

JOURNAL OF THE SA SPORTS MEDICINE ASSOCIATION

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SPORTGENEESKUNDE

TYDSKRIF VAN DIE SA SPORTGENEESKUNDE-VERENIGING



- Ian Holding on Squash
- Exercise and Pregnancy
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SPORTS MEDICINE JOURNAL CHANGES HANDS

Dr C Noble MB BCh, FCS (SA), Editor-in-Chief

The SA Journal of Sports Medicine has a new name—The Journal of the SA Sports Medicine Association. The reason for this is that we have a new sponsor—Ciba-Geigy (Pty) Ltd.

In the present economic climate, sponsorship is extremely difficult to find and the journal must have the backing of sponsors. Boehringer Ingelheim (Pty) Ltd, our previous sponsor, decided to discontinue its support because of the downturn in the economy. On behalf of the Editorial Board and our readers I wish to thank the management of Boehringer Ingelheim for many years of support and the great kindness always shown to us.

Having said this, we would like to heartily welcome our new sponsors, Ciba-Geigy (Pty) Ltd, with whom I am sure we will have a long and successful liaison. Ciba-Geigy is a pharmaceutical company which is already extremely well known in sporting circles. The company has sponsored or helped to sponsor many previous sports medicine meetings. Over the years Ciba-Geigy products have helped large numbers of injured sportsmen. The company has also provided the medical world with several excellent publications in many fields including sports medicine. These publications have usually been illustrated by Frank H Netter, undoubtedly the finest medical illustrator in the world. This expertise will now be utilised in the *Journal of the SA Sports Medicine Association*.

Squash

In this edition of the journal we have interviewed Ian Holding, a medical practitioner who is also probably the best squash player in South Africa. We welcome his valuable contribution. Squash has many followers, including medical practitioners, but it is a game not without risk. Northcoat assessed 50 players who died on the squash court or immediately after a game. Scientific assessment has been unable to show



that squash was incriminated in their deaths. It was not the squash that killed them but the state of their hearts. Squash, being a very stressful activity, may have played a contributory role, but even this has not been adequately proven.

Injuries

Certain injuries are specific to squash while others may also occur in other sports. The most important specific injury is related to the eye—damage occurring as a result of the player being struck by either the ball or the racquet. As squash is played in a confined space, a player is more likely to strike his opponent particularly at the "hack squash" level where many of the players still use tennis strokes.

In tennis a player has to watch one's opponent in front of him, but in squash a player has to look back constantly to

see where his opponent is going to play the ball. Thus he is more liable to be hit by a squash ball on some part of the body. A typical bruise is the most common injury—however, an eye strike may cause blindness. Protective equipment has been manufactured for this purpose, but unfortunately most players do not encumber themselves with this form of facial protection.

The non-specific injuries related to squash commonly seen in practice are ruptured Achilles tendon, internal derangement of the knee, backache and epicondylitis. Most of these injuries are seen in the older squash player (over 30 years), the younger squash player having muscular tears and occasional torn ligaments of the ankle, hand or knee. There are two reasons for injuries in older players. Firstly, squash can be described as a load sport which means that pressure is exerted on certain

parts of the anatomy during the game. The second factor is the ageing process. It has been clearly shown that after the age of 30 years the weakest parts of the musculo-skeletal system are the tendons specially close to the osseous attachment; not only this but the menisci tend to undergo degenerative change as well. The latter is further weakened by rotational loading which is part and parcel of the game of squash. Heavy loading of the lumbar spine which is an integral part of the movements of squash with rapid flexion and extension may cause weakening of the discs with resultant disc prolapse or weakening of the pars interarticularis causing spondylololthesis which in itself provides additional loading to the involved disc. In rotator cuff syndromes such as bicipital and supraspinatus, tendinitis as well as tears are not uncommon in the older squash player as well. In view of this, many people feel that squash should be a young person's game. This in my opinion is unfair as many sports played by the older athlete may result in similar injuries. The possible cardiovascular improvement which may come from heavy endurance activity such as squash is an excellent reason for the older athlete to play. It is important, however, to advise all squash players who develop symptoms referable to cardiac insufficiency such as chest pain, shortness of breath and palpitations to stop playing immediately and undergo a medical examination as it has been shown that nearly all sudden death victims on the squash court had symptoms before a fatal game.

Early Season Rugby Injuries

The rugby season is with us again. Unfortunately this will bring with it innumerable injuries, some of a severe nature, which will keep the medical professions busy once again. Immediately sports physicians should think of the prevention of these injuries. Unfortunately many rugby players are not yet fit at the beginning of the season and therefore the chance of injury is greater. They should remember that in order to play rugby, one has to play the game properly. This involves off-season training and pre-season fitness peaking and then the practice of the game in the season. Unfortunately the first two facets—off-season and pre-season training—are forgotten by many of our rugby players. They arrive at the start of the season grossly unfit, very often having done little or nothing off-season. This results in numerous ligament and tendon pulls as well as an inability by the player to take heavy knocks with resultant further damage. Last year the fitness committee organised by the medical group of the Transvaal Rugby Football Union held a

fitness symposium that was poorly attended by coaches. It is doubtful that it will be arranged again. It is unfortunate that rugby coaches believe they know all about rugby and fitness requirements and therefore do not have to be taught anything.

"Unfortunately many rugby players are not yet fit at the beginning of the season and therefore the chance of injury is greater. They should remember that in order to play rugby, one has to play the game properly. This involves off-season training and pre-season peaking and then the practice of the game in the season."

Certain changes have taken place in the laws in order to reduce the incidence of injury in the game—but this is not enough. One of the major problems at all levels of rugby is the lack of strictness applied to dirty play by the referee. Foul play can be eliminated only by applying the rules very strictly and by enforcing adequate punishment.

Running "Addiction"

About 10 years ago when I first started seeing large numbers of runners with injuries I could not understand why so many of them had to run despite their injuries. To try to understand the runners further I took up long-distance running. Despite completing two Comrades Marathons and a number of standard marathons I was never "hooked" on running.

I have had runners who have pleaded with me to run despite severe injury of such a nature that running was extremely painful. I have seen others who, having been forced to rest, have become extremely depressed, some morose, some aggressive, but all showing withdrawal symptoms similar to those in drug addiction. Other runners, however, despite very high weekly distances appeared not to be too badly affected by the running. A few even welcomed an injury that prevented them from running a major race. It would appear that the personality type to a large extent determines who gets "hooked". It is extremely difficult to say if this is a true addiction. Over the last few years "endorphins", which are morphia-like substances, have been described by some Americans as "the poppies of the mind", have been blamed for "addiction" in runners. Although endorphins are increased by exercise, they have not been conclusively shown to be associated with addiction. Although the clinical features are very suggestive that running can be addictive, there is no conclusive evidence of true biochemical addiction. I would suggest that all doctors read the chapter on runners' high in Tim Noakes' *The Lore of Running* for an excellent discourse on this rather fascinating subject.



IAN HOLDING ON SQUASH

On 12 years of international-class squash, Springbok Ian Holding (30) has been hit in the face less than 10 times. Stitches were required on only three occasions.

"I think the top players tend to hit the ball away from themselves into the corners," he says. "Generally, to prevent most squash injuries, a player must move out of the way to give the opponent freedom to play the ball. The rules don't permit wild play."

Dr Holding, who holds BSc (biochemistry and genetics) and MB BCH degrees from the University of the Witwatersrand, has definite ideas about squash injuries.

"Squash can basically be regarded as a contact sport which is one aspect of squash injuries. Secondly there are self-inflicted injuries resulting from the nature of the game, state of fitness and

the environment in which it is played. The confined space, not watching the opponent and bad technique (which results in the racquet going into a much greater arc than it should) cause players to be hit.

"This tends to occur around the head. Injuries to the eyebrows and the face are generally common. The nose, teeth and lips could also be cut quite severely," he points out. "Eye injuries can be serious and the ball and the racquet can cause major injuries"

"After playing your body needs a good number of hours to recover. This is particularly true of stretched muscles. Technique and fitness will help to prevent most musculo skeletal injuries. Heat exhaustion can be a problem and should be avoided by not playing when it is very hot and humid and by drinking plenty of water before and during play."

Dr Holding is admirably qualified to discuss training, injuries, diet, competition

and all the other facets of squash. Ten years ago he won his first SA Amateur event and was the youngest winner in 30 years. He has four national titles to his credit and several Transvaal Open titles.

In 1976 Ian reached the semi-finals of the World Amateur Championships in Britain and in the same year he was the only amateur to be placed in the last 16 in the World Championships.

He has scored several convincing wins over the world's leading players—the last being Stuart Dunport from New Zealand who is ranked fifth internationally. On his "good days" Ian has beaten players ranked six, seven and eight in the world. However, he admits: "I have always been limited by the fact that I have had a narrow peak at any stage of the season because of my university studies. Probably one of my assets is the ability to peak at a certain stage". In a wide-ranging interview Dr Holding spoke to the *Journal of the SA Sports Medicine Association*.

Question: Do you actually time your peak—actually work it out carefully?

Holding: Yes, I work it out pretty carefully, very much like Bruce Fordyce peaks for the Comrades. It is essential for me to peak for one or two events. This explains why one can rise to great heights on some occasions and play averagely well at other times.

Question: This is obviously something which you would expect.

Holding: Any athlete would expect this because you cannot be 100% fit the whole time or at 100% peak performance. I think this is something the administrators and officials sometimes forget about. This causes quite a lot of conflict between the athletes and the officials.

Question: Where are you working at present?

Holding: I am a junior lecturer in Prof Tobias' Department of Anatomy at the Wits Medical School. It is a famous department with a great deal of history. Working there gives me a great opportunity to get to learn about the structure of the human body.



ProSquash

Question: Ian could you describe your training programme for a major event?

Holding: Ideally I try to plan my training around a yearly cycle, it is very much like the athletes would do. I do a good six months of background training which includes quite a lot of road running and court practising. At this stage the work is not very intensive. I concentrate on volume. I would then also do some weight training. The objective is to develop stamina. Once the season arrives I do about three months of transition training and then increase the intensity of my training. I try to develop a bit more speed and adapt the background training that I have done to the specific demands of squash. Concentrated playing and court training will help to sharpen my playing skills.

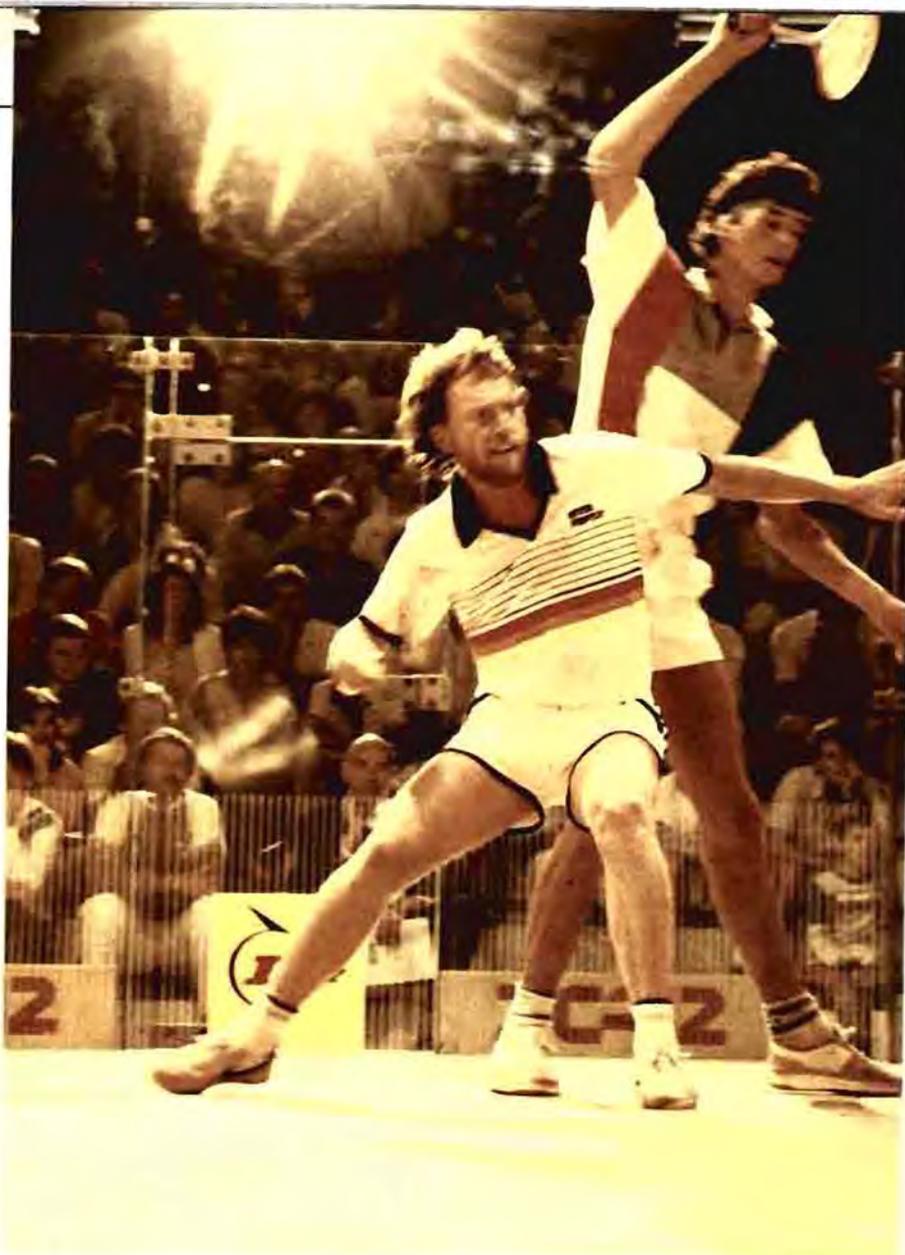
Question: When you are doing road training, what sort of distances would you cover?

Holding: When I am playing squash as well, I tend to base my distances around five to eight kilometers, sometimes going up to sixteen, but I find that with an hour of squash it is more than adequate. How I am feeling will determine whether I will run gently or attempt a time trial.

There are times that I have clocked 17 minutes for a 5km time trial. I've recorded 28 minutes in an 8km trial. These are the preceding events that I would undertake. They give one a measure of our fitness status.

There are also a number of court programmes which one can do. For example, continuous running on the court simulating squash play. One can work for 30 minutes simulating squash without a ball but with the racquet—actually simulating the movements of play. This is quite important in the next three month period because fitness is basically specific to what you are doing. One should remember this. It is no good being really fit on the road when your muscles are not adapted to the squash movements. So a lot of time in the three month period is based on squash movements, stretching and the bending down as well as the very important twisting and turning movements. At this stage I would also probably increase the weight training. General strengthening is so important that I work out three times a week at Sam Busa's gym in Hillbrow. I use heavy weights for general strengthening and train for about 40 minutes each session. I find that this is quite important as it tends to keep one's co-ordination together. If you have the general body strength you tend to co-ordinate better when you become tired in a hard game.

When I start competition training for the next three months, I hardly do any road-running. I try to develop my speed with the court sprints and then play and practise much more. My court



ProSquash

practice partner is Gary Bental an engineer and PhD post-graduate student who is my coach and trainer. In short, he engineers my squash training. He is a good standard player himself and is a good analyst of squash playing.

Common training problems are over-training and losing motivation. When one is tired you do not really get down to what you should be doing. It is very good to have a trainer's input. I do a lot of mental training as well which involves focusing on one event. Mental focusing is very important in terms of actually achieving what you set out to do. In your skill training as well, if you develop the ability to mentally visualise the stroke that you are going to perform before you actually go and practise it, you will acquire that skill much faster than actually getting on to the court and practising for a longer time. In other words one can do five minutes of mental training with 15 minutes of practice and gain more benefit out of doing that than say an hour of practice.

I find that most of the top athletes tend to do this. They set a goal and

work through it and it becomes an obtainable goal. Mental training also ensures that one is more self confident.

Question: How much water should an in-training player drink? Do you have definite ideas about diet?

Holding: It is essential to be adequately hydrated. Fluids should be taken before and during the event and after the game, fluids should be replaced by plain water.

It is also important to know that your carbohydrate storage is adequate and that you have adequate glycogen. This should be sufficient to last the whole game. Your diet should be healthy and balanced. I tend to eat a vegetable based diet with hardly any red meat, which I replace with fish. You are basically what you eat. A mixture of legumes and whole grains make this diet complete in proteins, and complex carbohydrates.

Question: What of the future?

Holding: Generally I enjoy the game but I might not be too competitive over the next couple of years. However, I think it is important to carry on exercising every day to stay healthy and fit.

TRAINING- THE PRACTICE PART II

Timothy D Noakes M B ChB MD Metropolitan Sport Science Centre, Department of Physiology, University of Cape Town Medical School and author of *Lore of Running* (Oxford University Press)

Introduction

In the first part of this article on training, Dr Tim Noakes discussed starting out, shaping, reinforcement control, stimulus control, goal setting, associative/disassociative strategies and coping thoughts. He also examined the question as to whether middle-aged people should undergo an exhaustive medical evaluation before they start practicing. In the second part of the series the author of the recently published bestseller, *Lore of Running*, gives invaluable advice about the selection of appropriate running shoes, shoe advice for the novice, anatomy of the running shoe, shoe choice for uninjured runners and related topics.

Choose Appropriate Running Shoes

Once you have either cleared yourself, or your doctor has given you the go-ahead to start running, the next step is to choose an appropriate pair of running shoes. This is easier said than done. The choice of running shoes has become enormously complex. The 1985 Shoe Survey by the *South African Runner* magazine listed 77 different running shoes for men and 10 for women; in the United States there are probably at least twice as many shoes from which to choose.

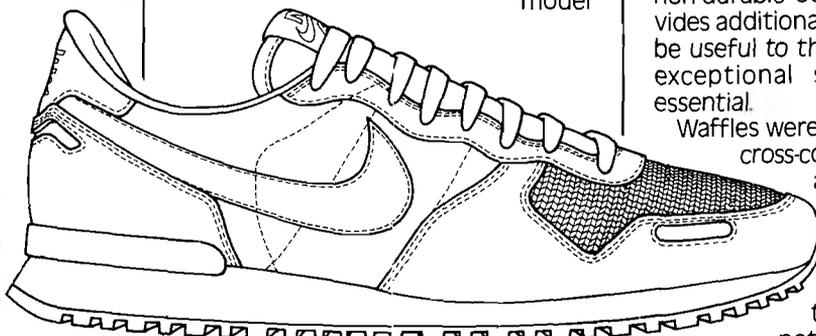
Unfortunately this problem is compounded further by the fact that we are still unable to define those minor individual differences in body structure which determine which shoes are best for a particular individual (Cavanagh, 1980). I feel that the choice of the appropriate running shoe is determined by two principal factors:

1. Whether or not you are a novice
2. If you are not a novice, whether or not you are injured.
 - i) If you are injured, whether (a) you run enough to warrant expensive shoes and (b) for what you want to use the shoes.
 - ii) If you are injured, what type of injury you have.

Shoe Advice for the Novice

It is always best to start running in a relatively modestly priced pair of shoes, bought from a reputable running shoe dealer. If after some months of running an injury occurs, the nature of the injury will indicate what type of shoe is likely to help that injury and prevent further similar injuries.

But even if one is to enter that running shoe shop prepared to buy a modest running shoe, it helps to know something about the different features of running shoes and how these features affect the performance of any particular model



Nike Vortex

Anatomy of the Running Shoe

There are six major anatomical features of any running shoe—the outer sole, the mid-sole, the presence or absence of other devices either in the shoe (arch or shank supports) or in the mid-sole (variable density mid-soles) which help reduce pronation, the nature of the shoe-last, whether it be straight or curve-lasted, and the degree of medial and lateral mid-sole heel flares.

The Outer Sole

The outer sole is that part of the shoe that comes into direct contact with the ground. Today, outer soles are made from a variety of different materials and are of different designs.

The main design variation is whether or not the sole has 'waffles'.

Bill Bowerman filled a waffle toaster with urethane, producing the first outer sole with this characteristic pattern—hence the name.

The most important feature of the outer sole is that it should not wear down too quickly. It should have the greatest durability in the areas of greatest wear, particularly at the outer heel edge. This type of outer sole has been called the non-uniform outer sole. The reason why very durable material is not used throughout the entire outer sole is that the more durable the material, the heavier it is. Thus the non-uniform outer sole saves weight. The only benefit of a soft and therefore non-durable outer sole is that it provides additional cushioning which may be useful to those runners for whom exceptional shock absorption is essential.

Waffles were originally designed for cross-country, not road running as they give better traction on uneven ground (Cavanagh, 1980). They also increase shock absorption. However, waffles do not wear as well as flat-surfaced outer soles.

The shoe I most use, the Nike Vector, does indeed have a waffle outer sole and I have grown to prefer this as much of my running is done on mountain trails where the superior traction of the waffle is a bonus. But I also have a foot strike that generates very even wear across the entire sole and thus the waffles last the life of the shoe.

A final point is that I do not believe that the outer sole wear at the heel should necessarily be repaired unless it threatens to go right through to the mid-sole. The heels wear in order to accommodate the natural heelstrike of the athlete. The athlete whose foot lands with the heel in marked supinate the heel. To repatch such a heel constantly prevents proper adaptation of the shoe to the athlete's particular heelstrike pattern.

strike pattern.

The important features of the outsole are durability and traction.

The Mid-sole

The mid-sole is the real heart of the shoe and is the feature of the shoe that I always notice first. The most important feature of the mid-sole is the degree of softness or hardness.

There are three different functions of the mid-sole:

it must be strong enough to resist excessive inward rotation of the ankle (pronation) as the foot progresses from heelstrike to toe-off; it must be able to flex at a point about two-thirds from the heel, as the heel starts to come off the ground leading to toe-off.

Prior to the mid-1970s, mid-sole material was made only from rubber which has dual disadvantages of being heavy and absorbing shock relatively poorly. In 1974, Jerry Turner of the Brooks Shoe Company contracted a chemical engineer, David Schwaber, to produce a lighter material with better shock-absorbing properties (Cavanagh, 1980). The result was a compound called ethylene vinyl acetate (EVA). Tiny gas bubbles are trapped in the EVA when it is cooled at high pressure; these bubbles make the material light and a good shock-absorber. The major disadvantage is that with wear, the tiny gas bubbles are expelled from the EVA which flattens out, becomes harder and absorbs shock less well. When the EVA compacts down unevenly either in the heel or mid-sole, the shoe distorts badly and this may be an important cause of injury.

Another problem arises from the manufacturing process, it is difficult to produce EVA of consistent hardness. As a result the quality of the mid-sole can vary from shoe to shoe.

For these reasons, it is essential that the prospective shoe buyer check the mid-sole hardness of all the shoes he buys and learns to use the 'thumb compression test' to test the mid-sole hardness that best suits him.

In this test the mid-sole at both the heel and forefoot is squeezed between the fingers of both hands and the relative hardness of the mid-sole is estimated. The greater the degree of mid-sole indentation produced by this method, the softer the shoe and therefore also the more shock that shoe can absorb. However, the added shock absorption is bought at a price: the softer the shoe, the quicker it will tend to compact down. Conversely, the less inden-

tation caused by the thumb compression test the harder the shoe, the less shock it will absorb, but also the less likely it is to compact down readily.

I have already mentioned that the mid-sole must combine a capacity for shock absorption with that of control of ankle pronation and adequate flexibility. Yet to some extent, two of these characteristics are mutually exclusive; an EVA which has good shock absorption will be soft and therefore have good flexibility but very poor pronation control, whereas EVA which provides good control of pronation will be hard, inflexible and have poor shock absorbing characteristics.

In an attempt to compensate for these mutually-exclusive characteristics, shoe manufacturers have used mid-soles of different hardness in different areas—a soft, shock absorbing material along the outer heel border and under the ball of the foot to increase shock absorption and flexibility; a firmer material along the inner border of the shoe, extending from heel to mid foot, to control pronation.

By and large, these techniques have been successful. The only problem that has not been effectively answered is the mid-sole underneath the ball of the foot. This area does not absorb the highest forces during landing—that is done by the heel—but it is exposed to moderately high pressure for much longer time. Thus it will tend to compact down even more than the heel. Yet it might be soft enough to allow flexibility.

One attempt to solve this problem was provided by the Nike Tailwind, first released in 1979. In this shoe the mid-

sole contained a series of five polyurethane tubes extending from heel to forefoot into which freon gas was injected at a pressure of about three atmospheres (Cavanagh, 1980). While this shoe ultimately proved unsatisfactory because it had poor rearfoot control, its second, third and fourth generation offspring, the Nike Mariah, the Nike Odyssey and the Nike 'V' series have clearly shown that the air sole does not compact down as does conventional EVA. However, in not one of these shoes does the air sole extend to the forefoot. If the air sole is present only in the heel, the EVA under the forefoot will still be prone to compaction in those runners who, like myself, land heavily on the forefoot.

In summary then, the features of the mid-sole that require consideration are its hardness and whether or not it is made of mixed material. As we shall see, those who require shock absorption in their running shoes because they have 'rigid' lower limb structure must look for shoes with soft mid-soles; those with 'mobile' feet need firmer shoes.

The Presence of Slip or Board-lasting

During the construction of running shoes the nylon material that constitutes the shoe upper—the part that covers the foot—is stitched together and its lower part is glued onto the top of the mid-sole. If this part of

the upper is stuck directly to the mid-sole and no additional material overlies it, then the shoe is said to be 'slip-lasted'. Alternatively, if a brown-coloured board overlies and hides the tucked-under portion of the upper, the shoe is said to be 'board-lasted'.

Board-lasting increases the ability of the shoe to resist pronation. The board may extend from heel to toe, in which case the board-lasting is said to be conventional lasting. The benefit of partial board-lasting is that it does not reduce flexibility in the forefoot, yet retains some ability to resist ankle pronation.

In general, board-lasted shoes will benefit those runners who require shoes to control their excessive ankle pronation, whereas slip-lasted shoes are best for those with rigid feet which requires as much movement as possible.



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Heel Counter With or Without Heel Stabilisers.

The heel counter is made from a firm thermoplastic material that is moulded into the correct shape during a special heating process (Cavanagh, 1980). Some heel counters extend further on the inner than on the outer side of the shoe and, today, most are associated with special stabilising structures which tend to bind the heel counter more firmly to the mid-sole.

The aim of the heel counter is to reduce ankle pronation. The athlete who requires a shoe that will limit his ankle pronation should obviously choose a shoe with a strong heel counter.

There are two ways to test the strength of the heel counter. First, pinch the middle of the heel counter on its inner and outer edges between the thumb and the index and second

In general it is held that a straight-lasted shoe, because it contains considerable additional mid-sole material under the midfoot, will help resist ankle pronation and should therefore be used by runners who require such control. In contrast, the curve-lasted shoe is of benefit to those athletes looking for increased foot movement and shock-absorption. Such athletes usually have high-arched feet and tend to wear the outer edges of their shoe soles and usually run with their toes pointing inwards (toeing-in).

Medial and Lateral Mid-sole Heel Flares

The mid-sole of the shoe at the heel is usually wider on both sides where it meets the ground, than where it meets the foot; in other words, it is flared from foot to ground.

The flare on the inside of the shoe probably resists ankle pronation; the flare on the outside probably increases ankle pronation because it acts as a

Additional arch supports systems are provided in some running shoes. By and large, these systems offer too little to help runners who pronate excessively but may assist those with only minor degrees of ankle pronation.

The achilles 'protector' is the extension of the material at the top of the heel counter. Although some suggest that this 'protector' may be the cause of inflammation in the achilles tendon, I have not encountered this. However, should the protector cause discomfort, simply remove it as it does not affect the function of the shoe in any way.

The way in which a shoe is laced may affect its comfort. The two most common lacing methods are variable width lacing, in which there are two rows of non-aligned eyelet holes, which allows the athlete to choose either a narrower or a wider lacing system and speed lacing in which plastic D rings are substituted for the conventional leather eyelets. The friction between the plastic and pressure distribution is said to



ZX500 Adidas

Internal thermo-plastic heel counter which minimises excessive sub-talar joint movement

External heel counter provides supportive base

Dual density EVA midsole designed to counter excessive pronation

Inner sole which moulds to the runner's foot and provides an extra shock-absorption layer.

fingers of your dominant hand. Determine how much pressure is required to distort the heel counter towards the centre of the shoe. Second, holding the heel counter as before, grasp the mid-sole of the shoe in the palm of the other hand and determine how much torque is required to distort the heel counter to the inside or to the outside of the shoe.

The less distortion produced by these manoeuvres, the stronger the heel counter.

Straight or Curved (Banana) Lasting.

A straight-lasted shoe is one which, when viewed from below, is symmetrical around a line drawn from the middle of the heel to the middle of the toe. In contrast, the front of a curved banana or inflated-lasted shoe bends inside a line drawn from the middle of the heel to the middle of the mid-foot.

lever forcing the foot inwards at heelstrike.

Thus it seems likely that the medial heel flare may be of value to runners who need control of ankle pronation, but the lateral flare is probably more of a hindrance than a help. Indeed when in the mid-1970's, Nike introduced a shoe with an exaggerated lateral flare, the LDV 1000, a number of runners using the shoe developed the iliotibial band friction syndrome (Cavanagh, 1980).

It seems probable that lateral heel flares will disappear sometime in the future. Certainly the injured runner who uses a shoe with a lateral heel flare would probably do best to file that flare off.

There are a number of other less important features worthy of note. All modern shoe uppers are made of nylon. Leather tends to stretch once wet and it needs to be dried slowly.

be more even with the D rings. However, plastic D rings are hard and can cause considerable pressure on the top of the foot.

A recent innovation in lacing has been the use of Velcro strips in place of laces.

Finally, some shoes also have supplementary lacing systems in which tabs at either the midfoot or the heel allow the laces to be attached to either the mid or rearfoot, or both.

Final Considerations

Having decided what model shoe one is going to buy, it is important to make sure the shoe fits. Here four rules apply.

First, a general rule is that the shoe should be bought slightly larger than the runner's conventional shoes. This is because the foot swells about one half size when he runs. A good test of whether the shoe is of the correct size is that the width of the index finger

should be able to fit between the end of the longest toe (not always the big toe!) and the front end of the shoe upper.

Second, the width of the shoe must be right and there must be sufficient height in the toe-box to allow free up-and-down movement of the toes. Athletes with very wide or very narrow feet will need to look to manufacturers who offer shoes with different width fittings or will need to discover those manufacturers whose normal width range tends to be either broader or narrower than the average running shoe. The most important width fitting is over the middle (bridge) of the foot.

Third, the shoe must feel good immediately you walk in it. A shoe that feels uncomfortable in the shop will only become even more so once on the road.

Fourth, the heel must not slip out of the heel counter at toe-off.

Shoe Choice for Uninjured Runners

Once the novice has been running for some time and has not experienced an injury, he becomes an uninjured non-novice runner and the choice of his second pair of shoes requires several new considerations. If the novice suffers an injury that may be related to his choice of running shoe, then he becomes an injured runner and his choice of shoe is determined by a different set of factors.

Uninjured runners fall into two categories—those who are at risk of injury but who are not yet running enough to become injured, and those fortunate few who can do whatever they like without ever becoming injured. This latter group comes from experienced runners—their choice of shoes can be made entirely without recourse to any of the information contained here. They could probably run barefoot if they trained for it.

One way for the uninjured novice to check whether he may be injury prone, is to try the pinch test. The pinch test is effective because damaged tissues become tender to the touch long before they actually cause pain to be felt during or after running. A feeling of tenderness or discomfort when either



The Argus

the Achilles tendon is pinched between the thumb and forefinger, or when firm pressure is applied along the borders of the shin-bone (the tibia) or the knee-cap indicates trouble. If allowed to go unchecked, the result may be a debilitating injury.

Tenderness in any of these areas indicates, amongst other things, that the foot is being allowed to pronate excessively and that a shoe with those features that restrict ankle pronation should be worn.

It is important not to race in shoes that are either too light or too worn out. The muscles normally provide a good measure of overall shock absorption during running, but near the end of a long race, they become too exhausted to help, so that the shoe is left to absorb the shock unaided. A shoe that felt adequate at the start of the race may not be optimum when it must cope without the help of the muscles.

All running shoes have a limited life expectancy—a probable maximum of six months of daily wear—before their ability to absorb shock or control the foot is lost. So it is advisable to change shoes about that often.

"All running shoes have a limited life expectancy—a probable maximum of six months of daily wear—before their ability to absorb shock or control the foot is lost. So it is advisable to change shoes about that often."

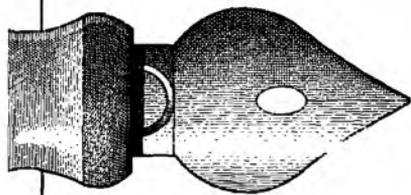
A question runners frequently ask is whether they should train in a shoe that is heavier than the ones in which they normally race. I don't really think that the weight of the training shoe makes any real difference to the overall training effect. Distance and speed are what count in training and shoes should be chosen so that they are comfortable and protective. Shoes for cross-country racing can sacrifice some cushioning and should have a low heel to increase stability on uneven ground. Shoes for ultra-marathon races need more cushioning as do shoes used if one is training high mileages. Joggers who train less than three times a week, or who run less than 20 kilometres a week probably do not need the additional protection built into the very expensive running shoes, although they may should they become injured.

As far as different brands or models of shoe are concerned if you are comfortable in a particular brand of shoe, you should stay with that shoe. I have found that I am comfortable in only a small range of shoes. Yet any number of other shoes which seem to have the identical characteristics as these shoes are, for no apparent reason, simply not comfortable.

(Continued on page 10)

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A

Arthritis/Running Link

I refer to your article on the topic of the possibility of a linkage between running and arthritis on page 5 of your issue No 29. You referred to a research study done by Caldwell and reported in *The Physician and Sports Medicine* of August 1984, in which a questionnaire study of swimmers and cross-country runners was carried out. The statistics derived from that study showed no linkage between road-running and arthritis of any kind. In this connection I would like to sound a note of caution when it comes to the elderly runner. Cartilage cells, like brain cells, die off progressively from skeletal maturity onwards. This does not mean that articular cartilage automatically gets thinner in advancing years, but its capacity to regenerate itself reduces progressively, and becomes minimal in old age. Translating this information into practicalities, it follows that a young athlete easily regenerates cartilage as superficial attrition occurs; but in old age this ability is lost. A properly controlled scientific study is called for in order to determine whether or not athletically active older people are subject to a higher incidence of osteo-arthritis than the more common sedentary members of that community. Until such a trial is conducted, we should discourage people over the age of 50 years from long-distance cross-country running. I have had several patients with what appears to me to be unnecessary arthritis produced by overuse in old age; and this observation has been corroborated by colleagues abroad.

Prof A W B Heywood, Department of Orthopaedic Surgery, University of Cape Town.

Editor-in-Chief Dr Clive Noble replies:

There is no published evidence to show that running over the age of 50 increases the rate of degeneration of normal joints. There is in fact evidence to the contrary. In a study of former champion Finnish athletes¹ it was found that advanced degenerative

osteo-arthritic changes were found in 4% of the group but were present in 9% of the control group.

Other studies² indicate that the incidence of osteo-arthritis is no higher in highly active sport persons than in the non-active population. Wally Hayward who is approaching 79 years of age had no evidence of osteo-arthritis despite years of running prodigious distances. Furthermore there is evidence³ to support the belief that the absence rather than presence of normal weight bearing across a joint leads to degenerative changes similar to those found in early osteo-arthritis.

To conclude, it has been established that a history of joint injury pre-empts osteo-arthritis, thus exercise on abnormal joints could ultimately cause degenerative osteo-arthritis. It would possibly be wise to discourage any patient (regardless of age) with known joint damage, from excessive activities. Thus it is my opinion that there is no need to discourage persons over the age of 50, with normal joints, from long distance running.

References

1. Puranen and colleagues (1975).
2. Adams 1976, Bird *et al*, 1980, Edmond *et al*, 1980, Murray Leslie *et al*, 1977.
3. Palmoski *et al* (1980).
4. Murray Leslie *et al*, (1977).

Sports Quiz

1. Who beat Björn Borg in a Wimbledon final?
2. Who wrote the screenplay for *Chariots of Fire*?
3. What was President Eisenhower's favourite game?
4. Who was the first person to hit six sixes in an over of first-class cricket?
5. Complete the couplet: "Float like a butterfly, sting like a bee ..."
6. What US President was a keen jogger?
7. Which golfer recovered from a bad car crash to win the US Open?
8. Who was a Wimbledon finalist at the age of 19 and again at 39?

9. Who won the 5 000 and 10 000 metres and marathon in the same Olympics?

10. What is the USA's premier sports magazine?

From *Utterly Trivial Knowledge: The Sports game* by David Robins (Penguin Books, 1985).

- ANSWERS
1. John McEnroe
 2. Colin Welland
 3. Golf
 4. Garfield Sobers
 5. ... His hands can't hit what his eye can't see
 6. Jimmy Carter
 7. Ben Hogan
 8. Ken Rosewall
 9. Emil Zatopek
 10. Sports Illustrated

(Continued from page 9)

In summary then, my advice for the uninjured runner is to stay with the shoes that he finds comfortable and to choose shoes that are appropriate for racing and training and for different distances.*

*Republished with the permission of Dr Tim Noakes, author of *Lore of Running* (Oxford University Press).

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SPORTS MEDICINE

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FRIDAY 8 AUGUST

08.00–08.40	Registration
08.40–08.50	Welcome: SASMA President
08.50–09.10	Diet and the sportsman
09.10–09.30	Drugs and sport
09.30–09.50	Strength and fitness for sport
09.50–10.10	Energy utilisation and fluid balance in marathon running
10.10–10.30	Heat injury and sport
10.30–10.50	Cardiac prehabilitation
10.50–11.00	Discussion
11.00–11.10	Tea
11.10–11.30	Cardiac rehabilitation
11.30–11.50	Heart disease and the sportsman
11.50–12.10	Psychiatry and sport
12.10–12.20	Discussion
12.20–12.40	Film: Heart
12.40–13.00	Lunch
13.00–13.20	Foot biomechanics
13.20–13.40	Ankle injuries (soft tissue)
13.40–14.00	Shin splints and other shin pain
14.00–14.20	Meniscal injuries
14.20–14.40	Anterior cruciate instability
14.40–15.00	Patello femoral injuries
15.00–15.10	Discussion
15.10–15.30	Film: Injury
15.30–15.40	Tea

A.G.M. SASMA

DINNER: FRIDAY EVENING

SATURDAY 9 AUGUST 1986

09.00–09.20	Lumbar disc pathology
09.20–09.40	Shoulder injuries
09.40–10.00	Elbow injuries
10.00–10.20	Hand and wrist injuries
10.20–10.40	Discussion
10.40–10.50	Tea
10.50–11.10	Sports injuries in the child
11.10–11.30	Sport and the pregnant woman
11.30–11.50	Physiotherapy of running injuries
11.50–12.10	Rehabilitation of knee injuries
12.10–12.30	Rehabilitation of muscle injuries
12.30–12.40	Discussion

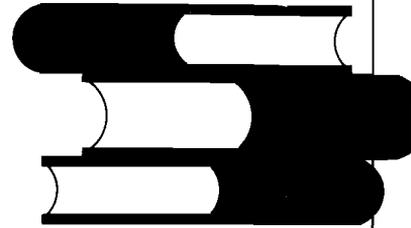
Speakers:

Speakers invited to present papers include: Dr C Noble, Dr T Noakes, Dr P Firer, Brig E Hugo, Dr R Morris and Dr N Gordon.

Registration:

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Lore of Running by Dr Tim Noakes, Oxford University Press

Seldom have I had the opportunity of reading a more enjoyable and stimulating book on sports medicine. Not only is Dr Tim Noakes' book packed with interesting and useful information on running but it is written in a style that makes for pleasant reading.

Written at a medical level it had nonetheless been ardently read by many of the runners themselves, especially the "addicted ones". For me the section on running injuries was particularly interesting. Some of the treatments suggested – such as a change of running shoes – are particularly innovative for the stereotyped orthopaedic surgeon or sports traumatologist. It is a pity that new running shoes used in the treatment of running injuries cannot be paid for by medical aid! I believe that every doctor, physiotherapist or podiatrist who treats running injuries should make himself familiar with this book. It is sometimes controversial and always thought provoking.

Dr Clive Noble M B BCh, FCS (SA), Editor-in-Chief

Sports Injuries, Their Prevention and Treatment by Lars Peterson and Per Renström. Juta and Company Ltd. 1986.

The authors of this book, Lars Peterson and Per Renström, are two leading Swedish orthopaedic surgeons, both expert and widely experienced in treating sports injuries.

Sweden has led the world for many years in sports science, and the original Swedish edition of the book has been so successful that it is now being made available to the English-speaking world. This edition has been revised and updated, not only by the authors, but by an international team of English-speaking editors.

Editors of the South African edition are Duncan Mitchell, Professor of Physiology, University of the Witwatersrand and George Beaton, formerly Professor of Medical Education at the same university.

Sports injuries is a handbook for physical educationists, coaches, trainers, physiotherapists, first-aiders, fieldside care specialists, serious sportsmen and sportswomen and anybody else concerned with preventing and treating injury in sports.

Using plain language and clear diagrams, the authors systematically cover the parts of the musculoskeletal system susceptible to injury in sport, showing how the injuries happen, how to prevent them, and especially how to get an injured participant back into his or her sport safely and quickly.

With an increasing number of people taking part in both amateur and professional sport, there is now a greater demand for clear understanding of all types of injury; early and correct diagnosis; fast, efficient and effective treatment and a knowledge of preventive and rehabilitative training.

The 488 page *Sports Injuries* handbook gives clear, practical instruction and advice on:

- Sports injuries by region including the back, neck, head, spine, arm, knee, lower leg, ankle, foot and trunk
- Warm-up, stretching and taping
- Good protective clothing and equipment
- Preventive and recovery training in a colour-illustrated 45-page section
- Special child and adolescent activities
- Sport for the handicapped.

With over 240 colour photographs and X-rays, over 130 specially commissioned full-colour diagrams and an extensive glossary, this comprehensive book will be indispensable to all those involved in sport and should be part of every kit bag.

Sports Medicine in Primary Care by Robert C Cantu, Collier Macmillan International

This compact volume is designed especially for general office practice. It enables physicians to write exercise prescriptions, dispense knowledgeable information on sports nutrition, counsel patients on health, life-style and prevention of injury, treat common injuries in each organ system and identify indications for referring patients to an appropriate specialist.

Describing the 240 page reference book the *Journal of Family Practice* comments "... a well-written and illustrated book for all those in family practice who are interested in sports medicine. It may be used as a textbook for medical students and resident physicians or as a reference book for practising physicians."

The opinion of *Physical Therapy* was: "... highly recommended for sports physical therapists because it provides a version of the field of sports medicine."

Sports Medicine, Sports Science: Bridging the Gap, Edited by Robert C Cantu and William J Gillespie, Collier Macmillan International.

The Editors offer broad coverage of the medical, physiological and psychological assessments needed before exercise training. It deals with specific exercise programmes and with special considerations such as nutrition, diabetes, cardiac rehabilitation and the prevention, recognition and treatment of sports injuries common among adults.

Commented the *New England Journal of Medicine*: "... a good book for the hospital medical library. It will be used by numerous specialists and physical therapists, also by trainers.."

Contents include: psychology and sports-attitudes and beliefs in the prediction of exercise participation, change agents in the psychology of running and behaviour modification. There are also chapters on biomechanics, perspectives on the female athlete, sports nutrition and cardiac rehabilitation.



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GUIDELINES FOR THE PREGNANT RUNNER



Image Bank



MAY 1986 VOL 1, NO 1, 1986

T

he decision by Mary Decker-Slaney to continue running right up to the end of her pregnancy has focused attention on the pregnant runner. Ambitious "Queen Mary"

will let nothing prevent her from returning to world middle-distance competition—not even the birth of her first child.

Unlike some top class women athletes who gave up running during pregnancy Mary continues to put in 60–80 km per week with her doctor's consent.

The 27-year-old mother-to-be told journalists: "The doctor says it is OK to do what I am used to. But I get slower and slower and bigger and bigger".

In his book *Lore of Running* (Oxford University Press) the author Dr Tim Noakes discusses both the potential hazards and benefits of exercise during pregnancy.

Four potential areas of concern must be considered:

- Exercise compromises the blood flow to the developing foetus.
- Blood pH and lactate changes induced by high intensity exercise may affect the foetus.
- Maternal hyperthermia during exercise may affect the foetus.
- Maternal exercise increases the risk of premature labour.

Benefits of exercise

What scientific evidence there is indicates that exercise training during pregnancy increases physical fitness without detrimental effects.

In the short term the mother feels better and has more energy and suffers less of the common complaints that

are associated with pregnancy, in particular, constipation, back pain and reduced energy. Her weight gain is better controlled.

During labour the fit mother is better able to cope with whatever happens during delivery, in particular the possibility of complications. Strong abdominal muscles aid the expulsion of the baby, and well-toned pelvic floor muscles stretch better during delivery and recover more quickly.

Comments Dr Noakes: "However, these differences may be more psychological than physical. For in the only five such studies yet reported, contrasting results of the effects on training during pregnancy on the outcome of labour was found. In three studies the labour and delivery of women who had exercised during pregnancy were no different from those who had not. If anything, the exercising women were slightly more likely to develop delayed (obstructed) labour requiring Caesarean section than were the non-exercisers. But the numbers were small and no definite conclusions can be drawn.

In contrast a Hungarian study of 172 athletes—66% of whom continued their sporting competition during the first three to four months of pregnancy—showed that these athletes had fewer complications than normal during pregnancy and there was no increased risk of abortion. Labour and delivery were normal, except the rate of Caesarian sections were half that of the control group as was the duration of the second stage of labour.

In the long-term the mother who has been active during pregnancy will find it easier to lose weight and to recover from the effects of the delivery and pregnancy.

T

he American College of Obstetricians and Gynaecologists gives pregnant runners the following useful information:

PREGNANT RUNNERS-TAKE NOTE!

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- Before continuing with your running you should consult a doctor. Certain medical conditions preclude running during pregnancy. These may include placenta previa, multiple pregnancies, a history of miscarriages, a weak cervix, hypertension, anaemia, diabetes, or thyroid disease.

- Don't try to start a more rigorous training programme. You should be prepared to cut back on intensity and distance. Don't push yourself to exhaustion.

- Exercise at least three times a week for 20 to 30 minutes for maximum benefit. Your heart rate should be in the 120 to 140 range. After you stop running your resting pulse should be back to normal within 10 minutes. Also remember that your resting pulse will rise during pregnancy.

- You should drink plenty of fluids and avoid overheating. An increase in body temperature can harm the foetus, which has no mechanism to cool itself. Dehydration can interfere with blood circulation and may trigger premature labour.

- Avoid aggressive competition and become a fun-runner instead. If you feel that you are straining or becoming excessively fatigued you should stop running. You should also discontinue training if you experience breathlessness, dizziness, headaches, muscle weakness, nausea, chest pain or tightness, back pain or pubic pain. In these circumstances you should consult a doctor.

- Slow, gradual stretching should be included as part of your warmup and cool down. Kegal's exercises for the pelvic muscles are also recommended, both prenatally and postpartum.

- Don't try to lose weight by exercising during pregnancy. You should concentrate on a balanced diet to meet your caloric needs as well as the needs of your baby and your exercise.

- Strenuous exercise, if done at all should not exceed 15 minutes in duration.

- Do not run if you have a fever.

- Do not run in hot, humid weather.

This information is based on a recent bulletin of the American College of Obstetricians and Gynaecologists, 600 Maryland Ave, SW Washington, DC 20024 and research from the Melpomene Institute, 316 University Ave, St Paul, MN 55103.



SELF-ADMINISTERED EXERTION THERAPY: ITS EFFECTIVENESS & APPLICATION-PART II

Van Niekerk, M BA (Hons) Psychology
Schomer, H H BA (Hons) MA PhD Psychology
Department of Psychology, University of Cape Town, Rondebosch, 7700.

Summary
The authors have examined the effectiveness of anxiety management training through physical exertion (running) and positive and negative imagery without an ongoing client-therapist relationship. Their study suggests that self-administered exertion therapy, with its simple, cost-effective and readily amendable techniques is a valid and viable alternative means of alleviating certain forms of anxiety. It is hoped that their study will stimulate further research.

Results

The results obtained from the present experiment clearly indicate that a combination of physical exertion and positive and negative level without the presence of a facilitator. Experimenter effect was thus shown not to play any significant part in anxiety reduction.

The data obtained from the experiment was analysed by means of a 2-way Analysis of Variance (2-way ANOVA) with repeated measures on factor B. Table 1 summarises the Analysis of Variance of the IPAT, Langner Index and POMS respectively.

Significant F-interaction occurred at the 0,01 level i.e. anxiety scores did not change consistently over the four levels of instruction as time proceeded.

Simple Main Effects analyses of all three psychometric devices employed indicated that: (a) During the second and third week of the programme there were significant differences between the anxiety scores of the four groups. (b) One week after termination of the programme the anxiety scores of the four groups still differed significantly. (c) Within each group, with the exception of Group 4 (the control

group), anxiety scores fluctuated significantly over the five weeks.

Tukey's HS Pairwise comparisons revealed that during the middle of the

second week of the programme the anxiety scores of the group receiving a manual only was significantly less than those in the control group. It was

Table 1

2-way ANOVA with repeated measures on Factor B (time intervals)
DV: Anxiety level

ANOVA SUMMARY TABLE

IPAT DATA

SOURCE	SS	df	MS	F-ratio
Between Subj.	4178.729	2	1392.9097	12.323932
Subj. W G	2616.793	32	113.02478	
Within Subj.				
B	3954.9902	4	988.74756	70.385171
AB	2339.3188	12	194.94324	13.87724**
B X SWG	1798.1016	128	14.047668	

LANGNER INDEX DATA

Between Subj.				
A	6103.9248	3	2034.6416	18.455535
Subj. W G	3527.8594	32	110.24561	
Within Subj.				
B	4996.7886	4	1249.1971	55.265463
AB	3934.7622	12	327.89685	14.506414**
B X SWG	2893.2578	128	22.603577	

POMS DATA

Between Subj.				
A	2059.7338	3	686.57794	5.2312369
Subj. W G	4199.866	32	131.24581	
Within Subj.				
B	1084.8675	4	271.21687	13.678865
AB	1008.8215	12	84.068459	4.2400056**
B X SWG	2537.9124	128	19.82744	

** $p < 0,01$ with factor A = method of instruction $\alpha = 0,01$
F (12;128) = 1,83

only during the third week of the programme that the other experimental groups (i.e. the group receiving a manual and an audio-tape, and the group receiving a manual and an audio-tape and a video-tape) exhibited significantly less anxiety than the control group. On termination of the programme these trends were still evident, i.e. the anxiety levels of those in the experimental groups were still significantly less than those in the control group.

Graphical representations of the anxiety reduction patterns can be seen in figures 1 to 3. In addition the above are expressed in relative percentage fluctuations in Figure 4.

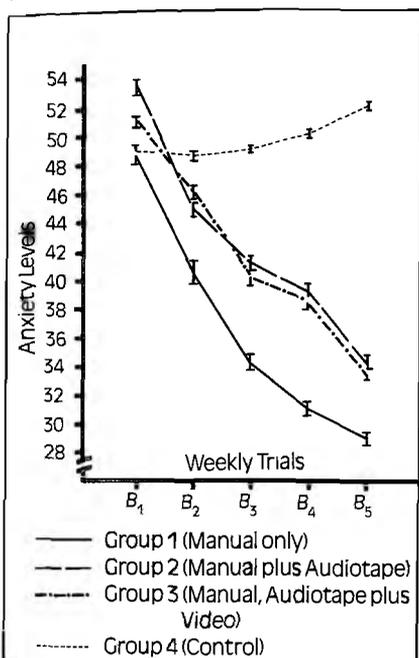


Figure 1: Graphical Representation of the IPAT Data

Discussion

The results suggest that anxiety reduction through physical exertion and positive and negative imagery can occur in the absence of an instructor. Contrary to expectation, the study shows that neither the maximal treatment group (i.e. the group receiving a manual, an audio-tape and a video-tape), nor the group receiving a manual and an audio-tape as instruction exhibited significantly more anxiety reduction than the minimal treatment group (i.e. the group receiving only a manual). Results revealed that neither rate nor amount of anxiety reduction is positively correlated to complexity of instructional level. The results suggest that the manual alone was superior to combinations of the manual, audio-tape and video-tape in reducing state anxiety.

Although it was hypothesised that the maximal treatment procedure would yield significantly more anxiety reduction than the other treatment groups, results indicated that this did

not occur. Video-tape pre-training did not significantly facilitate therapeutic outcome. These unexpected results could be attributed to a variety of factors. Contrary to the findings of Hilkey and Wilhelm (1982), the results of the present study may be seen as a result of removing possible therapist reinforcement from the video-tape pre-training sessions. Since the experimenters were always present at these sessions in the Hilkey and Wilhelm study, ascertaining the exclusive effect of video-tape pre-training on therapeutic outcome is difficult. Assuming that it is the video-tape pre-training alone which enhances treatment effects is fallacious.

Postulating that learning the rules and principles that govern a particular behaviour is more conducive to behavioural or cognitive change than simply copying the behaviour, is an alternate aetiological speculation to the current findings. The former method of learning forces one to restructure one's cognitions about anxiety. The latter method of learning, as happened in the maximal treatment group, can be seen as an imposition of ideas. This is not only counter-productive to adequate personal problem-formation (Romanovska, 1982), but also to the integration of the learned behaviour in the person's repertoire of covert and overt responses.

Although it was hypothesised that the minimal treatment group would yield significantly less anxiety reduction than the maximal treatment group, the results refuted the hypothesis: rate and amount of anxiety reduction was greatest in the group receiving only a manual. The role of self-attribution may be central to these findings, for they support indications from different areas of self-attribution research that therapeutic outcome is influenced by the client's belief about the causes of behavioural changes. Those subjects

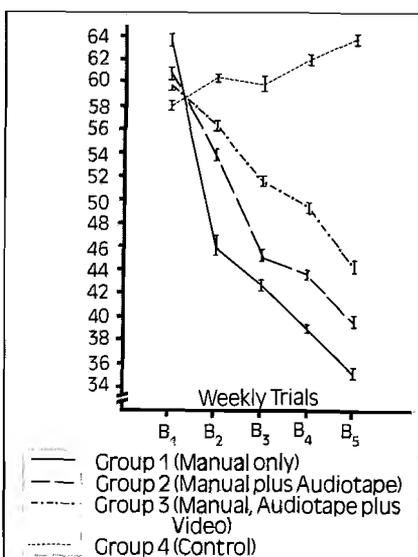


Figure 2: Graphical Representation of Langner Index Data

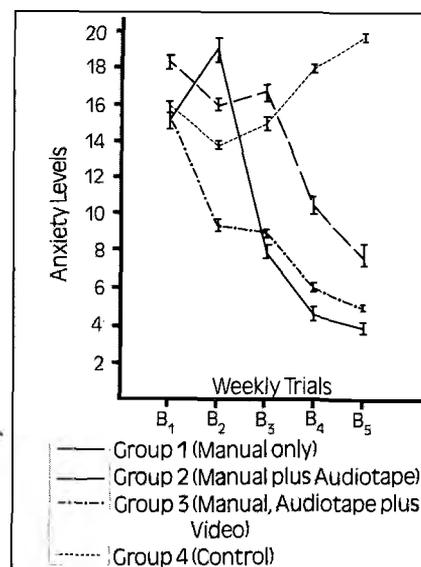


Figure 3: Graphical Representation of the POMS Data

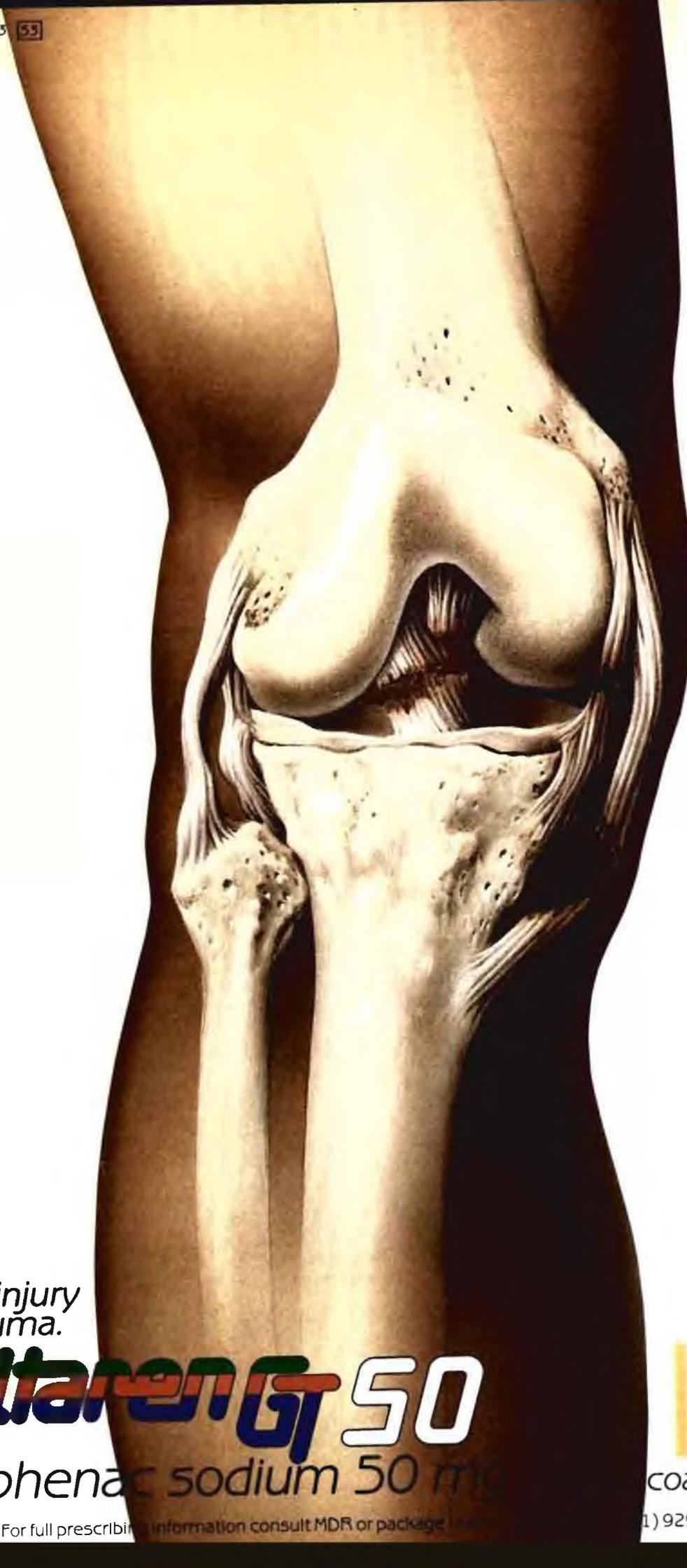
in the group receiving only a manual as instruction believed that they had the sole responsibility for some action, that a successful outcome would be due to their personal competence and that their behaviour was not only voluntary but also internally mediated. As opposed to this, the subjects in the maximal and intermediate treatment groups could have perceived the audio-tape as an external pressure. This led to a consciously or unconsciously mediated opposition to treatment. The co-operation necessary to achieve maximal treatment effects turns into active opposition, i.e. reactance occurs (Kanfer & Goldstein, 1980).

A further aetiological speculation for the superior efficacy of the manual is similar to that posed by Condry (in: Kanfer & Goldstein, 1980). The manual alone could have demanded the development of greater self-knowledge and self-exploration (to achieve treatment effects) than the audio- and video-tape. This in turn could have led to the establishment of a durable internalised repertoire of the desired responses. Condry argues that skills acquired in this manner are better integrated into the individual's schema and hence more meaningful to him/her. This in turn leads to superior internalisation of complete repertoire of behaviours conducive to positive change.

In the context of the research on forced compliance (which might tentatively be postulated as one of the dynamics underlying the findings in Groups 2 and 3), Collins et. al., (in: Kanfer & Goldstein, 1980), called attention to the importance of the recognition of variables which are associated with the acquisition of skills under perceived external manipulation may actually be antagonistic to the maintenance or internalisation of such skills.

(Continued on page 18)

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WAAROM LID WORD VAN DIE SA SPORTGENEESKUNDE-VERENIGING?

Die SASGV staan nog in sy kinderskoene, maar groei steeds in lidmaatskap. Aangesien heelwat potensiele lede van die SASGV iets meer wil weet van die doelstellings van die vereniging, asook die persoonlike voordele wat hulle kan verkry uit lidmaatskap van die vereniging, wil ons graag die doelstellings van die vereniging uiteensit.

Deur aan te sluit by die SASGV, word u deel van 'n groep kollegas met gemeenskaplike doelwitte, nie net plaaslik nie, maar ook in die streke en op nasionale en internasionale vlak. Dit is 'n akademiese forum waar idees, sienings en ondervindinge gewissel kan word op 'n gereelde basis—'n netwerk van kollegas dwarsdeur die land met wie u persoonlik in aanraking kan kom indien nodig.

Wat is die SA Sportgeneeskunde-vereniging?

Die SA Sportgeneeskunde-vereniging (SASGV) is 'n professionele vereniging wat betrokke is by alle aspekte rakende die sportgeneeskunde. Aangesien die SASGV 'n subgroep is van die Mediese Vereniging van SA (MVSA), bestaan die lede uit geregistreerde mediese praktisyns wat lid is van die MVSA uit beide die private en openbare sektore.

Aangesien daar soveel belangstellendes in sportgeneeskunde is wat nie lede van die MVSA is nie (beide medici en nie-medici) is daar voorsiening gemaak vir hierdie persone om geaffilieerde lede van die SASGV te word deur aan te sluit by die sportwetenskapafdeling van die Suid-Afrikaanse Vereniging vir Sportwetenskap, Liggaamlike Opvoedkunde en Rekreasie (SAVSLOR). Geneeshere wat nie lede is van die MVSA nie, fisioterapeute, liggaamlike opvoedkundiges ens. moet volle lede van SAVSLOR word. Sodoende sal hulle name op die poslys geplaas word waardeur hulle die nuusbrieff sal ontvang met al die informasie aangaande toekomstige vergaderings—plaaslik en internasionaal, asook alle publikasies van beide SASGV en SAVSLOR rakende sportwetenskap.

Aansoeke om lidmaatskap moet gestuur word aan:
Die Sekretaris
SASGV/SAVSLOR
Kerkstraat 1131
Hatfield
PRETORIA
0083

"Deur aan te sluit by die SASGV, word u deel van 'n groep kollegas met gemeenskaplike doelwitte, nie net plaaslik nie, maar ook in die streke en op nasionale en internasionale vlak."

Wat is die Doelstellings van die Vereniging?

Die doelstellings en doelwitte van die vereniging is:

- Die bevordering van die wetenskap en praktyk van sportgeneeskunde.
- Om navorsing in sportgeneeskunde en sy vertakings aktief te steun, te bevorder en aan te moedig.
- Om onderrig en opleiding in sportgeneeskunde aan te moedig.
- Om kennis insake die diagnose, voorkoming en behandeling van sportblessings te bevorder.
- Om gereelde vergaderings te reël.
- Om samewerking tussen alle belangegroepes in sportgeneeskunde te bewerkstellig.

- Om die belange van sy lede te beskerm.
- Om die voorafgaande doelstellings te bereik, mag die vereniging subgroepes in die lewe roep, wat kursusse kan reël om die kennis van sportgeneeskunde uit te bou.

Wat is die Voordele van Lidmaatskap van die Vereniging?

Deur lid te word van die SASGV, sal u:

- die geleentheid hê om gereelde lesings en werksinkels by te woon insake sportgeneeskunde.
 - die geleentheid hê om aan te sluit by plaaslike subgroepes.
 - die joernaal gereeld ontvang (*Tydskrif van die Sportgeneeskunde-vereniging*.)
 - in staat wees om aktief deel te neem aan die tweejaarlikse nasionale kongres.
 - 'n forum hê vir persoonlike kontak en die uitruil van gedagtes insake sportgeneeskunde op 'n nasionale en internasionale vlak deur die vereniging se assosiasie met F I M S (Federation Internationale de Medicine Sportive—die Internasionale Federasie vir Sportgeneeskunde).
 - geregtig wees op verminderde inskrywingsfooie vir kursusse en kongresse.
 - deur u lidmaatskap sportgeneeskunde in Suid-Afrika bevorder deur koördinerende van die aktiwiteite van 'n multi-professionele span van kundiges.
- In hierdie joernaal vind u 'n aansoekvorm om lidmaatskap van die vereniging vir u aandag.

Cape Town Venue for Sports Medicine Congress

The 1987 congress organised by the SA Sports Medicine Association is to be held in Cape Town from April 14 to 16.

Details of the programme are still to be finalised, but the main topics will be:

- Exercise in health and disease.
 - Medical aspects of dance.
 - Sports traumatology.
- At least four international speakers have been invited to participate. Further information will be published in future issues of the *Journal of the SA Sports Medicine Association*.

The manual succeeded in structuring the acquisition of new behaviours in a way which encouraged subjects to accept responsibility for complying with the programme

Both the audio-tape and video-tape failed to do this. Besides this, both these devices could have served as external gauges of competence. Failure to conform to the behaviours observed by the models and/or keep up with the narrator's instructions could have been anxiety-provoking initially—hence the greater amount of time needed to reduce anxiety. Because these initial negative effects of modelling are not permanent, they cannot be said to be detrimental to the ultimate goal of the treatment, i.e. anxiety reduction. If however, time effective indices are considered, the superiority of the manual is clearly evident: A fast, maximally effective method which maintains a judicious balance between client and helper (inanimate in this case) participation in such a way that the client never perceives the helper as imposing objective or strategies.

Inferences drawn from these findings should, however, be tentative. Problems of experimental design, for example, subject population and the small number of subjects per group, limit the strength of the results. Difficulties in measuring the relatively complex phenomena of state and trait anxiety should foster caution in interpreting the results. Also, any generalisation of results from an investigation of anxiety in volunteer university students to other anxious individuals should be made cautiously. Procedures applicable to severely anxious students

may not be applicable or appropriate to more severe anxiety-neurotics.

The implications of this study are, however, vast when compared with mainstream psychotherapy and counselling.

In our society, seeking counselling or psychotherapy for neurotic anxieties has arguably become a very middle-class activity. Many people (without the required opportunity, money and / or intelligence) are denied therapy for anxieties. Depth therapy (eg. Freudian and Neo-Freudian) requires clients to have a certain level of intelligence to qualify for intervention. Besides this, all therapies are so expensive that only those with the necessary financial resources can afford them.

This study suggests that self-administered exertion therapy, with its simple, cost-effective and readily amendable techniques (as outlined by Schomer, 1979), is a valid and viable alternative means of alleviating certain forms of anxiety. It is the hope of the authors that this study will stimulate future research into the area of self-administered exertion therapy. Possible explorations may focus on maintenance of self-administered treatment effects. A worthwhile endeavour for future research would be the development and evaluation of procedural variations and modified instructional formats which would minimise dropout rate—a phenomenon which is notoriously high in self-administered techniques. Definitely worth exploring is whether the group setting is a curative factor. Subjective evaluation indicated that this was not the case and the authors are of the opinion that working through the treatment programme alone can be equally effective.

This hypothesis does, however, require further validation.

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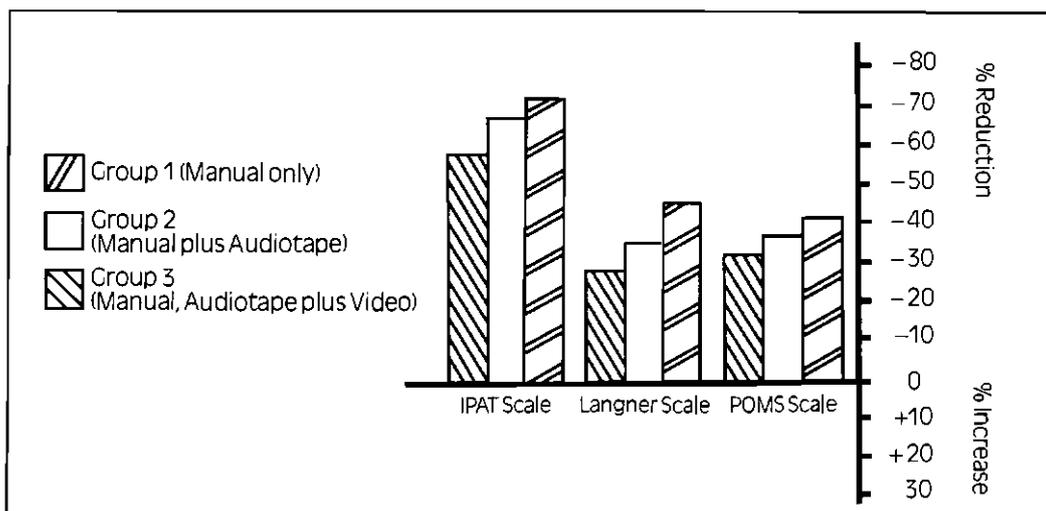


Figure 4: Overall Average Percentage Reduction in Anxiety Level Attributable to the AMT Programme

WHY YOU SHOULD BECOME A MEMBER OF SASMA

The South African Sports Medicine Association, while still in its infancy, is growing in membership. As many potential members would like to know more about the objectives of the association

as well as the personal advantages of becoming a member, we would like to explain SASMA's aims.

By joining SASMA you immediately join a fraternity of your colleagues with common goals, not only locally but regionally, nationally and internationally. We have organised an academic forum where ideas, views and experiences can be exchanged on a regular basis. If required, you can be brought into personal contact with a network of colleagues throughout the country.

What is the South African Sports Medicine Association?

SASMA is a professional body involved in all aspects of sports medicine. Since the association is a subgroup of the Medical Association of SA (Masa), its membership is made up of registered medical practitioners of both the public and private sectors who are members of Masa.

In view of the fact that there are many other interested parties who are not Masa members (medical or non-medical disciplines), provision has been made for these parties to become affiliated members of SASMA by joining the sports science section of the South African Association for Sport Science, Physical Education and Recreation (SAASSPER). Doctors who are not members of MASA, physiotherapists, physical educationalists etc. will have to become full members of SAASSPER, their names will come on the mailing list whereby they will receive the newsletters containing all information relating to future meetings locally and internationally as well as other publications of both SASMA and SAASSPER relating to Sport Science.

Application to become a member of SASMA or SAASSPER should be sent to:
The Secretary
SASMA/SAASSPER
1131 Church Street
Hatfield
Pretoria
0083

"By joining SASMA you immediately join a fraternity of your colleagues with common goals, not only locally but regionally, nationally, and internationally."

What are the Objects of the Association?

These are:

- The advancement of the science and art of sport medicine.
- To foster, promote, support, aug-

ment, develop and encourage investigative knowledge of sports medicine and its ramifications.

- To encourage the teaching and education of the same.
- To promote the knowledge of recognition, prevention and treatment of sports injuries.
- To hold and arrange periodic meetings.
- To establish and maintain co-operation between medical and other sciences concerned with sports medicine.
- To protect the interests of its members. To represent and further the interests of sports medicine and to do all such other things as are incidental to or conducive of the above objects.
- To accomplish the foregoing objectives, the Association may establish sub-groups and shall have the power to carry on research, and establish courses to the advancement of the knowledge of sports medicine.

What are the Benefits of Joining the Association?

By joining SASMA you will:

- have the opportunity to attend regular lectures and workshops in sports medicine.
 - have the opportunity of joining local sub-groups.
 - receive the *Journal of the SA Sports Medicine Association*
 - be able to actively take part in the bi-annual national congress.
 - have a forum for personal contact and exchange of ideas on a national and international level through the association with F I M S (Federation Internationale de Medicine Sportive—the International Federation of Sports Medicine).
 - receive reduction of fees for courses and congresses.
 - promote the advancement of sports medicine in South Africa through co-ordinated efforts by a multidisciplinary team of experts.
- In this journal you will find an application form for membership for your information.

NEWS FROM THE REGIONS

ransvaal

Sports Medicine Course

The Executive of SASMA is to hold a sports medicine continuing education course in Johannes-

burg on August 8 and 9.

The venue is the Bozzoli Hall at the University of the Witwatersrand.

Although the course is to be held at general practitioner's level, anybody who is interested may attend.

Topics to be discussed include traumatology, rehabilitation, cardiology, physiology, sports psychology and others. Further details will appear in future editions of the *Journal of SA Sports Medicine Association*.

For further information contact Mrs Audrey Schuster, P O Box 5539, Northlands 2116 or telephone (011) 783-6635.

Western Province

The Western Province subgroup has scheduled the following meetings on various sports medicine related topics.

May 7 Back Pain and the Athlete

Dr G du Toit - Examination of the Back

Dr G Irving - Exercises for the Back

August 6: The Triathlon Phenomenon

Dr G Irving - Medical Problems

Dr T D Noakes - Training Principles and Equipment

Dr D P van Velden - Position on the Bike
November 6: Alternative Therapy and the Athlete.

All meetings will be held at the UCT Postgraduate Medical Centre (Barnard Fuller Building, University of Cape Town Medical School, Lecture Theatre 4). Enquiries should be directed to Dr G Irving Tel: (021) 419-1944.

Abstracts

Heat Illness is Approximately the Same for Men and Women

During road races the frequency of heat illness is approximately the same for men and women.

Recent American studies suggest that there are few differences between men's and women's responses to heat stress when they are matched VO_2 max.

Dr Emily M Haymes, Associate Professor of Movement Science and Physical Education at Florida State University in Tallahassee, reports that although early studies showed that women are less tolerant of exercise in the heat than men, this may have been because the women had lower fitness levels.

"In hot, humid environments women have an advantage in losing heat because of their larger-surface-to-weight ratio, even though men lose more sweat," she adds. "Training lowers women's threshold for sweating and improves their tolerance for exercise in the heat. During road races the fre-

quency of heat illness is approximately the same for men and women.

E M Haymes

The Physician and Sportsmedicine, Vol 12, no 3, March 1984.

Suid-Afrikaanse
Sportgeneeskunde
Vereniging



South African
Sports Medicine
Association

APPLICATION FORM AANSOEKVORM

Full Member/Volle lid R25
Student Member/Studente-lid R5

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Address/Adres:

.....

Tel No/Tel Nr: MASA No/MVSA Nr:

Full Member: Medical practitioners who are members of M.A.S.A. Volle Lid: Mediese praktisyne wat lede van die M.V.S.A. is. Student Member: Medical students in clinical years. Studente lede: Mediese studente in hul kliniese jare. Applications for membership of SASMA should be sent to: The Secretary, SASMA, 1131 Church St, Hatfield, Pretoria, 0083. Cheques to accompany membership form.