

Contents

Chapter 1

The Neurophysiology of Pain

Pain Receptors	1
Pain Nerves	1
Dermatomes and Myotomes	3
Transmission in the Spinal Cord	3
Ascending Pathways	7
Pain from Different Organ Systems	8
Pain from the Skin and Superficial Tissues	9
Deep Somatic Pain	9
Visceral Pain	9
Referred Pain	12
Physiological Mechanisms of Pain Control	12
Peripheral Mechanisms	13
Central Mechanisms	14
Neurohumoral Mechanisms	14

Chapter 2

Transcutaneous Electrical Nerve Stimulation

Introduction	17
General Principles for the Use of TENS	17
Indications for the Use of TENS	19
General Characteristics of TENS Units	20
Conventional High-Frequency TENS	21
Alternative Modes of TENS	24
The Neural Mechanisms of TENS in Alleviating Pain	25
Electrodes and Electrode Placements	26
Side Effects and Counterindications of TENS	29

*Chapter 3***TENS in Different Pain Syndromes**

Post-operative Pain	41
Neck and Shoulder Pain	45
Low Back Pain	56
Arthritic Pain	64
Pain in the Chest	70
Fracture Pain	75
Deafferentation Pain	75
Trigeminal Neuralgia	82
Central Pain	86
Phantom Pain	88
Vascular Pain	91
Headaches	96
Dental Pain	101
Cancer Pain	103
Dysmenorrhea	104
Labour Pain	107
Bladder Pain	110
Pancreatic Pain	110
Psychogenic Pain	111

*Chapter 4***Additional Areas of Application of TENS and Different Modes of Electrical Stimulation**

Sports Medicine	113
Improvement of Muscle Function	120
Wound and Fracture Healing	123
Treatment of Venous Stasis	124
Pruritus	127

Subject Index	129
-------------------------	-----