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Invitation to the International Contest for the Carl Diem Plaquette 1971/72

1. Every two years the German Sports Federation (Deutscher Sportbund) awards the Carl Diem Plaquette for an outstanding scientific paper relating to the field of sport.

2. In special consideration of the fact that the Olympic Games of 1972 will be held in Munich entries for the contest are invited on an international scale.

3. The award of the Carl Diem Plaquette in 1972 will be accompanied by a prize in money of up to DM 10.000,–. Other scientific papers relating to the field of sport submitted within the framework of the contest may be awarded a prize in money or receive commendation.

4. The papers must be submitted in the German, English or French language. They must not have been published before and may not be published either in whole or in part or made the subject of contract negotiations until the end of the contest and the grant of the awards. Habilitation theses and theses for an academic degree may be considered only if they have not yet been made available to the public.

5. The final date for submitting the papers to be addressed in six copies by registered mail to Deutscher Sportbund, 6000 Frankfurt am Main, Arndtstrasse 39, will be February 1st, 1972, the postmark serving as proof. Papers submitted at a later date will not be considered.

6. The six submitted voucher copies of the papers awarded the Carl Diem Plaquette or other prizes will become the property of the German Sports Federation. Two voucher copies each of all other papers will remain with the German Sports Federation as library copies.

7. A paper awarded the Plaquette or a prize in money may be published in the "Wissenschaftliche Schriftenreihe des Deutschen Sportbundes" (Series of Scientific Publications of the German Sports Federation), if the Committee so decides. Publication by another publisher or any other form of publication will not be allowed until the final selection of these papers.

8. In order to safeguard the anonymity of the writer, the papers will be submitted under a code word. Each paper must be accompanied by a closed envelope showing the code word and containing the following data:
   a) name, adress and short curriculum vitae of the writer;
   b) a statutory declaration to the effect that the paper has been prepared by the writer without any assistance and that the entry for the contest conforms to the conditions of the invitation;
   c) a complete listing of the aids used as well as an assurance that no other aids were used (provided such statements are not already contained in the paper itself);
   d) a declaration stating whether, where and in what version the paper has already been the object of a contest.

   If the anonymity of the writer is not maintained during the proceedings through the writer's own fault the paper submitted by him will be excluded from the contest.

9. The result of the contest will be announced at a festive gathering arranged by the German Sports Federation.

Frankfurt am Main, March 1st, 1971

COMMITTEE FOR THE AWARD
OF THE CARL DIEM PLAQUETTE

Professor Dr. Dr. h. c. Dr. h. c. Erich Burck
(Chairman)

BOOK REVIEW

APPLIED KINESIOLOGY

Edited by:- C. R. Jensen and G.W. Schultz

Published by:- McGraw-Hill, U.S.A.

Price on application to the Publishers.

The effective management of Sports injuries demands a clear understanding of body mechanics in general, and the mechanics of the sport in particular. There are already a number of publications in this field, and this new book published in the McGraw Hill Series in Education is one of the better books on the subject, although the American bias may perhaps make it less attractive to the European reader.

While the selection of a basic manual of kinesiology must be a matter of personal preference this text-book is well worth serious consideration.

J. G. P. Williams, F.R.C.S.Ed., D.Phys.Med.

THE SPORTS COUNCIL

As we go to Press, we learn that the Sports Council is to be re-organised, and will be able to act as a grant-awarding body of Government, instead of its present advistory status only. We are pleased to learn that the Chairman is to be Dr. Roger Bannister.

Dr. Bannister is an Hon. Life Member of the B.A.S.M., and for the past two years has been a most valuable member of the Executive Committee.

NEWSLETTER

The ACSM Newsletter is produced under the guidance of the Public Information Committee of ACSM, Harry Olree, chairman. Members: David Costill, William Haskell, Arne Olson, Michael Pollock, Russell Simmons, and Merritt Stiles.

American College of Sports Medicine Newsletter: Owned by American College of Sports Medicine, 3034 Stadium, 1440 Monroe, Madison, Wisconsin 53706. Published Quarterly in January, April, July and October at Harding College, Searcy, Arkansas 72143. Second class postage paid at Searcy, Arkansas 72143.

Guest Column on Meeting

The first joint meeting of the American College of Sports Medicine and the Canadian Association of Sports Sciences will take place at the Inn on the Park in Toronto, Ontario, May 10, 11, and 12, 1971. The Program Committee composed of John Faulkner, John Boyer, and Al Craig from ACSM and Tom Fried, Max Avren and Roy Shephard of CASS have been working since the Albuquerque meetings on the Symposia and on the Program Format.

The program includes more Symposia than have been scheduled for several years. On Monday, May 10, at 1:30 p.m. Al Craig of ACSM will chair a Symposium on "The Role of Rules, Equipment and Training in the Prevention of Sports Injuries." Ken Clark will present the basic format and then speakers with experience in training, coaching, and medicine will present their views. A panel organization is designed to involve the audience in the discussion. On Tuesday, May 11 at 9 a.m. John Boyer of ACSM will chair a Symposium on the "Organization and Conduct of Fitness Programs." Speakers will discuss fitness programs with different emphases and purposes. Tuesday, at 1:30 p.m. John Merriman of CASS will open a Symposium on "Theraputic Rehabilitation." Rehabilitation of post coronary patients, patients with chronic chest disease, amputees, and crippled children will be treated. Albert Taylor of CASS will chair the final Symposium Wednesday, May 12 at 9 a.m. on "The Metabolic Adaptations to Physical Activity." Discussion will focus on adaptation of muscle, of glucocorticoids and carbohydrate metabolism of insulin and glucose turnover, and of substrate metabolism.

The Free Communication Sessions will focus on such general topics as rehabilitation of the patient who has had a myocardial infarct, the effects of exercise on various substrates and organs, physical characteristics of women gymnasts and runners and physiological responses of women to exercise and sports, heart rate response to various stresses, relation of respiratory variables to phyical fitness and age effects of anabolic steroids on the performance of rats, effects of exercise on physiological characteristics of the rat heart, personality profiles and phychological response of athletes and non-athletes, regulation of temperature and estimation of the temperature response to exercise, human metabolism in exercise, maximum oxygen uptakes of specific populations, and sports injuries.

Rather than split the American College of Sports Medicine or The Canadian Association of Sports Sciences into small interest groups, the Program Committee hopes that this program format will provide a diversified program that will bring members of different backgrounds together in selected sessions. At the same time, small special interest groups may be serviced at other sessions. The concurrent sessions have enabled us to schedule 4 symposia and 86 Free Communication Papers, yet allow more free time between sessions for informal exchange and visits to the exhibitors. We welcome your comments and recommendations either verbally at the Meetings or in writing afterward on the success of this arrangement.

John Faulkner, Co-Chairman
Program Committee

EDITORIAL

HARRY OLREE

The American College of Sports Medicine, chartered as an interdisciplinary organization with 54 members in 1955, now has approximately 1,800 members. Many of the objectives of the organization, as stated when the College was founded, are being achieved. Forums are provided through annual regional and national meetings for the interchange of ideas by physicians, physical educators, physiologists and other allied scientists. Further efforts to promote postgraduate education include the publishing of the Newsletter, the Journal, and a list of members who are qualified and willing to lecture or conduct workshops in the area of sports medicine.

The interdisciplinary nature of the organization which provides for an exchange of ideas between the various disciplines is excellent, and the efforts being made to disseminate knowledge are commendable. However, for the most part, these activities result in members "talking" to members only. If the ACSM is to reach its greatest potential for service some means must be found for getting reliable information to the thousands of coaches, trainers, physical educators and team physicians who are not members of this organization. A means of speaking officially on current medical problems in sports in terms that are not, in Dr. Bert Hyman's words. "OMH" (Over My Head) for the average consumer of this information is needed.

Perhaps this could be accomplished through timely releases of position papers to the news media who would give them national coverage. Some topics which might lend themselves to official pronouncements are: (1) heat and/or altitude acclimatization, (2) the use of drugs in athletics, (3) diet and it's implications for health as well as performance, (4) rehabilitation of athletes and when they should be returned to competition, (5) the use of vitamins, (6) the recommendation of rule changes where the health and safety of the athlete is endangered, and (7) physical training for young athletes and the optimal age at which to begin contact sports.

Sample Abstracts from Each Free Communications Section

Age and Response to Coronary Rehabilitation

By Roy J. Shephard and T. Kavanagh
Dept. Phys. Hyg., University of Toronto
and Toronto Rehabilitation Centre
Rumsey Road, Toronto

A total of 31 patients have participated in a programme of graded physical activity for up to two years following myocardial infarction. Approximately half of this group now earn 30-65 "Aerobics" points per week. Younger patients show the expected fruits of improved cardio-respiratory fitness (decrease in excess weight and skinfolds, greater strength, increase of stroke volume, maximum cardiac output and aerobic power), with associated improvements in the e.c.g. response to exercise. Older patients fail to earn the requisite points, and show much less improvement of physical condition; we believe the limitation in response has a physiological rather than a motivational basis.

Exercise Effects on the Kidneys at Different Ages

Arthur S. Leon, M.S., M.D.
and Colin M. Bloor, M.D.
Dept. of Clinical Pharmacology
Hoffmann-La Roche Inc, Nutley, N. J.
and Dept. of Pathology, UCSD

School of Medicine, La Jolla, Calif.

A decrease in renal blood flow occurs during endurance exercise associated with urine changes suggestive of kidney damage. In order to determine the effects of chronic exercise on the kidneys at different ages, 120 young (1 month old), adult (3 to 4 months old) and old (more than 12 months old) rats swam 1 hour either daily or twice a week for 10 weeks and then were killed along with unexercised controls. The kidneys were removed, weighed and fixed in formalin. Sections were prepared for histometric analysis including line sampling and planimetric measurements on camera lucida drawings of renal components. With both degrees of exercise, young rats showed lower kidney weight, fewer glomeruli and less medullary tissue than unexercised controls. In adult rats no significant diferences were noted between exercised and unexercised rats. In old rats both degrees of exercise resulted in a loss of kidney weight and a decrease in medullary and cortical mass and glomerular size with glomerular number remaining unchanged. Thus the effects of chronic exercise on the kidneys varied with age. Retarded kidney development occurred in the young and loss of renal tissue in the old, while no apparent kidney changes were observed with exercise in adult rats.

The Retarded Leg Syndrome

By John F. Fahey, M.D.

The purpose of my study was to find the cause for ankle, knee and hip injuries. One year old babies demonstrate preference for the right hand. Most hip dysplasias are found on the left hip of man and animals. The left foot turns out and the posterior tibial muscle is not as developed as the right. The achilles tendon insertion is medial to center of the heel bone. Man stands on one foot and walks with the other. Examination on the supine position reveals reduced ranges of movement of all joints of the turned out foot as compared with the straight foot. Nobody escapes this syndrome which is acquired during late interuterine life. Full growth of the foot takes twenty years. Soft moccasins permit unrestricted growth and contact with the earth. Early reversal of the imbalances require stretching of the achilles tendon and developing some degree of eversion of the heel bone. The equalizing of both feet and achilles tendons imparts an upper relaxation of all articulations. Standing upright push both knees over the second toes and recover several times; or with both knees forward make circles clockwise and counter clockwise with the pelvis.

Effects of Three Different Durations of Endurance Exercises upon Serum Cholesterol

Ali Tooshi, Ph.D., Jersey City State College

Purpose: The purpose of this study was to compare the effects of three different durations of exercise on cholesterol, body composition, and certain fitness measures.

Method: Thirty-two men 27 to 54 years of age were randomly assigned to one of the four groups on the basis of their initial cholesterol. Groups I, II, and III exercised 15, 30, and 45 minutes a day for five days a week for a total of 20 weeks with the same intensity. Group IV served as Control Group. The training program consisted of endurance walking, jogging, and running. Fasting serum cholesterol, body composition, resting pulse rate, blood pressure and brachial pulse wave were measured. A two-mile run and an all out treadmill run test were administered. Average caloric cost of exercise for each group was determined.

Results: The study showed that 45-min. exercise group made significant change in all test items. The 30-min. group did not change in cholesterol, but did improve in other test items. The 15-min. group improved only in fitness measures.

Conclusion: Less than 45 minutes exercise a day did not produce significant change in cholesterol.

Smoking Habits, Chronic Lung Disease and Physical Fitness

D. A. Cunningham, H. J. Montoye,
M. W. Higgins and J. B. Keller
Department of Physiology and Phy. Edu.
The University of Western Ontario,
London, Canada

Relationship between cardiovascular fitness (heart rate response to a sub-maximal step-test) and smoking habits, chronic lung disease, and ventilatory lung function was studied in 3,400 males and females (ages 16 to 69).

It was observed that male smokers had consistently higher heart rates in all age groups than non-smokers. Differences in females were not as great. However, few of the age specific differences were statistically significant. Male chronic bronchitics had higher heart rates before, during and after exercise than those subjects without bronchitis. Few females had chronic bronchitis and the results were inconclusive. Few age specific groups, either males or females, indicated significantly different mean heart rates for subjects who reported shortness of breath. Male subjects who had the highest F.E.V.1.0 values also had the lowest heart rates at rest or exercise. This trend was not clear for female subjects.

In general, those subjects who do not smoke, are free from chronic lung disease and/or have superior lung function, also have a better cardiovascular response to exercise. (Supported by the Center for Res. in Diseases of the Heart, U. of Mich., under Grants HE-0984 and HE-12755, Nat. Inst. of Health, U.S.A. and in part by a Grant from Fitness & Amateur Sport Directorate, Ottawa, Canada.)

The Effects of Exercise and Dianabol Upon Selected Performance and Physiological Parameters

Barry S. Brown, Arthur Pilch
University of Arkansas

The use of anabolic steroids to increase muscle mass has become widespread despite FDA warnings against using these potent drugs to enhance performance. The present investigation was undertaken to determine the effects of 6 weeks administration of Dianabol (menthyl-androstenolone) upon levels of performance, organ weights, heart rate and systolic blood pressure in adult male albino rats. Animals were injected daily (S.Q.) with a placebo (sesame oil), low dose (½ mg/kg) or high dose (5 mg/kg) of Dianabol and subjected 5 days/week to one of three treatments: sedentary housing control, high jumping exercise or treadmill running. At sacrifice, internal organs were extracted and weighed to the

nearest mg. Adrenal gland, brain and heart weights significantly increased among high jumpers. Testes, kidney and levator ani weights significantly increased in rats injected with low doses, whereas, only testes weight increased in rats exposed to high doses of drug. Performance (Chi Square analysis) was not affected by either high or low dose of Dianabol throughout the 6 week regimen.

Stereotypes of Football Players As A Function of Positions

Roger L. Williams and Zakhour I. Youssef
Eastern Mich. Univ.

Sports experts seem to agree that different football positions require different personality characteristics and a varied level of motor skill, **e. g.,** quarterback position presumably demands a calm personality, a cerebral endowment, and great motor finesse. By contrast, some other positions may require sheer physical strength and a combative, aggressive personality. This study investigated whether football coaches stereotype players according to their various positions and attempted to determine the profile, magnitude and consistency of such stereotyping on both personality traits and motor skill dimensions. This study also investigated the relationship between such stereotypes and the players' scores on psychological tests. On two separate occasions, each of six coaches rated 13 football positions as to their players' motor skill and personality characteristics. Coaches were instructed to base their ratings on their actual expeciences with the players throughout their coaching careers. MMPI derived scales and the 16 PF test were administered to 251 players. Test-retest correlation coefficients indicate that the 6 coaches were reliably stable in their stereotypes of the players. Coefficients of concordance indicate significant agreement among the coaches on the stereotypes. Only the 16 PF scores yielded a personality picture consistent with the coaches' stereotypes. Effects of such stereotyping on interpersonal relationships between coach and player are discussed.

Size of the Spleen in Well-Trained Endurance Athletes: "Athletic Spleen"

By. Drs. V. N. Smodlaka, N. F. Bartone, R. V. Grieco, D. J. Savino, S. Stricevic, M. Stricevic, and Mr. D. Adamovich

A group of well-trained endurance athletes and average persons were selected for study. Radio-isotope scans of the spleen and liver as well as a six-foot x-ray of the heart were taken at rest and immediately after short, exhaustive work on the bicycle ergometer. It was found that: 1) the spleen was larger in the well-trained athlete, and 2) the spleen had decreased in size after work for both the athlete and non-athlete.

From the Departments of Rehabilitation Medicine and Radiology, Methodist Hospital of Brooklyn, 506 Sixth St., Brooklyn, New York.

Fitness of the Canadian Eskimoe

Andris Rode and Roy J. Shephard
Dept. Phys, Hyg., Univ. of Toronto

The inactivity of modern metropolitan man is commonly blamed for the limited aerobic power of the city-dweller (1). It is thus of interest to measure fitness variables in primitive hunting communities, relating observed measures of physical fitness to activity patterns. We studied 229 Eskimoes resident in the isolated community of Igloolik, some 1,426 miles from the north pole; about 70% of villagers between the ages of 8 and 66 years participated in the investigation. Measurement, of working capacity followed procedures previously standardized for the International Biological Programme. With the exception of girls aged 13-18 (who had attended a residential school in Churchill), the population had a uniformly higher aerobic power and greater leg strength than the urban populations of North America. Skinfold thicknesses and excess weight, were also lower than in Toronto. Total caloric expenditure was not remarkable, but many of the village activities called for short bursts of quite intensive work.

1. Shephard, R. J. Endurance Fitness, U of T Press (1969).
2. Weiner, J. S. and Lourie, J. A. Human Biology A Guide to field methods. Blackwell, 1969.

Upcoming Events

July 26-28 — Shoulder in Sports, American Academy of Orthopaedic Surgeons, San Francisco, Calif. Info.: Fred L. Behling, MD, 300 Homer Ave., Palo Alto, Calif. 94301.

Sept. 13-15 — Knee in Sports, American Academy of Orthopaedic Surgeons, New York City. Info.: James A. Nicholas, MD, 150 E. 77th St., New York, N. Y. 10021.

Sept. 21-Oct. 2 — FIMS International Basic Course of Sports Medicine, Izmir, Turkey. Simultaneous translations in English, French and Turkish. Info.: Prof. Dr. Necati Akgun, Ege University Medical Faculty, Dept. of Physiology, Bornova, Izmir, Turkey.

Sept. 27-Oct. 1, 1971 — Third Internal Seminar on Biomechanics, International Council of Sports and Physical Education (at UNESCO), Instituto di Fisiologia Umana — Universita degli Studi — Roma. Official language: English; Simultaneous translations French-English and Italian-English considered after expiration term for papers. Info.: Prof. Sergio Cerquiglini, Instituto di Fisiologia Umana, Universita degli Studi, Rome, Italy.

Aug. 21-25, 1972 — Sport in the Modern World: Chances and Problems, Munich, Germany. Info: Herbert Kunze, 8000 Munchen 13, Saarstrabe 7, Germany.

Dr. Jack F. George

ACSM FELLOW HONORED

Dr. Jack F. George, Professor of Health, Physical Education and Recreation, Southern Connecticut State College, New Haven, Conn. recently received an international award and honor.

The Royal Society of Health, London, England has elected Dr. George to its highest rank — M.R.S.H. He was cited for his thirty years of contributions to the health services and health education fields at the local, county, state and national levels in the United States. Her Majesty, Queen Elizabeth is Patron of this Society.

Last year, Dr. George was elected Chairman of the Board of Directors of the National Foundation for Health, Physical Education and Recreation, Washington, D. C. He is co-author of a book, "School Athletic Administration," published by Harper and Row which has been selected as the outstanding book in this field of education.

Tom Dempsey's Handicap is an Asset

Tom Dempsey, the place kicking star of the National Football League, despite half a kicking foot, has one advantage over others. He has no moving toes, a prime reason for loss of power.

Physicians associated with the New Orleans Saints football team pointed out in a scientific exhibit here that Dempsey's congenital foot deformity "enables him to hit the ball with a sledgehammer effect."

Dempsey still retains a key anterior tibial tendon that would be absent had his deformity been the result of a traumatic amputation rather than a birth defect.

"Without this tendon a kicker would be unable to bring up his foot in a flexed, locked position for the kick," said Drs. J. Kenneth Saer and Ray J. Haddad, Jr., orthopaedic surgeons who serve the Saints and are faculty members of the Tulane University Medical School.

Dempsey set a new NFL record by kicking a 63-yard field goal against the Detroit Lions last fall. He has become an image of courage and determination to handicapped youngsters around the world, the surgeons said, and has received thousands of letters.

Injury Prevention in Skiing and Snowmobiling

Merritt H. Stiles, M.D.*

PART I**

Introduction

While skiing and snowmobiling are similar in being winter sports, dependent on snow cover, they differ widely from the standpoint of accident potential and injury prevention. Terrain—equipment—human relationship is simple in skiing, essentially that between an individual and snow covered terrain, somewhat complicated by the interposition of a pair of slippery boards. In snowmobiling the direct relation between individual and snow is minor, unless he is stranded by equipment breakdown in a wilderness. The relationship between snowmobile and snow covered terrain is more important, though still less important than the relationhip between man and machine. The risks of accident and injury are similar to those which exist whenever a human being, all too often inexperienced, incompetent, careless or befuddled, exercises control over a powered vehicle.

This paper will consider the accident and injury potentials of skiing, and then go on to methods and techniques of injury prevention. Part II dealing with snowmobiling will appear in a future issue of the Newsletter. Inevitably, skiing will be discussed in greater detail, in part because skiing has been a major interest for the past 15 years while there has been no personal contact with snowmobiling, in part because skiing is a relatively mature sport with many organizations interested in and working for its safe development, while snowmobiling is relatively new, without a corresponding organizational structure.

Accident and Injury in Skiing

It is important to make a distinction between accident and injury in considering skiing. There are many circumstances which result in accidental falls, snow conditions, terrain condi-

Continued on Next Page

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** Part II dealing with snowmobiling will appear in a future issue of the Newsletter.

tions, the skier's maneuvers, almost all the result of interaction between skier and terrain. Yet only a very small percentage of these accidents result in significant injury, providing of course injury to one's pride is discounted. Factors contributing to accidents will be reviewed, and the resultant, though rare, injuries considered.

Skiing is easiest on a smooth, gentle slope, although such a slope is not as safe as it might seem. Deep snow, particularly if heavy and wet, will result in repeated falls for any but the most competent skiers. Hard packed snow and New England "boiler plate" or "blue ice" frequently cause falls. A breakable crust over soft snow, resulting from wind packing or alternate thawing and freezing, is a frequent cause of severe falls, and most skiers avoid such conditions assidously. Steep slopes are more difficult to ski; they are often covered with rounded mounds called "moguls", a hazard in themselves, but also a help in turning for the experienced skier. When a steep slope becomes hard packed or icy it introduces the risk of a prolonged, and sometimes dangerous, slide to the bottom of the slope should the skier fall. In other snow conditions a steep slope may present the risk of avalanching. All of these hazards are greatly increased by fog or flat light, where surface details disappear. A large number of skiers, particularly beginners, concentrated in a small area introduces another hazard, collision with another skier.

More important than snow and terrain, however, is the ability of the skier himself. Skiing is an unnatural, learned technique. Once past the basic instruction phase many children quickly become competent by mimicking good skiers. Most older persons progress only slowly, in part because of a more cautious approach, and days, weeks, and even years of alternate instruction and practice may be required before a difficult slope can be handled without frequent falls. The difficulties are compounded, of course, if the beginning skier is not in good physical condition. In a study of leg fractures in 1967-68 Dr. John O. Outwater of the University of Vermont stated that the skier himself was the principle contributing factor in more than 75 per cent of the accidents.[1]

What injuries are encountered? The Volunteer National Ski Patrol System, which has provided help and rescue to injured American skiers for more than 30 years, has records of accidents going back many years; a few ski areas with particularly dedicated and qualified medical advisors have also kept records. With such studies as background, a broader study involving 16 representative areas scattered throughout the country, financed by a Public Health Service grant, was made during the 1967-68 season under the direction of Dr. James G. Garrick. Types of injuries observed are listed in Table 1. It was noted that the incidence of injury was higher in young skiers and lower in adults, with a slight rise in skiers over 50. Beginning skiers had a higher incidence of injury, the incidence declining as ability improved. Female skiers had significantly more injuries than did males.[2]

Skiing is a long-established sport, and there have been many efforts over the years to lessen the risk of injury and to provide assistance to accident victims, the National Ski Patrol System playing a leading role. It was only in 1963, however, that the major national organizations involved in skiing formed the National Ski Study Group (Table 2), a non-policy-making, non-dues-paying group comprised of the heads of the member organizations. The study group was dedicated to the overall welfare of skiing, and, having a major interest in injury prevention, it invited the National Safety Council to name an advisory member. One of the study group's first activities was the formulation and promotion of Rules of the Slope, a skier's courtesy code (Table 3). F.I.S. (Federation Internationale de Ski), governing body for the sport of skiing, has developed a similiar code, though stressing more strongly a skier's obligation to help others in distress. The study group encouraged the National Ski Areas Association in its collaboration with the National Standards Association in the development of lift safety codes, now in effect in most states with ski areas, and it worked closely with NSAA in establishing an international uniform trail classification and marking system, indicating relative trail difficulty. In recent years two additional members have been added to N.S.S.G., Ski Specialists Guild, and Ski Retailers International, and a standing National Committee on Skiing Safety formed.

Individual ski area operators play a major role in promoting safety through slope maintenance, in grooming to remove rocks, brush piles and other obstacles, in packing deep snow so it can be handled more easily by the average skier, in cutting down moguls and breaking up and dragging runs which have become too hard packed or icy. Since skiing is a learned technique, instruction is a major safety factor. Beginning skiers of mature years in particular require patient and prolonged instruction, with periodic brushing up even after they are relatively experienced. Professional Ski Instructors of America has developed standard teaching techniques and student classification methods so that a skier may move from one school to another around the country with minimum adjustment. PSIA's clinics and instructor certification programs provide an important service.

(Continued on Next Page)

Physique and Performance in Young Skiers

William D. Ross, Simon Fraser University James A. P. Day, University of Lethbridge

Physique and performance characteristics of 26 boy and 15 girl participants in Nancy Green Ski League competition at Red Mountain (Rossland, B.C.) were described and related to point production in competition. The samples represented half of the participants of each sex. In terms of anthropometric determined Heath-Carter somatotypes, neither sample had endomorphs nor ectomorphs who did not have a secondary dominance in mesomorphy. Both samples contained a substantial portion of ectomesomorphs with ectomesomorphic boys accounting for a disproportionate number of "very good" and "good" ratings and ectomesomorphic girls showing a slight advantage over girls of other body types in the sample. Zero and first order partial correlation coefficients of performance with age, height, weight, four skin-fold measures, humerus and femur diameters, and arm and calf girths were largely insignificant. The study supports current NGSL practice of holding competition for boys and girls under fourteen without regard to age or size differences. Boys tended to perform better than girls but strong performances by very young girls suggests they may be able to narrow the difference in future years.

S.F.U. Grant 714-034

Warm, comfortable clothing is important, to prevent chilling without impairing free movement. Modern skis are in general shorter, lighter, more flexible, with a smoother running surface, and consequently more easily handled. Boots are higher and stiffer, providing better edge control but also introducing the complication of boot-top rather than ankle fractures. The most important equipment item in injury prevention is the binding which fastens the ski to the boot. Modern releasable bindings, properly adjusted, will usually release the boot from the ski in a high speed fall, particularly on a steep slope. A fall on a gentler slope, at slower speed, may not produce the force needed to release the boot if the ski tip becomes buried, and the resultant slow, twisting fall may result in injury. Moreover, even the best binding may be of little value unless it is properly adjusted. Binding release problems have been studied from the engineering standpoint, and helpful devices developed for checking binding adjustment.[3, 4]

Excellent physical condition is an important factor in safety as well as in the enjoyment of skiing. Preferably this should be on a year-around basis, and not just preseason. And what might be called "mental conditioning" is important, education in the hazards of various snow and terrain conditions, good judgment in the selection of runs and slopes to be skied under prevailing circumstances. The numerous factors involved in safety are summarized in Table 4.

Comment

Do efforts to lessen injury actually produce favorable results? Comparative statistics from 1960 to 1968 at Mt. Tom Ski Area, Holyoke, Mass., as reported by Dr. Robert D. O'Malley[5], indicate they do. (Table 5) Mt. Tom has had a special safety program in effect, providing checking and adjustment of bindings, without cost, to any skier who wished to take advantage of the service, and some 25,000 skiers did during this past season.

When asked why Vail was packing out so many more runs and slopes than it had in earlier years, Robert Parker, Vail's Marketing Manager, stated: "We feel it is an important safety measure; our injury rate is down from 3.72 per 1,000 ski man days to 2.6." Dr. Garrick found a fall of about one-third in the incidence of injury between his preliminary and final studies. It was his opinion that the most important contributing factor, accounting for about half of the improvement, was the improved proficiency of the average skier.[2]

Paul Copello, whose office processes all injury claims under the U. S. Ski Association insurance program, a program which covers travel to and from the ski area as well as the skiing itself, has stated: "Actually, the most dangerous part of the skier's day is the drive home. Looking at claims paid over the years it becomes apparent that skiers, tired from a day on the slopes or in the lodge, are apt to get involved in traffic accidents." Mr. Copello adds: "Walking around frozen streets in ski boots is potentially more dangerous than skiing itself. Wear something more appropriate."[6]

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2. Garrick, J. G.: The Epidemiology of Ski Injuries, presented before Amer. Coll. Sports Med., Albuquerque, N. M., May 9, 1970.
3. Lipe, G. C.: Factual Evidence of Errors and Omissions Which Produce Release Binding Malfunction, presented before Northwestern Medical Association, Sun Valley, Ida., February 10, 1970.
4. Outwater, J. C. and Ettlinger, C. F.: An Engineer Looks at Ski Bindings, presented before Winter Sports Safety Congress, Chicago, Ill. Oct. 28, 1969.
5. O'Malley, R. D.: A Ski Area's Approach to Safety, presented before Northeastern Medical Association, Vail, Colo., Mar. 2, 1970.
6. Copello, P.: How Safe Is Skiing?, Western Ski Time 3:16-17 (Dec. 25) 1968.

TABLE 1.

SKI INJURY CLASSIFICATION

Type of injury	Per cent of total
Abrasions	2
Contusions	5
Lacerations	10
Musculo-tendinous	5
Ligamentous	39
Dislocations	3
Fractures	36
	100

TABLE 2.

NATIONAL SKI STUDY GROUP

National Ski Areas Association

National Ski Patrol System

Professional Ski Instructors of America
Ski Industries America

United States Forest Service

United States Ski Association

United States Ski Writers Association

Advisory member: National Safety Council
Added members: Ski Specialists Guild
Ski Retailers International

Standing committee: National Committee on Skiing Safety

TABLE 3.

RULES OF THE SLOPE

(a skiers courtesy code)

1. All skiers shall ski under control, in such a manner that a skier can avoid other skiers or objects.
2. An overtaking skier shall avoid the skier below him.
3. Skiers approaching each other on opposite traverses shall pass to the right.
4. Skiers shall not stop in a location which will obstruct a trail, not be visible from above, or impede progress of other skiers.
5. A skier entering a trail or slope from a side or intersecting trail shall first check for approaching skiers.
6. A standing skier shall check for approaching downhill skiers before starting.
7. When walking or climbing in a ski area, skis should be worn, and the walker or climber shall keep to the side of the slope.
8. All skiers shall wear straps or other devices to prevent runaway skis.
9. Skiers shall keep off closed trails and posted areas and shall observe all traffic signs and other regulations as prescribed by the ski area.

TABLE 4.

MEASURES TO LESSEN RISK OF SKI INJURY

Slope grooming and maintenance; lift maintenance

Trail and closed area marking

Use of dependable equipment, including releaseable bindings

Knowledge of binding adjustment methods

Adequate instruction and practice

Education in ski rules of the slope

Good physical condition

TABLE 5.

COMPARATIVE INJURY STATISTICS
Mt. Tom Ski Area, Holyoke, Mass.

Years	M.D.S.*	Injuries	Incid.**	Fractures	Incid.**
1960-65	438,022	2,126	4.85	324	0.74
1966-67	120,613	489	4.05	83	0.68
1967-68	102,940	368	3.58	68	0.66

*Man days skiing
**Incidence per 1,000 man days skiing

THE PRESIDENT OF B.A.S.M.

The following announcement has been received from Government House, Wellington, New Zealand.

GOVERNMENT HOUSE

The Queen conferred a G.C.V.O. on the Governor-General in Auckland on the 26th March, His Excellency's decorations are now as under:

His Excellency the Governor-General Sir Arthur Porritt, Bt., G.C.M.G., G.C.V.O., C.B.E.

AMENDMENTS TO MEMBERSHIP LIST

CHANGE OF NAME.

Miss Rosemary Wilkinson, M.C.S.P. to Mrs. Bothner - By.

CHANGES OF ADDRESS.

Mr. J. H. Anderson, 12 Cherry Tree Avenue, BALERNO, Midlothian.
Dr. P.J.C.Barry, 6 Argyle Road, Herbert Park, DUBLIN, 4.
Mr. G.J. Bennett, 27 Inwood Road, Wembdon, BRIDGWATER, Somerset.
Mr. J.W. Bridgeman, Flat 8, Vernon Lodge, Spencer Road, EASTBOURNE Sussex.
Dr. I.H.M. Curwen, 11 Clare Court, Grosvenor Hill, LONDON W.19.
Dr. J.E.Davies, 9 Church View, Baglan, PORT TALBOT, Glamorgan.
Mr. I.M.Dunstall, M.C.S.P., 2 Field Rise, Littleover, DERBY.DE3 7DE.
Dr. Elizabeth Ferris, 39B Rosslyn Hill, LONDON N.W.3.
Dr. P. Haggart, 6 Sunnyfield, The Ryde, HATFIELD, Herts.
Dr. A.T.Halliday, P.O.Box 1047, KRUGERSDORP, Transvaal, South Africa.
Dr. J.G.McCall, 2000 Sheppard Avenue West, Apt.605 DOWNSVIEW, Ontario, Canada.
Prof. R.M.H.McMinn, Dept. of Anatomy, Royal College of Surgeons, Lincoln's Inn Fields, LONDON, W.C.2 3PN.
Mr. I.C.Mackie, M.C.S.P., 8 Cedar Court, Athanaeum Road, LONDON N.20.
Dr. J.R. Owen, Hillcrest, Toft Dunchurch, RUGBY, Warwickshire.
Mr. G.A.Palmer, M.C.S.P., 20 Yoells Lane, Lovedean, PORTSMOUTH, Hants. PO8 9SP.
Lt.Col. A.R.Robinson, R.A.M.C., Catterick Military Hospital, CATTERICK CAMP, Yorkshire.
Dr. S. Sadhu, The Royal Infirmary, BOLTON, Lancs. BL1 4QS.
Dr. W.D.Stanish, 6183 Allan Street, HALIFAX, Nova Scotia, Canada.
Mr. R.J.Stevens, Smythe House Flat, 45A London Road, TONBRIDGE, Kent.
Mr. J.A.Tata, M.C.S.P. no.103, 2435 Second Street, BURLINGTON, Ontario, Canada.

NEW MEMBERS.

The following members have been elected by the executive committee at their meeting on May 10th 1971.

	Proposed by.
J.R. Alexander, DLC. 29 Bearford Drive, Glasgow. S.W.2.	J. Moncur.
R. Baylis (Student) 4, St. James Close, New Malden, Surrey.	H. Burry.
Dr. J. Carvell, 20 Hamilton Place, Perth, Scotland.	W. Waldie.
L. Denham, 4 Kingsley Crescent, High Wycombe, Bucks.	H. Robson.
Dr. T.E.Durkin, 16 Cheltenham Road, Gloucester.	H. Robson.
Dr. J.J.Ferguson, 'Lochnagar' Lade Braes. St. Andrews.Fife.	J. Moncur.
Prof. J.F.Forbes, Humbolt State College, Arcata, California, 95521. U.S.A.	H. Robson.
J. Garden, FRCS. 15 Cleghorn Road, Lanark.	J. Moncur.
Dr. R. Graham, 463 Springfield Road, Belfast 12.	J. Williams.
Dr. G. Gregg, 22 Malone View Park, Belfast. BT9 5PN.	J. Williams.
Dr. A.N. Gyory & Mrs. MCSP. 22 Inglis Road, Ealing, W.5.	H. Robson.
M. Habboushe, FRCS. Alwiyah. Hussam Eddin 56/21C. Baghdad, Iraq.	J. Williams.
T. Hale, Dip. P.E. Bishop Otter College, Chichester.	H. Robson.
D.A.Hill, MCSP. BSc. Loughborough College of Educ'n. Leics.	H. Robson.
Dr. N.R.Jefferson, Southland Hospital, Kew, Invercargill, New Zealand.	H. Robson.
Dr. M. Jegathesan, 33/34 Leinster Gardens, London W.2.	J. Williams.
H.A.King, DLC MSc. 51 Lyndhurst Way, Peckham. S.E.15.	J. Williams.
Dr. J. Morrow. 10 Glendate Park, Newtown Breda, Belfast 8.	J. Williams.
J. Musgrove, BSc. 21 Sandringham Road, Northolt, Middlesex.	H. Robson.
Marjorie Prain, RGN, Ruadhchre, Longforgan, Dundee DD2 5EX.	J. Moncur.
D.T.Richards, Dip.PE. Sutton Valence School, Maidstone,Kent.	J. Williams.
Mrs. Margt. Saunders, SRN. 5 Lymbourne Close, Belmont Rise, Cheam, Surrey.	H. Robson.
Dr. A. Sinclair, Perth, Western Australia.	J. Williams.
D.E.M. Taylor, FRCS, 19 Learmonth Gardens, Edinburgh EH4 1HB.	J. Moncur.

RESIGNATIONS AND LAPSED SUBSCRIPTIONS

Mr. M. Brook. Resigned.
Mr. L.G.Brookes. Lapsed.
Mr. M. Cook. Resigned.
Dr. J.T.Curran. Resigned.
Mrs. Beryl Dunn, Resigned.
Mr. C. Gascoyne. Resigned.
Mr. C.M. Jones. Resigned.
Dr. E. Knowles. Resigned.
Mr. R.A. Laxton. Resigned.
Dr. E.C. Rowlette. Resigned.
Mr. & Mrs. P. Sargent. Resigned.
Mr. A.C.Scott. Resigned.
Mr. W. Sheryn. Resigned.
Prof. K.B. Start. Resigned.
Mr. C. Stratten. Lapsed.
Dr. M.L. Thomson. Resigned.
Miss Doris West. Resigned.
Mr. B. Woodmansee. Lapsed.

All England Women's Hockey Assoc. - Resigned on death of Miss A.K.Hobbs.

DEATHS.

Dr. A.E. Hume Kendall.
Dr. A.C. Nicol.

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ABSTRACTS FROM OTHER JOURNALS.

BRITISH ASSOCIATION OF SPORT AND MEDICINE.

NOTICES TO MEMBERS

F.I.M.S. COURSE IN SPORTS MEDICINE

The International Basic Course of Sports Medicine for the International Federation of Sports Medicine will be held in Izmir, Turkey from 21st September until 2nd October, 1971.

The working languages (simultaneous translation) include English.

The Organising Committee will accept one delegate from each Country as guest and will provide all facilities in Izmir at no charge.

Additional delegates will be charged at a rate of 8 U.S. dollars per day.

The travel expenses remain the responsibility of the individual participant.

Any member of the Association who wishes to attend this Congress should get in touch with the Secretary immediately. Dr. P.N.Sperryn, 63 Alric Avenue, New Malden, Surrey.

It is hoped that it might be possible to obtain financial assistance regarding travel, at least for the first delegate from this Country.

SCIENTIFIC CONGRESS MUNICH 1972

The Organising Committee for the Games of the XXth Olympiad Munich 1972 is to hold a Scientific Congress in Munich from 21st to 25th August, 1972 on the theme SPORT IN THE MODERN WORLD; CHANCES AND PROBLEMS.

This congress is intended to provide an opportunity for an exchange of observations and views between representatives of sport and of all fields of research concerned with modern sport. It will be the special aim of the congress to encourage enquiry into the problems of sport within those fields of research which have only recently made an approach to this subject. The congress will concern itself with the following subject - groups:

1. ANTHROPOLOGY, PHILOSOPHY, THEOLOGY.

Theme: "Human identity and alienation in sport"

Topics: Emancipation and repression through sport - Leisure time - Urbanism - Games - Selfworth and bodiliness - The contribution of sport to the integration of society - Mass media and crowd behaviour - Prolegomena to a philosophy of sport and sports performance - A philosophical phenomenology of sport.

2. SOCIOLOGY, SOCIAL-PSYCHOLOGY.
Theme: "Sport and conflict".
Topics: Does sporting rivalry unite or divide? - Professionalisation and its problems - The ideology and reality of active sportsmanship - Career problems of sports champions - Sport and the mass media.

3. EDUCATION, PSYCHOLOGY.
Theme: "Sport - personality - education".
Topics: The role of motivation in sporting performance - The motor learning process at various ages - The function of mental training in sports instruction - The problem of aggression in sport - Sport for physically and mentally handicapped children.

4. MEDICINE.
Theme: "The age factor in sport".
Topice: Is athletic training advisable at all ages? - What age limits are there to top sporting performances? - Is physical training conductive to longevity - The relation of fundamental medical data to improve physical performance - Sport for the young and the old - Sport in its prophylactic and rehabilitation function.

It is intended that the subjects should be dealt with in lectures, symposia and work shops. The topics will be treated in close co-operation with other disciplines, and to some extent in inter-group work shops. There are also plans for excursions, exhibitions, guided tours and visits to cultural events.

If you are interested in this Scientific Congress, please complete and return the provisional registration form* by 31st January, 1971 (bookings made after this will still be possible). In view of the limited accommodations available, it is necessary to restrict the number of participants at the congress. After receipt of your reply card we shall send you further details concerning the program of the Scientific Congress and terms of participation, together with full particulars of the sporting and cultural events to be held during the Olympic Games from 26th August to 10th September, 1972. It would be appreciated if you would pass on this leaflet to anyone interested.

An important instruction on the booking of accommodation and admission tickets.

Please book your accommodation in Munich through the Sales Agency appointed for your country which has also been commissioned as sole agent for the sale of tickets for the events of the Games of the XXth Olympiad Munich 1972. These Sales Agencies will be announced towards the end of 1970 in the public information media. On return of the enclosed reply card you will receive on release a list of the Sales Agencies.

Munich, October 1970. Willi Daume, President of the Organizing Committee for the Games of the XXth Olympiad Munich 1972. Herbert Kunze, Secretary General of the Organizing Committee for the Games of the XXth Olympiad Munich 1972.

* Requests for booking forms etc. should be sent to the secretary general, address above.

FARNHAM PARK REHABILITATION CENTRE

EVENING LECTURE COURSE

'MEDICAL CARE OF ATHLETES AND SPORTSMEN'

WEDNESDAY, OCTOBER 20th - 8.00 p.m.

Introductory Lecture:-

'CAUSE AND PREVENTION OF SPORTS INJURIES' - Dr. J.G.P.Williams.

WEDNESDAY, OCTOBER 27th

'EXTRINSIC INJURIES - THEIR CARE AND MANAGEMENT - Dr.H.G.Burry.

WEDNESDAY, NOVEMBER 3rd

'INTRINSIC INJURIES - THEIR CARE AND MANAGEMENT' - Dr. J.G.P.Williams

WEDNESDAY, NOVEMBER 10th

'OVERUSE INJURIES - THEIR CARE AND MANAGEMENT' - Dr. P.N.Sperryn

WEDNESDAY, NOVEMBER 17th

'HYGIENE AND FIRST AID' - Dr. J.G.P.Williams.

WEDNESDAY, NOVEMBER 24th

'GENERAL MEDICAL PROBLEMS' - Dr. P.N.Sperryn.

WEDNESDAY, DECEMBER 1st

Round Table Discussion and Panel.

LECTURERS

Hugh Burry, M.R.C.P., M.R.A.C.P., D.Phys.Med., Consultant in Physical Medicine, Guy's Hospital, London.

Peter N. Sperryn, M.R.C.P., D.Phys. Med., Medical Officer British Amateur Athletic Board, British Universities Sports Federation, Hon. Secretary, British Association of Sport and Medicine.

J.G.P.Williams, F.R.C.S., (Ed.) D.Phys. Med., Medical Director, Farnham Park Rehabilitation Centre, Acting Secretary General, International Federation of Sports Medicine.

Requests for further information and applications to Administrative Officer, Farnham Park Rehabilitation Centre, Farnham Royal, Bucks.

Course Fee £3.

LUNG FUNCTION & WORK CAPACITY

The proceedings of a symposium held at the University of Salford, 1970, convened jointly by the University and the British Association of Sport and Medicine.

These proceedings are now published and, on payment of £0.75p, may be obtained from:-

Miss A.J.Barratt, Room 111, Registrar's Building, University of Salford, SALFORD, M5 4WT.

Included are papers and subsequent discussions by:-

Professor G. R. Kelman	-	Cardio-pulmonary function during exercise under various environmental conditions.
Dr. E. J. Hamley	-	The application of lung function tests to the assessment of work tasks in ergonomics.
Dr. H. Lewinsohn.	-	The effect of an industrial environment upon normal lung function over time - a current study in an asbestos textile factory.
Dr. J. D. Brooke.	-	The use of lung function measures to predict work abilities within a sports group.
Dr. B.J. Whipp.	-	Intra-breath respiratory responses following the onset of cycle ergometer exercise.
Mr. V. Thomas.	-	Ventilatory indices of fitness.
Mr. G. J. Davies.	-	Problems in the use of respiratory variables to assess field work demands and to replicate these in laboratory tasks.
Mr. R. Watson.	-	Aerobic work capacity of the female physical education student.

Please make cheques payable to the University of Salford.

Brief abstracts only of these complete papers are published in B.J.S.M. V.4. July 1971.

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