

Chiropractic Management of Sports and Recreational Injuries

R.C. Schafer, D.C., F.I.C.C.

Chiropractic Management of Sports and Recreational Injuries

R. C. SCHAFER, D.C., F.I.C.C.

Review Editors

Leonard W. Schroeder, DC, CCTP, FICC

James F. Ransom, DC, FICC

George J. Goodheart, DC, FICC

Michael A. Sabia, Jr, DC, PhD

Jan M. Corwin, DC

Paul A. Jaskoviak, DC, FICC

Brian M. Davis, DC, FICC

W. Heath Quigley, DC, MS, FICA

Charles Brandstetter, DC, ND

Faye B. Eagles, DC, FICC

M. Wayne Brown, DC

Developed in cooperation with
THE COUNCIL ON SPORTS INJURIES
of the
AMERICAN CHIROPRACTIC ASSOCIATION
and
ASSOCIATED CHIROPRACTIC ACADEMIC PRESS



WILLIAMS & WILKINS
Baltimore/London

USER'S COMMENTS

Users of this manual are encouraged to submit recommended additions, changes, or comments to improve the subject matter. Comments should be keyed to the specific page, paragraph, and line of the text within the paragraph in which the change or addition is recommended. Reasons should be provided for each comment to assure understanding and complete evaluation. Comments should be forwarded to the editor in care of Williams & Wilkins.

Copyright (C) 1982
Williams & Wilkins
428 E. Preston Street
Baltimore, Md. 21202, U.S.A.

All rights reserved. This book is fully protected by copyright. No part of this book may be reproduced in any form or by any means, including photocopying, or utilized by any information storage and retrieval system without written permission from the copyright owner.

Printed in the United States of America

Reprinted 1983

Library of Congress Cataloging in Publication Data

Main entry under title:

Chiropractic management of sports and recreational injuries.

Includes index.

1. Sports—Accidents and injuries. 2. Wounds and injuries—Treatment.
3. Chiropractic. 4. Sports medicine, I. Schafer, R. C. II. American Chiropractic
Association. Council on Sports Injuries.

RD97.C48 616 617'.1027 81-16471
ISBN 0-683-07581-0 AACR2

Composed and printed at the
Waverly Press, Inc.
Mt. Royal and Guilford Aves.
Baltimore, Md. 21202, U.S.A.

PREFACE

This manual has been designed for the physician and student who desire a reference to the proper management of sports-related disorders—whether it be one who occasionally cares for athletes or one who desires to build a specialization in this area of interest. Thus, one's involvement may take various forms: from that of strictly in-office health care, to that within small community clubs, to that as a professional team physician, and the many levels between such as intramural activities and those conducted for just personal pleasure by the weekend athlete or vacationing sportsman.

Many sections will also be of vital interest to athletic trainers, coaches, and administrators. Each chapter summarizes traumatology and its background according to the current state-of-the-art within athletic and recreational activities. Concern has been given to both background theory and the practical aspects involved in the management and prevention of sports-related injuries and disorders.

Participation in this area will show that there are some unique disabilities found in competitive athletics which are rarely, if ever, encountered in private practice. Each sport requires a different type of history-taking and examination emphasis; and each age group (children, adolescents, adults) presents individual problems. Preadolescent participation in sports offers unique risks and professional challenges. Likewise, an increasing number of senior citizens maintain a degree of fitness through tennis, golf, bowling, jogging, volleyball, and other sports which are not without risk. These factors are added to the usual variances seen in general practice such as degree of maturation, body type, past illnesses and surgery, congenital abnormalities, sexual variances, and so forth. As a rule, athletic rehabilitation must be carried beyond the usual range considered to be full function. Last, but far from least, is the particular athlete's motivation and career aspirations which must be carefully appraised in terms of fitness and short-term and long-range goals.

By applying one's discipline to sports injuries and related disorders, any doctor can find a vast range of clinical challenges at hand. The demand for alert health counsel and health management is insatiable. The broadening of a variety of sports available on the interscholastic and community level is increasing, as is the incidence of sports-related disorders. Of necessity, the on-site physician is often challenged to analyze, differentiate, diagnose, treat, or refer "on the spot" without aid of x-ray and laboratory reports. Such a skilled doctor must work solely with the basic tools of the physician: eyes, hands, and ears.

On first glance, a reader may question why certain degenerative conditions are mentioned in a text on traumatic injuries. While it is obvious that a person suffering a serious disability would not be engaging in sports, quite often an accident suffered during the early stages of pathology may be the initiating factor in bringing the process into clinical view. For this reason, differentiation must be made between acute trauma and trauma superimposed on a previously subclinical entity.

This text is divided into four parts. The first three parts offer a foundation for appreciating the role of professional health care within sports-related activities and the theory behind modern application. The fourth part offers a carefully researched compendium of the case management of sports-related injuries on a regional basis. These sections have been designed for ready reference to quick answers to common problems and techniques.

Part I offers an introduction to the role of the athletic physician, accident prevention and conditioning factors in sports, and the importance of athletic equipment and safety gear. Communicable diseases and their prevention are discussed, along with skin diseases associated with sports. The special considerations involved in female athletics, nutrition and physical activity, and the clinical assessment aspects of physical fitness offer a comprehensive foundation of understanding health care within athletics.

The scope of Part II is one of basic examination and evaluation considerations. Unique factors in examining procedures, anthropometric considerations, biomechanics, and body structure are discussed in relation to the participating athlete. A section on physical perform-

ance and the typical training rationale offers insight into the practical applications of physiologic mensuration upon which much clinical judgment must be based. This section is followed by a discussion of the various environmental influences on athletic performance, with emphasis upon the myriad effects of heat and cold. Inasmuch as the athlete is more than tangible tissue, an overview of the psychodynamic aspects of athletics is offered. And to complete the discussion on examination and evaluation, sections on basic roentgenology and laboratory data in sports care are offered.

Part III discusses the general aspects of trauma, including first aid and emergency care; basic physiologic therapeutic procedures; skin and soft-tissue injuries; muscle, fascia, and tendon injuries; and peripheral nerve injuries. Part III is concluded with a discussion on spinal subluxation considerations, with emphasis upon the neurologic implications.

Part IV offers the practical aspects of examination, symptomatology, rapid differential diagnosis, prognosis, common complications, and conservative therapeutics (primary and ancillary) involved in alert health care. Specific sections are offered for head and facial injuries, traumatic eye and ear disorders, neck and cervical spine injuries, upper extremity disabilities, thoracic and abdominal injuries, pelvic and spinal injuries, and lower extremity disabilities. The best of the recognized methods of articular correction, taping, muscle therapy, trigger-point therapy, physiotherapy procedures, physical support, and other rehabilitative procedures are discussed. In many instances, alternative techniques are offered to meet special needs. For clarity, adjustive and taping procedures are illustrated to support text descriptions.

It should be kept in mind that while many techniques are discussed, a technique is an art, and an art is interpreted by human standards. Thus, an art is not "the way" to do something, but "one way" to do something. Twelve excellent chiropractic physicians may adjust a spinal listing a different way, and twelve expert trainers may tape an ankle a different way—but each will do what is necessary to obtain a correction efficiently.

—RCS

ACKNOWLEDGMENTS

Deep appreciation is expressed to the members of the ACA Council on Sports Injuries, as well as scores of reputable practitioners and educators. Because of their specialized ability and acknowledged expertise, the scope of this text has been enhanced by their contributions to the basic manuscript and their constructive review refinements.

Board of Review and Technical Assistance

While space does not allow mention of all contributors and reviewers, special gratitude must be extended to the following, in alphabetical order:

Charles Brandstetter, DC, ND

President, American Council on Chiropractic Physiotherapy

M. Wayne Brown, DC

President, Council on Mental Health of the ACA

Robin Canterbury, DC, DACBR

Chairman, Department of Roentgenology, Palmer College of Chiropractic

Kim D. Christensen, DC

Director, Sports & Rehabilitation Chiropractic Clinic of Milwaukee, Oregon

Postgraduate Faculty, Western States Chiropractic College

Member, American College of Sports Medicine

Jan M. Corwin, DC

Team Chiropractor, University of California (Berkeley)

Member, American College of Sports Medicine

Brian M. Davis, DC, DACBR, FICC

Secretary, Council on Roentgenology of the ACA

Faye B. Eagles, DC, FICC

President, Council of Women Chiropractors of the ACA

George J. Goodheart, DC, DICA, FICC

Charter Diplomate, Int. College of Applied Kinesiology

Member, Commission on Sports Medicine Modalities of the US Olympic Council

Paul A. Jaskoviak, DC, FICC

President, Council on Neurology of the ACA

Dean, National-Lincoln School of Postgraduate Education

Scott J. Murray, DC

Member, Department of Roentgenology, Northwestern College of Chiropractic

John M. Nash, DC

Dean of Students, Texas Chiropractic College

Shu Yan Ng, DC

Director, Chiropractic Clinic of Hong Kong

Reed B. Phillips, DC, MSCM, DACBR

Research Director, Foundation for Chiropractic Education and Research

W. Health Quigley, DC, MS, FICA

Director of External Affairs, Cleveland Chiropractic College (Los Angeles)

James F. Ransom, DC, FICC

First Vice President, Council on Sports Injuries of the ACA

Michael A. Sabia, Jr, DC, PhD

Lecturer; Ringside Physician, N.J. Boxing Commission

Leonard W. Schroeder, DC, CCTP, FICC

President, Council on Sports Injuries of the ACA

Neil Stern, DC, DACC, FACC, FICC

Executive Vice President, New York Chiropractic College

Cooperating Professional Organizations

American Chiropractic Association (ACA)
Council on Mental Health of the ACA
Council on Neurology of the ACA
Council on Physiotherapy of the ACA
Council on Roentgenology of the ACA
Council on Sports Injuries of the ACA
Council of Women Chiropractors of the ACA
Foundation for Chiropractic Education and Research (FCER)

Cooperating Chiropractic Colleges

New York Chiropractic College (NYCC)
Northwestern College of Chiropractic (NWCC)
Palmer College of Chiropractic (PCC)
Texas Chiropractic College (TCC)
Western States Chiropractic College (WSCC)

Cooperating Service Organizations

Associated Chiropractic Academic Press (ACAP)
Behavioral Research Foundation (BRF)
Contour Comfort Company
Flex-Wedge Company
Gebauer Chemical Company (GCC)
Ohio Chiropractic Equipment & Supplies (OCE&S)
Smith Truss Company, Inc. (STC)
VRB, Inc.
Widen Tool & Stamping, Inc.

CONTENTS

PREFACE	v
ACKNOWLEDGMENTS	vii

PART ONE: INTRODUCTION

1: INTRODUCTION TO SPORTS-RELATED HEALTH CARE	3
The Art of Evaluation	3
The Physician's Responsibilities	3
Areas of Necessary Cooperation	4
The Club or Team Physician	8
Good Health Care	8
Special Considerations in Female Athletes	10
2: ACCIDENT PREVENTION AND CONDITIONING	15
Accident Prevention	15
Conditioning Fundamentals	17
Athletic Equipment and Safety Gear	18
3: COMMUNICABLE DISEASES AND THEIR PREVENTION	27
Background	27
Parasitic Infestations	28
Fungal Infections	30
Common Viral Infections	34
Typical Bacterial Infections	36
4: MISCELLANEOUS SKIN DISORDERS	39
Background	39
Trauma-Associated Disorders	41
Nontrauma-Associated Disorders	44
Toxic Eruptions	45
5: NUTRITION AND PHYSICAL ACTIVITY	47
Nutritional Requirements	47
Meals Before, During, and After Competition	52
Athletic Conditioning Factors Contributing to Malnutrition	53
6: CLINICAL ASSESSMENT ASPECTS OF PHYSICAL FITNESS	55
Assessment of Physical Fitness	55
Body Types	61
Body Mechanics and Its Effects on Athletic Performance	64
Suggested Readings: Part 1	71

PART TWO: EXAMINATION AND EVALUATION

7: EXAMINATION PROCEDURES AND APPLIED BIOMECHANICS	75
Exclusion Criteria	75
The Physical Examination	75
Basic Disqualification Factors	76
Cardiovascular Considerations	77

Respiratory Considerations	78
Alimentary Considerations	78
Renal Considerations	79
Communication	79
Classifications of Physical Activity	80
Anthropometric Considerations	81
Basic Clinical Biomechanics	84
Biomechanics and Trauma	90
8: PHYSIOLOGIC PERFORMANCE AND TRAINING RATIONALE	93
Performance Physiology	93
Underlying Factors in Physiologic Testing	93
Performance Assessment	100
Training Physiology	104
9: ENVIRONMENTAL INFLUENCES ON ATHLETIC PERFORMANCE	107
Body Temperature	107
Environmental Heat	108
Environmental Cold	114
Altitude and Physical Activity	117
Water-Related Activities	118
Electrical Injuries	119
10: PSYCHODYNAMIC ASPECTS OF ATHLETICS	121
Personality	121
Personality Assessment in Athletics	122
Environmental Factors	123
Behavioral Characteristics	126
Emotional Problems in Athletics	131
Sexual and Menstrual Influences	135
Interpersonal Relations	135
Psychodynamic Aspects of Common Skin Disorders	137
Psychologic Influences on Physiology	138
Effects of Chiropractic Adjustments on the Psychologic State	141
11: ROENTGENOLOGY IN ATHLETICS	143
Interpretation	143
Differentiation	143
Bone and Joint Diseases	149
Choosing a Roentgenologic Consultant	154
12: LABORATORY DATA	155
The Blood	155
The Urine	155
The Skin	155
Posture and Distortion Analysis	156
Bilateral Weight Scales	156
Contourography	157
Basal Metabolic Rate	158

Spirometry	158
Electrocardiography	158
Electromyography	159
Electroencephalography	159
Suggested Readings: Part 2	161

PART THREE: GENERAL ASPECTS OF TRAUMA

13: BASIC FIRST AID AND EMERGENCY CARE	165
Tenets of First Aid	165
The Unconscious Athlete	171
Transporting the Injured Player	174
Oxygen Deprivation	175
Cardiopulmonary Resuscitation	178
Cardiac Arrest	181
Hemorrhage	183
Shock	189
Hypothermia	192
Sudden Death in Athletics	193
First Aid Supplies	194
14: PHYSIOLOGIC THERAPEUTICS IN SPORTS	195
Physiologic Therapeutics	195
Therapeutic Cold	196
Therapeutic Heat	198
Galvanic Current	201
Ultraviolet Rays	202
Traction	203
Mechanical Supports	204
15: SKIN AND RELATED INJURIES	207
The Skin and Subcutaneous Tissues	207
Cleanliness	207
Blisters	208
Callosities	210
Corns	210
Contusions	210
Abrasions	211
Lacerations	211
Acute Traumatic Gangrene	213
Hematomas	213
Moist Dressings	215
Bites and Stings	216
Burns and Scalds	219
Frostbite	221
16: BONE AND JOINT INJURIES	223
Bone Injuries	223
Fractures	224

Epiphyseal Disorders	226
Bone Inflammations and Infections	227
Joint Injuries	229
Pertinent Signs and Symptoms	231
Joint Dysfunction vs Joint Disease	235
Soft-Tissue Joint Injuries	236
Dislocations	239
Objectives of Joint Injury Management	239
17: MUSCLE, FASCIA, AND TENDON INJURIES	241
Muscle Injury	241
Muscle and Tendon Strains	244
General Treatment of Muscle Injuries	246
Complications to Strain	246
Myalgia (Fibrositis)	248
Compartment Syndromes	249
Tendon Disorders	250
Trigger Points (Myodysneurias)	252
18: PERIPHERAL NERVE INJURIES	257
Examination	257
Common Symptoms of Neural Disorder	261
Peripheral Nerve Injuries	265
Major Types of Neuritides	267
Autonomic Imbalance	268
Special Therapeutic Considerations	270
19: BASIC SPINAL SUBLUXATION CONSIDERATIONS	273
Spinal Biomechanics	273
Motor-Unit Classification of Subluxations	274
Mechanics Involved in the Spinal Examination	278
Precipitating Factors of Spinal Subluxations	279
Classification of Selected Causes of Spinal Pain	281
Effects of Spinal Subluxations	281
Basic Clinical Considerations	287
Suggested Readings: Part 3	291

PART FOUR: INJURY CASE MANAGEMENT

20: HEAD AND FACIAL INJURIES	295
Trauma to the Head and Scalp	295
Implications, Complications, and Sequelae of Head Injury	306
Injuries of the Face, Nose, and Sinuses	311
Dental Injuries	316
21: TRAUMATIC EYE AND EAR DISORDERS	317
Injuries of the Eye and Vision	317
Injuries of the Ear and Hearing	322

22: NECK AND CERVICAL SPINE INJURIES	327
Emergency Care	327
Soft-Tissue Injuries of the Anterior Neck	328
The Cervical Spine	329
Soft-Tissue Injuries of the Posterior Neck	333
Bone and Joint Injuries and Related Disorders	337
Cervical Subluxation Syndromes	343
23: SHOULDER GIRDLE INJURIES	351
Introduction	351
Injuries of the Scapular Area	353
Injuries of the Clavicle	354
Injuries of the Shoulder Joint	362
Nerve Injuries	383
24: ELBOW, WRIST, AND HAND INJURIES	385
Injuries of the Distal Arm and Elbow	385
Injuries of the Forearm and Wrist	395
Injuries of the Hand and Fingers	405
25: THORACIC AND ABDOMINAL INJURIES	415
Chest Injuries	415
Rib and Sternal Injuries	419
Dorsal Spine Injuries	421
Abdominal Injuries	427
Perineal Area Injury	433
26: LUMBAR SPINE, PELVIC, AND HIP INJURIES	437
Lumbar Spine Injuries	437
Injuries of the Pelvis	452
Injuries of the Hip	460
27: THIGH AND KNEE INJURIES	467
The Thigh	467
The Knee	473
The Patella	492
28: LEG, ANKLE, AND FOOT INJURIES	497
Injuries of the Leg	497
Injuries of the Ankle	506
Injuries of the Foot	517
Injuries of the Toes	527
Suggested Readings: Part 4	531
APPENDIX: EXAMINATION FORMS	535
INDEX	547

Part 1

INTRODUCTION

CHAPTER 1

Introduction to Sports-Related Health Care

CHAPTER 2

Accident Prevention and Conditioning

CHAPTER 3

Communicable Diseases and Their Prevention

CHAPTER 4

Miscellaneous Skin Disorders

CHAPTER 5

Nutrition and Physical Activity

CHAPTER 6

Clinical Assessment Aspects of Physical Fitness

CHAPTER 1

Introduction to Sports-Related Health Care

If you were to ask the average coach about the responsibilities of an athlete, he would most likely reply that he or she was to conduct one's self to the credit of the team, play fair, obey the officials, keep in training, be a credit to the sport, follow the rules, and enjoy the game: win or lose. This is the rhetoric commonly spooned to the naively inclined. If it were true, fewer sports injuries would be suffered.

With rare exception, even the Little Leaguer is commonly taught to WIN, drilled to disguise foul play from the eyes of the referees and umpires. Even in so-called noncontact sports, emphasis is often placed on getting the other team's stars out of the game without causing injury to your own team. While conditioning is emphasized, the motivation is frequently on the preservation of a potential winning season rather than on prevention of a personal injury to a human being.

These words are harsh, but realistic. Yet, doctors handling athletic injuries must have a realistic appraisal of sports today if they are in good conscience to properly evaluate disability and offer professional counsel.

THE ART OF EVALUATION

All people participating in vigorous sports should have a complete examination at the beginning of the season. Re-evaluation is often necessary at seasonal intervals and is always necessary with cases where the candidate has suffered a severe injury, illness, or had surgery.

Evaluation begins with questioning. Because of drilled routine, any doctor is well schooled in the taking of a proper case history. But, with an athletic injury, both obvious and subtle questions often appear. How extensive was the preseason conditioning? How much time for warm up is allowed

before each game or event? What precautions are taken for heat exhaustion, heat stroke, concussion, and so forth? Does the coach make substitution immediately upon the first sign of disability for proper evaluation? How adequate is the protective gear? How many others on the team have suffered this particular injury this season?

Who, what, when, where, how, and WHY? These are the questions which must be answered before any positive course of health care can be extended. A detailed history of past illness and injury is vital. In organized sports, an outline of the regimen of training should be a part of the history, as well as a record of performance. Most sports will require a detailed locomotor evaluation of the player. Special care must be made in evaluating the preadolescent competitor because of the wide range of height, weight, conditioning, and stages of maturation. A defect may bar a candidate from one sport but not another, or it may be only a deterrent until it is corrected or compensated. Many famous athletes have become great in spite of a severe handicap.

THE PHYSICIAN'S RESPONSIBILITIES

If a doctor only had to concern himself with injury prevention, care, and rehabilitation, his role would be much easier. But many other factors are involved. For instance, consider motivation. The average coach has many pressures upon him, as do the players. These pressures may blind a coach to the fact that a player is participating with an injury, playing beyond the point of exhaustion, or playing with an injury where further trauma may lead to permanent injury. Players too, in their enthusiasm, may avoid reporting injury or even try to hide its effects.

The attending physician should mentally

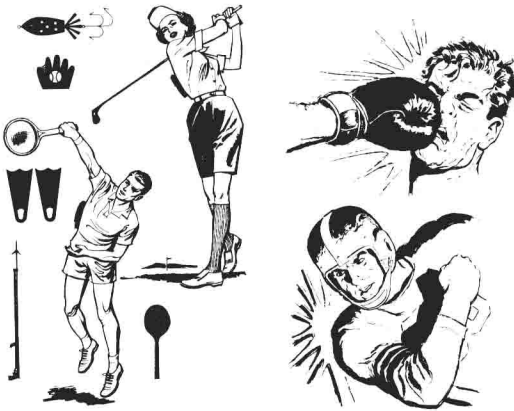


Figure 1.1. Most all sports help to build a healthy body, and most all sports present some risk. Who, what, when, where, how, and why questions must be answered before any positive course of health care can be extended by the doctor (with the permission of the Behavioral Research Foundation).

target that he is only responsible to the patient and his professional code of conduct. He is not responsible to the coach, trainer, ticket buyers, fans, school board, administrators, or the alumni association. Thus the question must be asked: Who has the authority to return an injured player to play or to practice: the physician, the trainer, or the coach? Obviously, no athlete should be allowed to risk permanent damage, regardless of the circumstance. In terms of preassessment before participation or competition, the physician should:

1. Determine the fitness of the individual by a thorough history and examination relative to a particular type of activity, and, when necessary, arrange for evaluation and treatment. During the interview, take note of any prior injuries or weakness from prior competition. Each complaint should be checked thoroughly as some athletes have a tendency to be stoic. New team members should be carefully checked for pre-existing disorders that may compromise an athletic career. In addition, the physician and coach may wish to determine minimum standards of strength and fitness before letting someone participate.

2. Conduct basic clinical tests. A routine full blood count and urinalysis are essential, a standard resting ECG is often important, and a chest x-ray film is desirable. Comprehensive tests should always be taken when clinical symptoms or signs appear. The physical examination should always include a spinal analysis, posture check, and neurologic and orthopaedic evaluation.

3. Advise the candidate with an atypical condition of suitable sports or modifications. While all sports involve some risk, advise, or if necessary restrict, the candidate with overt or covert limitations from activities presenting great risk. Offer professional counsel which would contribute to optimal health and development.

4. Consider a psychologic assessment as to the athlete's goals, attitudes, desires, motivation, and reasons for participation. All physical, laboratory, and psychologic assessment tests must be made with the permission of parents or guardian in case of a minor.

AREAS OF NECESSARY COOPERATION

The doctor must demand a degree of control equal to his responsibilities, and this is often difficult during the heat of competition. The physician's decisions will not always be treated with respect by the nonprofessional. Thus, it is imperative that the doctor do his best in establishing areas of cooperation and an atmosphere of mutual rapport.

A sport is a game, and a game should not unduly jeopardize a person's health or safety. However, the coach and the athlete justifiably expect both serious and minor disabilities to be treated with readiness, skill, and efficiency because any handicap has serious consequences. Both coach and athlete must feel that the doctor understands the problem and is as interested in quickly returning the athlete to competition as they are. Honest, open communication is the cornerstone from which to build trust and confidence.

The Athlete

No rule exists that the athlete must confide in a doctor or accept his recommendations when there is a lack of confidence. The need for sympathetic understanding of the athlete

and his particular problems and aspirations cannot be overemphasized. Creating an atmosphere of mutual confidence and trust is vital to establishing control. Likewise, the development of the athlete's confidence in the doctor will help to prevent "doctor shopping" by the athlete to get the opinion the athlete wants. Without confidence in the doctor, the athlete may not report possible masking or harmful do-it-yourself or over-the-counter remedies or devices.

All disabilities are important, and all must be dealt with individually: not by rote or preference for a favorite "star" or influenced by pressures where each prediction of potential disability may be publicized. Each athlete presents a variance as to strength and weakness, attitudes, motivations and goals, pain threshold, development, body type, the specific acute trauma, etc. In a squad of two dozen, there are 24 unique people. These factors must be analyzed, differentiated, and a therapeutic solution applied.

The Trainer

The ego of a physician is often deflated when he learns that the trainer is held in higher respect. If a team had to choose between a team physician or a trainer, the physician would usually lose. And this respect is usually well earned. The trainer's entire life has been devoted to the care of sports injuries. Loyalty also builds respect. Trainers have often been with the team for many seasons, while physicians have come and gone.

Many trainers and coaches possess a remarkable memory which can recall in detail a similar injury occurring many years ago, its efficient treatment, the exact duration of the rehabilitation process, and the capabilities of the athlete on recovery—to the dismay of a young doctor's professional pride who must at least match the record.

While the trainer is commonly seen at the college and professional level, his aid is usually missing at the secondary and primary levels—and this lack makes the physician's role overly demanding and sometimes impossible. The reason for this is that a trainer must be an expert at applying bandages, splints, dressings, slings, specialized athletic

taping, and other first-aid measures. He is an expert at evaluating, ordering, fitting, and maintaining equipment, and is often called upon to custom design a special piece from available material. The skilled trainer is an expert in physical conditioning, physical rehabilitation, and in a large variety of physiotherapeutic applications and their contraindications. He must be knowledgeable in the risks of various field conditions: what constitutes a safe infield, turf, or track. And, he must be knowledgeable in what an athlete will eat, regardless of nutritional theory and professional advice.

The trainer is often called upon to be squad psychologist, sociologist, counselor, friend, and confident. He serves as father confessor to the troubled athlete and is able to handle a large variety of temperaments and demands under pressure from both squad and staff. The experienced trainer "knows his people" for he lives daily with their complaints, hopes, opinions, personality quirks, and the unchecked locker room shop talk which few doctors are allowed to hear. He knows the art of listening to feelings rather than words and thus gains an insight of capabilities others do not have. This insight is invaluable to both physician and coach who do not enjoy the closeness with the athlete which the trainer is allowed.

A good trainer is more than an assistant to the doctor, he often serves somewhat as a mentor to the new team physician. On the other hand, an unskilled trainer must be carefully judged and evaluated as to capability of delegated duties and willingness to perform. Is there a definite plan for handling a serious injury or health emergency both at games and at practice? Planning ahead is imperative. Duties and procedures must be cordially discussed and mutually agreed upon, not proclaimed. The doctor and trainer have different yet parallel roles, and each should respect the experience and limits of the other. Few young doctors can tape a sprained joint as skillfully as an experienced trainer. The handicap of little mutual confidence is an impossible situation.

Care must be taken that the unskilled trainer does not allow numerous supplements, potions or pills, capsules or contraptions left unattended and available to an ath-