

Medical Injuries In The Martial Arts

ENDORSEMENTS

“...a clever idea. . .detailed explanation. . .recommend it not only for martial arts patrons but also for all sports enthusiasts. . .the most exciting book on injuries ever published.”

- *Grandmaster Ansei Ueshiro and Sensei Robert Scaglione*
3rd Degree Shorin Ryu Karate USA

“...the first good attempt to fill the gap of medical knowledge surrounding the martial arts.”

- *Grandmaster Duk Sung Son and Sensei M. David Stone*
4th Degree World Tae Kwon Do Association

“This book is very informative for martial arts practitioners, their teachers, and medical doctors. It should greatly further the study of injuries in the martial arts.”

- *Master S. Henry Cho*
Tae Kwon Do, Black Belt Hall of Fame

The book was reviewed and evaluated by the Institute of Sports Medicine and Athletic Trauma at Lenox Hill Hospital, New York.

“This book represents a unique, innovative, and definitive study of medical injuries in the martial arts. It will serve as the standard of reference for students, instructors, and physicians who deal with the various medical aspects of the martial arts in the years to come.”

- *Grandmaster Richard Chun*
World Headquarters for Tae Kwon Do and Moo Duk Kwan

“Medical studies of the martial arts have long been needed. This book represents a great step forward in specifically understanding the injuries and treatment of martial arts injuries. It should be of great assistance to sports physicians and dedicated practitioners of the martial arts.”

- *Michael D. Roback, M.D.*
Representative to the Medical Committee of the Karate Section of the AAU
Chief of the Section for Research of the Physicians Martial Arts Association

“The study of karate related injuries and their treatment has been one of the most neglected areas in the sphere of martial arts development. The Birrers' excellent book details in laymen's terms the most common injuries and gives easy-to-understand suggestions for their treatment. A must for every Sensei. Recommended for all practitioners.”

- *Professor Alex Sternberg*
4th Dan, Shotokan Karate Institute
Coach of the United States National Karate Team
Gold Medalist 1979 Pan Am Maccabee Games

“This book is sorely needed at this time because of the rapid growth of the martial arts throughout the world. I would highly recommend it as required reading for anyone involved in judo and karate. It is a very clear guide to understanding the causes of injuries one might possibly encounter during practice or tournament competition. Athletes, coaches, and trainers should be totally familiar with the contents of this book and keep a copy handy as a daily guide to training, especially as a *preventive measure*.”

- *Charles Merriman*
6th Dan Goju Ryu Karate Do
Head Coach US/AAU Karate Team

“This book will help to enlighten the various instructors around the country who practice treating martial arts injuries at local tournaments and will fulfill the critical need to have competent medical personnel on hand. It is hoped that many of our black belt 'doctors' will read and understand what is being said in this book. There can be no excuse for an instructor's failure to have anyone other than qualified persons in the field of medicine attend these injuries.”

- *Thomas LaPuppet*
5th Dan, Metropolitan AAU Karate Chairman
Black Belt Hall of Fame 1969
Assistant Coach Maccabbia Games

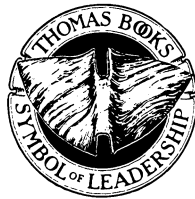
Medical Injuries In The Martial Arts

By

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and

CHRISTINA D. BIRRER, M.S.



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This book is dedicated to Lee and Marjie, The Sensei,
and students devoted to the study, instruction, and
philosophy of the martial arts.

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Introduction

THE introduction of the martial arts in the United States represents a unique marriage between Western and Eastern philosophies. For many, karate, kung fu, jujitsu, and judo conjure up a romantic chivalrous mystery coupled with an inordinate fear of smashing boards, bones, and bodies. The unrealistic picture of a black belt samurai warrior taking on incredible odds and being victorious is, in fact, embodied in the reality of fitness of body, mind, and spirit uniquely balanced to produce an individual more able to cope with the problems of a changing society.

Thousands of years have passed since the inception of the martial arts, and during that time it has been polished and refined into a highly precise science with many categories and branches. Today there are hundreds of different school styles and there are even variations within a particular school. In addition, new styles continually develop and are taught, thus emphasizing the dynamic and progressive nature of the martial arts. The impetus to the martial arts is enhanced by the current social need to exercise and stay fit as well as learn self-defense in a society filled with ever-increasing dangers. The advertising and cinema industry promote the arts, and easier faster modes of travel allow a close interaction with the countries from whence the arts arose. Western thought as a result is becoming more and more tempered by Eastern methodologies. For all these reasons there is fertile ground for the development and maturation of the martial arts as never before.

The training of an individual is long; the masters will tell you a lifetime. It is not only a physical, but also a spiritual and intellectual ordeal; it is a quest for a stronger, more durable self, a confident mind, and a happier heart. As a student begins his studies in the arts, his movements are incoordinated and undisciplined; his thinking and the summoning of his inner strength (chi) are weak. Only after a prolonged period of repetitive training do these abilities take form and improve. During this period many exercises are undertaken, the most fundamental of which are attaining total fitness (strength coupled with cardiovascular endurance) and concentration.

Only after self-confidence, fitness, and knowledge are reached will a student easily break boards, bricks, or other objects as a testament, not so much to his strength, but to his concentration. Throughout this period he also performs kumite, a form of disciplined coordinated fighting in which the student puts to use his endurance and techniques. Various degrees of contact are allowed, depending on the particular style. Control and coordination of the technique is carefully controlled by the student and closely monitored by the instructor. It is a matter of personal pride in each student to perform the technique correctly and not injure his opponent. An observer will often see a contestant respectfully bow to his opponent after he has accidentally struck him. An individual may be disqualified if he strikes a prohibited area such as the head, groin, or kidney region. There also are full contact tournaments which incorporate protective equipment: headwear, cups, hand and foot gear. Rarer still there are contests with full contact using no protective apparatus, with the ultimate goal to knock the opponent out.

Despite such intensive and disciplined training and protective equipment, injuries do occur in all degrees. In the old days at the famous Shaolin Temple and other schools, martial arts training included intensive training with herbs and other medicines so that the graduate was not only an expert in combat but also a leader competent in medicine, history, religion, and politics. The vast majority of instructors today lack first aid and cardiopulmonary resuscitation ability. Furthermore, many doctors are ignorant of the injuries that occur in the martial arts. With the ex-

ception of our reported survey there has been no collaborative study concerning injuries in the martial arts. To date there have only been sporadic reports regarding particular injuries; the overall injuries considered to be extremely low.

The authors are most pleased to report the results of their international survey and its implications. It is the purpose of this book to discuss the various injuries that occur in the martial arts. It is devoted primarily to the instructor whose ultimate responsibility is the dissemination of the martial arts through safe teaching and the physician who will often be required to collaborate on the care of the martial arts athlete. Few physicians today have been specifically trained or even studied sports medicine, though its necessity is becoming daily more imperative. For them the book should be a guide to such care. Finally the student, should add this material to his training, for only in good health and safety will he, like his ancestors, be able to complete his difficult training.

Therefore, the cause of the martial arts will be furthered in the world if its instructors, physicians, and students have a confident knowledge and treatment regimen of the various injuries which can occur during their rigorous training. In such a way will the wedding between Eastern and Western styles grow, prosper, and attain fulfillment.

Richard B. Birrer, M.D.

Christina D. Birrer, M.S.

Any work which is new in its field naturally arouses curiosity, criticism, and hopefully further investigation. We invite and challenge you, the reader, to share with us your ideas, experiences, and unusual injuries so that the next edition will be more complete and exact. Please write to the following:

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Brooklyn, New York 11203

How To Use This Book

THE material in this book is designed for the instructor, physician, and student of the martial arts. It is arranged to provide not only a handy reference work for the physician but also a guide for the instructor and student in recognizing an injury and treating it in the dojo if possible. The language in the book is practical and designed for the layman. Unless otherwise denoted all medical terms are defined. Each chapter is broken down into parts, thus providing easy reference: i.e. Chapter 3-The Head, 3.2-The Eye, 3.21-The Cornea. Also those sections set in sans serif typeface denote material of interest to the physician, since they require a more detailed knowledge of medicine.

Chapter 1 contains a summary and review of the martial arts injury survey. It is mathematically analyzed and presented in raw figures, percentages and levels of statistical significance.

Chapter 2 contains a detailed description of the common important injuries in the martial arts: their presentation, mode of occurrence and management. Their discussion serves as a basis of referral for later chapters (3-10) dealing with specific areas of the body.

Chapter 11 is a standard presentation of cardiopulmonary resuscitation (CPR) which is fundamental to all emergency care. It should be carefully read and studied in the event that such an emergency should arise.

The Appendix contains a list of items that should be easily available for a dojo emergency. The items are inexpensive and are to be used for basic first aid.

Since the book is arranged according to the basic anatomy

of the body, a reference summary chart using common terminology is supplied: (Figure 1). In addition, this anatomical chart can be compared with the striking point chart also provided which hangs on many dojo walls: (Figure 2). The target chart also contains the data derived from the survey, indicating the percentage of injuries in that particular area.

Finally, a partial compilation of weaponry is presented for reference since occasional injuries are secondary to the usage of one or more of them: (Figure 3).

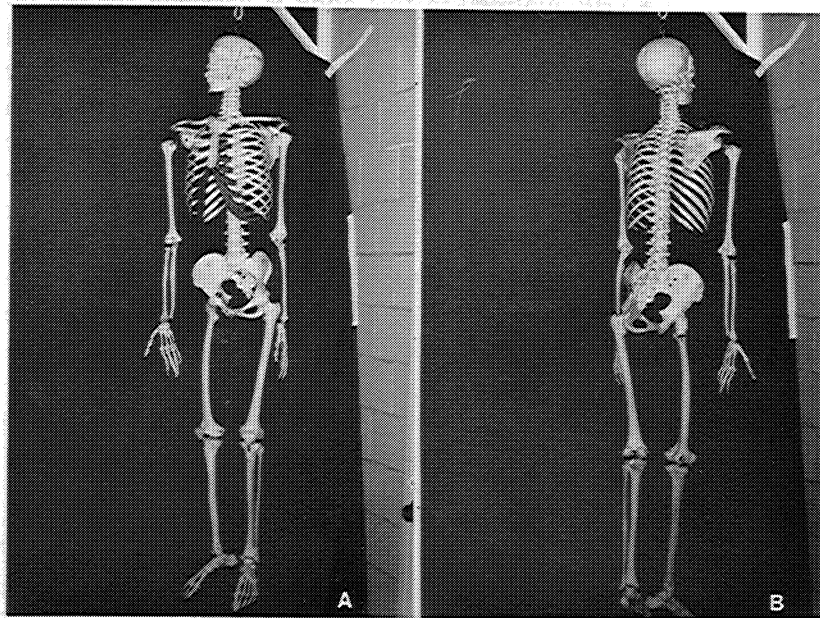


Figure 1 A and B. Anterior oblique and posterior oblique view of the human skeleton.

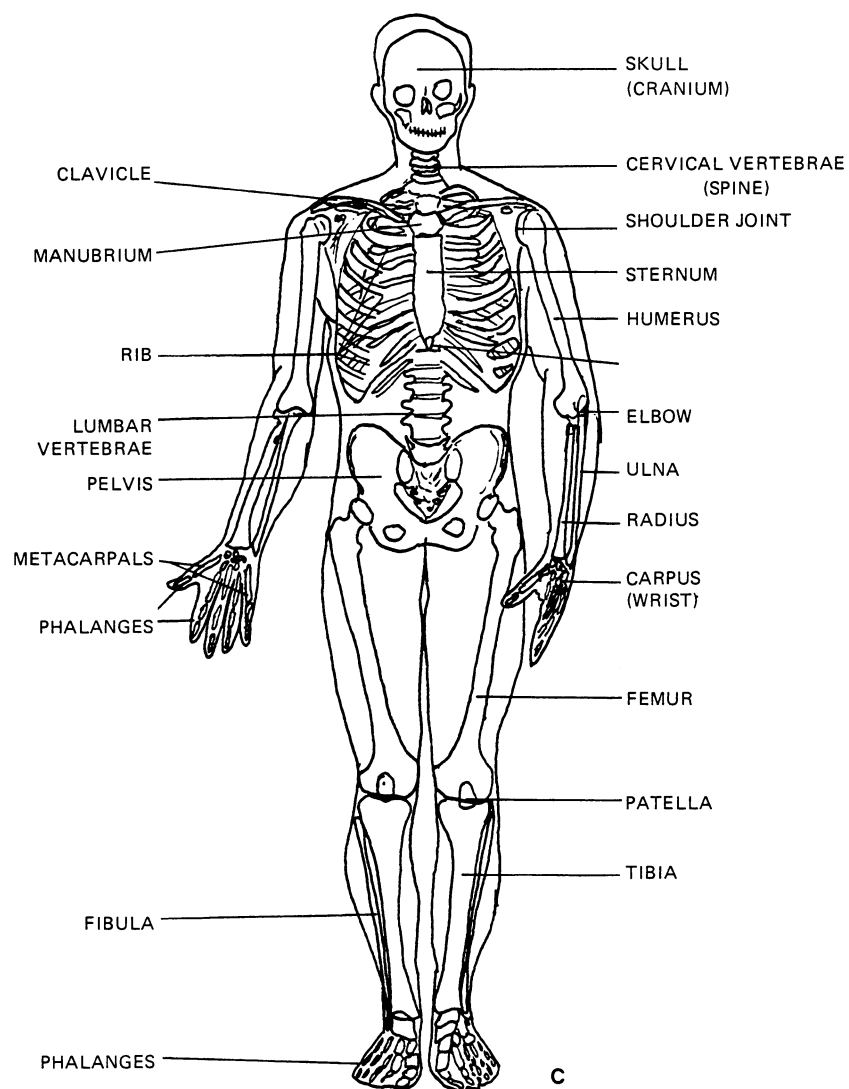


Figure 1 C. The bones of the anterior skelton.

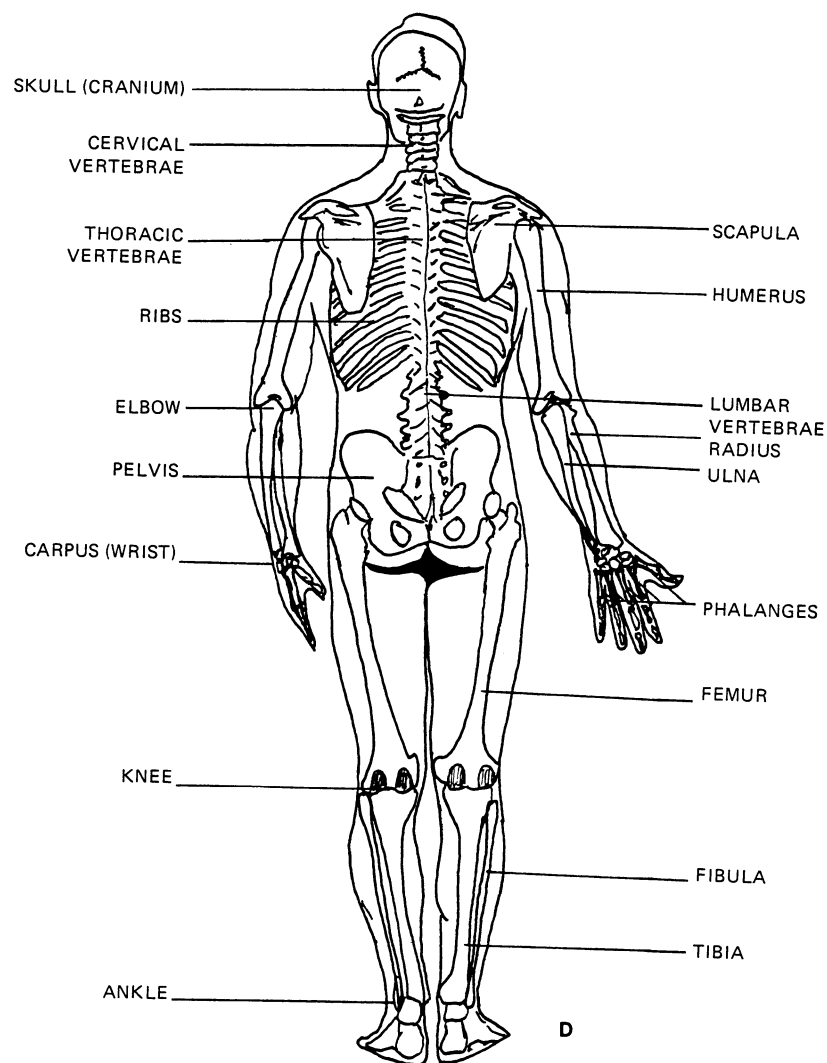


Figure 1 D. The bones of the posterior skelton.

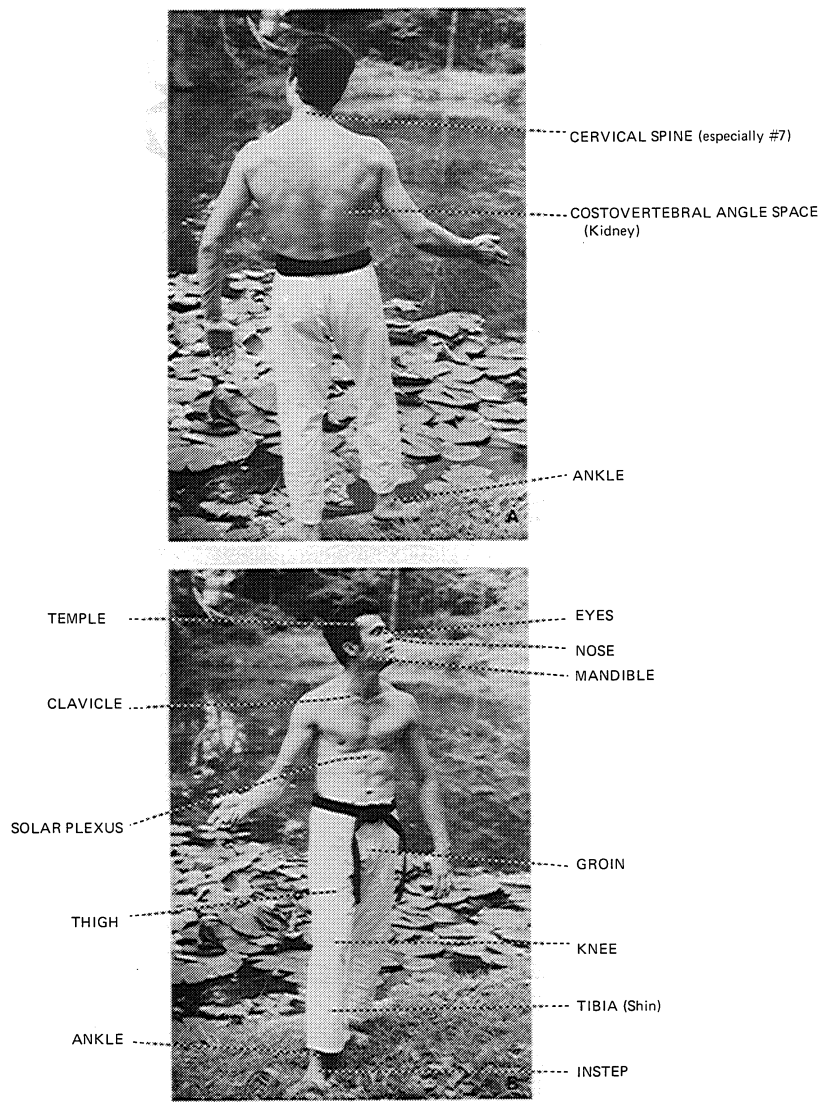
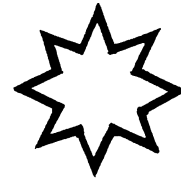
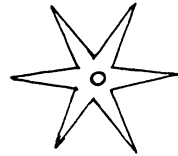


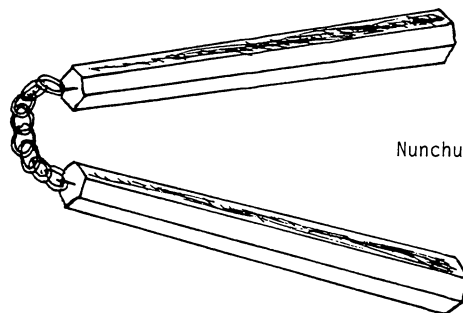
Figure 2 A and B. Common striking points in the martial arts.



Shurikens(stars) or Ninja
Throwing Blades

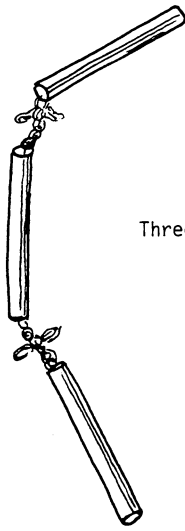


Sickle-Key Spearhead

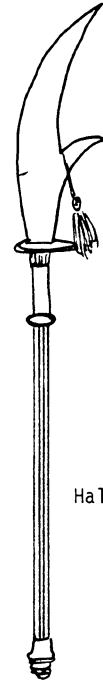


Nunchuka

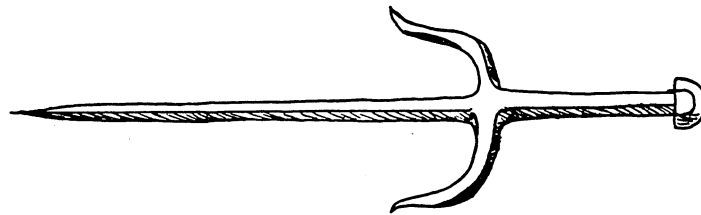
Figure 3 A, B, and C. Examples of weapons used in the Martial Arts.



Three Sectioned Staff



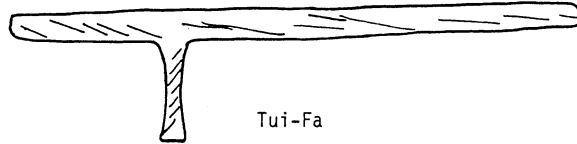
Halberd



Sai



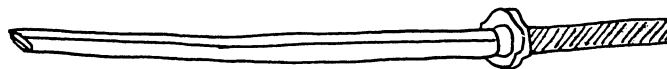
The Long Staff



Tui-Fa



Shinai:bamboo sword used to practice Kendo



Bokken:wooden sword used to train for the Samurai

Contents

	<i>Page</i>
<i>Acknowledgments</i>	vii
<i>Introduction</i>	ix
<i>How to Use This Book</i>	.xiii
<i>Chapters</i>	
1. The Numbers	.3
2. Common Injuries and their Standard Management	10
2.1 Contusion	11
2.2 Hematoma	12
2.3 Dislocation	16
2.4 Sprain	18
2.5 Strain	20
2.6 Open Wounds	23
2.7 Skin Infections	28
2.8 Tenosynovitis	30
2.9 Bursitis	31
2.10 Ganglion	32
2.11 Muscle Spasm	34
2.12 Fracture	35
2.13 Phlebitis	38
2.14 Nerve Injury	39
2.15 Myositis Ossificans	40

3. The Head	42
3.1 Skull	43
3.2 Brain	47
3.3 Eyes	49
3.4 Ears	53
3.5 Nose	54
3.6 Mouth	55
3.7 Miscellaneous	59
4. The Neck	63
4.1 Cervical Spine	65
4.2 Muscle	70
4.3 Airway	70
5. The Chest	73
5.1 Rib and Sternum	74
5.2 Lung	78
5.3 Heart	79
6. The Abdomen	82
6.1 Trauma to Abdominal Wall	82
6.2 Liver	83
6.3 Spleen	83
6.4 Intestines	83
6.5 Bladder	86
7. The Back	89
7.1 Thoracic Spine	89
7.2 Lumbar Spine	92
7.3 Muscle	96
7.4 Kidney	99
8. Upper Extremity	102
8.1 Shoulder	102
8.2 Arm	122
8.3 Elbow	123
8.4 Forearm	130
8.5 Wrist	134
8.6 Hand and Fingers	139

9. Lower Extremity.	160
9.1 Hip.	160
9.2 Thigh	162
9.3 Knee.	164
9.4 Leg.	175
9.5 Ankle	180
9.6 Foot and Toes	186
10. The Pelvis	196
10.1 Contusion	196
10.2 Fracture	199
11. Cardiopulmonary Resuscitation	201
12. Conclusion.	208
<i>Appendix: The Martial Arts First Aid Cabinet.</i>	<i>210</i>
<i>Bibliography.</i>	<i>211</i>
<i>Index</i>	<i>.</i>

Medical Injuries In The Martial Arts

CHAPTER ONE

The Numbers

RIGHTFULLY this chapter and essentially the book should begin with the statement that the martial arts from a professional and lay point of view is a very safe sport. Compared to the other familiar competitive sports such as football, rugby, ice hockey, basketball, or baseball, the martial arts has injuries that are fewer in number and severity. However, injuries nonetheless occur, the majority of which are minor requiring only attention in the dojo.

Historically speaking, for centuries the martial arts evolved in an atmosphere of social repression and secrecy. Different schools developed their own style and technique, and actually fought with other schools for supremacy. There was no cohesive unity, intermingling of ideas, or investigational study of these various methods, because these freedoms were denied by authority. It was only after this century's world wars that Western and Eastern thoughts and ideas began intermixing and unlocking years of shadowy philosophy, history, religion, and government. With it the martial arts were reborn and came into their own.

Since that time the arts have flourished in popularity and acceptance. Hundreds of new styles and schools have been added to this rapidly growing sport that is no longer stifled by social repression. Unfortunately, little scientific investigation has been accomplished concerning the different methodologies of techniques or fitness. There are many reasons for the gap in knowledge. Primarily, there is no central organization for the martial arts per se and secondarily, society as well as the martial arts are somewhat refractory to researching a field which by history has been en-

shrouded by mystery and unacceptance.

There have only been sporadic reports in the literature concerning the incidence of injuries in the martial arts particularly Judo in the last forty years. The studies that have been done report types of injuries but do not comment on statistical significance or treatment. Based on this paucity of information we availed ourselves the opportunity to design, implement, and analyze a unique, cooperative study. An international survey was taken concerning the number, severity, and type of injury and body location which occurred in the various styles of the martial arts. Seventy-three percent of the surveys were completed and returned, representing a total of 107 schools and 26 different styles of the martial arts. The results are tabulated in Tables I-V.

TABLE I
Summary of Data

TOTAL INJURIES: 24112
TOURNAMENT INJURIES: 14164 (59%)
NONTOURNAMENT INJURIES: 9948 (41%)
TOTAL MARTIAL ARTS YEARS: 9800
TOTAL NUMBER OF ATHLETES: 6347

TABLE II
The Number and Percentage of each injury in the
various body areas under nontournament conditions.

TYPE LOCATION	LACERA- TION	CONTU- SION	SPRAIN STRAIN	FRAC- TURE	DISLOCA- TION	TOTAL
HEAD	179 13.8	321 7.1		28 3.2		528 5.6
NECK	31 2.4	97 2.1	99 3.6	9 1	2 0.4	238 2.4
SHOULDER	56 4.3	258 5.7	176 6.4	54 6.2	104 20.3	648 6.5
ELBOW	79 6.1	311 6.9	48 1.7	17 2	37 7.2	492 4.9
ARM FOREARM	155 11.9	429 9.5	155 5.6	41 3.8	7 1.4	787 7.9
WRIST	44 3.4	295 6.5	212 7.7	61 7.1	7 1.4	619 6.2
FINGERS HAND	121 9.3	333 7.4	143 5.2	211 24.4	281 54.9	1089 10.9
TRUNK	87 6.7	395 8.7	334 12.2	104 12	4 0.8	924 9.3
GROIN	13 1	139 3.1	286 10.4	12 1.4		450 4.5
HIP	62 4.8	347 7.7	213 7.8	11 1.4	2 0.4	635 6.4
KNEE	78 6	22 4.9	292 10.6	13 1.4	6 1.2	611 6.1
THIGH LEG	167 12.8	486 10.7	354 12.9	36 4.2	4 0.8	1047 10.5
ANKLE	81 6.2	467 10.3	313 11.4	71 8.2	7 1.4	939 9.4
FOOT/TOES	147 11.3	425 9.4	121 4.4	197 22.8	51 10	941 9.5
TOTAL	1300 13.1	4525 45.5	2746 27.6	865 8.7	512 5.1	9948 100

TABLE III
The Number and Percentage of each injury in the various
body areas under tournament conditions.

TYPE LOCATION	LACERA- TION	CONTU- SION	SPRAIN STRAIN	FRAC- TURE	DISLOCA- TION	TOTAL
HEAD	331 16.8	409 6.5		59 4.6		799 5.6
NECK	59 2.9	151 2.4	169 4.3	13 1	2 0.3	238 2.8
SHOULDER	97 4.8	498 8	243 6.1	87 6.8	97 15.2	1022 7.2
ELBOW	122 6.1	501 8	75 1.9	29 2.3	22 3.4	749 5.3
ARM FOREARM	302 15	607 9.7	219 5.5	49 3.8	12 1.9	1189 8.4
WRIST	60 3	398 6.4	287 7.2	73 5.7	9 1.4	827 5.8
FINGERS HAND	197 9.8	418 6.7	201 5.1	325 25.4	387 60.6	1528 10.8
TRUNK	131 6.5	455 7.3	499 12.6	125 9.8	8 1.3	1218 8.6
GROIN	45 2.2	196 3.1	401 10.1	14 1.1		656 4.6
HIP	111 5.5	521 8.3	293 7.4	16 1.2	2 0.3	943 6.7
KNEE	105 5.2	306 4.9	413 10.4	19 1.5	10 1.6	853 6.0
THIGH LEG	181 9	659 10.5	544 13.7	51 4	10 1.6	1445 10.2
ANKLE	107 5.3	543 8.7	417 10.5	101 7.9	6 0.9	1174 8.3
FOOT/TOES	161 8	597 9.5	214 5.4	321 25	74 11.6	1367 9.7
TOTAL	2009 14.2	6259 44.2	3975 28.1	1282 9.1	639 4.5	14164 100