian daripada terbitan ini boleh diterbitkan semula, disimpan untuk pengeluaran atau ditukarkan ke dalam sebarang bentuk atau dengan sebarang alat juga pun, sama ada dengan cara elektronik, gambar serta rakaman dan sebagainya tanpa kebenaran bertulis daripada Penerbit UKM terlebih dahulu.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopy, recording, or any information storage and retrieval system, without permission in writing from Penerbit UKM.

Diterbitkan di Malaysia oleh / Published in Malaysia by
PENERBIT UNIVERSITI KEBANGSAAN MALAYSIA
43600 UKM Bangi, Selangor Darul Ehsan, MALAYSIA
www.ukm.my/penerbit
e-mel: penerbit@ukm.edu.my

Penerbit UKM adalah anggota / is a member of the MAJLIS PENERBITAN ILMIAH MALAYSIA / MALAYSIAN SCHOLARLY PUBLISHING COUNCIL PERSATUAN PENERBIT BUKU MALAYSIA / MALAYSIAN BOOK PUBLISHERS ASSOCIATION No. Ahli / Membership No. 198302

Atur huruf oleh / *Typeset by*PENERBIT UNIVERSITI KEBANGSAAN MALAYSIA
43600 UKM Bangi, Selangor Darul Ehsan, MALAYSIA



Cataloguing-in-Publication Data

Perpustakaan Negara Malaysia

A catalogue record for this book is available from the National Library of Malaysia

eISBN 978-629-486-336-1

Contents

	List of Tables & Figures 7
	Preface 9
CHAPTER 1	Pathophysiology and Epidemiology of
	Knee Osteoarthritis 11
CHAPTER 2	Conservative Management of Knee Osteoarthritis 30
CHAPTER 3	Photobiomodulation 56
CHAPTER 4	Low-Level and High-Intensity Photobiomodulation 72
CHAPTER 5	Clinical Evidence of Photobiomodulation in Knee
	Osteoarthritis 86
	References 109
	Index 123

Preface

Knee osteoarthritis (KOA) has surged as a critical global public health issue, burdening healthcare systems and affecting millions worldwide. This degenerative condition, marked by joint deterioration leading to pain and restricted mobility, demands nuanced therapeutic approaches for optimal patient outcomes. Photobiomodulation (PBM), or laser therapy, stands out among treatments, showing promise in KOA rehabilitation. This book, "Photobiomodulation in the Rehabilitation of Knee Osteoarthritis", meticulously explores the synergy between KOA and PBM therapy. Its aim is to dissect KOA's complexity and unveil PBM's potential in symptom alleviation.

Through carefully crafted chapters, it offers foundational knowledge and cutting-edge insights. Chapter 1 introduces KOA, providing essential context on its prevalence and impact. Chapter 2 discusses conservative management strategies, paving the way for a detailed exploration of PBM in subsequent chapters. Chapter 3 focuses on PBM's historical evolution, mechanisms, and clinical applications, including dosage and safety considerations. Chapter 4 compares low-level and high-intensity PBM, elucidating their therapeutic potentials. Finally, Chapter 5 consolidates clinical evidence supporting PBM's efficacy in KOA symptom management, drawing from rigorous trials and reviews. This book transcends academic discourse, serving as a vital resource for advancing KOA rehabilitation practices. By synthesizing knowledge, it empowers researchers, clinicians, and stakeholders to navigate KOA complexities and optimize PBM therapy for better patient outcomes.

Research related to the work is approved by the Medical Research Ethics Committee of Universiti Malaya Medical Centre (MREC UMMC ID: 2019124-8061) and (MREC ID: 2020102-9129). The funding for this publication is supported by the UKM Press Book Publication Fund (DPB-2024-026).

Mohd Azzuan Ahmad Ashril Yusof Mohamad Shariff A. Hamid