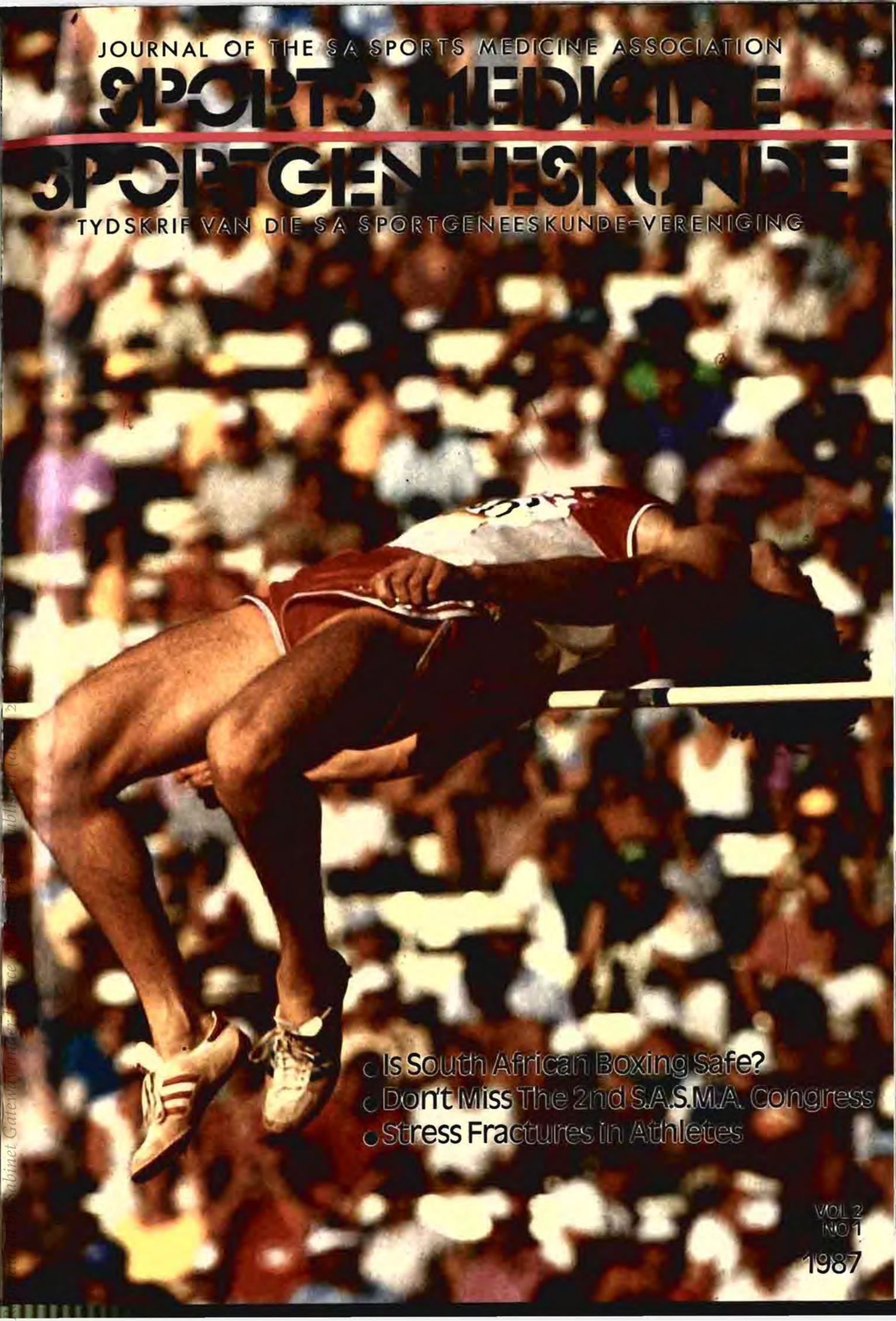


JOURNAL OF THE SA SPORTS MEDICINE ASSOCIATION

SPORTS MEDICINE

SPORTGENEESKUNDE

TYDSKRIF VAN DIE SA SPORTGENEESKUNDE-VERENIGING



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- Is South African Boxing Safe?
- Don't Miss The 2nd S.A.S.M.A. Congress
- Stress Fractures in Athletes

VOL 2
NO 1

1987



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IS SOUTH AFRICAN BOXING SAFE

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

I have always campaigned against banning professional boxing even though the previous president of S.A.S.M.A. favoured its banning in his own personal capacity.

My attitude has always been that it is far better to have adequate control of professional boxing than to ban it. The question that one must ask is—Is the South African Boxing Board of Control doing all in its power to safeguard the health of the boxers under its control? "

About two years ago the World Boxing Association produced a Safety Code. This had a number of good points but one particularly controversial one i.e. the doctor at the ringside had the power to stop a fight if

he thought that one of the contestants was taking excessive punishment. Another was that all contestants in a world title fight must have a brain CAT scan immediately before the fight. To my knowledge and certainly in world title fights in South Africa these measures have not been applied. Almost two years ago at Sun City a meeting of all the medical officers of the provisional boards under the chairmanship of Dr I. Labuschagne was held. At that meeting your editor presented a safety code comprising what was considered to be the best aspects of all the various World Safety Codes. This was unanimously accepted by the medical officers present. This Safety Code needed to be ratified by the South African Boxing Board of Control. To my knowledge this has never been done despite the fact that we had a recent death in the ring of a

South African boxer. Also judging from some recent fights the general ringside opinion was that some of the refereeing was not up to scratch, a number of one sided fights being allowed to go on too long. I do not blame the referee who has no medical knowledge nor does his training have a medical background. He does have the power to call in a doctor to advise him but in many cases he is not certain when to call the doctor as he does not know what he is looking for. The exception to this is cuts around the eyes which is most likely the least important decision needed in the ring. It is surely grossly unfair to a referee that he alone should have the power to rule over the life and death of a boxer in the ring.

We have two excellent medical men on the South African Boxing Board of Control viz Dr I. Labuschagne and

Dr J. Jivhuho, so why the delay. Surely the "governing body" of S.A. Boxing, the WBA's Safety Code as a maximum should be accepted—but seeing that it is not followed by the W.B.A. itself the exercise seems futile.

The general medical opinion in 1st world countries is that boxing should be banned—let us not land up with unsafe boxing only happening in the 3rd world.



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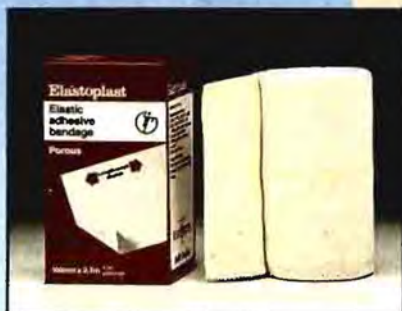
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SEVEN FOOT BARRIER "NOT IMPOSSIBLE"

A

t highschool Springbok Desiré du Plessis, holder of the South African and all-Africa high-jump records, admits that she wasn't a very good high-jumper. "You know, at school you have to run and jump for your team. I wasn't very good, but I improved. I did not like high-jumping at all — I preferred long-jumping and running"

Desiré, a 21 year-old, Rand Afrikaans student, is pleasant, modest — and dedicated. Her coach, Owen van Niekerk, believes that she is improving too fast. South Africa's world-class high-jumper is happy with her training programme. "It really is quite hard", she says. "The purpose is to work towards a goal, I don't think I have improved too fast. Anyway there is nothing you can do about it"

Coach van Niekerk is obviously enthusiastic about Desiré's potential. "I've mapped out a four-year programme for her and I reckon that in Desiré, South Africa has the world's first wom-

en athlete capable of breaking the mystical 7ft (2,13m-2,14m barrier)", he told *The Star*.

Desiré may be modest, but she has plenty of guts and determination. "It's a goal I'm aiming for", she laughs girlishly. "The 7ft barrier is not impossible". In this interview the *Journal of the SA Sports Medicine Association* spoke to Desiré and her coach about training methods, injuries, motivation, personal philosophies and other interesting topics.

Question:

Desiré, your leap into the record books has not been easy. Is it true that you became a high-jumper at school almost by chance?

Du Plessis:

You know, at school you have to do everything — you have to run and jump for your team. So I started jumping. I wasn't very good but I improved. I did not like high-jumping at all — I preferred long-jumping and running.

Question:

Did you start high-jumping at school because you are tall?

Du Plessis:

There were a lot of tall girls at school. But in any case I started jumping and became better.

Question:

For some time you have battled to emerge from the shadow cast by Charmaine Gale of Northern Transvaal. Did this worry you?

Du Plessis:

No, never. I have been the national champion for the past four years. I realise you have to start from the bottom and work to the top. I knew I would improve.

Question:

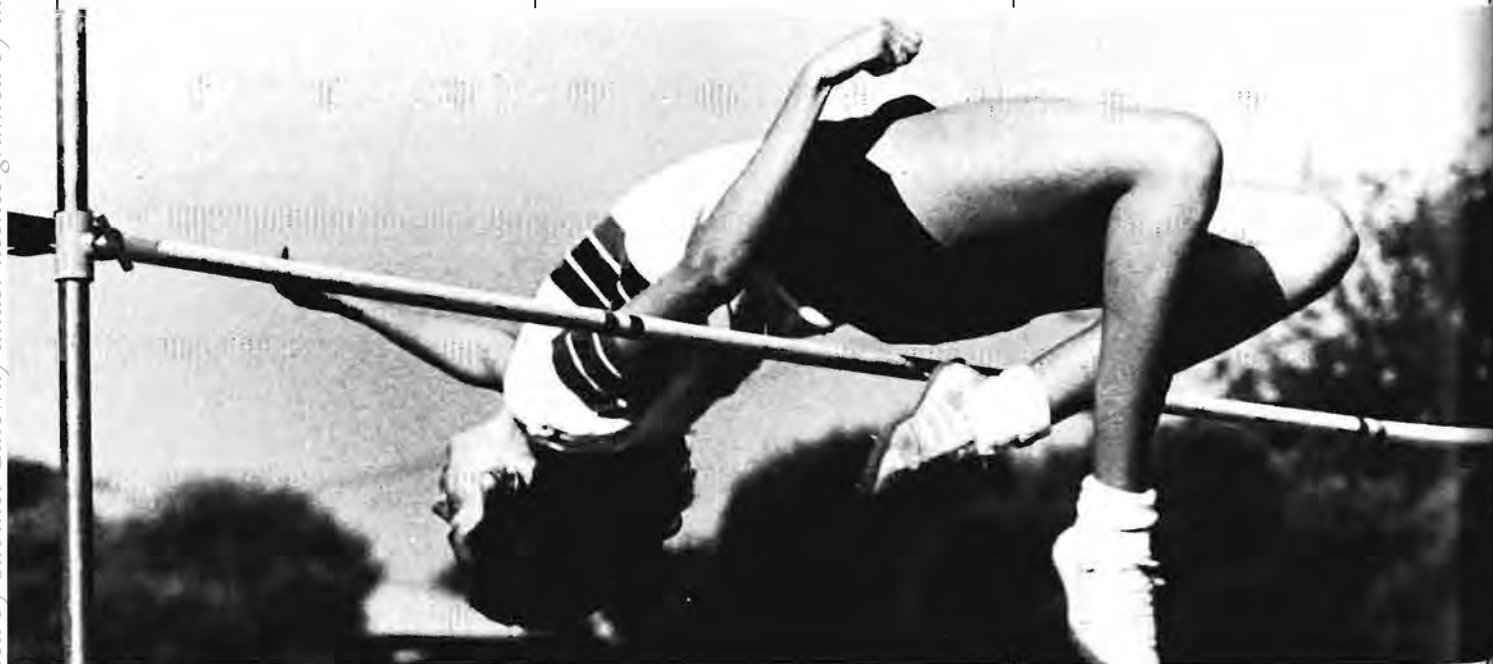
What do you feel about jumping 7ft? Is it possible?

Du Plessis:

I don't think it is impossible. It may take years to reach this mark. I don't know why women can jump only 2m or more. Men jump 2,40m. Women have improved their times in the marathon. So I can't see why women high-jumpers cannot jump higher.

Question:

Now that you are the all-Africa record



holder are you a university celebrity?

Du Plessis:

Some people know about it. Only the sports people are actually aware of the record.

Question:

Please discuss your training programme.

Du Plessis:

Our programme includes weight training, running and a great deal of jumps. More recently there has been a greater emphasis on running and the number of jumps has increased. This, together with the weight training, has made me stronger. At the beginning of winter I train with weights in the gym. Jumping training includes a variety of exercises, including uphill and depth jumps.

In the off season I train with weights three times a week and run twice a week. Mondays, Wednesdays and Fridays are set aside for weight-training. I run and jump on Tuesdays and Thursdays. The running is a long, hard workout.

Question:

How do you sum up your training programme?

Du Plessis:

It is quite hard. The purpose is to work towards a particular goal. I am happy with my training programme — I don't think I have improved too fast. Anyway there is nothing you can do about it.

Question:

Your coach says you have the potential to be a world record-holder.

Du Plessis: (laughing)

I don't know. It's a goal I'm aiming for. The 7ft barrier is not impossible.

Question:

You have made the dramatic statement that Desiré is not a natural high-jumper. Please explain.

Mr van Niekerk:

Because Desiré is very tall (she is 1,95m

"We try to teach athletes more about injuries so that they don't panic — they must try to treat the limb immediately. Once you are injured — particularly if you are a jumper — you must see a doctor who knows something about sport injuries."

now) she was selected at school as a high-jumper. She was not born a high-jumper — she did not have the natural ability to jump. She did not have enough spring and nobody thought she could jump.

Question:

Do you believe she can break the mystical 7ft (2,13m-2,14m) barrier?

Mr van Niekerk:

Yes, Desiré has been on a programme for four years. She is actually working on an eight year programme to achieve maximum height. At the moment Desiré is the only jumper in the world, including the world champion, who has the ability to jump 2,10m or higher.

Question:

You have said she has the potential to beat the world record which is 2,08m.

Mr van Niekerk:

At present Desiré is not trying to break the record because she is a South African and world records don't count. In four years Desiré aims to break 7ft. If she gets close to that height she will break the world record. A 7ft jump can be compared with Roger Bannister's

sub-four minute mile — nobody thought he could ever break this barrier.

A 7ft jump will stand for many years. If she achieves this Desiré will be the first woman — South African or otherwise to have done that — whether it counts or not.

Desiré has improved too fast. She should have jumped 2,01m after six years training — not four years training.

Question:

Why has she improved suddenly?

Mr van Niekerk:

As I have said she was not born to spring. But she now has so much spring that she is starting to break through. Her weight training, which has strengthened jump muscles, as well as jumping exercises have forced her to improve a bit faster. Improvement is marked in the middle of the eight year programme.

Question:

Desiré also has a strict strength building programme?

Mr van Niekerk:

We select all the muscles which help her lift — feet, calf, knee, upper leg and hip, back and stomach muscles.

Question:

You are the senior athletics coach at RAU. Do you have other responsibilities?

Mr van Niekerk:

Yes, I am also the senior jumping coach in South Africa — the co-ordinator of jumping events in the Republic.

Question:

How did you gain your specialised experience as a coach?

Mr van Niekerk:

I was a triple-jump Springbok. In the 1950s we did not have coaches. We had to organise things ourselves. I am very interested in athletics and have more than 5 000 coaching books. I write to coaches all over the world, including communist countries.



Question:

How do you sharpen the performance of jumpers?

Mr van Niekerk:

The training combination which I have selected has helped jumpers more than anything else. I work out my own exercises and then go according to a plan.

Question:

Please describe your personal athletics history.

Mr van Niekerk:

I specialised in long jump and triple jump and became a Springbok in 1962-63. For more than 15 years I held the triple jump record — 50ft 10ins and that was achieved on a grass track. If I did it all over again I'm sure I would have jumped much better on a tartan track.

Question:

Do you have further advice about jumping training?

Mr van Niekerk:

Hundreds of different jumps are selected so that the jumper's muscles are fully conditioned. Winter and build-up training must be done in a manner similar to middle-distance training.

Middle-distance runners start with slow running. Jumpers' training includes six

weeks to two months of slow jumping — skipping, easy hops, jumping and "steps". We then go on to interval training for six weeks to two months. Interval jumping involves covering 100, 150 or 200m on one leg, "long strides" and various other exercises designed to improve jumps. Tempo training is the next stop. The middle-distance athlete runs hard 100, 200 and 300m sprints. Our hard training includes running 60m and more on one leg, harder jumps and other exercises over distances of 60m to 150m. Then we go on to speed training just before the start of the season. During the season athletes do depth jumping. They jump down from boxes and over boxes to take up all the shock. But you cannot execute these exercises unless you have really built up. Middle distance runners cannot run 600 and 800m unless they have prepared for these shorter runs. This is where athletes all over the world go wrong. Jumpers try to do depth and hard



jumping, even high jump training, before they have trained to become high-jumpers. That is our secret: we train to become high-jumpers and long-jumpers — that is why our athletes experience few injuries.

Although RAU jumpers execute 20 000 jumps in winter they don't do much jumping in training because they are built up already.

They may do different exercises for the take-off and lift but they do not do much high-jump and long-jump training. If they jump it will be about twice a week.

For example on Tuesdays they jump "easily" and try to improve their technique. This is repeated on Thursdays. Athletes build up during the week and then are ready for six, eight or ten hard jumps.

Question:

How are injuries avoided?

Mr van Niekerk:

Because of the build up in training

athletes do not experience many injuries. They also do a lot of running, which also helps. Training and not straining must be emphasised. I used to be a coach who advocated a great deal of training in one day. When athletes jump a lot they not only run the risk of injury but will feel tense and sore the next day. In other words the training programme is affected. Our jumpers condition their bodies to get used to the tension and exertion of jumping. The body cannot do something unless it is really used to doing it.

Our top athletes know more about muscle injuries than most other athletes in South Africa. It should also be remembered that jumpers can be injured very easily.

Question:

Do you believe that athletes should not rush to the doctor too quickly if they are injured?

Mr van Niekerk:

What I mean is that athletes can sort out their injury very easily. Jumpers and coaches should learn more about treatment. We treat the injury immediately. Maryna van Niekerk holder of the

South Africa and Africa long jump record had an un-official jump of over 6,87m — which would have been much better than the Africa record.

She jumped so hard that she strained her ankle. Maryna did not sprain it but her foot hit the board so hard that her ankle was strained. Because of immediate treatment the injury was avoided. Three days after that she broke the all-Africa record.

We try to teach athletes more about injuries so that they don't panic — they must try to treat the limb immediately. Once you are injured — particularly if you are a jumper — you must see a doctor who knows something about sports injuries. Otherwise it will take you a long time to sort out the injury.

It is no use going to an ordinary doctor. He will merely tell the athlete to rest. Anybody knows that. The athlete must be told what to do to build up again.

DON'T MISS THE 2ND SASMA CONGRESS

T

he 2nd National Congress of the South African Sports Medicine Association promises to be a landmark in the development of Sports Medicine in South Africa.

Authorities of international repute will be participating and sharing their knowledge in many of the topics that are currently of great interest in Sports Medicine.

Day One: Exercise in health and disease

The first day of the Congress will deal with exercise in health and disease. Six sessions have been arranged, two on exercise and coronary heart disease featuring international authorities, Professor Ralph Paffenbarger from Stanford University and Dr Peter Wilson who is currently Director of Epidemiology in the world famous Framingham Study into coronary risk factors and heart disease. Professor Paffenbarger is recognised as one of, if not the leading authority on the epidemiology of exercise in the prevention of coronary heart disease. The remaining four sessions will cover Obesity, Anorexia and Nutrition; the use of Exercise in the Management of Disease; Medical Screening to Reduce the Risks of Exercise; and Exercise Prescription and Adherence. These sessions will feature all the recognised South African authorities in these fields and will provide an up to date overview of the progress that is being made in these areas.

The principle aim of the session will be to provide concise reviews of the topic with adequate time for discussion.

Day Two: Spotlight on Dance Lets start with a short dance-medicine quiz:

Your patient who is a serious ballet dancer complains that she is unable to achieve adequate depth in her demi-plié. Physical examination of her foot reveals tenderness medially between



"Of all forms of physical activity, dance is perhaps the most specialized with its own terminology and peculiarities of style...and yet the most neglected."

the medial malleolus and anterior tibial tendon. Pain is reproduced by hyperdorsiflexion of the foot.

1. Do you know what she means by demi-plié?
2. Can you diagnose this (very common) condition among dancers?
3. Were you aware that stretching the achilles tendon can only aggravate this condition?

(Answers on next page)

Did you know?

*Tenderness, swelling and crepitus in the posterior aspect of the ankle of a dancer may neither be ACHILLES TENDONITIS nor FLEXOR HALLUCIS LONGUS TENDONITIS (more medial) nor PERONEAL TENDINITIS (seen more laterally), but a condition known as **Dancers Heel**. This is a chronic injury involving posterior talar impingement. The dancer experiences pain as she goes 'on pointé' (ie brings the foot into extreme plantar flexion) as the soft tissue structures including the synovium and capsule are compressed. The condition may be aggravated by the presence of a large posterior tubercle or os trigonum. With repeated impingement, the soft tissue becomes inflamed and fibrotic.

*Dancers who repeatedly 'roll in' or 'sickle in' may develop pain and tenderness in the posterior aspect of the medial malleolus. With continued inflammation a small nodule can form in the flexor hallucis longus tendon.

The point that we would like to make, is that you're going to find this second day of the symposium most interesting!

Of all forms of physical activity, dance is perhaps the most specialized with its own terminology and peculiarities of style... and yet the most neglected. Dancers in this country quite justly complain that doctors don't understand the demands which dancing places on their bodies and are of little help in diagnosing and establishing the aetiology of their injuries. It is for this reason that a particular spotlight will



all on the medical and scientific aspects of dance at this Congress. We are convinced that this will be an extremely eye-opening experience for the medical profes-

sion. At last you are going to be introduced to the obscurities of this exercise-form. And with a vengeance!

The programme is to be introduced by Prof Elizabeth Trigaardt—one of the 'biggest names' in ballet-dancing in South Africa. She will conduct a live practical demonstration with her ballet school students and together with Sonja Mayo, one of the country's most highly regarded contemporary dance teachers and a physiotherapist by profession, will focus on the importance of correct technique in avoiding injuries.

The latter part of the morning's programme will concentrate on the orthopaedic aspects of dance. We have invited Lyle Micheli, resident orthopaedic surgeon of the Boston Ballet Company and John Bergfeld, of the Cleveland Clinic Foundation for this purpose. These two specialists will provide a general overview of foot, lower leg, knee and back injuries occurring in dancers. Several open papers will also be presented by local speakers.

The afternoon's programme will include a discussion of the particular problems related to children's participation in dance (Lyle Micheli) and a focus on nutritional aspects, in particular, the disturbingly high incidence of anorexia nervosa and bulimia amongst dancers. Len Calabrese, co-worker at the Cleveland Clinic Foundation will make a special contribution in this regard.

Aerobic Dance has taken off in South Africa... and with it an alarmingly high incidence of injury. The symposium will answer the question 'why is aerobic dance so hazardous?' Several local speakers will present research findings and Renee Parker will discuss the latest trends away from high-impact aerobic dance in the USA.

Other issues receiving attention will include the incidence of amenorrhoea amongst dancers and a scientific approach towards conditioning. (As sections of the afternoon programme will only be of interest to those with a specific interest in dance, a parallel session of free papers in General Sports Medicine will take place concurrently.)

As a whole this dance programme is going to be unique. It will provide you with an overview of the state of knowledge and be of immense value in assisting you with the treatment of dancers. An opportunity not to be missed!

Medical practitioners attending the complete dance programme will be

"So you say you don't see dancers in your practice! Ask yourself, "why not?" Dancers are crying out for doctors who understand their Injuries and can help them. By attending the second day of the Sports Medicine Symposium, you can obtain specialized knowledge in this field and become of assistance to dance schools in your area. Dance teachers will be only too delighted to refer their students to you if they are aware that you possess this specialized knowledge.
DATE: Wednesday, 15 April 1987
REGISTRATION: 07h30-08h30
Special certificate of attendance to be available on request."

able to obtain a certificate of attendance.

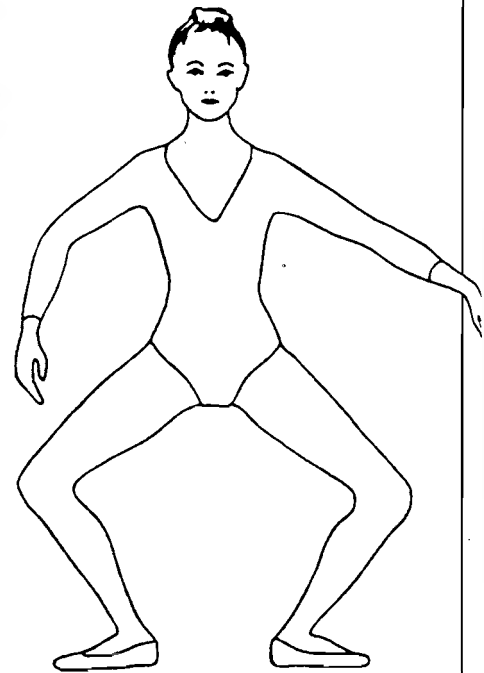
Day Three: Sports Traumatology

The theme for the third day of the congress is Sports Traumatology. This is a very wide area, but a concentrated effort is made to cover the most important injuries in sport by experts both locally and from abroad.

The topics to be discussed are divided in five sessions:

- Sports injuries in children and adults
- Upper limb injuries
- Lower limb injuries
- Injuries to the head and spine
- Overuse injuries

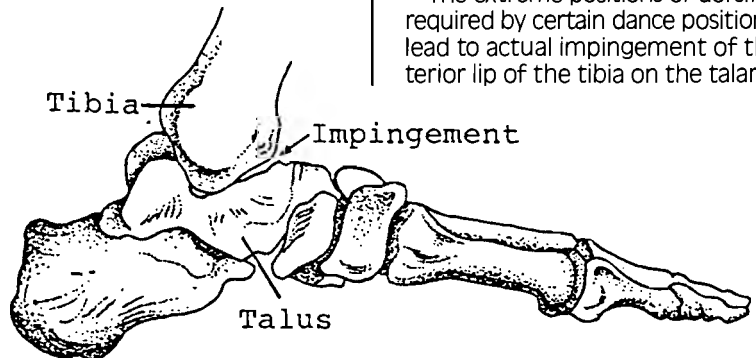
The lectures will be published in full in the congress proceedings for future reference.



Answers: Dance Medicine Quiz

1. Heels remain on the ground as dancer bends knees (pliés).
2. Anterior talar impingement syndrome.

The extreme positions of dorsiflexion required by certain dance positions can lead to actual impingement of the anterior lip of the tibia on the talar neck.



REGISTRASIEVORM

2DE KONGRES VAN DIE SUID-AFRIKAANSE VERENIGING VIR SPORTGENEESKUNDE

14-16 APRIL 1987 CAPE SUN-HOTEL, KAAPSTAD

Voltooi asseblief en pos (u tjek ingesluit en uitgemaak aan die Sportgeneeskundekongres) aan: Mej. D. McTeer, Nagraadse Mediese Sentrum, Universiteit van Kaapstad Mediese Skool, Observatory 7925. Telefoon: 471250 bylyn 348.

Naam _____

Adres _____

Poskode _____ Tel: _____

Registrasiefooie sluit alle lesings, tee en middagetes in.
NB Daar is aansoek om toeweging t.o.v. inkomste-belasting gedoen.

REGISTRASIEFOOIE

	Heeltyds	Per Dag
Lede	R185	R75
Ander	R210	R85
Studente	R 60	R25

Kongresbanket R25 per persoon.

Totale bedrag ingesluit R _____

Tjeks is aan Sportgeneeskundekongres betaalbaar.

As u op 'n daaglikse basis bywoon vermeld asb welke dae

SOSIALE BEDRYWIGHEDE

Maandag 13 April	Registrasie en skemerkelkparty 18h00 Cape Sun-Hotel	Ek sal die funksie bywoon Vergesel	<input type="checkbox"/> JA <input type="checkbox"/> NEE	<input type="checkbox"/> JA <input type="checkbox"/> NEE
Woensdag 15 April	Banket en dansvertoning 20h00 R25 per persoon Cape Sun Hotel	Ek sal die funksie bywoon Vergesel	<input type="checkbox"/> JA <input type="checkbox"/> NEE	<input type="checkbox"/> JA <input type="checkbox"/> NEE
	Stel ons asb. in kennis as u in die damesprogram belangstel (nadere besonderhede volg later)		<input type="checkbox"/> JA	<input type="checkbox"/> NEE

AKKOMMODASIE

Voltooi asb. hierdie gedeelte as u akkommodasie benodig. Ons sal dan die nodige reëlings tref.

Cape Sun-Hotel, Kaapstad (bed en ontbyt)	Enkel R88.00	Dubbel R62.00 per persoon
Die Dorpshuis Kaapstad (slegs bed)	R54.00	R31.50 per persoon

Ek benodig enkel/dubbel akkommodasie teen _____ Ek arriveer op _____

en vertrek op _____ = _____ nagte.



REGISTRATION FORM

2ND SOUTH AFRICAN SPORTS MEDICINE ASSOCIATION CONGRESS

14-16 APRIL 1987 CAPE SUN HOTEL, CAPE TOWN

Please complete and return (together with your cheque made out to the Sports Medicine Congress) to Miss D. McTeer, Postgraduate Medical Centre, UCT Medical School, Observatory, 7925. Telephone: 471 250 ext 348.

Name _____

Address _____

Postal Code _____ Tel: _____

Registration fees include all lectures, teas and lunches.

NB Concession for income tax rebate has been applied for.

REGISTRATION FEES

	Full course	Daily rate
Members	R185	R75
Non-members	R210	R85
Students	R 60	R25

Congress banquet R25 per person.

Total amount enclosed R _____

Cheque made payable to Sports Medicine Congress.

If attending on a daily basis please state which days

SOCIAL FUNCTIONS

Monday 13 April Registration and cocktail party 18h00 Cape Sun Hotel
I will attend YES NO
Accompanied YES NO

Wednesday 15 April Banquet and dance exhibition 20h00 R25 per person Cape Sun Hotel
I will attend YES NO
Accompanied YES NO
Please let us know if you are interested in the ladies programme. YES NO
(further details to follow)

ACCOMMODATION

Please complete this section if accommodation is required and we will make your bookings.

	Single	Double
Cape Sun Hotel, Cape Town (bed & breakfast)	R88.00	R62.00 per person
The Town House, Cape Town (bed only)	R54.00	R31.50 per person

I require single/double accommodation at _____ Arriving _____

Departing _____ = _____ nights.



2DE SASGV KONGRES- 'n WARE MYLPAAL VIR SPORTGENEESKUNDE IN SUID-AFRIKA

D

ie Suid-Afrikaanse Sportgeneeskunde Vereniging organiseer sy tweede internasionale sportgeneeskundekongres in Kaapstad (Cape Sun Hotel) tydens 14-16 April

1987. Hierdie kongres kan gesien word as 'n ware mylpaal in die geskiedenis van sportgeneeskunde in Suid-Afrika aangesien dit die grootste kongres op hierdie terrein is wat nog op hierdie subkontinent gereël is wat temas dek soos:

- ★ Sport en oefening in gesondheid en siekte
- ★ Die mediese en wetenskaplike aspekte van dans
- ★ Sportbeserings in volwassenes en kinders

Die belangstelling in die kongres is so groot, dat die organiseerders verplig was om groter fasiliteite te bekom om al die afgevaardigdes, uitstallers en referate te akkommodeer. In die huidige tydvak van akademiese boikotte jeens Suid-Afrika, is dit bemoedigend om te verneem dat daar 'n amptelike afvaardiging vanuit Duitsland kom van die Duitse Vereniging van Ortopediese en Troumatologiese Sportgeneeskunde. Benewens die vier hoofsprekers op die kongres uit die VSA, is ons ook bevoorreg om sprekers uit Engeland en België te bekom wat 'n inset op die kongres lewer om 'n ware internasionale kleur aan die verrigtinge te verleen.

Voorlopige besonderhede insake die program word elders in hierdie publikasie gegee deur die organiseerders van die wetenskaplike program. Die volledige referate word na afloop van die kongres die lig laat sien in 'n prestige publikasie.

Wie behoort die kongres by te woon?

Aangesien sportgeneeskunde so 'n multidisiplinêre vakgebied is, is daar belangegroepes in al die mediese, aanverwante mediese professies asook sportwetenskaplikes, sportafrigters, dansonderwysers, en les bes, die sport-

man self. Alle persone wat nou betrokke is by sport, oefening en gesondheidsbevordering deur 'n gesonde leefwyse, sal baat by die besprekings.

Wat behels die program?

Die wetenskaplike program word oor drie dae versprei, met 'n goed omskrewe tema vir elke dag wat 'n baie wye area betrek. Alhoewel die klem val op die geneeskundige aspekte van sportbeoefening, word daar nogtans gepeog om alle belangegroepes se behoeftes te bevredig deur gebruik te maak van 'n multidisiplinêre paneel van deskundiges. Parallele sessies word sover as moontlik beperk deur die tyd vir referate te beperk tot 15 minute. Besprekingstyd en praktiese demonstrasies word so ver as moontlik gereël om afgevaardigdes meer betrokke te maak by die aanbiedings. Die volgende temas word breedvoerig behandel:

Hipokinetiese siektes:

Suid-Afrikaners word toenemend die slagoffers van gesondheidsprobleme wat ontstaan as gevolg van 'n gebrek aan sinvolle fisieke aktiwiteite. 'n Gesonde leefwyse en die gebruik van oefening in voorkomende en bevorderende geneeskunde is 'n brandpunt in die mediese wêreld en word deur van die wêreld se bekendste geneeshere toegelig. Hier dink ons veral aan die epidemie van iskemiese hartsiektes wat ons land teister.

Abnormale eetpatrone

Sekere sportsoorte het byna sinoniem geword met siektes soos anorexia nervosa en bulimia as gevolg van die groot klem wat daar geplaas word op 'n lae gewig en estetiese lyne. Daar word 'n breedvoerige bespreking gehou oor hierdie uiters sensitiewe probleem en 'n poging sal aangewend word om riglyne neer te lê waarvolgens hierdie siektes voorkom kan word.

Mediese aspekte van dans:

Geneeshere lig dikwels hulle wenkbroue wanneer daar van dansbeserings gepraat word, maar met die huidige entoesiasme waarvolgens mense deel-

neem aan aerobiese oefeninge, word dokters dikwels gekonfronteer met dansverwante probleme.

Tydens die simposium word 'n dansvertoning georganiseer om aan die kongresgangers te demonstreer watter eise 'n choreograaf en afrigter aan sy dansers en gimnaste kan stel wat soms lyk of dit die wette van swaartekrag, ergonomie en anatomie ignoreer!

Kinders in sport:

'n Besondere hoogtepunt in die verrigtinge is die besprekings wat handel oor sportbeserings in kinders wat toegelig word deur Dr Lyle Micheli, 'n wêreld outoriteit op hierdie terrein. Ouers, afrigters en onderwysers is dikwels bekommerd oor die intensiewe oefenprogramme wat jong sportpresteerders moet volg ter voorbereiding vir kompetisies op nasionale vlak.

Sportbeserings:

Kontaksport het 'n onvermydelike beseringsrisiko en die voorkoming, behandeling en rehabilitasie van sportbeserings sal altyd van groot belang wees vir die mediese professie namate groter wordende getalle mense aan sport en oefening begin deelneem. Geneeshere moet attent gemaak word op die groot verskeidenheid van unieke sportbeserings wat soms moeilike diagnostiese uitdagings kan wees.

Die geneesheer moet nie alleen die wese van die sport en besering verstaan nie, maar ook die sportman se motivering en verwagtings om 'n sportbesering suksesvol te hanteer.

Nuwere ontwikkelings in sportgeneeskunde:

Daar is geleentheid tydens die kongres vir vrye referate insake resente navorsing in geneeskunde soos byvoorbeeld meniskusoorplantings, gewrigs-ervanging en sportdeelname, nuwere fisioterapeutiese tegnieke vir rehabilitasie, ensovoorts.

Damesprogram:

Alhoewel Kaapstad byna alles bied vir die besoeker, word daar tog ter wille van eenheid 'n besoek gereël na 'n wynplaas en die historiese Stellenbosch,

STRESS FRACTURES AND POSTERIOR TIBIAL SYNDROME IN ELITE ATHLETES

Dr D.P. Van Velden MB ChB

S

Summary

A series of 31 stress fractures caused by long distance running in 19 elite athletes during one year only is presented. Most fractures occurred in the tibia (68%), 14% were in the fibula, 10% in the metatarsals and 6% in the femur. The athletes were all examined clinically, radiologically and with radionuclide bone scans (Tc 99 m pyrophosphate). The X-ray appearance is delayed, variable and often subtle. The bone scan is positive early in the process and detects multifocal asymptomatic stress fractures, and stress fractures causing referred pain. The stress fractures all healed after a period of 6-8 weeks of appropriate treatment. We found a high percentage of abnormal pronation in athletes with tibial stress fractures. It is suggested that long distance runners might follow a diet containing insufficient calcium, and that calcium supplementation should be considered in selected cases. We consider "shin splints", or the posterior tibial syndrome to be a periosteal reaction caused by repeated mechanical stress of traction on the tibialis posterior tendon at its attachment to both the tibia and interosseous membrane. A stress fracture is a dynamic continuing process ranging from a periosteal reaction ("shin splints") through accelerated remodelling of circumferential lamellar bone weakened by increased osteoclastic resorption to a stress fracture and eventually a complete fracture.

Introduction

A knowledge of the clinical syndrome of stress fractures is becoming increasingly important at a time when more and more people are participating in repetitive sports, most especially running, in an effort to benefit their cardiorespiratory systems and to achieve weight loss, improved muscle tone, and a general sense of well-being. The key to successful handling of this

syndrome is early diagnosis and treatment, as well as prevention of stress fractures, thereby reducing the morbidity for the patient.

Definition

Breithaupt,¹ a Prussian military surgeon, is credited with the first description of stress fractures in 1855 when he described a syndrome of painful swollen feet in soldiers after long marches.

A stress fracture is best defined in terms of a dynamic clinical syndrome characterized by typical symptoms, physical signs and plain X-ray and bone scan findings which is aggravated by stress and relieved by inactivity. Constant findings in the syndrome include bone tenderness and localized swelling, with positive findings on technetium bone scan with or without signs on plain X-rays. All of these findings occur in the normal, disease free bone of patients subjected to repetitive stresses.

Incidence

Stress fractures are well documented in the military experience^{2,3,4,5} and recently there have been increasingly frequent reports of stress fractures occurring in athletes.^{6,7,8,9,10,11} The most frequent site of a stress fracture in athletes is the tibia, although it has been described in the metatarsals, calcaneus, fibula, femur, pubis, ischium, ilium, pars interarticularis, humerus, ulna and ribs. With regard to individual sports and activities, stress fractures have been reported in running,^{12,13,14,15} ballet,^{16,17} hockey,¹⁵ cricket,¹³ javelin throwing,¹⁸ diving,¹⁵ basketball,¹⁵ tennis,¹⁵ dancing,¹⁵ swimming,¹⁹ football,²⁰ rugby and gymnastics.^{21,22}

Results

Patients and Methods

This paper reports on 31 stress fractures in the leg, sustained by 19 elite middle and long-distance runners attending the Students' Health Service of

STRESS FRACTURES IN ATHLETES : 1983

	TIBIA		FIBULA		METATARSAL		FEMUR	
	L	R	L	R	L	R	L	R
1. Mr C.S.	■	■		■				
2. Mr P.E.		■						
3. Mr A.S.	■	■						
4. Mr S.M.	■							
5. Mr X.Y.	■	■						
6. Mr N.B.	■	■						
7. Mr P.B.	■	■	■	■				
8. Mr W.M.					■			■
9. Mr J.C.	■	■						
10. Mr R.B.	■							
11. Mr J.R.					■			
12. Mr P.K.	■							
13. Ms I.W.			■					
14. Ms C.E.		■						■
15. Ms M.S.	■							
16. Ms M.M.			■					
17. Ms D.H.		■						
18. Ms L.N.	■							
19. Ms S.T.		■						
	21		5		3		2	
	68%		16%		10%		6%	

TOTAL : 19 PATIENTS, 31 FRACTURES, 8 MULTIFOCAL (42%)

the University of the Orange Free State in Bloemfontein, Republic of South Africa during 1983.

The median age of the athletes was 21 years (range 18–25 years). There were 7 women (37%) and 12 men (63%). The stress fractures were multifocal in 42% of cases. The patients were all highly competitive runners. Other sports were excluded from this series. (Fig. 1).

Anatomical distribution of stress fractures (Fig. 2).

In this series where we examined runners only, we found an incidence of stress fractures of 6% in the femur, 68% in the tibia, 14% in the fibula and 10% in the metatarsals. We had no athlete with a femur neck or pubis fracture.

This correlates favourably with other series of the incidence of stress fractures done in sports injury clinics all over the world (Orawa et al 1978).

Training methods

The runners trained on the average approximately 100 km/week, ranging from 30–150 km/week. Most of them

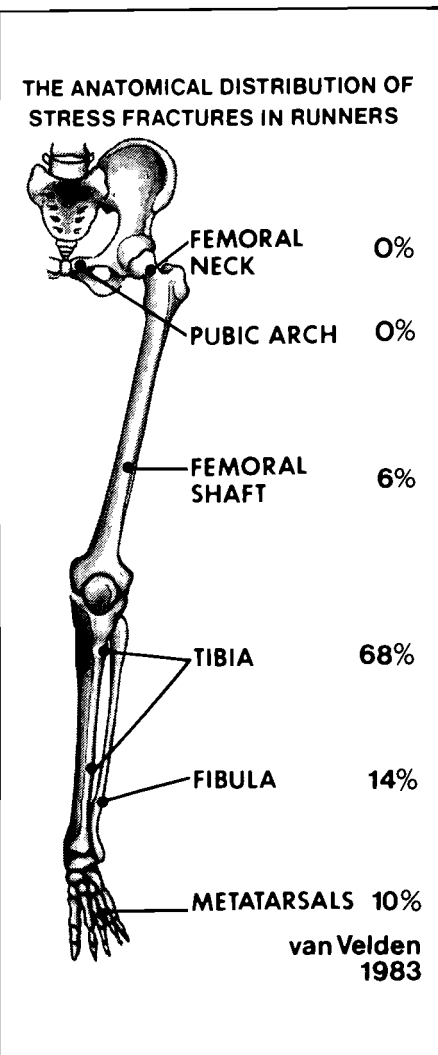


Fig. 2

had been practising regular physical exercise for only a few months before the onset of the symptoms.

History

The athletes attended the regular sports injury clinic where a detailed history of previous injuries and training techniques was obtained. None of the runners sustained a previous stress fracture or any other prior injury. The runners ran mainly on the track or a hard asphalt surface. Most runners had modified their training in some way prior to injury. Injury generally occurred within 12 weeks of these changes. The most common training change was an increase in the number of kilometers run, some athletes reported changes in running surfaces, shoes or speed. All the runners were elite athletes competing at provincial or national level. The athletes complained of pain that recurred with activity and was relieved by rest.

Physical examination

All 19 runners presented for treatment because of pain and had tenderness on palpation at the fracture site. In about 50% of athletes, swelling as well as a slight raise in skin temperature was noted over the fracture site.

The athletes were requested to bring along their running shoes for examination of the pattern of wear. Subsequently the runners' feet were observed whilst running on the treadmill and in a static weight bearing position. The above observations revealed that 73% of the runners with lower extremity problems had abnormal pronation or prolonged pronation time of the foot during the stance phase. Most of these feet had a normal subtalar joint range of motion. We found that the measurement of the amount of eversion and inversion of the heel in relation to the leg is crude, inexact and not of much practical value in the evaluation and prediction of the degree of pronation of the foot.

No other physical abnormalities were found to correlate with this overuse

TIBIAL STRESS FRACTURES

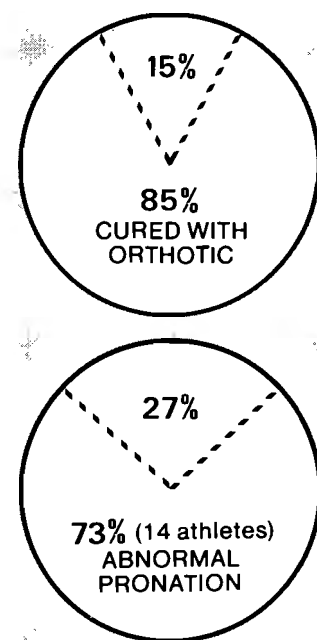


Fig. 3

syndrome of the lower extremity (Fig. 3).

Special investigations

The clinical findings in all 19 subjects were confirmed with radionuclide bone scans (Tc 99 m pirophosphate) and conventional roentgenograms.

The radionuclide bone scans were positive in all the clinically suspected stress fractures. Eleven patients had only one stress fracture, whilst 8 patients (42%) had multifocal fractures (Fig. 4).

The initial radiographs were positive in only 60% of clinically suspected stress fractures, but delayed conventional roentgenograms after 14 days revealed another 10% positive results. However, half of the scintigraphic foci remained negative on the radiograph (Fig. 5).

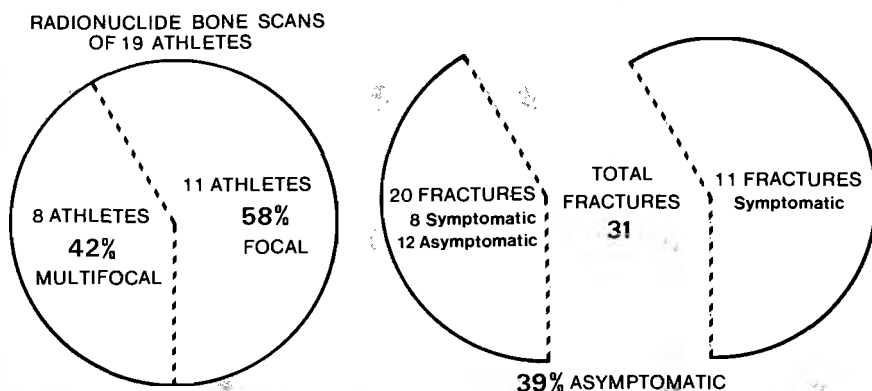


Fig. 4

RESULTS OF RADIOGRAPHS

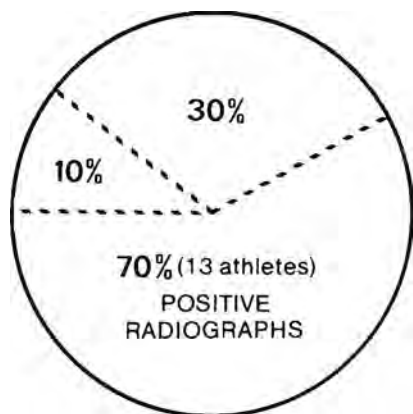


Fig. 5

Treatment

The primary treatment of stress fractures in athletes was directed at eliminating the cause of the overuse syndrome which involved mainly curtailing of all running. No patient required cast immobilization or absolute rest. Cardiovascular tone and flexibility were maintained by an alternative aerobic exercise such as cycling and stretching was added to maintain flexibility. The runners refrained from running from two weeks to six months. There were 14 athletes (73%) with tibial fractures displaying abnormal pronation of the feet who were treated with orthotics or better designed "anti-pronation" running shoes to prevent the pronation in addition to rest (Fig. 3).

The athletes were all advised to resume running on soft surfaces only if the fracture area was painfree, and to increase the training load gradually. The patient had to be free of significant pain with activity; training distances and techniques that produced pain, were avoided.

Discussion

Stress fractures are not uncommon in runners and shin splints is one of the commonest reasons for consulting the physician in our sports injury clinic. This is considered to be an overuse syndrome due to the rhythmic repetitive muscle action that causes sub-threshold mechanical insults which summate beyond the stress-bearing capacity of the bone. It is when the mechanical integrity is lost, that stress fractures become manifest.

The response of bone to increasing levels of stress is a dynamic process of accelerated remodelling where the normal bone is temporarily weakened by the osteoclastic resorption which is followed by a slower osteoblastic replacement of osteonal bone. When the reactive bone (callus) is inadequate for reinforcement, a break will be seen in the

cortex. With further overexercise, the stress fracture can proceed to a complete fracture with displacement.²³ The clinical syndrome of stress fracture is best understood not as an event, but rather as a continuing process ranging from a periosteal reaction through accelerated remodelling of circumferential lamellar bone weakened by increased osteoclastic resorption to a stress fracture and eventually a complete fracture. It is important to note that shin splints is merely a periosteal reaction to repeated mechanical stress of the traction on the tibialis posterior tendon and at its attachment to both the tibia and interosseous membrane^{24,15} due to abnormal pronation of the foot. A better descriptive name for "shin splints" would be posterior tibial syndrome (Fig. 6).

In this series we found a high incidence of hyperpronation and excessive tibial rotation in athletes with tibial stress

could be a compensatory motion secondary to misalignment of the heel-foot, or leg-foot alignment. The increased pronation of the subtalar joint may also be due to a forefoot varus deformity, a rearfoot varus deformity or it may be connected to other foot abnormalities such as a length discrepancy between the left and right lower extremity. Fractures of the femur, tibia and metatarsals occur mainly on the side of the long leg. Females are twelve times more prone to stress fractures than males²⁵ especially when there is a history of dieting or anorexia nervosa, or in amenorrhoeic runners. Their diet lacks sufficient calcium to maintain the normal calcium balance. Trabecular bone density is lower in highly trained woman with sustained amenorrhoea than in a group of equivalently trained women with regular menstruation. This could be due to estrogen deprivation and

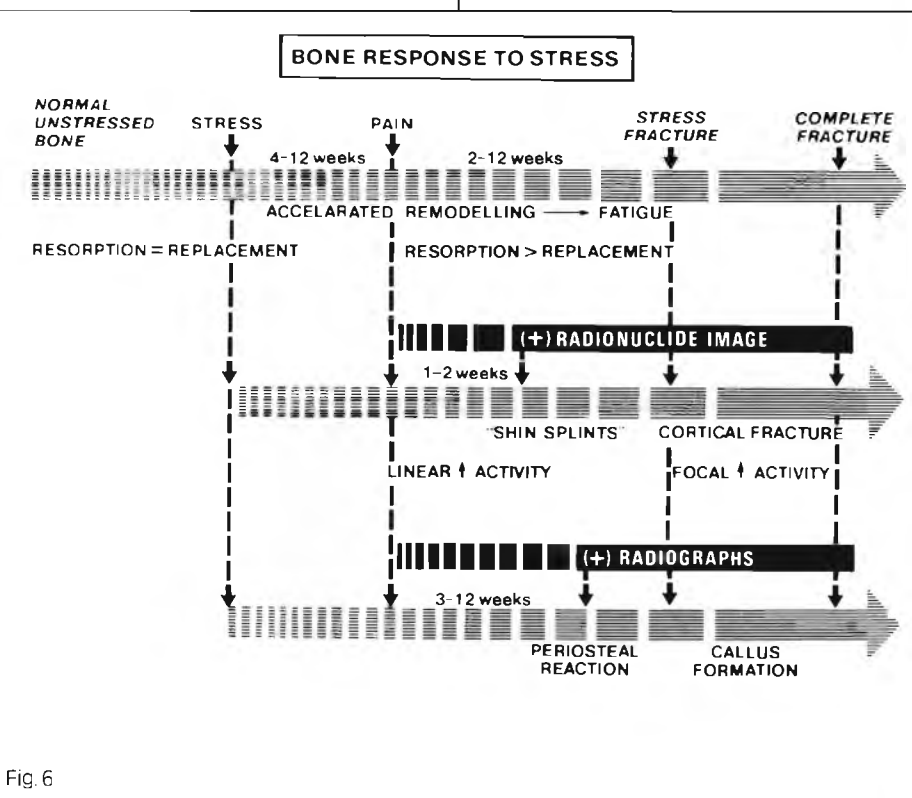


Fig. 6

fractures (73%). These athletes responded favourably to antipronation orthotic devices in their running shoes or the appropriate antipronation running shoe which corrected this biomechanical abnormality (85%). In mid-stance, with the foot pronated and the tibia internally rotated, the tendon is pulled at its attachment to both the tibia and the interosseous membrane. Pronation can be aggravated by running on a banked track, or the shoulder of the road. Competitive runners with abnormal pronation or prolonged pronation time of the feet, use appropriate orthotics or shoes as a preventative measure at our clinic. This greater pronation at the subtalar joint

reflects increased bone loss. Previous inactivity increases the incidence of stress fractures, but highly trained athletes are liable to sustain these injuries when required to perform at peak levels for prolonged periods of time, or changed their training programme or shoes recently. The Caucasians are considerably more at risk than the Blacks.

Excessively hard running shoes, in particular spikes, may be a factor explaining this injury, especially in track athletes. The same principle applies for runners training on very hard surfaces. These factors are not so important, for weight bearing is not an essential requirement for such fractures as

demonstrated by rib fractures secondary to chronic cough, or in swimmers. Training errors were common to all our athletes:— a sudden increase in the training load, run one or more very long races, return too quickly to heavy training or faster speed.

Interestingly, in only three animals have stress fractures been documented— thoroughbred racing horses, racing greyhounds and man. These all have been specifically trained to produce maximum performance with certain types of repetitive physical exertion.^{26,27}

The presumptive diagnosis of stress fractures is made on the typical history and clinical examination. The runner will relate a pain that recurs with activity and is relieved by rest. The pain is usually at the site of the stress fracture, but we have had cases with referred pain.

The clinical examination will usually demonstrate point tenderness of the bone at the site of the stress fracture. There is usually a localized swelling in the area of the stress fracture, or a tender, corrugated feeling along the tibial border due to the periosteal reaction and micro-fractures of shin splints. Of particular significance in our series of tibial and fibular stress fractures, was the slight palpable raise in the skin temperature over the suspected fracture site. This sign could easily be detected with dorsum of the fingers against the subcutaneous bone. (This finding forms the basis of stress fracture diagnosis by Computer-assisted thermography).²⁸

Confirmation of stress fractures can be obtained with conventional roentgenograms or radionuclide bone scanning. The initial conventional radiographs in our series were positive in only 60% of clinically suspected stress fractures and delayed conventional roentgenograms after 14 days revealed an additional 10% positive results. Radiographs can be normal, when stress fractures are present, for three reasons:

1. The reactive bone formation and fracture may be present, but not identified, because the reactive bone was not tangential and the fracture line was not perpendicular to the X-ray beam.

2. The appearance of reactive bone formation is usually delayed from three weeks to three months after the development of symptoms.

3. The wrong area was examined roentgenographically because of referred pain: femoral fractures can refer pain to the hip or knee, proximal tibial fractures can refer pain to the knee, and distal tibial fractures can refer pain to the ankle.

When the roentgenograms are normal, the athletes may question the diagnosis of stress fracture and commence

running with a strong possibility of delay in healing of the stress fracture. It is our policy to do bone scans on all elite athletes with suspected stress fractures and normal and abnormal conventional radiographs, for the following reasons:

1. To confirm the diagnosis.
2. To detect multiple unsuspected stress fractures.
3. To detect stress fractures causing referred pain.
4. Radionuclide bone scans also detect stress fractures earlier than conventional roentgenographs and is very specific—in fact, a normal bone scan excludes the diagnosis of stress fractures. The increased sensitivity of radionuclide bone scan relates to increased blood flow and is largely independent of the rate of osteogenesis. The sensitive radionuclide imaging revealed



that stress fractures might be considered a multifocal entity, that half of increased radionuclide activity remain radiographically negative, and that a third may remain asymptomatic. Stress fractures are often multifocal (42% in our series) and may cause a referred pain distant from the original fracture site.^{2,29}

The importance of early detection of stress fractures is early treatment. Undiagnosed stress fractures can progress to complete fractures with displacement. Preventive measures can be instituted prior to the development of disabling pain that precludes athletic competition. Adaptions to the training programme or correction of biomechanical deformities (ie. pronation), decreases the morbidity.

However, conventional roentgenograms must still be obtained prior to radionuclide bone scans for two reasons. First, abnormal findings for a

stress fracture would eliminate the need of a bone scan. Second, conventional roentgenographs are more specific and can identify causes of falsely abnormal bone scans, ie tumors and infections.

In highly competitive athletes, it may be exceptionally difficult for the regular participant to refrain from all activities for the duration of rest from injurious sport. Cycling was of great benefit physically and psychologically while allowing healing to occur in stress fractures of the lower extremity. In our experience a positive bone scan is sometimes the only way to convince an over enthusiastic and highly competitive athlete that he is overtrained and needs relative rest!

Conclusion

1. Stress fracture is a clinical overuse syndrome that is characterised by localized pain and bone tenderness and swelling, elevated local skin temperature, relieved by rest and produced by repetitive stress.

2. The incidence of stress fractures is generally increasing with increased athletic activity. Incidence is higher in females and lower in black athletes.

3. The X-ray appearance is delayed, variable and often subtle. The bone scan is positive early in the process and detects multifocal asymptomatic stress fractures and stress fractures causing referred pain.

4. The importance of early diagnosis is early treatment. Patients with only a periosteal reaction (shin splints) may require only a change of regimen, an orthotic foot control, and a period of 2 or 3 weeks rest, while the stress fracture patients usually require several weeks of abstinence from potential harmful exercise.

5. Abnormal pronation is a common finding in tibial stress fractures in runners. The use of anti-pronation orthotics in shoes or a more rigid anti-pronation running shoe to limit the excessive movement of the subtalar joint, is a valuable treatment modality to prevent lower extremity overuse problems in athletes.

6. Femoral neck and shaft fractures need special attention and usually need internal fixation.

7. The tibia is the most common bone involved in a stress fracture.

8. Athletes with amenorrhoea and athletes displaying symptoms of anorexia nervosa, are particularly prone to develop stress fractures. Under these circumstances it is advisable to supplement the athlete's diet with calcium (1 500 mg Calcium per day).

Turn to page 20 for references.



Barclays World of Cricket, The Game from A-Z, General Editor E W Swanton, Collins, 1986.

When **Barclays World of Cricket** appeared in 1980, building upon and expanding on E W Swanton's original **World of Cricket**, it rapidly assumed a position of unchallenged authority and reputation among cricket books.

Such has been its success that, six years later and having sold out two editions, it is virtually unavailable. Now in its place comes a new and revised edition which maintains the pedigree of its illustrious predecessors. A few years is a long time in cricket and the new edition includes descriptions of the major, and minor events and developments which have taken place since 1980.

The expansion in the book's text is matched by an increase in the quantity of illustrations, while the distinguished list of contributors has been enhanced by the addition of many outstanding writers of the present generation.

The new edition maintains the overall format and chapter divisions which were fundamental to the success of the 1980 edition and covers the following subjects: history of the game, overseas cricket, biographies, international cricket, English countries and universities, the limited-over game, grounds of the world, other United Kingdom cricket, a cricket treasury, the laws, glossary, statistical appendix.

There are an additional 64 pages of the text, making 736 in all, and over 300 new black and white photographs, bringing the total number of illustrations to 850.

The 1980 edition was lauded by critics. Said John Arlott: "it towers above all other works of cricket reference." Sir Donald Bradman's comment: "No cricket lover, whatever his stature, should be without a copy."



club members as well as the lone practitioner. Completely non-racial, **Karate SA** will appeal to thousands of students of karate, one of the fastest growing sports in South Africa.

The author, Rob March, who has practised **Shotokan** karate for over 15 years and holds the rank of the third Dan, has included chapters on the various styles of karate and has interviewed 12 top South African karate experts.

The foreword has been written by Dr Gordon Irving of the Metropolitan Sports Science Centre, University of Cape Town. "Karate is a sport in which the exercise of both mind and of body are equally important", he says.

Among the uninitiated it has been likened to an Eastern form of boxing. But while there is heated debate in medical circles about whether or not boxing should be banned (because of the inherent dangers of long-term brain damage that boxing poses), karate does not suffer from the same sort of controversies. Karate has something for everybody, whether it is practiced in order to keep fit and flexible, to meet others, to develop one's physical and mental potential or to learn self-defence.

Karate SA is well illustrated with photographs and line drawings which clearly and simply show the various moves and techniques of karate.

Karate SA by Rob March, Timmins Publishers, pp 126, R 29, 95, 1986.

This book is aimed at the keen student of all ages and can be used by karate

POTENTIAL PSYCHOLOGICAL DANGERS OF JOGGING

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

Cooper concludes that we all share pathological narcissistic and masochistic tendencies but that most find ways to divert these tendencies towards useful activities. The marathon runner is likely to be quite far along the narcissistic-masochistic spectrum and "almost uniquely, carries on a useless activity which symbolises society's need for a special hero who will enact the infantile triumphs requisite for healthy functioning, and who also enables the audience to share vicariously in some of his or her forbidden pleasures".

show personality characteristics similar to those of girls with anorexia nervosa is discussed in my book. Once again, the suggestion is that running provides a socially-sanctioned diversion for such persons to cope with their disturbed psychological state.

vi) The addictive dependent personality
I suspect that, for whatever reasons, some people are especially prone to becoming addicted to alcohol, cigarettes or other drugs. Furthermore, my experience with some such individuals suggests that they find that running is a counter-addiction which allows them to live without recourse to these drugs.

us believe.

In one of the few scientific studies of these symptoms, Baekeland (1970) found that daily exercisers refused to participate in a study for which they would be paid to stop exercising for a month. Many asserted that no amount of money would stop them exercising. Baekeland was therefore forced to study less addicted people who exercised only three times a week. He found that a month-long period without exercise impaired sleep, increased sexual tension and increased the need to be with others.

It is also enlightening to look at the scientific evidence Morgan (1979) pro-



Thus runners with more than their fair share of narcissistic and masochistic pathology are likely to use running as a pseudo-solution for avoiding problems in life, and Cooper suggests that the running addiction, in particular the need to inflict the pain suffered during a marathon is "best understood in terms of its contribution to the masochistic psychic balance, with overtones of perverse satisfaction".

vi) The anorexoid personality
That some obsessive male runners

The arguments against a "running addiction"

Withdrawal symptoms in runners

The published evidence of the withdrawal symptoms experienced by runners who are forced to stop running, are somewhat less dramatic than Morgan (1979) and Sacks (1981), would have

vides to support his description of the "runners' addiction" and the withdrawal symptoms that result. He provides eight brief case reports involving the following: two runners who developed withdrawal symptoms when they were forced to stop running because of injury; three joggers who continued to exercise with chronic injuries; one who missed a staff meeting and went running instead; a counselling psychologist who expressed guilt as his midday run cut into thirty minutes of his counsel-

ling time for which he was being paid; and finally an Olympic wrestler who, in addition to his wrestling training, would awaken in the middle of the night and run 8-10 km.

It would certainly seem that the documented evidence for withdrawal symptoms in runners is distinctly sparse. My personal experience is that such symptoms are usually of a psychological, not a physical nature and only occur when I stop running whilst still working. I have never developed these symptoms when I have stopped running even for as long as four weeks whilst on holiday. This indicates that these withdrawal symptoms are not solely due to stopping running.

The biochemical argument

There is now good evidence that endorphin levels in the blood rise during exercise (Francis, 1983; Harber and Sutton, 1984) supporting at least superficially, the premise that elevated endorphin levels caused by exercise could explain the addictive nature of running. However, there are two weaknesses in this argument.

Firstly, it is now also known that endorphins play an integral part in the normal stress response of the body. Thus any stress to which the body is exposed will cause endorphin levels to rise and we know that not all stresses, for example being chased by a lion, are likely to be addictive!

Secondly, because the proposed mechanism for the running addiction is neurochemical (ie. addiction to endorphins), the implication is that anyone who ever runs will become addicted in the same way as someone who takes an addictive drug. Thus a runner who made a rational decision to begin running would ultimately become dependent on a neurochemically-based addiction which would override his rational thinking processes making it impossible for him to stop.

But the evidence is that not all joggers experience the runner's high nor that they are addicted to the extent of developing the symptoms described by Morgan (1979) and Sacks (1981). The fact that the runner's withdrawal symptoms are mainly of a psychological rather than a physical nature, further suggests that the addiction is not neurochemically-based. Thus an entirely different explanation must be sought.

The psychological explanation

I find it difficult to dispute the contention that certain categories of runners are attracted to running because it provides a psychological support system that allows them to cope with their particular psychological disorders. In this group we would include those who suffer from anxiety and depres-

sion, the athletic neurotics, the obsessive compulsives, the anorectics and those with addictive-dependent personalities. Probably there are many more such categories.

But this explanation can hardly hold for the vast majority of runners who both outwardly, and when tested scientifically, seem to enjoy excellent psychological health. We have already described a number of studies which have shown that runners exhibit increased emotional stability and score low on neuroticism and anxiety (Morgan and Costill, 1972). Indeed even obligatory runners enjoy excellent psychological health (Blumenthal et al., 1984, see also Chapter II). They are also cleverer than average, of higher socioeconomic status, more imaginative and self-sufficient than average, although they tend to be more introverted. In addition, runners have been shown to score higher on psychological scales which measure needs for 'thrill and adventure' and it has been suggested that running may be an important method for 'thrill and adventure' seekers to acquire sufficient sensory input to keep their needs satisfied (Pargman, 1980).

Thus it would seem that an explanation for attraction or addiction to running must take into account all these psychological attributes of runners. One suggestion (Pargman, 1980) is to consider that adherence to running is either as a *commitment dedication* on an intellectual basis, or an *addiction-dependence* on a psycho-chemical basis. Thus the committed runner might run regularly for health or social reasons, (the desire to forestall a heart attack), or for financial reasons, or for prestige, power or narcissism. In this view, a professional runner is not addicted to running but committed to earning a living. The addicted runner on the other hand, runs not for any intellectual reasons, but because running provides opportunities for mind-bending experiences, for euphoria or for escape from depression or anxiety (Sachs, 1981).

Two psychologists from the University of Illinois, Mary Ann Carmack and Rainer Martens (1979), were the first to attempt a more complete explanation of the way in which social, psychological and physiological factors interact to determine the extent of any individual's involvement in running. They quantified the extent of this involvement on the basis of assessing the following aspects of the runner's lifestyles: The time spent thinking and reading about running, the distances involved in travelling to races and the frequency of competition; the number of marathons run; the number of friends who were runners; the percentage of new friends met since starting running who were also runners; the amount of

money spent on books and magazines about running, and on running equipment and accessories; the extent to which changes in eating, drinking and other lifestyle patterns have been made so as to accommodate the daily run; and the duration and intensity of the running itself.

Two North American sociologists, Paul Joseph and James Robbins (1981), have used this information in a novel study of the sociological factors that influence so called running addiction. They note that Western society is quite unusual in its concern with work as the activity contributing most to the sense of self-esteem and sense of accomplishment, but also conclude that this is in the process of changing. Currently only 20% of Americans consider their work to be a more important source of their personal identity than their leisure activities and, over the past twenty years, the number of men in Sweden who consider leisure to be more important than work, has doubled. They wondered whether the extent to which runners were committed to running might not also reflect a shift in their source of self-identity from work to leisure.

Using this Carmack/Martens Commitment to Running Scale, they studied four different groups of runners whose commitment to running was classified according to the following criteria, and related their level of commitment to various indices of work satisfaction and commitment:

Group 1: "Running as the most important commitment." This group ran at least 64 km a week and raced often; most of their friends were runners and they read about running at least weekly.

Group 2: "Running as a crucial commitment." This group ran between 18-64 km per week and raced frequently. They were less involved in the running sub-culture than were Group 1 runners.

Group 3: "Running as a hobby." This group also ran between 18-64 km per week, but had no interest in the running sub-culture.

Group 4: "The occasional runner." Runners in this group ran just when they felt the urge. They usually stopped running in winter or during bad weather.

These authors made three important findings. Firstly, they found that all runners, regardless of their level of commitment, valued self-involvement at work, but this self-involvement had to be active, one in which the employee was able to focus on himself and the contribution he could make.

Secondly, it was found that the more committed these runners were to their running, the greater the tendency to rank running as a more important source of their self-identity than their work. Thus the more committed the person is to his running, the more he feels he can be best understood

through his running.

Finally, the greater the dissatisfaction with certain aspects of work, in particular the potential it gave for self-development, for self-improvement, or for competition, the greater the tendency to rank running over work as the more important source of self-identity. This was particularly marked in those who were dissatisfied with the capacity for self-development offered by their work and hence shifted their identity from that of worker to runner.

Joseph and Robbins conclude that those associating with the leisure role, in this case the runners, are either attracted to a particular set of work needs, really a philosophy of work that stresses the *cultivation of self* — (a chance to relax, to be alone with one's problems, to counter the seriousness of life, to forget about personal problems) — or they are frustrated by their job experience because of its failure to provide opportunities for their self-development in terms of, for example, control over the outcome of their efforts; the ability to see the unambiguous results of those efforts; the chance to be totally involved and to make a contribution to society; and to provide challenge, adventure and friendship.

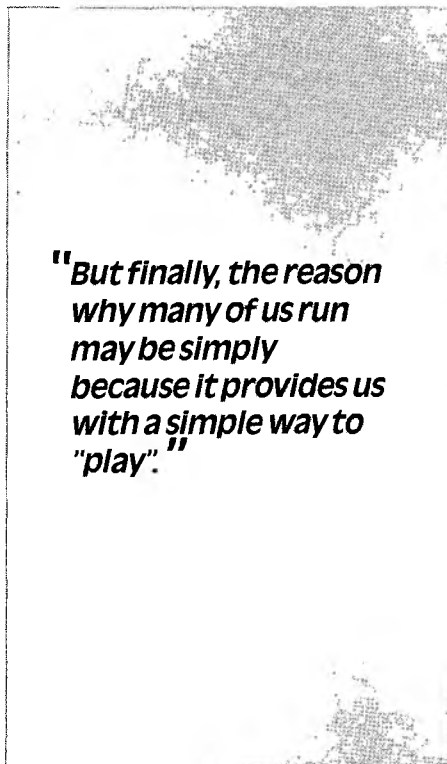
In sociological terms, these authors suggest that their findings indicate that firstly, there is the gradual rejection of the previous social norm that individuals should identify themselves exclusively through their work. Running, they suggest, "represents a quiet but legitimate rebellion against the unwarranted hegemony of work as the primary focus of self-identity".

Secondly, they point out that this shift in identity would not have been possible if there had not also been an expansion of leisure time. However, they note that this is selective and does not involve all social classes. Thus runners come from a social class which enjoys this privilege of an expanded leisure time and therefore the possibility for this shift in self-identity.

Thirdly, they conclude that the very fact that there exists this need to search for alternative or supplemented areas of self-understanding indicates that ambiguity exists. If running is then to take on compulsive and irresponsible features of its own, they suggest that running itself contains elements of pathos, uncertainty and insecurity. The unsettling elements of this search for self-identity through running is the implication that all is not as it should be in other aspects of the runner's life. By pouring ourselves into running, Josephs and Robbins suggest that we unconsciously adopt a form of social amnesia and therefore escape from activities that continue to be important.

Two other explanations have been offered for commitment to running that do not invoke an abnormal psy-

chological state. Fred Graham (1981) Professor of Religious Studies at Michigan State University, points out that there are four major anxieties that colour our lives; death, guilt, meaninglessness and loneliness. He suggests that a recent addition is the anxiety of terminal helplessness or living death. This he suggests has arisen through the introduction of hospital intensive-care units which raise the spectre of a living death in which the terminally ill patient, too ill to function, loses control of his life and is at the mercy of machines and the unfortunate medical ethos of preserving life at all costs. Graham noticed that a statement frequently made by runners is typified by the following: "I'm going to run till I'm 90. If the weather is bad on my last day,



"But finally, the reason why many of us run may be simply because it provides us with a simple way to 'play'."

I'll collapse and die on the indoor track. Don't let anyone try to keep me alive, Fred. Just take a pushbroom and shove me off the running surface. Then, when you've finished your run, call the coroner." Graham also suggests that part of the explanation for the withdrawal symptoms that occur when one misses a few days' training is that this causes anxiety because it induces thoughts about "the body is ageing" and the time of terminal helplessness is closer.

These feelings engendered by the anxiety of terminal illness, are well described in Noel Carroll's (1981) book: "His controlled fear is that all his precious training will go down the drain if he eases up for a single day... I have lived all my running life with this anxiety and I know I share it with other runners: an inability to sleep if a day's training is missed; the guilty feeling that over-

whelms one with gloom and despondency; the remorse for reneging on your commitment; the realisation that you have let yourself down."

But finally, the reason why many of us run may be simply because it provides us with a simple way to "play". Another pair of American psychiatrists, Samuel Perry and Michael Sacks (1981), point out that the word sport comes from the word disport which means to "carry away" from work. They point out that there are three features of sport that also make it play: it produces nothing in the real world, once sport has purpose, it is no longer play but becomes work; play is separate from the real world (the opposite of play is not work, but reality); although it is a purposeless activity in a make-believe world, the feelings expressed in play can be very real and very intense.

Thus, for many of us running provides the make-believe world of our childhood in which we can do anything, including win the Comrades Marathon in our dreams: "Like children, we pretend because we can never completely accept reality for what it is. Pretending is make-believe, an illusion" (Perry and Sacks, 1981).

So running is our personal private playground in which we develop our private personal creations. In running, the runner is able to control how, when, where, how far and how fast he runs; he can call "time out" when he has had enough and he can set his own goals; all the ingredients essential for a play activity.

And the success of this make-believe is shown by the answer to the question: Who really but the runner could be proud of finishing 10 000th in the Comrades Marathon?

Conclusions

The most important lesson I have learned in researching this section on running addiction, is that there are few definitive answers in psychology. In part this is because of the extreme complexity of human nature and the fact that psychology is a relatively young science and therefore in a state of continuing flux. There seems to be very many possible explanations for any particular observation but few firm data to identify which theory is correct.

In providing a broad range of possible psychological explanations for this attraction to running, I have not tried to conclude which theories are the more likely. Rather I have provided readers with a core of ideas that will allow them to make some commonsense deductions about their own motives for running.

By understanding our addictions, we may be better able to manage them and so avoid the most dangerous pitfall in running — "The Selfish Runner's Syndrome".

FINALE FASE REHABILITASIE VAN SPORTBESERINGS EN DIE PLEK VAN ISOKINETIESE TOETSING DAARIN

Dr Etresia Storm (MB ChB) (Pret) Projekleier: Ciba-Sportbeseringsprojek, Instituut vir Sportnavorsing en - opleiding, Universiteit van Pretoria.

Geen pasiënt met 'n sportbesering behoort sy sport te hervat voor hy nie funksioneel gerehabiliteer is nie - so kan herbeserings tot 'n groot mate verhoed word.

Die doel van funksionele rehabilitasie is om die volgende te herwin:

1. Funksioneel spierkrag.
2. Kardiovaskulêre fiksheid.
3. Spieruithou vermoë.
4. Koördinasie en balans vir sport-spesifieke aktiwiteite.
5. Soepelheid.

Die hantering van 'n sportbesering verg 'n multidissiplinêre rehabilitasiespan. Die span lede sluit in: die pasiënt, dokter, fisioterapeut, biokinetikus en afrigter. Die besering kan in 5 fases verdeel word, naamlik:

1. die profilaktiese fase;
2. die besering en noodhulpfase;
3. die behandelingsfase;
4. die primêre rehabilitasiefase;
5. die sekondêre rehabilitasiefase.

Die fisioterapeut is verantwoordelik

vir die baie belangrike primêre rehabilitasiefase. Hierdie fase neem 'n aanvang so gou moontlik na die besering, byvoorbeeld nog in die bed na chirurgie of direk na 'n sagteweefselbesering. Die fisioterapeut help die pasiënt met die herwinning van sy kinetiese funksie. Wanneer die pasiënt pynvry kan beweeg, is die rehabilitasieprogram egter nog nie afgehandel nie. Dan volg die sekondêre rehabilitasiefase waarin die pasiënt funksioneel gerehabiliteer moet word. Hierdie fase staan onder leiding van 'n biokinetikus - in samewerking met die fisioterapeut en afrigter.

Die beginsels van funksionele rehabilitasie is soos volg:

1. Evalueer die pasiënt herhaaldelik om sy vordering te monitor.
2. Oefen binne perke van pyn.
3. Verhoog die weerstand waarteen geoefen word progressief.

'n Isokinetiese toetsapparaat is van groot waarde by herhaalde evaluasie van 'n pasiënt om sy vordering te monitor. By 'n kniebesering kan die eerste

evaluasie byvoorbeeld gedoen word wanneer hy sy knie 90° pynvry kan flekseer. Verskeie sentra in die land beskik oor 'n isokinetiese toetsapparaat, byvoorbeeld 1 Militêre Hospitaal, Instituut vir Sportnavorsing en -opleiding (Universiteit van Pretoria), Universiteit van die Oranje-Vrystaat, Universiteit van Stellenbosch en Universiteit van Port Elizabeth.

Die Cybex is 'n voorbeeld van 'n isokinetiese dinamometer-met die apparaat word die spoed waarteen 'n beweging uitgevoer word, konstant gehou, terwyl die weerstand voortdurend verander. Die spier word by elke punt in die omvang van beweging maksimaal belas. Wanneer die pasiënt egter stadiger as die vasgestelde spoed beweeg, word geen weerstand ondervind nie. Die apparaat is dus ten volle akkomoderend vir pyn en uitputting. Dit is nie moontlik dat 'n pasiënt hom kan beseer terwyl hy getoets word nie, want hoe minder krag hy gebruik, hoe minder is die weerstand.

Alledaagse aktiwiteit word verrig



teen 'n hoeksnelheid van 60°/sek, terwyl hoë intensiteit sportaktiwiteit ver-
rig word teen 240-300°/sek. Die spoed
waarteen 'n pasiënt getoets word,
word dus deur sy behoeftes bepaal.

Die Cybex is ontwerp om 16 be-
wegingspatrone te toets, naamlik:

Skouer	- fleksie / ekstensie - ab / adduksie - horisontale ab - en adduksie - interne en eksterne rotasie by 90° abduksie.
elmoog	- fleksie / ekstensie
voorarm	- pronasie / suspensie.
pols	- fleksie / ekstensie - radiale/ulnare deviasie
heup	- fleksie / ekstensie - ab / adduksie - interne/eksterne rotasie.
knie	- fleksie / ekstensie
tibia	- interne / eksterne rotasie.
enkel	- plantaar-/ dorsifleksie met knie 90° fleksie - plantaar-/ dorsifleksie met knie 0° fleksie - in / eversie.

Die volgende waardes kan vir elkeen
van die bewegingspatrone bepaal
word en is van groot waarde by die op-
stel van 'n oefenprogram:

1. maksimum wringkrag;
2. totale arbeid verrig;
3. krag per kg liggamsmassa;
4. bewegingsomvang;
5. balans tussen
antagonisspiergroepe.

Die beseerde ledemaat word met
die gesonde ledemaat vergelyk en
mag nie met meer as 7% van die
gesonde kant verskil nie, anders is die
pasiënt nog nie gereed om sy sport te
hervat nie. Die beseerde ledemaat
moet egter verkieslik versterk word

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tot dit effens sterker as die gesonde
ledemaat is.

'n Oefenprogram wat in 'n gimna-
sium onder goeie toesig gevolg moet
word, word gegee op grond van
bogenoemde resultate.

Die pasiënt moet egter altyd *binne
perke van pyn oefen*. As hy enige pyn
of swelling ondervind, moet die weer-
stand en/of omvang van beweging
verminder word. Indien hy egter geen
pyn of swelling ondervind nie, moet
die *weerstand* waarteen beweging
tydens isotoniese oefeninge uitgevoer
word, *progressief* met elke oefenses-
sie *verhoog* word.

Al die spiere in 'n beseerde ledemaat
moet geoefen word, byvoorbeeld met
'n kniebesering moet die heupfleksore
en ekstensore, ab- en adduktore en
ook die gastrocnemius en soleus saam
met die quadriceps en hampese ver-
sterk word. Die hampese herstel
gewoonlik vinniger as die quadriceps.
'n Streckprogram vir die hampese,
quadriceps, liesspiere, gastrocnemius
en soleus moet ook gegee word.

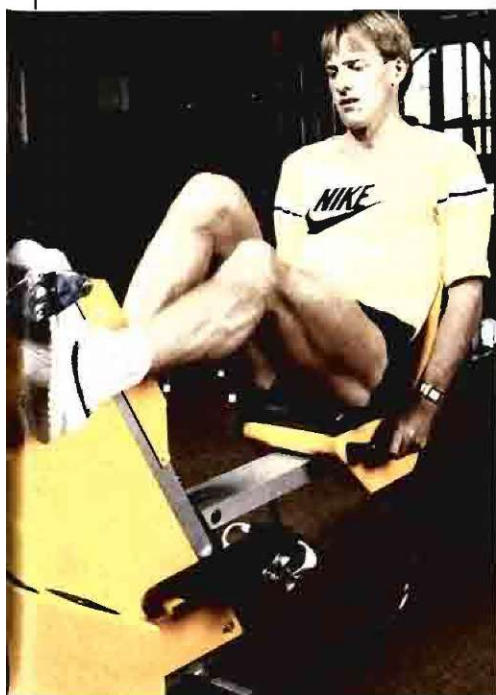
Baie aandag moet aan proprioepsie
en koördinasie gegee word. Die pasiënt
met 'n besering van die onderste
ledemaat moet aanvanklik op 'n belan-
seerbord oefen en waar sy besering

dit toelaat, tusspring. Heel aan die
einde van die rehabilitasieprogram kan
hy op 'n trampolientjie begin draf.

Sportspesifieke aktiwiteite moet ook
aan die einde van die program begin
word. Wanneer die beseerde ledemaat
minder as 20% swakker as die gesonde
een is, kan die pasiënt op reguit, ge-
lyk oppervlakte begin hardloop. Later,
wanneer hy dit sonder pyn of swelling
kan doen, kan hy stukke vinniger be-
gin hardloop en dan kan hy begin met
45° draaie en nog later met 90°
draaie en figuur 8's. Wanneer hy al hi-
erdie aktiwiteit pynvry kan verrig, is
die pasiënt sover dit menslik moont-
lik is, goed gerehabiliteer en gereed
om sy sport te hervat.

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Promotion for Tim Noakes

Dr Tim Noakes has made a significant contribution to Sports Medicine in South Africa, and is a well known figure in this field. He is a member of the editorial board of the Sports Medicine Journal and a frequent contributor to this journal.

Dr Noakes' efforts have now been rewarded by his promotion to Associate Professorship status at the University of Cape Town along with the well-known marathon athlete Dr Eric Bateman.

Dr Bateman qualified in 1970 with honours and distinction before becoming Principal Specialist and Senior Lecturer in the Department of Medicines Respiratory Clinic at Grootte Schuur Hospital.

F.I.M.S. by Dr Clive Noble

I recently had the opportunity of attending the International Sports Medicine Federation Congress in Brisbane, Australia. This was a well organised congress with a high academic level generally.

One of my interests as president of S.A.S.M.A. was to organise for S.A.S.M.A. to become affiliated to F.I.M.S.

On arrival in Brisbane I was met by my old friend Dr Erickson from Sweden who was the outgoing president of F.I.M.S. He informed me that the executive of the Federation wanted no part of affiliation with South Africa and that I should not even attend the meeting. Unfortunately such are the pressures on South Africa that I do not see any affiliation in the foreseeable future.

Vervolg van bl. 9

asook 'n uitstappie na Kirstenbosch met 'n lesingdemonstrasie deur Prof J N Eloff oor ons inheemse flora.

Hierdie kongres belooft om wetenskaplike kennis op 'n wye terrein insake sportgeneeskunde te dissemineer en 'n forum te skep vir verdere ontwikkeling van die gebruik van sport en oefening om gesondheid te bevorder. Deur ons internasionale kontakte word brue gebou wat Suid-Afrika sal vrywaar teen akademiese isolasie.

Continued from page 13.

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