sport health

VOLUME 30 • ISSUE 2, 2012

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Rural health
What it takes and needs

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Plus a chat with keynote, Ken Powell

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- Analysis of Australian football players' height
- Persistent groin pain
- Nerve entrapment syndromes around the shoulder
- Function vs cosmesis

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VOLUME 30 • ISSUE 2, 2012

Publisher
Sports Medicine Australia
PO Box 78 Mitchell ACT 2911
sma.org.au

Circulation: 4000
ISSN No. 1032-5662

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SUBSCRIPTION RATES
Australia A$40
Overseas A$60

SMA members receive *Sport Health* as part of their membership fee

Single copies and back copies A$15 (includes postage)

PP No. 226480/00028

For subscriptions contact
T (02) 8116 9815
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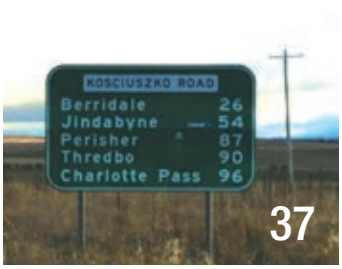
Cover photograph – www.istockphoto.com

Content photographs – www.istockphoto.com, Hamilton Lund, Tourism NSW, The Advertiser.



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Operating reserves – opportunity or threat?

To acknowledge the new partnership between Sports Medicine Australia and The Athlete's Foot, SMA members can use the enclosed voucher entitling them to an exclusive 20 per cent off when shopping in-store. Get to know your local The Athlete's Foot store and be fitted for your next pair of shoes. Nello Marino is pictured at The Athlete's Foot Elizabeth Street store, getting fitted for Asics runners.

If you have a worthy cause or issue related to sports medicine or physical activity that you would like promoted in *Sport Health* via a promotional item, e.g. hat, t-shirt, mug, email nello.marino@sma.org.au

SMA CEO, Nello Marino discusses some of the features of the OneSMA proposal.

Much has been happening behind the scenes at SMA since my last *Sport Health* column. Many would be aware that the National Board has been in consultation with State Branch Boards over the past 18 months on a proposal called OneSMA. OneSMA is a proposal to merge the branches of SMA to be unified under one governance structure. The key reasons for moving towards a unified structure are:

- To improve our structure of governance.
- To improve operational efficiency (and reinvest savings in member and community services).
- To foster a greater level of consistency of SMA services across the country.
- To establish clearer and improved lines of communication and accountability between State and National (in both directions).
- To forge stronger commitment between the State and National structures of SMA.
- To free up operating reserves for investment in local member and community activities.
- To present greater attractiveness to sponsors.

At the end of the day what matters most is ensuring members and the communities that SMA serves receive a better level of service, which is the key reason why OneSMA has been proposed.

For those unsure of the current structure, SMA is made up of a number of State organisations which operate in accord with a common Federal constitution (National Constitution).

This means that all Branches have a State Board, their own constitution, conduct their own audits and carry many duplicated structures that are inherent in constituted organisations.

The consultation to date has been deliberately focused almost entirely on State Branch Boards as an acknowledgement of the stake that is held by these members who serve on State Boards, and an acknowledgement that State Branch Boards are a key representative group under the federated structure of governance that is currently in place.

"…reserves should serve two predominant purposes for organisations."

However, it is reasonable to suggest that the proposal to date has raised some concerns amongst some State Branch Boards. Most notably the treatment of State Branch financial reserves has caused some angst.

Having had numerous meetings and discussions with other not-for-profit (NFP) organisations over recent times, this is an issue that is not exclusive to SMA. Whilst State reserves are important, for many organisations the growth and maintenance of reserves are seen as the most important indicator of success. As a result there are many NFP organisations which have placed the preservation of their

operating reserves above utilising their operating reserves to generate more opportunities and improve services to the membership and communities they serve.

This is not to suggest that not for profit organisations such as SMA should blindly spend the reserves that they have steadfastly earned for the sake of it. However it is a reminder that reserves should serve two predominant purposes for organisations such as SMA.

The first is to ensure that an organisation has sufficient funds to negotiate troubled times, whether they be short or long term. Most NFP organisations run on very lean budgets in recognition of the need to ensure member funds are spent as efficiently and effectively as possible. Many NFPs are also often reliant on Government to provide funds in order to deliver a number of important community activities. There was once a time when funding sources such as government could be better relied upon to support the important work delivered by many NFPs. Sadly this is no longer the case with many NFPs being more reliant on other sustainable commercial activities and sponsorship rather than government support.

This emphasises the importance of a nest egg to be in place in order to ensure that activities and services can continue when regular funding sources may dry up.

The second key reason is to ensure an organisation is able to invest to serve its community, as well as developing new streams of income in the interest of long term sustainability. Arguably this is no different to the principles of sound business practice and the importance of investment for ongoing success.

At present all of the SMA Branches (National and State) hold solid operating reserves. This has come through many years of prudent management. However under the current Federated structure there is a natural tendency for all nine governance structures (States and National) to carry operating surpluses that exceed the requirements of security and as a consequence fail to capitalise on the capacity to invest in our greatest asset, our members.

One of the inherent strengths that comes with the OneSMA proposal is the opportunity to free up local funds for the purpose of local investment with the knowledge that the objective of financial security is being addressed centrally rather than locally. Such a strength provides the opportunity for States to more securely invest in programs which offer the opportunity for growth and expansion based on the knowledge that a central, national pool of funds is available in potentially troubled times.

Members need to be assured that the National Board will continue to operate in accordance with the values of SMA. The value of accountability is applicable in this instance and the need to ensure that the organisation continues to demonstrate its accountability through the utilisation of its resources as efficiently and effectively as possible, and for the true benefit of the members and the communities that SMA serves.

Nello Marino

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5 mins with… Professor Caroline Finch

ASMF Fellow, NSIPC Conference Committee Conference Chair

What is your profession?

Epidemiologist.

How many years have you been in this profession?

All my working life. I completed a Masters in Statistics in 1985 and started working as an epidemiologist straight after this.

Where do you work?

I am based at Monash University within the Monash Injury Research Institute, and within that Institute I head the Australian Centre for Research into Injury in Sport and its Prevention (ACRISP).

What does your typical day consist of?

It feels like all I ever do is catch up with backlogs of emails! But in real terms, I work from the office two days a week and on those days I meet with my staff and students; plot and plan papers we are going to work on, and studies we are going to do; and find out about the exciting data that has been collected or conclusions my staff and students have reached based on their research. The other three days I work from home which involves paper writing, coming up with new study ideas, talking with a variety of people, and having meetings with sports partners and government departments which are essential to our work.

What studies are you concentrating on at the moment?

Currently we are working on a major project called NoGAPS. This is a large partnership grant funded through the NHMRC which we are conducting with the AFL, SMA and a number of other partners. We are developing exercise training guidelines which will include best evidence from elite level football and take it to community level football. It will highlight what can be done about reducing the gap between what elite players do for safety and what community players could also do.

Another study we are working on is with the AFL, NRL and SMA (funded by Sport and Recreation Victoria) which is looking at concussion guidelines for return to play and identifying when someone may be concussed in sport. We are working out to what extent the people involved in delivering sport at the community level are aware of the guidelines, their understanding of the guidelines, how they can apply them and whether they think they are relevant so we can provide guidance to sports bodies as to how they can disseminate safety information more effectively.

What is your favourite aspect of your job?

I have a fantastic team of staff and students. It is such a buzz to come into work and engage with one another on the fantastic topics we work on and the various sporting organisations we are involved with.

Another aspect is that it seems as if everyone in Australia loves sport, and has an opinion on how injuries in sport can be prevented but we are involved in the actual science behind it all. We know that we are making a difference.

What has been the highlight of your career?

In terms of sports medicine epidemiology, it has to be that the team I lead was awarded the status of one of the research centres for excellence into injury prevention in sport and promotion of athlete health, established by the IOC. Four research centres around the globe were identified, with ours being the only one from Australia (the others are located in South Africa, Canada and Norway). It is absolutely fantastic that we are one of the four and are recognised for our work worldwide.

When, why and how did you become involved with SMA?

I became involved with SMA in 1992/93. Around this time I took up a job at Monash University as a Research Fellow to undertake injury prevention research. I identified early on there was a gap in sports injury prevention. It was an area few people worked in, and those that did concentrated on elite athletes, not community athletes. When I identified this knowledge gap I had to work out potential community partners that I could liaise with. Someone suggested I should become involved with SMA, so I did. I often say that my best find of the 1990's was my engagement with SMA.

What inspired you to apply for ASMF Fellowship?

Since the early 1990's, I have had a strong relationship with SMA on an ad-hoc project by project basis. It was initially difficult coming from an epidemiology/statistics background, and not a sports medicine background, to know how I could fit in. Then I discovered ASMF Fellowships and thought this was a good way to formalise my relationship with SMA and hopefully inspire more people like me to become involved in the sports medicine area and contribute our set of skills.

When, why and how did you become involved with be active 2012?

I was invited to chair the conference committee for the National Sports Injury Prevention Conference which is one of the components of be active 2012 (of course, I think it is the most important component!)

What are you passionate about?

I am passionate about my work because I think it makes a difference to society and it is something people can understand and contribute to. Also, as I get older, the more I feel like I want to contribute back to society. I look for opportunities where I can mentor people in my direct field and more generally. For example, the Ballarat region are having a Careers Expo in a few weeks time where I will volunteer and inform people from regional Victoria why science is a fantastic area to be skilled in and how it opens many doors.

What's the best piece of advice anyone has ever given you?

I think there are two things: One: Be true to yourself. You are going to be more content with yourself if you are. Two: Reach as high as you can. If you never aim for the stars you are never going to get halfway. Set yourself a big goal and you will be more likely to succeed.

Name four people, living or not, you would invite for a dinner party and why?

I am becoming increasingly interested in the relationship between science and public policy and how we could blend the two for the sports medicine area. So I would invite someone who has done that very publically and recently: Bill Gates. I would also invite British author C.P. Snow, who wrote a series of books (the *Strangers and Brothers* novels) in the 1950s about the integration between science and policy. He started as a scientist and became very well regarded in public affairs. Einstein would also have to be an invitee with his links with policy particularly around the development of weaponry. And, I would need another woman there so I would love to invite Professor Fiona Stanley. I had the fortune of meeting her before I came into the sports medicine area and was really impressed with her then. She is another person who has a very strong link between scientific principles/evidence and policy particularly in child health, and think she would be very interesting to hear from.

Favourites

Travel destination: I'm not a big city person; I like places that are culturally and environmentally different, as I love seeing how different people live. I travelled to Vietnam last year and thoroughly enjoyed it.

Sport to play/watch: To do: Walking, with and without my dog. To watch: Cricket.

Cuisine: Asian Vegetarian.

Movie: The Prestige.

Song: Anything by The Eagles.

Book: The Millennium Trilogy by Steig Larsson.

Gadget: Toss up between my iPad and a plastic device that always opens up jars first go!

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Function, function, function

Dr J questions what we are looking for: results which are the best in terms of function, or results which are the best in terms of cosmetic outcome?

Rock music – the pre-eminent musical genre of our time – is generally notable for its rhythm and melody, with many of the lyrics clichéd and repetitive. Chris Lilley on *Angry Boys* made this point clearly with S-Mouse's rap anthem *Slap My Elbow* (if you count rap as part of the bigger rock/pop genre). Occasionally though you find some profound offerings, one which I'll use to segue into this issue's Dr J topic. Neil Finn's second band Crowded House has a song which starts 'I'd much rather have a caravan in the hills…than a *Mansion in the Slums'*. This is a more eloquent line than the classic real estate mantra about the three most important features of a property being 'location, location and location'. In recent years I have contributed to the movement of the pendulum in this direction by choosing to purchase a smaller property in a sought-after beachside suburb in preference to (for the same price) a much larger free-standing home further away from the city and beach. Sadly, from the perspective of ridiculous property prices, the majority of the real estate market well and truly 'got it' years ago with regard to the benefits of having surfing, snorkelling, sand and great views within walking distance of your doorstep. In the 21st century, it doesn't take a genius to declare that beachside locations within a short distance of a major city represent the bluest of blue chip locations. It does however give people the opportunity to regularly blurt out a 'captain obvious' statement like 'gee I wish I decided in 1985 to buy a big house on the beach at [insert Bondi, Byron Bay, Albert Park, Cottesloe etc] when they were selling for next to nothing, given that they are now worth [insert 1985 price and add a few zeroes]'. There isn't much value in listening to the so-called 'Monday's experts' (in football terms) who point out the trend after 99 per cent of people have realised it, which in property terms is that location is a more sought after commodity than size.

"What about in sports medicine? Are we looking for results which are the best in terms of function or the best in terms of cosmetic outcome?"

I want to discuss an emerging trend that relates to sports medicine that has one feature in common with the real estate obsession with location, but another feature which is the exact opposite. Although everyone will generally agree on which suburbs in a city are the most desirable, there is a genuine divergence on why they are considered desirable. Is it due to functional factors (proximity to the city, public transport and amenities like parks and beaches) or cosmetic/status factors (like nice views and the fact that nearby properties are neatly maintained by wealthy owners)? This is probably a classic chicken-and-egg debate. It goes without saying that the nearby houses are nicer and the streets are safer

in rich suburbs, but did they become rich in the first place for cosmetic or functional reasons? Do people like living near the water or a big park because the views are better (cosmetic) or there is functionality that you can go for a run or go for a swim more easily? The answer has to be that both location factors (cosmesis and functionality) have a value, although they are usually, but not always, found together. Train stations and multi-level shopping centres are highly functional, generally quite ugly and noisy, but will still tend to make nearby properties more valuable because of their utility. However, there is a point where this trend reverses, with properties near airports and busy main roads being less valuable, because the functionality is outweighed by the perceived cosmetic and auditory negatives.

"How can you be one of the fastest runners on the planet and call yourself functionally disabled?…his artificial feet and shanks are doing a job almost as well, in a functional sense, as the real thing."

"For a single but major arthritic joint below the knee, almost no patient would be offered a below knee amputation (or would consider it)…"

So in real estate it is all about location, but the value of a location is partially due to functional factors and partially cosmetic factors. What about in sports medicine? Are we looking for results which are the best in terms of function or the best in terms of cosmetic outcome? Without thinking about it too much, I'm sure that 95 per cent of the sports medicine community would immediately insist that we always are (or should be) looking for the best functional results, rather than what might look good. To support this philosophy, we have evidence that physical activity levels are strongly protective against most of the major diseases afflicting Western society. You need physical activity function to stay healthy. So, if an 18 year old female who is a keen netballer has an ACL injury and finds she can't change direction without her knee collapsing after this injury, most of us will recommend

Post fracture and infection.

an ACL reconstruction. If she was worried about getting a knee reconstruction simply because of the presence of a scar on her knee, we would try to counsel her about the long-term value of continuing to play her favourite sport and how this would be a much greater gain than the loss of a virgin knee in terms of presence of a scar. But to prove we aren't always knife happy, if a 50 year old male presented with a 'Popeye sign' having just ruptured his long head of biceps, we would probably counsel against a surgical solution to the problem. His biceps strength would probably be totally adequate and the cosmetic deformity of a bulging biceps would be considered mild compared to the risks of surgically trying to correct this. Function over cosmesis wins again.

"Do we need to persist with trying to find the holy grail of functional total joint replacements for these joints below the knee…or admit that a perfectly good functional alternative is already available and that we need to get our heads around using it more often?"

Yet what is the extreme to which we would take this argument? Between my writing of this column and your reading of it, perhaps one of the greatest moments in Olympic history will occur with Oscar Pistorius competing in the 400m sprint event at the Olympics. It may even qualify as the greatest moment ever if he wins a medal in the able-bodied event, although indications are that this is very unlikely to happen. But even just his ability to qualify for the Olympics is a monumental moment for so-called 'disabled' people around the world. In his case, I use the term 'so-called disabled' quite deliberately. He is actually cosmetically disabled. He is not functionally disabled to much degree at all. How can you be one of the fastest runners on the planet and call yourself functionally disabled? The bottom line is that his artificial feet and shanks are doing a job almost as well, in a functional sense, as the real thing. There has even been previous debate over whether his artificial limbs are better (with the implication that he should not be allowed to compete in the Olympics) although common sense has prevailed in determining that he has no unfair advantage.

Pistorius was born without fibulas in both legs and had a family and medical staff that made the decision when he was only 11 months old to amputate both legs below the knee. This momentous call was all about putting function ahead of cosmesis, in that the option remained to have apparently normal legs and feet which would have been functionally unsuitable for walking and running. The decision was life-changing and history has proven it to be the correct one, showing the great courage and clear vision his parents had.

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But how many older people (with much better autonomy to make a decision than an 11 month old) in a similar situation would ever make the same call? What about patients with severe arthritis of the ankle, or subtalar joint or even 1st metatarsophalangeal joint? Many of these patients consider surgery not because they can't run, but because everyday walking is painful. And if offered surgery it is most likely to be a fusion of one of the aforementioned joints, which is likely to help somewhat before inevitably leading to degenerative change of a nearby joint. For a single but major arthritic joint below the knee, almost no patient would be offered a below knee amputation (or would consider it), yet this stance is one which completely puts cosmesis firmly ahead of function. The functional level you can reach with a below knee amputation has now been shown to be a 400m qualification at the Olympics. Do we need to persist with trying to find the holy grail of functional total joint replacements for these joints below the knee (which we don't have yet) or admit that a perfectly good functional alternative is already available and that we need to get our heads around using it more often?

"It has always seemed a no-brainer that you would never trade off a normal looking leg for something foreign-looking just to improve function. But when you see Oscar Pistorius at the Olympics it has to make you look at this question from a different perspective."

Tawera Nikau.

There are certainly some people who get below knee amputations – severe diabetics with horrible vascular supply to the foot or malignant tumour patients are amongst them. Michael Milton is a famous Aussie Paralympian and multiple gold medal winner who had the mixed curse (but perhaps late blessing) to have suffered cancer as a child. Would his life have been better if this had never occurred? It is hard to know, but he has certainly made a wonderful life for himself as an athlete of the highest level (and has even broken the all-comers Australian record for downhill ski velocity). Tawera Nikau had his leg mangled in a motorcycle accident after his professional rugby league career had finished and he was advised and/or chose to have the leg amputated rather than keep a shrivelled non-functional appendage after multiple fractures and compartment syndrome. He hasn't won any medals post-surgery but has managed to complete the New York Marathon on an artificial leg. He has also worked in the media and as a motivational speaker and wouldn't regret the decision to put function over cosmetic appearance. He wouldn't be the only amputee to have run a marathon, but I doubt anyone with bone on bone ankle arthritis or an ankle fusion or replacement could ever do it. Who is the more functional then?

It sounds good in theory, but the Crowded House song I started with reveals a sting in the tail. One of the later lines in the song is 'I'd much rather have a Mansion in the Hills, than a Mansion in the Slums…Yeah I'd much rather, what I mean is, would you mind if I had it all? I'll take it when it comes'. If you have to choose between function and cosmesis, it is a difficult choice and most people would say 'why can't I have both? Why can't I find a large house with a big backyard in a beachside suburb with great views and within my budget? Do you mind if I have it all?'

If you have an arthritic ankle that stops you from walking, it is easy to articulate what you want – a normal looking leg that is fully functional. You might have an ankle that looks close to walking and you can hold onto the dream – which may be closer to a delusion – that one day it will be fully functional and allow you to run on it again without pain. That dream may be able to get you through the constant reality that you can't ever run again with the joint in the state it is in. If you decided to have a below-knee amputation, it would end the dream forever of having it all, in terms of cosmesis and function. But which is the more important? It has always seemed a no-brainer that you would never trade off a normal looking leg for something foreign-looking just to improve function. But when you see Oscar Pistorius at the Olympics it has to make you look at this question from a different perspective. He is not there because he is a disabled athlete. He is there because he is one of the fastest 400m runners in the world. And in being there he may give more inspiration to people around the world than anyone in the history of the Olympic movement.

Dr J

The opinions expressed in Dr J are the personal opinions of the author.

New Australian standard for adult pre-exercise screening

In 2010, three national organisations – Exercise and Sports Science Australia, Fitness Australia and Sports Medicine Australia – came together to standardise the way pre-exercise screening was undertaken in the Australian health and fitness industry. Kevin Norton highlights the importance of pre-exercise screening and why an update was necessary.

There is overwhelming evidence that the long-term benefits of regular physical activity outweigh the risks many fold.[1] The benefits are broad, affecting every physiological system of the body across most clinical and non-clinical populations, and all age groups including the elderly.[2]

However, despite these well-established facts almost one half of Australian adults are not active enough to achieve optimal health benefits. There have been encouraging signs of increasing prevalence of sufficiently active adults in several states over the last decade but it is still only small increases. These positive trends have probably been the result of extensive public health campaigns, increasing knowledge about the importance of being active for health and, for many people, greater flexibility in their lifestyles. Health promotion campaigns continue, as well as efforts to make exercise and physical activity programs safer, more enjoyable and part of every day activities. The development of an effective pre-exercise screening system within the health and fitness industry is part of these advances.

Occasionally, people with certain chronic diseases and other constraints may have a condition-specific risk related to exercise. This may mean increasing activities is absolutely contraindicated or, more commonly, they require tailored physical activity guidance and perhaps direct supervision. The most life-threatening problems are the ones we are most concerned about, for example, having a heart attack, stroke, an acute respiratory attack or serious swings in metabolic control. How do we know who might fall into these categories? The risks of an adverse event increase acutely when we undertake exercise, while it protects us both at rest and during the activity over the longer term. To put this into perspective, regular exercisers have a risk of dying of a heart attack or stroke during rest of about one in every 10 million hours compared to sedentary people who have a risk of dying (at rest) of about one in every five million hours (i.e. a 100 per cent increased risk). However, the greater 'protection' for regular exercisers comes at a cost. During exercise, even those used to exercising, increase their risk of sudden death. This increases their chance of dying (during the exercise) by about 4–20 fold, that is, to about one in every 0.5–2.5 million hours on average (for 'apparently healthy' people). Obviously, the risks are greater for people who have established cardiovascular disease and the large range reflects the progressively increasing risk of acute problems with greater exercise intensity and for those unaccustomed to exercise[3], however, heart attacks and sudden deaths are still extremely rare.

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The main cause of these transient adverse cardiovascular events in adults is prior pathologies related to atherosclerotic arterial disease.[4] Regular physical activity reduces the build-up of fatty plaques that lead to atherosclerotic disease as well as increasing blood vessel compliance, capillary density and myocardial size and strength. A risk assessment and the likely development of underlying pathologies can be 'rated' using responses to questions about medical and health issues and measures of common risk factors. The risk factors are typically easy to obtain and relatively inexpensive and include body mass index, waist girth, point-of-care lipid and glucose measures, blood pressure, and current physical activity patterns among others. These are often formally or informally used to categorise the relative risk of an adverse event for a person during exercise – typically high, moderate or low risk – if they undertake exercise that is inappropriate to their circumstances. These assessments can and should also be used to set programs and to adjust the intensity and progression of activity by exercise professionals.

Many pre-exercise screening systems for categorising risk prior to beginning an exercise program have been developed. Key international organisations such as the American College of Sports Medicine, the Canadian Society for Exercise Physiology and Sports Medicine Australia have each developed risk stratification systems. In general, these have been modified over the years to reflect the increasing knowledge about the risks versus benefits of being active or sedentary, incorporate new professional roles such as clinical exercise physiology and promote exercise broadly across the population in line with public health efforts. In effect they have progressively moved to become less onerous and, for many people, reduce the unnecessary burden of seeking medical testing and clearance prior to them becoming more physically active.

In 2010 three national organisations – Exercise and Sports Science Australia, Fitness Australia and Sports Medicine Australia – came together to standardise the way pre-exercise screening was undertaken in the Australian health and fitness industry. The perception was that while each of the currently available screening systems had its strengths, none was ideal for practical use in the Australian industry. Indeed, at the same time there was a major undertaking in Canada to evaluate and update their PAR-Q system to address many of the same concerns.[5] The screening system needed to be relatively quick to administer, easy to interpret, yet sensitive to filter higher risk individuals. A key goal of the technical committee was to develop a system that placed greater responsibility for the welfare of people new to exercise on the exercise professionals. The greater flexibility of the system came with greater local-level responsibility such as being cautious with the prescribed intensity of exercise in the early phases of a program and to progress in intensity and volume conservatively. To assist, the new screening system dovetailed in with the expanding allied health expertise available in the industry and with recently released exercise intensity guidelines.[6]

"The risks of an adverse event increase acutely when we undertake exercise, while it protects us both at rest and during the activity over the longer term."

The new Adult Pre-Exercise Screening System (APSS) was launched in 2011 and has three stages. Major differences in the new APSS include the fact Stage 1 can be self administered and evaluated in a similar way to the PAR-Q system. It is the only compulsory stage and contains seven basic questions about medical conditions. It was designed for easy administration even for people attending fitness centres and health clubs on a casual basis and can be completed online. There is greater flexibility in the system to encourage more people to begin physical activity at light-moderate intensity levels without the need for medical check-ups. This has often been perceived as a barrier to many people so they elect to either remain inactive or become active without any guidance.[5] If the client answers YES to any question in Stage 1 they should seek guidance from an allied health professional experienced in exercise prescription or their GP. In most instances however, people with chronic illnesses, provided they are stable, can be advised to begin light-moderate activity. For example, the National Heart Foundation concluded that, providing the (cardiovascular) medical condition is stable, even these patients can begin a light (low) moderate physical activity program without the need for a medical check-up.[7] They went on to say that for patients with known cardiovascular disease a detailed clinical assessment prior to recommending light (low) moderate physical activity is generally unwarranted and counterproductive.

"…they have…moved to become less onerous and, for many people, reduce the unnecessary burden of seeking medical testing and clearance prior to them becoming more physically active."

STAGE 1 (COMPULSORY)

AIM: to identify those individuals with a known disease, or signs or symptoms of disease, who may be at a higher risk of an adverse event during physical activity/exercise. This stage is self administered and self evaluated.

Please circle response

1.	Has your doctor ever told you that you have a heart condition or have you ever suffered a stroke?	Yes	No
2.	Do you ever experience unexplained pains in your chest at rest or during physical activity/exercise?	Yes	No
3.	Do you ever feel faint or have spells of dizziness during physical activity/exercise that causes you to lose balance?	Yes	No
4.	Have you had an asthma attack requiring immediate medical attention at any time over the last 12 months?	Yes	No
5.	If you have diabetes (type I or type II) have you had trouble controlling your blood glucose in the last 3 months?	Yes	No
6.	Do you have any diagnosed muscle, bone or joint problems that you have been told could be made worse by participating in physical activity/exercise?	Yes	No
7.	Do you have any other medical condition(s) that may make it dangerous for you to participate in physical activity/exercise?	Yes	No

IF YOU ANSWERED 'YES' to any of the 7 questions, please seek guidance from your GP or appropriate allied health professional prior to undertaking physical activity/exercise

IF YOU ANSWERED 'NO' to all of the 7 questions, and you have no other concerns about your health, you may proceed to undertake light-moderate intensity physical activity/exercise

Fitness professionals must know how to prescribe exercise appropriate to their client's capabilities and health status. This is a fundamental aspect of their professional expertise along with the ability to monitor physiological and psychological responses during exercise. If there is limited information about risk factors or general health then the path is conservative and progressive. However, the new APSS also includes options for more detailed risk factor assessments with two optional stages. These stages should be administered by qualified exercise professionals and are designed to provide specific information about a range of key risk factors and behaviours that will help tailor the exercise programs further. Stage 2 assesses risk factors via self-report while Stage 3 involves measurements of up to nine risk factors. The system also makes recommendations for people with extreme or multiple risk factors that may need further allied health or medical guidance. Again, professional judgment is also encouraged in these optional stages. A textbook guiding the use of the APSS is also available through Fitness Australia to help fitness professionals (www.fitness.org.au).[8]

"…almost one half of Australian adults are not active enough to achieve optimal health benefits."

We want as many Australians as possible to lead active and healthy lives and critical to the success of the system is the increased emphasis on exercise leadership and the capacity to make decisions in the safe interests of clients.

To access the Adult Pre-Exercise Screening System visit www.essa.org.au/for-gps/adult-pre-exercise-screening-system/

"We want as many Australians as possible to lead active and healthy lives…"

Professor Kevin Norton[1], Professor Jeff Coombes[2], Dr Robbie Parker[3], Dr Andrew Williams[4], Anita Hobson-Powell[5], Craig Knox[6] and Nello Marino[7]

[1] School of Health Sciences, University of South Australia
[2] School of Human Movement Studies, University of Queensland
[3] The Children's Hospital Institute of Sports Medicine (CHISM), The Children's Hospital at Westmead
[4] School of Human Life Sciences, University of Tasmania
[5] Exercise and Sports Science Australia
[6] Fitness Australia
[7] Sports Medicine Australia

References, as indicated within the article, are available at sma.org.au/publications/sport-health

be active 2012 – Introducing our keynote speakers

***Sport Health* recently had a chat with keynote speaker, Ken Powell about his upcoming conference presentation and all things physical activity.**

Ken Powell bio

be active 2012 conference presentation

'Stories about physical activity'

Background

Kenneth E. Powell, MD, MPH, is a public health and epidemiologic consultant. He was an epidemiologist with the Centers for Disease Control and Prevention for 25 years and with the Georgia Department of Human Resources for 8 years. The relationship between physical activity and health has been an important theme during his career. He initiated the Center for Disease Control and Prevention's epidemiologic work in the area by leading a consolidation of the scientific literature and setting the public health research agenda. He served on the Physical Activity Guidelines Advisory Committee for the U.S. Department of Health and Human Services; the Committee on Physical Activity, Health, Transportation, and Land Use and the Committee on Progress in Preventing Childhood Obesity for the Institute of Medicine; and is a member of the Physical Activity Work Group for the Task Force for the Guide to Community Preventive Services. He is a Fellow of the American College of Physicians, American College of Epidemiology, and American College of Sports Medicine.

Q: What are the key points you will be discussing at the upcoming be active 2012 conference?

A: I will be telling stories about physical activity, true stories about how we learned about the benefits of activity and how we arrived at our current crisis of inactivity. The stories touch upon human evolution, the development of scientific knowledge, and the withering of physical activity. I will also wonder how we will think about physical activity in the future and whether we will learn to do population-wide physical activity promotion.

Q: What do you believe are the key barriers to physical activity and how might we best overcome these?

A: The key barriers that prevent us from more successfully developing and implementing policies and practices to encourage and facilitate regular physical activity are:

- A refusal to take the health importance of physical activity seriously.
- The persistent conceptualisation of physical activity as high intensity sport and exercise.
- The failure to recognise the full range of health benefits of activity, instead giving recognition to physical activity only as a possible aid to weight control.
- A focus on high-risk rather than population-wide activity promotion.

Q: What is your perception of Australians in terms of physical activity?

A: I have always thought of Australians as people who love being outdoors and active. I think of Australia as a, if not the, leader in the scientific study and promotion of physical activity. Unfortunately, even the leaders in our field have a long way to go.

Q: What things in regards to physical activity promotion could and should be done in a place like Australia?

A: To successfully reverse the decline in regular physical activity in Australia and elsewhere will require a serious commitment not only from government but from business, schools, community organisations, and other components of society. Evidence of serious commitment must be manifest at the highest levels of leadership in all of these organisations. Serious commitment entails strategic planning and tangible support for capacity development, program planning and implementation, surveillance and evaluation of progress and activities, and ongoing research. The commitment includes the recognition that for people to be physically active the society as a whole must have policies and environments conducive to physically active living.

Q: When was the last time you came to Australia?

A: I last visited Australia in 1996 for the 3rd International Conference on Injury Prevention and Control (Melbourne). I also visited Australia in 1977 and 1987.

Q: What are you looking forward to doing/seeing most when you come to Sydney?

A: I look forward most to attending and participating in the 4th International Conference on Physical Activity and Public Health. I know I will learn a lot from the other people at the meeting. I am particularly interested in learning what they think about physical activity and its promotion. I also look forward to visiting my brother and his family who live in Adelaide.

be active 2012 speaker profiles

In addition to Ken Powell, be active 2012 will see the following inspirational conference speakers:

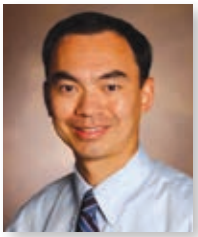
Keynote speakers

Dr Nick Cavill

'Evidence-based policy on physical activity: The tale of the Emperor's new clothes'

Nick Cavill is a director of an independent public health consultancy, a research associate of the University of Oxford BHF Health Promotion Research Group, and an honorary senior research fellow at the University of Salford. He specialises in the development of policy and programs on sustainable transport and the links to physical activity.

He is currently a specialist advisor to the National Obesity Observatory, and a member of the National Institute for Health and Clinical Excellence Programme Development Group on walking and cycling. He was one of the core team for the WHO Health Economic Assessment Tool for walking and cycling; a member of the Department of Health's Physical Activity Editorial Group; and a member of the World Cancer Research Fund policy panel. He has worked at both Departments of Health and Transport, and was formerly at the Health Education Authority, where he was head of the physical activity program from 1994 to 2000. Nick recently completed his PhD at the University of Salford, focusing on national policy approaches to promoting physical activity, and was made a member of the Faculty of Public Health through distinction.



Dr Kong Chen

'The hare and the tortoise revisited: Measuring physical activity and sedentary behaviour'

Kong Chen was trained in mechanical engineering (BS), biomedical engineering (PhD), and clinical investigation (MS). He has been working in the area of physical activity monitoring for the last 15 years, developing and using a variety of tools extending from portable sensors to metabolic chambers. He was the principal investigator of two NIH R01 grants for method development of objective physical activity monitors in adults and children. Kong is also an expert in quantifying human energy expenditure, autonomic system activity, physical fitness, and body composition in healthy and obese adolescents and adults, as well as in patients with chronic diseases. Currently, he is a clinical investigator of the Diabetes, Endocrinology, and Obesity Branch of the National Institute of Diabetes & Digestive & Kidney Diseases, focusing on energy and body weight regulation, while collaborating with scientists from the US, Iceland, Japan, Sweden, and China.

Associate Professor Malcolm Collins

'Biological mechanisms underlying musculoskeletal soft tissue injuries: Why it is clinically relevant'

Club Warehouse and Australian Institute of Sport Supported Speaker

Malcolm Collins is a Chief Specialist Scientist at the Medical Research Council (MRC) and an Associate Professor within the Department of Human Biology, University of Cape Town (UCT) in South Africa. He obtained a BSc degree majoring in Biochemistry and Physiology and a BSc (Hons) degree Cum Laude in Biochemistry from the University of Stellenbosch. He was awarded a PhD in Medical Biochemistry on collagen gene expression from UCT in 1993. After completing Post-Doctoral work also in extracellular matrix protein gene expression at the University of Washington in Seattle, USA, he joined the Research Unit for Exercise Science and Sports Medicine at the MRC and UCT. His main area of research is the molecular and genetic mechanisms underlying musculoskeletal soft tissue injuries and other exercise-related phenotypes. He has published over 80 peer-reviewed articles or book chapters. He is a Fellow of the European College of Sports Sciences.

Professor Roger Enoka

'Adaptations in physical performance from childhood to senescence'

Roger Enoka completed undergraduate training in physical education at the University of Otago in New Zealand (1968–1970) prior to obtaining an MS degree in biomechanics and a PhD in kinesiology from the University of Washington in Seattle (1974–1981). He has held faculty positions in the Department of Exercise and Sport Science and the Department of Physiology at the University of Arizona in Tucson (1981–1993) and the Department of Biomedical Engineering at the Cleveland Clinic Foundation (1993–1996). He is currently Professor

and Chair in the Department of Integrative Physiology at the University of Colorado Boulder. His research generally focuses on the neuromuscular mechanisms that mediate acute adjustments and chronic adaptations in response to physical activity performed by humans, with current projects on age-associated changes in neuromuscular function and the fatigue experienced by persons with multiple sclerosis.

Associate Professor Claude Goulet

'Minimising risk in high risk settings: Do the 3 E's of injury prevention (education, enforcement or engineering) work?'

Claude Goulet, PhD, is professor in the Department of Physical Education at Laval University, Québec, Canada. For more than 15 years, his research has been related to safety promotion in sport and physical activities. From 1998 to 2006, he was Head of sport safety research at the Québec Ministry of Education, Leisure, and Sport (QMELS). The QMELS is responsible for enforcing a unique law, the Act Respecting Safety in Sports. In accordance with this act, one of the QMELS's orientations is to *"ensure that the safety and physical security and well-being of participants are provided for during sports and recreational activities".* Therefore, the research projects of Dr Goulet cover many spheres of sport participation ranging from informal to organised activities, and from recreational practice to the highest level of sport participation. His interests lie in the epidemiology, the aetiology, the surveillance, and the prevention of sport and physical activity injuries. In addition to his interest in sport safety Dr Goulet's research also covers the psychosocial factors associated with the use of performance enhancing substances.

Dr Dale Hanson

'Closing the gap between injury prevention research and community safety promotion practice'

Dale Hanson graduated from Flinders University of South Australia in 1982, initially pursuing a career in general practice, and subsequently in emergency medicine. Since 1986 he has been working as Staff Emergency Physician at Mackay Base Hospital, in regional Queensland. He is acting Director of Clinical Training at Mackay Base Hospital and Director of Prevocational Training in North Queensland with the Rural Generalist Pathway. Dr Hanson is an instructor with Advanced Paediatric Life Support Australia. He is a senior lecturer with James Cook University teaching undergraduate emergency medicine and postgraduate public health. Concerned at the high rate of injury in the Mackay Region, he developed an interest in injury research, safety promotion, and social network analysis, completing his Doctorate in public health at James Cook University in 2007. He was awarded a university medial for his doctoral dissertation by James Cook University.

Professor Nanette Mutrie

'It's hard to persuade some people to walk – or is it?'

Nanette Mutrie, Ph.D., is Professor of Exercise and Sport Psychology at the University of Strathclyde, Glasgow, Scotland. She has researched ways of increasing active living with a particular interest in the mental health benefits. Current funded projects include the Scottish Physical Activity Research Collaboration (SPARColl funded by NHS Scotland; www.sparcoll.org.uk); the promotion of walking with the use of pedometers for older adults (funded by the Chief Scientist's Office); and the evaluation of the impact of structural changes to the environment on walking and cycling (funded by the Engineering and Physical Sciences Research Council; http://www.iconnect.ac.uk). Nanette is an Accredited Sport and Exercise Psychologist with the British Association of Sport and Exercise Science and is an Honorary Fellow of that organisation. She is also a Chartered Psychologist with the British Psychological Society. With her students and colleagues, she has published over 100 peer reviewed articles on exercise behaviour and intervention strategies. Nanette has editorial roles for *The Journal of Physical Activity and Health* and *Mental Health and Physical Activity* and has also contributed to policy, for example, 'let's make Scotland more active' and the National Institute of Health and Clinical Excellence (NICE) program on physical activity and the environment.

Refshauge Lecturer
Professor Karim Khan

Australian Sports Medicine Federation Fellows Sponsored Speaker

Karim Khan, MBBS, PhD, MBA, FACSP is an Australian-trained sports physician and Editor of the *British Journal of Sports Medicine.* In earlier times, Karim contributed to the paradigm shift that 'tendinopathies' are not due to inflammatory cell invasion. More recently, Karim has been a strong advocate of physical activity for public health. Bone health and falls prevention has been one focus via RCTs in older people with osteoporosis and high risk of falls. He notes Steve Blair's data that physical activity is the most powerful single health modality. The benefits of 30 minutes of physical activity daily are equivalent to finding a cure for smoking, diabetes and obesity combined ('smokadiabesity'). Karim practices what he preaches. He is a bike commuter even in Vancouver's incessant rain and he accumulates 60 minutes of physical activity daily (in bouts of >15 mins – walking is just fine). He is a founding investigator in the $40 million research enterprise at the University of British Columbia called the Centre for Hip Health and Mobility. As a sports medicine educator, Karim is well known via his contribution to the textbook *Brukner and Khan's Clinical Sports Medicine* which is now in its 4th edition with online video master classes.

Invited speakers

Dr Christine Friedenreich

'Physical activity and cancer: What have we learned and what do we still need to determine?'

Dr Friedenreich is a cancer epidemiologist who holds a position as a Senior Research Scientist with Alberta Health Services and is also an Adjunct Professor in the Faculties of Medicine and Kinesiology at the University of Calgary. Dr Friedenreich holds the Alberta Cancer Foundation Weekend to End Women's Cancers Breast Cancer Chair and holds a Health Senior Scholar from Alberta Innovates-Health Solutions.

Andrew Wallis

'Classification of exercise related pubic pain'

Andrew is a sports and manipulative physiotherapist who graduated from The University of South Australia in 1995. He went on to complete a Masters in Sports Physiotherapy and Masters in Manipulative Physiotherapy in 1999 and 2000. Andrew is currently employed as the head physiotherapist at St Kilda Football Club (from 2007) and works privately in Melbourne at Malvern Sports Medicine Centre. Prior to his time at St Kilda he worked at the Melbourne Victory Football Club from 2005–2007. Working in the field of elite sport over the last 15 years, which has also included netball (Thunderbirds), cricket (Redbacks), triathlon and motor racing (DJR), Andrew has developed a special interest in hip and groin pathology. He is also a lecturer on hip and groin pain on the Masters program at La Trobe University. The above journey has led to the development of an evidence based assessment and treatment model that is the subject of further research attempting to validate this model.

Hamilton Lund; Tourism NSW.

Notice of

Annual General Meeting and call for nominations

Notice is hereby given that the Annual General Meeting of Sports Medicine Australia will be held at the Sydney Convention and Exhibition Centre in the Bayside Terrace, on Saturday November 3 at 4.30pm.

Agenda

1. President's welcome
2. Roll call, apologies and proxies
3. Minutes of the previous AGM
4. Reports
5. Financial statements and audit report
6. Board election (if required)
7. Appointment of auditors
8. Special business
9. Close

Call for nominations – Board of Directors

Members are asked to provide nominations for positions on the Board of Directors of Sports Medicine Australia.

National Directors for:

- ACT
- NT
- TAS
- VIC
- WA

I ..... of .....

hereby nominate .....

for the position of .....

on the National Board of Directors of Sports Medicine Australia

Proposer's signature ..... Date .....

Seconder (full name) .....

Seconder's signature ..... Date .....

Nominations should reach: Sports Medicine Australia, Sports House, 375 Albert Road, Albert Park VIC 3206 or fax to 03 9674 8799

BY NO LATER THAN 5PM (EST) ON OCTOBER 3, 2012

Note to the validity of nominations to the Board of Directors of SMA

Appointment and election of National Directors

a) Each State Branch shall elect a National Director from and by the Federation membership in their state.

BE ACTIVE 2012

OCT 31 – NOV 3 2012 SYDNEY AUSTRALIA

BE ACTIVE 2012

OCT 31 – NOV 3 2012 SYDNEY CONVENTION & EXHIBITION CENTRE

PRE AND POST CONFERENCE SATELLITE MEETINGS AND WORKSHOPS

ICPAPH satellite meeting on Sedentary behaviour

Wednesday 31 October 0900 - 1215, Sydney Convention and Exhibition Centre

This seminar will present the latest on sedentary behaviour and its detrimental effects on health. Invited experts in the field will give presentations on the epidemiology, surveillance and measurement of sedentary behaviour as well as on the progress being made with interventions specifically targeting sedentary behaviour. After the presentations, there will be room for discussion with the presenters in the form of an expert panel.

ICPAPH satellite meeting on Integrating active transportation and health into transportation planning

Wednesday 31 October 0900 - 1230, Sydney Convention and Exhibition Centre

Walking and cycling as transport modes offer positive health, environmental and economic outcomes however these interdisciplinary co-benefits are typically underestimated in conventional transport planning appraisals. This seminar will provide an overview of the co-benefits and hidden health costs of conventional transport planning decisions and describe current international practices regarding the quantification of the health benefits of active travel. The seminar will conclude with a panel discussion to explore the role of political leadership, inter and intra governmental partnerships and cross-sectoral collaboration to ensure the inclusion of health as a required component of transportation planning and investment decisions.

ICPAPH satellite meeting on understanding and measuring sedentary behaviour and physical activity in workplaces, and on promoting worksite physical activity

Monday 5 November 0900 – 1600, School of Human Movement Studies, University of Queensland, St Lucia campus, Brisbane, Australia

This satellite meeting will focus on the importance of understanding and accurately measuring physical activity and sitting time in working adults, in order to develop interventions for more activity and better health at work. Invited experts will present on a range of issues relating to measuring and understanding patterns of movement in different occupational groups, and on progress being made with intervention to that aim to reduce inactivity and sedentariness at work. This will be an interactive meeting with opportunities for discussion and debate and hands on development of intervention ideas.

Registration fee of $100 per satellite meeting includes morning tea and lunch.

Sports Medicine Emergency Care Course

Wednesday 31 October 0800 - 1300 and Thursday 1 November 0815 - 0915, Sydney Convention and Exhibition Centre

This fully comprehensive short course for the on-field Emergency Care of the seriously injured or ill athlete has been developed and accredited by Sports Doctors Australia. The course is also recognised and accredited by RACGP for category 1 QI & CPD points and rural GPs who are registered in the emergency component of the Rural Procedural Grants program can access this grant for attending this course.

Registration fee $200 includes morning tea and lunch on Wednesday.

All seminars and workshops have limited capacity, so pre-registration is required.

MEMBERSHIP

Sports Medicine Australia

Join SMA now to be eligible for one of the ASMF Fellows awards. ACSMS and NSIPC Conference awards are only available to SMA members. For more information on SMA membership, visit sma.org.au. Joining fee of $40 for full professional membership waived for conference delegates.

NB you can apply for SMA membership through the registration process

International Society for Physical Activity and Health

Please note there are also ICPAPH Conference awards, which are only available to ISPAH members. For more information on ISPAH membership or to join visit www.ispah.org

NB you have to apply for ISPAH membership directly through ISPAH and then provide your customer number issued to you from ISPAH when registering

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ISPAH

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BE ACTIVE 2012

4th International Congress on Physical Activity and Public Health
Australian Conference of Science and Medicine in Sport
National Sports Injury Prevention Conference

OCT 31 – NOV 3 2012 SYDNEY AUSTRALIA

REGISTRATION FORM

Contact Details

Title..... First Name..... Last Name..... DOB..... Gender M / F

Profession/Position ..... SMA or ISPAH Membership No .....

Organisation ..... Email .....

Postal Address .....

Suburb ..... State ..... Post Code ..... Country.....

Phone ..... Fax ..... Mobile .....

Special Requirements - Dietary, Physical etc .....

Registration Fees

Sub Total $AUD

Conference Registration

"be active 2012" includes	Early Bird Registration On or before 31 July 2012	Late Registration On or after 1 August 2012	
☐ 4th International Congress on Physical Activity and Public Health (31 Oct-3 Nov)			
☐ Australian Conference of Science and Medicine in Sport (31 Oct-3 Nov)			
☐ National Sports Injury Prevention Conference (31Oct-3 Nov)			
SMA or ISPAH Member Registration - Full	$765	$865	.....
SMA or ISPAH Member Registration - Student*	$450	$550	.....
Non Member Registration - Full	$980	$1080	.....
Non Member Registration - Student*	$550	$650	.....
Developing Countries Registration (please refer to website for list)	$400	$500	.....
One Day Registration* (Please Tick ☑ which day you would like to attend)			
☐ Wed 31 October ☐ Thurs 1 November ☐ Fri 2 November ☐ Sat 3 November			
Registration - Full or Student	$300	$350	.....

*Student Registration: Student delegates must be full time and must supply a letter from their Head of School verifying full time status.
*One day registration includes entrance to the social program for the day that you are registered only.

Registered delegates receive access to all sessions being offered by the three conferences on their registered days only. Full registered delegates also receive lunch, morning and afternoon teas, tickets to the social program, entrance to the trade exhibition, a Book of Abstracts, which includes a detailed Conference Program, and a Conference satchel.

Accompanying Person Registration

☐ Accompanying Person - Daily catering only	$250	.....
☐ Accompanying Person - Daily catering and Social Program	$450	.....

The Accompanying Person - Daily catering only fee includes lunch, morning and afternoon teas for the four days of the conference. The Accompanying Person - Daily Catering and Social Program fee includes lunch, morning and afternoon teas for the four days of the conference, one ticket to the Welcome Reception, one ticket to the Poster Session, and one ticket to the Conference Dinner. Accompanying persons are not entitled to admission to the scientific program.

Social Program

Costs are included in the registration fee unless otherwise noted above. For catering purposes please Tick ☑ if attending.

	Delegate Ticket		Additional Ticket		# Required	
Welcome Reception (Wed 31 Oct)	$nil	☐	$65	☐	.....	.....
ASMF Fellows Dinner (Thurs 1 Nov) (open only to ASMF Fellows)	$95	☐	$95	☐	.....	.....
Conference Dinner (Sat 3 Nov)	$nil	☐	$130	☐	.....	.....

Sports Medicine Australia Membership

☐ SMA Full Member - $215 ☐ SMA Student Member - $55 .....

Pre and Post Conference Satellite meetings and workshops

☐ Sedentary behaviour	$100	.....
☐ Integrating active transportation and health into transportation planning	$100	.....
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Height of Australian football players: A game played by giants

Sports physician, Dr Geoffrey Verrall and sports scientist, Jamie Hepner (who works with the AFL) analyse the height of Australian Football League draftees from 2004 to 2010, focusing on the state of South Australia.

The Australian Football League (AFL) draft of young football players is undertaken in a manner that is similar to the drafts used by North American professional sports. Significant differences are noted in that the age of the AFL draftees are younger (average age 18) and that the AFL draft is a relatively new phenomenon with the first AFL draft occurring in 1986.

Australia converted to the metric system in the 1970s. However one of the remnants of the pre metric conversion times is that although Australians will talk about their weight in kilograms (kgs), they will talk about their height in terms of feet and inches with 6ft (183cm) being used to delineate between being tall and not so tall.

Australian football is played in all states within Australia. However in only four states (of a total of six) is Australian football the predominant football code with respect to numbers playing. One of these states is South Australia. There are 18 professional Australian football teams to which draftees are selected to play for. South Australia has a semi-professional league of nine teams which acts, in part, as a player development league for eventual opportunity to be drafted into the fully professional AFL.

In the AFL it has been noted that amongst the fastest and most skilful players are the Aboriginals and Pacific Islanders. These players are also noted, without proof, to be smaller on average compared to the normal Caucasian Australian football player.

In this context the aim of this study is to analyse the height of the AFL draftees in relation to the height of the normal population and the likelihood of attaining a professional career at the highest level of Australian football. To emphasise our findings we will focus on one area of Australia where football is the predominant football code played, South Australia.

Methods

AFL draftees from 2004–2010 (seven years) are included in this study. The height of the AFL draftee athletes are obtained from the official AFL draft publication[1]. The draftees have also been divided into South Australian or from other regions of Australia and into Aboriginals/Pacific Islanders or Caucasians. The heights of the general population and the population of Australia are obtained from the Australian Bureau of Statistics[2,3]. Statistical analysis (chi squared testing) was performed on the populations divided into above and below 183cm and being of Aboriginal or Pacific Islander or not being Aboriginal or Pacific Islander to determine any associations.

Results

A total of 562 players were selected in the National football draft between the years 2004–2010.

With respect to regions represented in the National draft:

- 288 (51.2 per cent) were from Victoria.
- 105 (18.6 per cent) from Western Australia.
- 81 (14.4 per cent) from South Australia.
- 78 (13.9 per cent) from other regions of Australia.

The mean height of all the draftees was 188.1cm with 111 (19.8 per cent) being less than 183cm in height and 48 (8.5 per cent) being less than 180cm in height and 1 (0.2 per cent) being less than 175cm.

There were 27 (4.8 per cent) Aboriginals and Pacific Islanders in the 2004–2010 AFL National draft. Seven of these were from South Australia with 23 (85.1 per cent) being less than 183cm in height. In addition 14 (51.9 per cent) were less than 180cm in height and the overall mean height was 179.7cm. This results in 535 non Aboriginal/Pacific Islander players in the National Draft (74 from South Australia) with a mean height of 188.6cm (South Australia 188.4cm) with 88 (16.4 per cent) being less than 183cm in height (South Australia 12 (16.2 per cent)) and 34 (6.4 per cent) being less than 180cm in height (South Australia 5 (6.8 per cent)). There is a statistical association between being aboriginal or Pacific Islander and being a smaller player (less than 183cm) selected in the AFL National Draft (chi value 76.1, $p<0.01$).

South Australia has 1.62 million (7.4 per cent) people of the 21.96 million Australians. In the Australian football playing regions there is 10.4 million people with South Australia having 15.6 per cent. The mean height of the Australian male population is 174.8cm. Only one player in the AFL National draft in the last seven years is below this height. Concerning males in the 18–24 year old age group the mean height of the Australian population is 178.4cm with only 4.5 per cent of those drafted being below this height. Seventy five (75.5 per cent) per cent of the Australian male population is 180cm or less in height and this compares to 6.4 per cent being 180cm or less in the 2004–2010 AFL National Drafts.

Discussion

Australian football at a professional level is a game played by tall males. In many respects the only 'normal' heighted athletes selected in the AFL National Draft are selected from the Aboriginal and Pacific Islander communities. White Australian males need to be tall (mean of 188cm) to be selected for professional Australian football.

South Australia has 13.9 per cent of AFL National draftees which is in line with the projected football playing population. With respect to the South Australian semi-professional development clubs (N=9) if you are a player less than 183cm in height then each club will have one player selected in the National Draft every five years. If you are less than 180cm in height each South Australian semi-professional development club (N=9) will have one player selected in the National Draft every 12 years. This applies only to non-Aboriginal and non-Pacific Islanders as if you are of these races you have a much higher chance of being selected if you are less than 183cm.

"There is a statistical association between being aboriginal or Pacific Islander and being a smaller player (less than 183cm) selected in the AFL National Draft…"

In the modern world some of the ideals of sport have been compromised. Instead of participation in sport for recreation and enjoyment there has been a move to professionalism with athletes nowadays earning a living from sports participation. With this increasing professionalism in Australian football there are obvious benefits to the athletes that are selected to play at the highest level. However in seeking a professional career there are often negatives on athletes, and society itself, that do not subsequently make professional careers. These can include; parental behaviour in the pursuit of professional sport for their offspring, the abeyance of athletes receiving an adequate education as the young athlete devotes significant time to attaining a successful professional career and a large sport dropout rate as the athlete is unable to make a professional career resulting in the athlete not taking an exercise ethos into later adulthood where it is a proven benefit to long term health.

"The mean height of the Australian male population is 174.8cm. Only one player in the AFL National draft in the last seven years is below this height."

Conclusion

Australian football at the professional level is primarily played by tall males. The height of the players is well above the mean height of the general population with the exceptions to this being football players who are Aboriginal or Pacific Islanders where the heights of these athletes are more 'normal'.

This study is important as having an understanding of the height requirements of being a professional Australian football player may be beneficial in facilitating appropriate counselling, development and sports participation for young adult males playing Australian football.

"White Australian males need to be tall (mean of 188cm) to be selected for professional Australian football."

Practical implications

This study contributes to sports, in particular Australian football by:

- Improving the understanding of the anthropometric requirements to participate in the sport of Australian football at the elite level.
- With this improved understanding of the anthropometric requirements of elite level Australian football, better education and counselling of the potential participants can be undertaken.
- Development of athletes to participate in Australian football at the elite level can be better targeted by having an improved understanding of the height needed to participate in Australian football at the elite level.

Acknowledgements

The author would like to thank the Australian Football League for their help in providing the data.

There are no outside sources of support for this research including no financial support. We declare that we have no conflicts of interest in the authorship or publication of this contribution.

Dr Geoffrey Verrall and Jamie Hepner

References, as indicated within the article, are available at sma.org.au/publications/sport-health/

Vale Dr Brian Sando

Brian at the ACSMS 2011 conference.

Brian with his SA Hall of Fame Award.

Considered by many as the grandfather of sports medicine and recognised by his colleagues as one of the most experienced and decorated sports doctors within Australia, it is with sadness that we learn Dr Brian Sando lost his battle with cancer recently.

Brian played an integral part in Australian sport, contributing at the local, national and international level.

Brian held senior medical roles with the Australian Olympic team since 1980 and the Commonwealth Games since 1986. He began as a Medical Officer in 1980 in Moscow, and then in 1986 in Edinburgh, where his various roles spanned eight Olympic Games and three Commonwealth Games. He rounded out his career as Australian Olympic Committee Medical Commission–Chairman and Commonwealth Games Federation–Medical Commissioner.

Other notable achievements include providing medical services to the Australian Davis Cup team, being the long serving team doctor of the Adelaide Crows from 1991 to 2009, and his significant contribution to the South Australian National Football League where he began as team doctor for Norwood in 1965, and remained until 1990 before he moved to the Crows.

In addition to his dedication to sports medicine, Brian also played an integral part in the fight against drugs in sport. A tireless campaigner against performance enhancing drugs, Brian was involved with the establishment of the Australian Sports Drug Agency, where he was Chairman from 1999 to 2006, and was also a Member of the FINA Doping Control Review Panel.

As a Life Member of Sports Medicine Australia in the formation years from 1970, Brian has a long history with SMA. He was National President from 1989 to 1991, SA Branch President from 1983 to 1984 and a national and state leader in the establishment of SMA's Accredited Sports Trainers Program in 1983.

Brian also held fellowship of the Royal Australian College of General Practitioners, Honorary Fellowship of the Australasian College of Sports Physicians and Life Member status of the Australian Medical Association.

He was awarded the Medal of the Order of Australia (OAM) in 1995 for his services to sports medicine, inducted into the Sport Australia Hall of Fame in 2001 and inducted to the SA Hall of Fame in 2011.

Brian will be remembered as a warm, caring professional with a great sense of humour and a commitment to world-standard sports medicine.

Sports Medicine Australia extends our deepest sympathy to his family.

The keys to business success

How do you decide on a logo for your business?

Brought to you by Papercut

Many business owners believe that a logo represents only a small part of their identity. Wrong! It's like building a house – your logo forms the foundation of your business. A graphic designer helps you build that foundation and provides a blueprint for all your future design work.

First of all, we recommend that you hire a graphic designer to create your logo. They are trained to look at the overall brand strategy and how best to apply your branding to all your business material.

Look for a designer whose style matches your preference, otherwise branding will be a struggle. It can also help to give your designer samples of logos that you like, colours that appeal and any ideas you may have to steer them in the right direction.

Keep in mind that your logo's main job is to communicate with your target audience. So, first you have to define your target audience. Who are they? What do they like? Why will they buy from you? Can you ask some of your target market to act as a review panel during the logo creation process?

Then, define the rest of your brand story. If your designer doesn't know what your company is about, they can't design a brand that will work for you. They need to know who you are, what you do, and what makes you different from your competitors.

Hand all that over to your designer and wait for your first round of designs. They should offer several great choices. Narrow down the options and then pass them by your review panel of target audience members to see what they say.

Refine the logo based on your audience's feedback and your designer's expertise. Look for a logo that's bold and unique, but also timeless so that you don't look dated in a few years.

Then start using the logo on all of your material. A logo won't work if people can't see it.

Your branding is an asset to your business so it's important to get it right from the start. Clients will judge your business by the way it looks, and your logo branding and website is the first impression of your business to a new client.

Papercut offers a wide range of creative services including graphic design, web design and development, brand, concept and strategy development and print management. Papercut are a Government preferred supplier and serve many small business clients locally and nationally. They are committed to their clients and offer exceptional quality, flexibility, and fast turnaround times from a small and friendly team. Papercut are strongly committed to the environment, and assist clients to reduce their carbon footprint by choosing environmentally responsible suppliers and products while operating business from a sustainable studio. For more information visit www.papercut.net.au

Are the odds in your favour for your business surviving?

Brought to you by Peter Rankin – Davidsons

Congratulations! You are a small business owner or maybe have an opportunity to start a business. It's now time for a reality check! Australian Government statistics provide a stark insight into business failures in Australia: somewhere between 50 per cent and 75 per cent of businesses fail within three to five years of their commencement. Obtaining **professional advice** and preparing a realistic **business plan** will significantly reduce the risk of your business failing.

Business planning

Having an effective business plan increases the odds of your business **succeeding** from one out of three, to four in five. In other words, most businesses with realistic business plans succeed. A business plan will help you objectively analyse your business opportunity, pinpoint critical success factors, force you to consider the threats to your business, confirm the demand for your products and/or services and helps to document goals and targets for you to achieve within realistic timeframes. However, it is just as important when preparing and implementing your business plan that you source independent professional advice to assist you with the process required.

Independent professional advice

Sourcing professional advice is essential for your business to succeed. Not only will your professional advisers help you to complete and implement your business plan but they will also help you navigate through the maze of complex issues you face when starting a business. The table below provides examples of professional support and advice you will most probably need when starting out.

Accountant	Financial Adviser	Lawyer
Business planning	Finance	Contracts
Financial accounts	Insurance	Leases
Tax		Structures

Appointing your most trusted adviser

Most small business owners prefer to have their business affairs managed by **one adviser**: their most trusted adviser. Appointing your most trusted adviser means you will have one adviser coordinating the management of your business affairs. It enables you to focus on what is most important for your business' survival: new customers, growth, pricing etc.

Your accountant is usually best positioned to take on this key support role. Here are some tips when selecting your most trusted adviser.

- Does your adviser provide both business and financial services advice?
- Can your adviser provide you with small business references of prior success?
- Is your adviser licensed to provide advice?
- Is your adviser a small business specialist?

Preparing a business plan and appointing a most trusted adviser are the business tactics of winners! Taking time out to plan and receiving targeted advice may mean the difference between your business not only surviving but thriving.

For further information please contact Peter Rankin at Davidsons, peterr@davidsons.com.au

Davidsons Accountants and Business Consultants specialised service offerings of Tax, Audit, Financial Services, Personal Insurances and Self Managed Superannuation can provide you with all the information, assistance and advice regarding your superannuation requirements. For more information visit www.davidsons.com.au or follow Davidsons on Facebook and Twitter.

Moving from talk to action – How your business culture can engage and retain great employees

Brought to you by Ros Holding, Associate Recruitment Consultant, Sportspeople

Culture within a sport organisation is not purely a set of boundaries that provide a picture of what is acceptable behaviour for employees and what defines ideal behaviour. It exists as those underlying channels by which organisational values are built from strategy, evolved out of debate and conflict, measured against failure and success and embraced with emotional meaning by all.

No different to a successful sporting club or team, this invisible force of 'culture' can engage a workforce to achieve great things and drive momentum towards accomplishing end goals.

As a specialist sector recruitment company, many successful sport leaders tell us one of the significant fundamentals in achieving better business performance is retaining great people. Retaining and successfully continuing to engage people seems to be consistent with those same organisations that spend significant time on creating 'positive culture'. The same organisations working incessantly on strategies to engage and retain their workforce also comprise of employees who tell us they 'love where they work and what they do'.

So take a moment to ask yourself these questions:

Where is your organisation culture now, and where do you want it to be? Do you invest enough time and money in ways to help employees engage better and understand your organisation values? How often do you encourage employees to share their ideas and use their extraordinary talent to make a difference?

Here are our thoughts on moving talk to action when it comes to business culture.

Acknowledge and create clarity – People working within sport come from varied backgrounds. Don't assume everyone brings or has the same values. Ensure clear and defined organisational values are known and championed across your organisation.

Create a multifaceted approach – Finding and retaining champions of positive culture in the right places throughout 'all levels' of your organisation will ensure people hear, see and watch those who wholeheartedly embrace your values, set the example and grow the thinking of others. Reward them well for doing so.

Communicate the old fashioned way – Have meaningful dialogue with your workforce to demonstrate you actually care about the culture and understand their wants and needs. Communicate 'in person' regularly, speak plainly, practice listening, learn and interact together. This may be a simple activity at the end of meetings or a sharing of new ideas.

Build awareness of how people's work affects results – Give those who work for you a sense of ownership over business imperatives and key issues. Change your organisational thinking to a new approach – cultivate wisdom to grow people's capabilities. Use strategies which bring acknowledgement and recognition for effort and work performance as a source of difference.

Be strategic and proactive in approach – Culture strategies need to be strategic to shape and manage change. Implementing grander marketing, smarter technology and providing more dollars may improve staff spirits, but strategically having the right leaders with the right structure is by far the more critical.

Plan, prepare and recruit well – What highly engaged ambassadors will be needed to take the business forward in the future? Before recruiting, gain common agreement from others in your workplace on what is expected from a role and which attributes, attitudes and skills are most important. Appointing using the 'who you know in sport' approach will not necessarily yield the best result and may even have a negative impact on existing workplace culture.

Building culture requires a common sense approach to understanding your workforce and how they connect with clever design of structures, systems and conditions to capitalise on the potential of both individuals and a workforce team as a whole.

In essence, putting the talk into action when it comes to business culture is not much different to optimising the spirit of a group of talented athletes to become a highly successful sports team!

Sportspeople is a leading recruitment agency and job board operator in the sport, fitness and aquatic sector. For more information visit www.sportspeople.com.au

The rise and rise of social media

Brought to you by Social Star

– Eric Qualman

The rise of social media and Google has radically transformed the way people have interacted over the past five years. Five years ago Facebook was brand new, Twitter had just started and LinkedIn was not considered an essential business tool. Fast forward to 2012 and there are 600 million Facebook account worldwide, Twitter is ever present in news stories and celebrity gossip and LinkedIn is used as an everyday business directory for sales and recruitment firms alike. These three sites are just the tip of the iceberg. Also in this field is YouTube, Wikipedia, Flikr, Google+, Pinterest and a plethora of niche sites to suit every micro culture and digital need you could imagine.

The speed with which these sites have **permeated our culture** and changed the way we communicate has been enabled by the rapid increase in technology innovation and adoption. Specifically the rise of broadband internet, mobile applications and the sophistication of phone handset technology. The smart phone market is now dominated by the iPhone and Android phone which give instant connection to the internet and social media sites for posting updates, have high resolution cameras and video capabilities to instantly capture the world around them and share with millions of people, and are relatively inexpensive.

Today, unlike any other time in history, an **individual has the power** to create, promote and commercialise their passion. A teenager in Europe can have an idea for a new website, build it with simple and free tools such as Weebly or Wordpress, promote it via Facebook and Twitter, and commercialise with Google Adwords and PayPal. All the pieces of the puzzle are available and most of them are free. Alternatively, professional help is available via oDesk and Elance for a low cost or if you want to learn to do it yourself, you can Google the topic or look at a video in YouTube. Information is the currency of the new economy and it is freely available, detailed, up to date and easy to digest.

The time is now, be part of the new economy, learn how to operate in the new information and social media age and commercialise your passion.

I am excited by the journey ahead, this is your time, your opportunity, seize the day and live the life you want because now the power is in your hands. **Technology will give you the cup, all you need to do is drink from it.**

Social Star specialises in social media advice. We take 20 years of corporate brand marketing experience and dozens of previous digital and social media campaigns and use this knowledge to assist our clients unleash their authentic brands online, exponentially grow their digital community and reap the financial rewards with smart commercialisation principles. For more information visit www.socialstar.com.au

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What's it like to work in rural health?

Podiatrist, Allison Mitchell takes us on a tour of her rural, remote working environment at Jindabyne in the Snowy Mountains, and highlights what working in rural sports medicine takes and what it needs.

If you crave to ski before work, mountain bike at lunch and soak up amazing sunsets in the evening, stop reading now. I can only apologise when outlining a typical day for me – alarm at 5:50am, run at a location above 1,400m elevation whilst watching the sun rise through a clean and unpolluted sky, an hour or so on the ski slopes before work (3–4 months of the year), commute to work along country roads with no traffic lights – only the distraction of ever changing scenery (and the odd roo, deer, brumby, wombat or snow tourist from Sydney), a day of patients who are generally happy and healthy – the result of living in an area such as this, a return commute along the aforementioned roads, and then home to where the noises or annoyances associated with city life don't invade the peacefulness. Just silence and clean air.

"Nowhere else in Australia will you find a percentage of year nine boys with knee joint crepitus or partial ACL or meniscus tears."

There aren't many places in Australia where it's a pleasure to put your hand in the fridge because it's warmer than outside. But, several years ago, bowing to pressure from several local GPs, I established a podiatry practice in the Snowy Mountains region of NSW.

"Many patients travel 100km for a regular GP or physiotherapy appointment in Cooma – an appointment in Canberra often requires a packed lunch and a swag!"

"By the completion of the appointment they've promised to recommend me to their wife/husband, son, daughter-in-law, best mate and the stock-and-station agent."

Snowline Podiatry is based in Jindabyne – two hours south of Canberra, two hours from the popular south coast towns of Tathra and Merimbula and a 25 minute drive from the NSW snowfields. The businesses catchment area exceeds 5,400 square kilometres with patients living at an elevation anywhere between 800m (Cooma and Bredbo) and 1,830m (Charlotte Pass). Encompassing the Monaro and Snowy Mountains, we have several communities considered remote, including Cabramurra and Charlotte Pass. The two most notable towns in the area – Jindabyne and Cooma – although only separated by 60km, are poles apart. Jindabyne revolves around the holiday trade – three and a half months of the Australian ski season as well as the boom times of Easter and Christmas. Because the income period is so short, the work ethic in the area is almost palpable with main employers being the National Parks and Wildlife Services, Snowy River Shire Council, SnowyHydro, Perisher Resorts and Kosciuszko Thredbo. Furthermore, Perisher, Thredbo and Jindabyne have the least recorded number of home ownerships in NSW[1] reflecting the transient nature of the population, due mainly to the snow industry. In contrast, many family-oriented grazing properties have been established in the Cooma area for over 100 years resulting in an older and more settled population. Agriculture-based industries are a major employer in Cooma, including Elders, Landmark, the local abattoir, pastoral companies and agriculture supply businesses. Eleven per cent of Jindabyne's population is over 65, whereas the same age group in Cooma makes up 30 per cent of the population[1,2].

The stats we all love:

Number of traffic lights seen, on average, per month	0
Number of patients who travel to school on a skidoo	12
Replacement windscreens/year	1
Flat tyres/year	3
Visits to panel beater/year due to wildlife altercations	2
Average kms driven per week (work)	550
Catchment area of patients	5,400 sq.km
Percentage of patients under 25	38 per cent
Percentage of patients 25–60 years	37 per cent
Percentage of patients 60+ years	25 per cent
Percentage of patients for routine podiatry care	35 per cent

(exclude three days a month in aged care/hospital setting)

Patient load

A podiatrist's dream is to have a greater percentage of biomechanical-type patients than routine care. Snowline Podiatry has achieved that by default – simply because of the nature of the surrounding population.

A difference in the presenting complaints of patients at Jindabyne versus Cooma has been noted. In Cooma, which has an older and more sedentary population, I see far more patients regarding type 2 diabetes, routine podiatry care and plantar heel pain. In contrast, Jindabyne and Berridale both have a younger and more active population; Berridale has NSW's highest percentage of residents aged 0–14 years[2]. At these locations, I deal with a plethora of teenage ingrown toenails, a greater number of paediatric complaints, more knee injuries and ski boot issues and of course, pressure to amend problems before the onset of the ski season or the annual pilgrimage to the North America ski slopes. More than 25 per cent of Jindabyne's permanent residents disappear overseas every January to Japan, US and Canadian ski fields. In contrast, it's common to find Cooma residents who've never been to the snow (90km away).

"If you crave to ski before work, mountain bike at lunch and soak up amazing sunsets in the evening, stop reading now."

Surely Jindabyne must have the highest incidence of knee injuries in people younger than 50 years of age in Australia. Why? The snow. Nowhere else in Australia will you find a percentage of year nine boys with knee joint crepitus or partial ACL or meniscus tears. The snow brings lower limb injury management challenges and I relish the opportunity to spend time with Thredbo's new ski instructors every year and love working in a team with boot fitters and other medical staff to assist our winter snow sports athletes. Many of my patients are current or previous members of an Australian snow sports team and performance and comfort are the goals of treatment; but the same applies to all our weekend warriors.

Challenges

Although sub-zero temperatures are ideal for snowmaking, they also play havoc with everyday activities. Such cold affects driving conditions both for the practitioner and patients – a minus eight morning sees 'summer' diesel freeze and roads become treacherous. Overnight snow often isolates people on properties at higher elevation and daytime snow and blizzard conditions sees school buses departing early and pressure to get home before dark, when access may no longer be possible.

The greatest challenge is the amount of travel required. With practice locations stretched along 100km of Kosciuszko Road and branching off another 40km towards Tumut, the distances covered take a toll on the vehicle and practitioner. Unlike metropolitan areas, 95km can be covered in an hour. But a standard eight hour work day is lengthened by an hour driving at each end as well as setup and pack up time at each worksite. Two or three days every week require a 120+ km round trip to work at the medical clinics or hospital in Cooma. A monthly clinic in Adaminaby is a 170km round trip, the majority of which has no mobile reception. The winter season brings sessional work at Thredbo. On average, the Subaru Outback (standard issue here in the mountains) covers 550km of country roads every week before extra-curricular activities are considered. Some home visits are accessed down gravel and dirt roads and driveways – the white Subaru doesn't stay white for long.

Distance, and the time required to cover it, is also a significant hurdle for patients. Canberra is a four hour round trip – a restrictive factor when a specialist's opinion or imaging is sought. An 'after-school' appointment still requires time off school. Many patients travel 100km for a regular GP or physiotherapy appointment in Cooma – an appointment in Canberra often requires a packed lunch and a swag!

One patient seen recently was a 38 year old fellow, involved in a hard, physical labour job linked to the ski season. An injury history including more than 15 concussions has caused his gait to deteriorate over the past year and it now resembles that of a stroke victim – further neurological testing and brain imaging is required. But, it's the ski season – the busiest time of the year for the Monaro and Snowy Mountain regions. There's no time to travel to Canberra or Sydney. *"Sorry",* I was told, *"it'll have to wait 'til October. Can't take time off work, can't just walk away this time of year. We'll sort it in October; that ok with you, love?"*

On a professional level, maintaining CPD can be difficult. The majority of such programs are based at state headquarters – Sydney and Melbourne. Although a 90 minute CPD session in Sydney may involve an interesting topic, it's impossible to justify an 11 hour round trip and at least one nights accommodation as well as the time lost from work to attend. It's exciting to see a number of professional bodies introducing 'webinars' (thanks AAPSM!) to cater for those who simply cannot make the trip to Surrey Hills, or Albert Park.

At all work sites, the practice staff consists of me, myself and I. All aspects of the day-to-day running of a practice fall to one person – welcoming new patients, billing, making next appointments, answering the phone and so on. Therefore, patients are generally booked every 40–45 minutes to allow time to welcome, chat, deal with the presenting complaint, chat, make the next appointment, bill and chat more – a time-consuming but warm and fuzzy side-effect of living and working in a rural area. Becoming known in the area and having family here as well means there is always plenty to talk about. Plus, no one's in a hurry…

Starting from scratch

Establishing a practice in this region has been made easier by having family here and knowing the area backwards. In being the 'new' podiatrist, many of the long-term residents were reluctant to impart information regarding their health and foot problems. But mentioning they own a neighbouring property or are distantly related to me opened the flood gates. All of a sudden we're comparing the percentage mix of RoundUp™ and TaskForce™ plus Herbdye™ when combatting Serrated Tussock and discussing the calf prices at last week's sale. By the completion of the appointment they've promised to recommend me to their wife/husband, son, daughter-in-law, best mate and the stock-and-station agent. *"Do you like chutney? I'll drop you in a jar of my latest batch next time I'm in town…"* Local knowledge has proven to be a standout when promoting the new business – word of mouth seems to be the greatest recruitment method for new patients, the majority of whom tell me they never saw the advertisements in the papers…

What rural health needs

I have now spent half my career working in rural areas. We're not all country bumpkins using the old credit card swipe machine and Dettol to clean our instruments. Snowline Podiatry has HICAPS and a wireless EFTpos unit. We even have internet connection (not five bars, but at least it's not a carrier pigeon!). I have an interest in my community but also an ongoing professional interest – for me it is sports and biomechanics.

There is increased pressure to maintain CPD points/hours and as a sole, rural practitioner, there are times when I crave discussing a difficult case with a like-minded professional. Webinars and online education sessions are slowly being introduced. Reducing the cost of state conferences for professionals based in rural or remote areas should be encouraged. To attend a one day conference in Sydney from Jindabyne requires two nights accommodation, one day away from work and fuel for 1,000km. Some medical and allied health professions are catered for with rural practice groups and memberships, but, as a whole, I believe this acknowledgment of rural health workers should be across the board to allow for better networking and greater support.

So, it's cold and professionally lonely and I seemingly spend half my week in the car, but being a sole practitioner in a rural area is hugely rewarding. I am part of and contributing to a fantastic, grounded and hard-working community. We may not have many of the conveniences taken for granted in metropolitan areas, but we do have an awesome way of life – an outdoor lifestyle year round, clean air and room to move. If the opportunity arises for you to take a position in a rural area, even for a short period, grab it. Working in a country area will not spell the end of your career; it may well just be the beginning.

Allison Mitchell

References, as indicated within the article, are available at sma.org.au/publications/sport-health

Sport Health thanks Allison for sharing her story. If you would like to share your working environment (rural or metropolitan) within *Sport Health,* please email *Sport Health* Editor, Amanda Boshier on amanda.boshier@sma.org.au

A 'new' way forward? – Kinesiology taping

SMA chats to four of its professional members to understand the method of kinesiology taping. The members discuss how they are using it in a practical setting and the benefits they have seen.

Kinesiology taping began with the Kinesio Taping® technique developed by Dr Kenzo Kase in Japan more than 30 years ago. Dr Kase developed the method to relieve pain and assist in the healing of traumatised soft tissues whilst maintaining athletic motion. Dr Kase found that standard taping techniques, such as athletic taping and strapping, provided joint and muscle support, however, they reduced range of motion and in some cases inhibited the healing process of traumatised tissue. A new treatment approach was needed.

Dr Kase's objective was to create a therapeutic tape and taping technique which could support joints and muscles, without restricting range of motion. He also hoped to formulate a taping technique which could have benefits for the lymphatic system.

Kinesiology taping first saw worldwide exposure during the 1988 Seoul Olympics. Since then, it has become integral in the therapeutic and rehabilitative taping of both muscular disorders and the management of lymphoedema and chronic swelling. It is used by many health professionals across the world.

Sports and Olympic Physiotherapist, Mr Andrew Hughes, has extensive knowledge of kinesiology taping products, their application and history. Andrew first worked with the product in the early 1990's in his role with the Australian Olympic Mens' Volleyball Team. "As a team, we would travel and play extensively in Asia and it is here that I first became aware of kinesiology taping. I now use the Leuko K-Tape and find its qualities enable me to perform techniques that I previously found difficult or virtually impossible. The greatest qualities of the tape are the combination of its skin-friendly and long-lasting adhesive mass and the tapes' high elasticity. It allows me to impart low loads on the skin, muscles and other soft tissues for long time periods".

Andrew stated that the choice of taping product should always be determined by matching the physical qualities of the tape with its desired function on the body. Kinesiology tape provided for new and innovative taping techniques that would surely prove popular and effective.

Ways in which SMA members are using kinesiology taping

In the 2010 NRL season, players from various teams started and have continued to use kinesiology tape. This signified the start of this taping method's impact in Australia. SMA chats with three SMA professionals to seek their opinions and workings with kinesiology taping.

Please note: It is important to understand that kinesiology taping will only assist those with a muscular dysfunction or impairment; therefore it will not enhance an athlete's maximum performance capabilities. It is also important to use the correct tension in the tape in order to get the desired tissue response, incorrect application will not work and could potentially result in further injury to the person. Always consult a trained professional.

Name: Pete Garbutt
Profession: Chiropractor
Workplace: Canberra, ACT
Sporting teams you work with: Dragons Water Polo Club, Belwest Soccer Club, Gungahlin United Soccer Club, Australian Beach Volleyball Tour, Canberra Heat Indoor Volleyball
Years in field: 17

Name: Jodie Porter
Profession: Physiotherapist
Workplace: Physiosports Brighton, VIC
Sporting teams you work with: Wesley Collegians Football Club – VAFA A Grade
Years in field: 8

Name: Jason Power
Profession: Physiotherapist
Workplace: Five Dock Physio, NSW
Sporting teams you work with: Drummoyne Power AFL, New Zealand Figure Skating, NSW Figure Skating and OWI athletes
Years in field: 8

Q: How do you use kinesiology taping?

A: Pete:

Depending on the situation I might use kinesiology taping to support or activate muscles, to limit movement and give the body cues on movement, and to help decrease swelling in an acute injury.

A: Jodie:

I was trained in the original method of kinesiology taping. The recommendations I tend to follow use the tape in different ways depending on what you are trying to achieve. I use the tape at different tension levels depending on my desired results. I tape along the line of the muscle, across fascial restrictions, over joints or over pain sites depending on the injury. I use many different shapes as well depending on where I am taping including I, X or Y strips, fans and lanterns. The more people I have seen using kinesiology taping though the more uses and techniques I am adding to my repertoire.

A: Jason:

Kinesiology taping has been developed to assist an injured athlete/person during their recovery from injury or neuromuscular dysfunction. It is designed to stimulate the skin and the receptors in the underlying muscle tissue to achieve a desired response from that tissue. It is applied in direct contact with the skin with various tension on the tape depending on the desired effect. Kinesiology tape is applied at 10 per cent stretch during its manufacture, therefore if you apply the tape straight onto the skin as you remove the backing it will be at approximately 10 per cent stretch.

The application to a muscle is best done with the tape covering both ends of the tendon at the origin and the insertion of the muscle. For muscle inhibition the tape tension should be between 15–25 per cent stretch, for muscle excitation the tape tension should be higher at 25–50 per cent stretch. It usually will only require one strip of tape cut into the required shape or pattern. There are four main cuts; the I, Y, X and web cut.

Q: In your experience, how does kinesiology taping differ from traditional sports taping? Do you prefer it?

A: Pete:

They are two different methods for different purposes. The tapes are very different in their construction and their indications for use. From a construction perspective, traditional rigid tape uses a rubber zinc oxide coated adhesive mass, whereas kinesiology tape use a polyacrylate coated adhesive mass which tends to be more gentle to the skin. Whereas traditional tape will often stick better to tape than skin, kinesiology tape, being heat activated will stick better to skin than tape. Rigid tape has no stretch, yet kinesiology tape has up to 140 per cent stretch linearly. Rigid tape is designed to restrict movement, whereas kinesiology tape is designed to promote movement. Rigid tape is often used to replicate the role of ligaments, whereas kinesiology tape looks to replicate the role of fascia and muscles. The role of rigid tape is often to protect joints, whereas the role of kinesiology tape is to protect muscles. Rigid tape can be used to restrict swelling, kinesiology tape is used to promote the drainage of swelling. I prefer kinesiology tape for uses that it is indicated for, but certainly rely on rigid tape where it is traditionally more appropriate.

"I find it really effective in reducing muscle tension especially when there is one particularly tight band."

A: Jodie:

Kinesiology taping is a stretchy tape and therefore allows the joint to maintain full range of movement whilst stimulating receptors to encourage more optimal muscle function. The wave application of the adhesive and the way the tape is designed also makes it different to other elastic tapes by more closely mimicking the skin. Due to these properties it is easier to manoeuvre on the patient and seems to cause less skin problems. I use all types of taping and don't have a preferred tape. I choose the tape depending on what I am trying to achieve and patient preference.

A: Jason:

Traditional sporting tapes are rigid and generally used to support joints and ligaments, kinesiology tape is designed to be flexible and move with the body to assist in returning the body to a level of homeostasis. In my opinion kinesiology and traditional tape will always have a place in sport and rehabilitation.

Q: How long have you been using kinesiology taping?

A: Pete:

Probably close to 10 years now.

A: Jodie:

I completed the course through the Australian Institute of Advanced Training in 2010. I have been using kinesiology taping since then.

A: Jason:

I have been using kinesiology taping for the last three years. Patients tend to like it more than traditional tape because of the more skin friendly acrylic adhesive and can be kept on longer than traditional taping methods (therefore requiring less frequent removal and reapplication).

Q: What prompted you to use it?

A: Pete:

Good reports about it from colleagues mostly.

A: Jodie:

One of my colleagues pointed out the course and I was very interested. People were often asking me what the Kinesio tape was on sportspeople and so I wanted to know more to give a more educated answer. Once I saw the benefits it could have I have continued to use it as another treatment option.

A: Jason:

I had been hearing about it for a few years, and the opportunity came up to explore its use further. I attended taping courses and became a certified Kinesio taping practitioner. It was clear that kinesiology tape worked best when applied with the correct technique. I have heard many stories of incorrect application that have provided unsatisfactory results. I use it because I have found it to be very helpful with the return to activity of my patients, it provides support though due to its stretch properties doesn't restrict necessary movements.

Clinical evidence has shown it to be helpful in reducing pain. On next session after kinesiology tape application, patients report less pain and better function during the application than patients who did not have kinesiology tape applied as part of their treatment.

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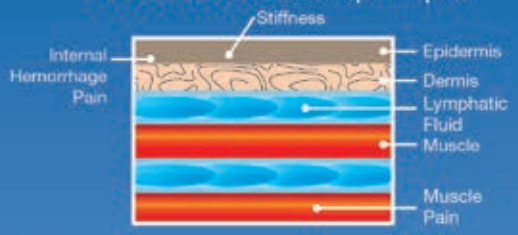
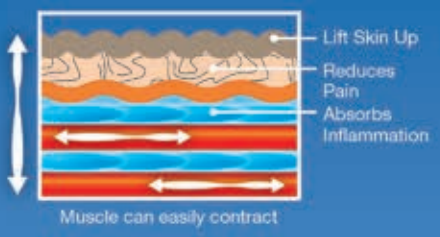


AFTER USING Leuko Sportstape K



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LEUKO SPORTSTAPE K - TAPING METHODS

A NECK STRAIN

1. Apply one end of the tape at the upper part of the neck parallel to the spine.

2. Gently tilt the head forward.

3. Place the tape over the strained area. Repeat the same on the right hand side parallel to the spine.

B SHOULDER PAIN AND INSTABILITY

1. Place tape on the outside of upper arm, approx half way down arm.
2. Gently move arm backwards and sideways.

3. Place other end of tape near outer end of collar bone.
4. Place another piece of tape on the outside of upper arm and gently move the arm in the opposite direction across the body.

5. Finish by placing the other end of the tape near the upper part of the shoulder blade.

C TENNIS ELBOW - 1

1. Place one end of the tape at the back of the wrist.

2. Flexing the wrist.

3. Place the other end of the tape toward the lateral side of the elbow.

D TENNIS ELBOW - 2

1. Place one end of the tape at the midpoint of the lower arm.

2. Place the tape around the elbow following the direction of the picture.

E BACK PAIN - 1

1. With the patient standing, place one end of the **Leuko Sportstape K** at the sacrum parallel to spine.

2. Gently bend forward and place the other end of the tape along the spine.

3. Repeat the same to the other side of the spine.

F BACK PAIN - 2

Apply one end of **Leuko Sportstape K** below the navel and direct up the left side at a 45°angle.

1. Gently turn the upper trunk around to the left and **2.** the hips to the right.

Apply the tape to the outside of the trunk. Repeat on the right side.

G HAMSTRING

1. Patient is standing and gently leans forward to lean on table/desk whilst keeping knees straight.
2. Apply 1 piece of **Leuko Sportstape K** to the middle of the upper hamstring area.

3. Gently stretch the tape as you apply it down the outside hamstring muscle to end below the knee joint.
4. Repeat down the inside hamstring muscle.

H KNEE PAIN

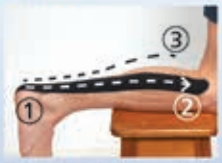
1. Lie the patient on their back with their knee straight. Apply one end of the tape on the front of the upper thigh muscle.

2. Gently bend the knee to 75% flexion and place the other end of the tape below the knee-cap.

3. Split tape in middle and tape around each side of the patella before continuing down and finish off below the knee-cap.

I CALF PAIN, CRAMP & FATIGUE

1. Lie the patient on their front with their foot over the end of the bed. Gently bend the ankle forward and apply tape under the heel.



2. Gently stretch the tape along the Achilles tendon and up the outside of the calf muscle.

3. Repeat, using a 2nd length up the inside of the calf muscle.

J ANKLE SPRAIN

1. Apply one end of the tape just below and behind the outside ankle bone.

2. Gently stretch the tape up along the outside of the lower leg.

3. Whilst the patient gently turns their foot in.

Thanks to Andrew Hughes (Sports Focus Physiotherapy) for assisting with the production of these instructional diagrams.
www.sportsfocusphysio.com.au

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Q: In your opinion, what are the benefits of kinesiology taping?

A: Pete:

Probably the biggest benefit of kinesiology tape is that it promotes movement. As it turns out, our body responds very well to movement, and not particularly well to limitation of movement in most healing situations.

A: Jodie:

Kinesiology taping has many benefits. As mentioned previously it does not have to restrict joint movement and therefore can be used for different purposes to rigid tape. Clinically I find it the most helpful for reducing pain and muscle tension. Recently I have been using it a lot in swelling and bruising with some great effects. I also like it for giving patients some joint support without restricting range of movement like you would with rigid tape.

As mentioned earlier it is easy to manoeuvre along muscles and over difficult areas. It is also nicer on skin and so can be used in some patients who react to more traditional tapes. I also find children are often happier to wear it as they have options other than skin colour.

A: Jason:

The benefits of the tape inclulde:

- It tends to be less likely to result in a skin reaction than traditional tape (skin reaction can still occur).
- It can stay on the skin for a longer duration, reducing the need for reapplication.
- Can extend the treatment effect between sessions by assisting the patient/athlete to maintain the desired muscle tone or body position.
- Can assist in reducing patients' perception of pain.
- Can assist in reducing oedema/swelling (with correct application).

Q: Who do you currently use kinesiology taping on?

A: Pete:

On a wide variety of patients and athletes from pregnant mums to arthritic knees to hamstring strains. Sometimes it's a first line intervention in an acute injury, sometimes a support in return to sport.

A: Jodie:

I use a lot of kinesiology taping in the clinic and at the football club. I still use rigid tape if I want to restrict the joint movement such as to help prevent ankle sprains etc, especially if the player or patient feels they need more support. The kinesiology taping can be tensioned to be a restrictive tape, however most people are accustomed to the feel of the rigid tape and also it is less expensive and so I feel there is still a place for rigid tape in these populations.

A: Jason:

I use kinesiology tape on most of my athletes/patients after treatment for many of the previously mentioned reasons. I use it only on athletes prior to competition only if they have a muscle imbalance, it is only effective on these type of athletes.

Q: What sport do you predominately use it in? Are you seeing a trend in this sport in moving towards kinesiology taping?

A: Pete:

Beach volleyball, soccer and running. I use it on a regular basis in all of these. With the greater familiarisation of the tape and techniques there is a growing use of it.

A: Jodie:

I use kinesiology tape in athletes from all different sports. Due to my association with Collegians Football Club I probably use it more in the Australian Rules footballers. I have given a few presentations to trainers and physiotherapists in the Victorian Amateur Football Association and through SMA and am definitely seeing those people starting to use kinesiology taping more often. It is still not nearly as widely used in Australian Rules Football as in tennis and athletics but I think we will see more and more kinesiology taping in other sports as people are introduced to it.

A: Jason:

I use it with all the sports and athletes that I am associated with that will benefit from its principles. It can be seen more and more often in the media on rugby league and rugby union players. It will be interesting to see how many Olympic athletes in London are using kinesiology tape.

It initially was brought to the public attention at the Beijing Olympic Games in 2008. Many of the USA athletes across all sports were wearing the tape and spoke very highly of its benefits. Phil Dalhausser, a USA beach volleyball

player strained his abdominal prior to the Beijing games. He credited health care management and the application of the kinesiology tape with his ability to play and win the gold medal.

Q: What kind of injuries/problems do you use the tape for?

A: Pete:

Hamstring strains, low back tightness, patellofemoral pain syndromes, scapula retraining and many others.

A: Jodie:

I mainly use kinesiology taping on muscle injuries. I find it really effective in reducing muscle tension especially when there is one particularly tight band. Recently I have started using it a lot more in acute ankle injuries and 'corkies' for swelling control.

A: Jason:

The tape can be used on over active (hypertonic) muscles, weak muscles, oedema (swelling), correction taping for conditions, patellofemoral joint pain, shoulder impingement, postural correction and sacroiliac joint dysfunction, just to name a few. As with traditional taping methods your skills in application and your imagination can be your only restriction. For an injury that requires rigid support traditional tape is more effective than kinesiology tape.

Q: What areas do you mostly use kinesiology taping on?

A: Pete:

It really varies from day to day and sport to sport. In beach volleyball, shoulders; in running, calf muscles; in soccer, knees; in general practice, low backs.

A: Jodie:

Due to the percentage of footballers I see I use kinesiology taping on the lower limb the most, especially hamstring, achilles and patellofemoral joint injuries. However I use it almost anywhere on the body.

A: Jason:

Kinesiology taping is mostly used on muscles either to inhibit or excite muscle activity. In a clinical setting, I tend to use it for muscle inhibition, anatomical and postural correction. It works particularly well on over active neck, shoulder and upper thoracic muscles.

"Probably the biggest benefit of kinesiology tape is that it promotes movement."

Q: In your experience, how long does kinesiology taping take to work?

A: Pete:

Many effects are immediate, but again, this depends on the purpose of the taping and what you are trying to achieve. Some effects take place because the tape is giving the stimulation over a long period.

A: Jodie:

If kinesiology taping is going to help I find it to have an instantaneous effect for muscle injuries. When I am using it for swelling I find it to have a good effect after a couple of days. It doesn't always have a permanent effect and therefore I use it in conjunction with other techniques and exercise.

A: Jason:

If you use the correct application and appropriate tape tension the effect should be immediate. I have had patients tell me that they feel the effect most once they remove the tape. With comments like "I was feeling fine till I took the tape off" or "I could really feel the difference in the muscle after I took the tape off."

"It works particularly well on over active neck, shoulder and upper thoracic muscles."

Jason Power applying kinesiology tape.

Q: Have you seen evidence that it works? What results have you seen?

A: Pete:

Every day. You see some pretty amazing results with applying the tape over bruising where you can see the changes that it makes quite dramatically. Aside from that though, you often see an increase in range of motion of a knee or shoulder when then tape is applied and the pain is reduced.

A: Jodie:

Up until this year there has been limited research on the effectiveness of kinesiology tape. Most of the research has not shown clinically significant results in any of the proposed benefits. A meta-analysis completed by Williams, Whatman, Hume & Sheerin, (2012) concluded '[kinesiology taping] may have a beneficial effect on strength, force sense error and active range of movement of an injured area, but further clarification is needed.' Clinically, however, I have had some fantastic results to the point that we sometimes refer to it as 'magic tape'.

A: Jason:

I have had many patients with a reduced range of motion as a result of increased tone (tightness) in a muscle. After the tape has been applied a greater range of motion is achieved. As mentioned earlier with the quote from Phil Dalhausser and by the increasing number of athletes in all sports internationally, using kinesiology tape is an indication that it must be having some beneficial effects.

"Kinesiology taping first saw worldwide exposure during the 1988 Seoul Olympics. Since then, it has become integral in the therapeutic and rehabilitative taping of both muscular disorders and the management of lymphoedema and chronic swelling."

Want to learn more?

SMA has recently started running kinesiology courses. Visit your local SMA state branch for further information and/or to express interest, http://sma.org.au/sma-branches/

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SPORTS MEDICINE AUSTRALIA
RECOMMENDED

Persistent pain in the groin region

Vox pop

SMA recently asked sports medicine professionals their opinion on the following question:

Where do you see the future of multidisciplinary sports medicine?

"I think the signs are already there that in the not too distant future that a health professional's original training and designated discipline will be less relevant than their skills and that 'accreditation' is likely to replace 'registration'. So for sports medicine teams the concept of team doctor, physio, podiatrist etc might be replaced with skills/competency based designations and role descriptions."

Mark Brown, Physiotherapist, QLD

"Promotion of health and provision of expertise to combat those factors which hinder the public ability to exercise."

Dr Jeanne McGivern, Sports Doctor, VIC

"The future of multidisciplinary sports medicine has to evolve further to minimise the patient's time missed from sport due to injury/illness. To do this, it is important not to have 'walls' in your practice limiting your education and knowledge from other health professionals. We should all identify the strengths (and weaknesses) of our own health profession. Asking for advice from another is a compliment, and benefits the patient."

Jason Rzepecki, Team Podiatrist for the West Coast Eagles Football Club, WA

SPORTS MEDICINE AUSTRALIA

Physiotherapist, Michael Drew discusses diagnosis of persistent pain arising from the attachments of the pubic arc in athletes.

Groin injuries are common in sports such as soccer, rugby league, cricket, ice hockey and Australian Rules football (Orchard et al 2002, Verrall et al 2001, O'Connor 2004, Brown et al 2008, Werner et al 2010, Orchard and Verrall 2000). In soccer, they can account for 12–16 per cent of all injuries per season (Werner et al 2010). In Australian Rules football they are the second most common injury behind hamstring muscle strains and have been estimated to be responsible for 11 to 18 competition games per team being missed by players due to injury in a season (Orchard & Seward 2011). They have a high recurrence rate, reported between 15 per cent and 38 per cent (Werner et al 2010, Orchard & Seward 2011). Numerous conditions have been reported (Smedberg et al 1985, Orchard et al 1998, Brennan et al 2005, Verrall et al 2005, Zoga et al 2008), many with multiple co-existing pathologies present (Holmich 2007). To understand these, it is best to first consider the anatomy of this region.

The confluence and close proximity of the anatomy of the pelvis leads to an overlapping of symptoms with multiple structures usually implicated (Holmich 2007). The bony pelvis is comprised of two innominate bones that develop from three primary ossification centres, one each for the ilium, ischium and pubis. Various secondary ossification centres appear during puberty and fuse between the ages of 15 and 25 years (Oatis 2004, Moore & Dalley 1999). Laterally within the pelvic ring, the illium, ischium and pubis coalesce are covered by hyaline cartilage to form the acetabulum which articulates with the head of the femur. The anterior union of the innominate bones is the symphysis pubis, a fibrocartilaginous amphiarthrosis.

"The adductor longus is the most commonly implicated adductor muscle in these patients with longstanding groin pain."

"We will be taking an increasingly 'whole community' approach, and 'multi-disciplinary' will expand beyond the usual suspects (public health, exercise science, physiotherapy, sports and recreation) to allied disciplines in planning, transport, education and economic development."

Mark Fenton, Adjunct Professor, Tufts University, Boston Massachusetts, USA

The symphysis pubis is stabilised and strengthened by pubic ligaments inferiorly, superiorly and posteriorly (Moore & Dalley 1999). Textbook descriptions of the anterior stabilisers of symphysis pubis usually contain the decussating fibres of the rectus abdominis and the external obliques muscles (Moore & Dalley 1999, Gray 2001). A recent cadaveric and MRI study (Robinson et al 2004) showed the fasciae of the rectus abdominis, after inserting on the pubic crest, to be continuous with the symphysis pubis capsule, fibrocartilage disc and adductor longus muscle. They also fuse with the anterior pubic ligament (Benjamin & McGonagle 2001).

The adductor longus is the most superficial of the three adductor muscles in the medial thigh compartment. Originating from the anterior aspect of the body of the pubis, just inferior to the pubic tubercle, it expands to insert to the linear aspera of the femur. The origin is composed of 37.9 per cent tendon and 62.1 per cent muscle tissue (Strauss et al 2007), has bilateral attachments to the pubic symphysis capsular tissues via the aponeurosis which also merges with the fibrocartilaginous disc and hyaline cartilage of the pubic symphysis. It is fibrocartilage in nature (Davis et al 2011, Ippolito & Postacchini 1981) and can transmit forces across the pubic symphysis (Clark et al 2010).

The adductor brevis muscle attaches to the pubic bone and may commonly have attachments to the capsular tissues, a variant seen in half of the male cadavers compared to 33 per cent of the females (Roberson et al 2007). The gracilis muscle attaches to the pubic body and inferior pubic ramus. It rarely attaches to the adductor longus muscle but may commonly fuse proximally with the adductor brevis muscle (Davis et al 2011).

The inguinal canal is an inferiomedial oblique passage running parallel to the medial half of the inguinal ligament. It is formed by the aponeurosis of the external oblique anteriorly, the transversalis fascia and conjoint tendon posteriorly with the roof formed by the arching fibres of the internal oblique (IO) and TA muscles. The floor is created by the inguinal ligament and reinforced lacunar ligament medially (Moore & Dalley 1999).

There have been many attempts to diagnose and classify these conditions with the clinical entity approach (Holmich 2007) and the patho-anatomical model (Falvey et al 2008) being the most referenced. Holmich (2007) classified groin pain into three main clinical entities. These were adductor-related, iliopsoas-related and rectus abdominis-related, with the adductor-related entity being the primary entity in nearly 60 per cent of patients with longstanding groin pain. However, a third of these patients had multiple pathologies. Patients were diagnosed with adductor-related groin pain if they had pain on palpation of the enthesis and pain on resisted adduction. Currently, there is level II evidence for an exercise program for the treatment of adductor-related groin pain (Holmich et al 1999). The patho-anatomical model (Falvey et al 2008) systematically considers the structures around the 'groin triangle' to provide a platform for assessment and diagnosis while based upon a review article; this is of use clinically. Overleaf are the main diagnoses, highlighted in a systematic review presented at a recent APA conference.

Yellow pin – pubic symphysis; White pins – adductor longus; Left red pin – entrance to inguinal canal below; Blue pins – rectus abdominis.

Adductor longus enthesopathies

The adductor longus is the most commonly implicated adductor muscle in these patients with longstanding groin pain. As Cooper and Misol (1970) first described, this enthesis is formed from four zones (tendon, un-mineralised fibrocartilage, mineralised fibrocartilage and bone), the fibrocartilage is approximately 4–25mm thick with the thickening reported as part of a degenerative process of the tendon (associated with eventual rupture) which is in agreement with other studies (Kannus & L Jozsa 1991). However, avulsion is rarely a cause in longstanding groin pain. MRI has been studied as a method of diagnosis with good positive (8.07) and negative (0.15) likelihood ratios (Zoga et al 2008). Adductor enthesopathies are represented in the adductor-related entity described by Holmich (2007) and therefore palpation and pain provocative tests are warranted. Currently, they have not been evaluated extensively against a reference standard, but have been reported in studies of pubic bone marrow oedema (Verrall et al 2005, Slavotinek et al 2005).

"It is estimated that roughly three-quarters of symptomatic Australian Rules footballers have MRI detectable pubic bone marrow oedema."

Bone marrow oedema

It is estimated that roughly three-quarters of symptomatic Australian Rules footballers have MRI detectable pubic bone marrow oedema (BMO). This is further correlated when the pubic BMO is greater than 2cm (Verrall et al 2005). Contrasting this, it has been shown that asymptomatic young elite soccer players have pubic BMO and is weakly correlated to the development of groin pain (Lovell et al 2006). Verrall et al (2005) evaluated three pain provocative tests against the reference standard of MRI. Patients were diagnosed with pubic stress injuries if they had chronic groin pain (greater than six weeks) and had a positive MRI for pubic BMO. Subjective complaints included pain during and/or after exercise as well as pain localised to the groin region (pubic bone and adductor region). There was a high likelihood of having pubic BMO if all three tests are positive, with the bilateral adduction test being the most predictive (positive likelihood ratio=11.0). However, the authors acknowledge that these tests are not specific to the pubic bone and may also stress the symphysis and/or adductor muscles and entheses. The mechanism of pain causation is currently unknown.

Dynamic insufficiency of the posterior inguinal wall

Dynamic insufficiency of the posterior inguinal wall (PIWD) is diagnosed by dynamic ultrasound if, under load (valsalva or other), there is an increase in cross-sectional area of the canal (Orchard et al 1998). This contrasts to a small degree of closure in normal inguinal canals under these conditions. Care should be taken when utilising ultrasound to evaluate these patients as the specificity is very low and sensitivity is high (specificity=0 per cent; sensitivity=100 per cent). Hence, it should only be used to 'rule out' this condition.

"The hip can be injured and/or related in nearly 50 per cent of patients with chronic groin pain…"

Inguinal hernia

Inguinal hernias can occur in sporting populations (Smedberg et al 1985, Taylor et al 1991, Kesek et al 2002). They can be direct or indirect, with femoral hernias being rare in this population (Yilmazlar et al 1996). Direct hernias account for over half of hernias in athletes and can occur in combination with indirect hernias as well as PIWD (Smedberg et al 1985). Herniography has a high sensitivity (over 81 per cent), high specificity (over 92 per cent) and low complication rate (Smedberg et al 1985, Ng et al 2009). However, ultrasound has been proven to have equally high sensitivity and specificity (Bradley et al 2003), is non-ionising, has no complications and is becoming more popular among referrers for these reasons.

Sagital section lateral to pubic symphysis, blue flag indicating pyramidalis anterior to rectus abdominis tendon.

These diagnoses are by no means comprehensive, but from the strict inclusion and exclusion criteria for our systematic review, these were the main diagnoses reported. It is important to note that many non-musculoskeletal conditions can refer to this region including gynaecological, urological, malignancies, rheumatological and sexually transmitted diseases. The hip can be injured and/or related in nearly 50 per cent of patients with chronic groin pain (Bradshaw et al 2008) and accurate diagnosis is warranted early in the diagnostic procedure and this can change treatments accordingly.

To move forward and devise better diagnostic methods and treatments, we must first improve our understanding in the aetiology of these conditions. Currently, there has only been limited success. Research is needed into ascertaining normal adaptations in athletic populations, more detailed descriptive anatomical studies and more histology of this region so that a pathological model can be developed.

"To move forward and devise better diagnostic methods and treatments, we must first improve our understanding in the aetiology of these conditions."

Michael Drew

Michael Drew is currently undertaking a PhD at the University of Newcastle. He has worked previously at the Newcastle Knights Rugby League Club as a physiotherapist and data analyst. He currently works at the Australian Institute of Sport where he is involved with the daily management and treatment of the AIS-based rowers. His research and clinical interests are longstanding groin and hip pain as well as enthesopathies and diagnostic procedures. His thesis will be studying the anatomy and histology of the pubic bone and the adductor enthesis.

References, as indicated within the article, are available at sma.org.au/publications/sport-health/

Shouldering the load – Nerve entrapment syndromes around the shoulder

Repeated shooting caused a player to present with quadrilateral space syndrome.

Australasian College of Sports Physicians (ACSP) President, Dr David Hughes looks at shoulder pain and weakness and highlights that nerve entrapment syndrome may be a possibility in the presentation.

"Quadrilateral space syndrome presents in throwing and overhead athletes as a *gradual onset* of vague posterior shoulder discomfort and weakness."

Case One

A 24 year old, right hand dominant professional basketball player presents with insidious onset of vague right shoulder pain and weakness over the past six months. There is no history of trauma. There is no history of shoulder instability or recent intercurrent illness. The pain had its onset shortly after the athlete made a representative basketball side. In preparation for training with the side, she had greatly increased her shooting practice and was regularly completing two hour shooting sessions on her own. Repetitive shooting was the most provocative activity. The player described a dull ache in the posterior aspect of the shoulder and a feeling that her right upper limb was heavy. Examination revealed a full range of motion in the shoulder with mild discomfort at end of range abduction and forward flexion. The shoulder became fatigued when held in the abducted and externally rotated position, relative to the non-dominant left side. Provocation tests for thoracic outlet syndrome were negative. Impingement tests were negative. The shoulder was stable. There was subtle but definite weakness of shoulder abduction on the right, relative to the left. There was a small area of decreased pinprick sensation over the distal insertion of the deltoid. Neurological examination of the upper limb was otherwise normal. Cervical spine examination was normal. There was no obvious atrophy of shoulder girdle muscles. There was internal rotation deficiency in the right shoulder, relative to the left. An MRI of the shoulder showed no evidence of intra-articular or structural pathology and in particular no evidence of labral tear, rotator cuff disease or bony abnormality. The major findings were subtle denervation changes within the teres minor and posterior aspect of the deltoid muscle. There was atrophy of the teres minor, subtle fatty infiltration of teres minor and subtle neural oedema in both teres minor and deltoid. The diagnosis was made of quadrilateral space syndrome. The player was treated with stretching of the posterior capsule, stretching of triceps, soft tissue release therapy around the posterior shoulder and postural correction exercises. The player made a steady recovery from all symptoms and signs, without any further interventions or investigations.

Case Two

A 32 year old SAS soldier presents with painless weakness in the left shoulder. He is used to undertaking very rigorous physical training including negotiating obstacle courses which include swinging across a monkey bar type structure. When performing this particular exercise two months earlier, the soldier had felt a sharp pain at the posterior aspect of the left shoulder. The pain settled of its own accord over subsequent days and he was able to keep training, albeit with a sense of mild tightness or discomfort. Over subsequent weeks he noticed a gradual onset of weakness in the shoulder. He found he was unable to complete normal resistance training exercises because of weakness with activities such as push-ups and prone flies. On examination there was scalloping of the posterior shoulder musculature, inferior to the scapular spine. There was a full range of motion in the shoulder. Strength testing revealed profound weakness of external rotation by the side but only moderate weakness of abduction. Scapular rhythm was disordered with overhead movements. MRI of the shoulder revealed a ganglion at the spinoglenoid notch which appeared to be emanating from a small tear in the posterior labrum of the glenohumeral joint. There were localised denervation changes in the infraspinatus muscle only. Ultrasound guided aspiration of the ganglion and injection of corticosteroid into the ganglion resulted in dramatic relief of symptoms and recovery of strength over a matter of weeks. The diagnosis was made of compression neuropathy of the distal branch of the suprascapular nerve.

Assess shoulder movements and rhythm from behind the patient.

Painless weakness of external rotation may be due to a suprascapular nerve palsy.

Overview

Shoulder pain and/or weakness is a common presentation in sport and exercise medicine practice. The differential diagnoses are many and include pathology relating to the neck, shoulder musculature, the joints of the shoulder (SC joint, AC joint, glenohumeral joint) and common mechanical issues such as impingement, rotator cuff tendinopathy and instability. Nerve entrapment syndromes are also included in the differential diagnosis but can be easily missed if not suspected. Nerve palsies around the shoulder can be due to a variety of causes including viral illness, traction injury, direct contusion and compressive lesions.

Quadrilateral space syndrome

The quadrilateral space is found at the posterior aspect of shoulder. The borders of the space are the teres minor superiorly, the teres major inferiorly, the long head of triceps medially and the surgical neck of humerus laterally. The axillary nerve and the posterior humeral circumflex artery pass through the quadrilateral space. The axillary nerve provides motor innervation to the teres minor and the deltoid muscle. It provides sensory innervation to the skin over the lateral aspect of the deltoid.

The posterior humeral circumflex artery supplies the teres minor and deltoid muscle.

Quadrilateral space syndrome presents in throwing and overhead athletes as a *gradual onset* of vague posterior shoulder discomfort and weakness. The weakness is subtle and is most noticeable in abduction. There can be subtle weakness of external rotation related to denervation of teres minor although this may be difficult to detect, given that infraspinatus usually provides adequate compensation. Compression of the posterior humeral circumflex artery also contributes to the discomfort and weakness associated with reduced blood flow to teres minor and deltoid.

If the condition is suspected, it can be treated conservatively in the majority of cases. Where differentiation from other possible aetiology is required, MRI may show subtle denervation changes in the absence of other major structural pathology. Isolated denervation changes in teres minor are pathognomonic of quadrilateral space syndrome. Denervation changes in deltoid are not always present in this condition.

Electrophysiological studies and/or surgical exploration are required in a minority of cases.

Suprascapular nerve injury

Suprascapular nerve injury is the most common neuropathy around the shoulder. The history can vary from insidious onset due to compression from a space occupying lesions such as ganglion, to acute onset from a direct blow to the superior aspect of the shoulder. Suprascapular nerve palsy can also be secondary to an overuse injury with the condition being described in volleyball players, probably related to repetitive traction forces.

The suprascapular nerve arises from the C5 and C6 spinal roots and like the axillary nerve, is a mixed motor and sensory nerve. The nerve travels through the suprascapular notch of the scapula to provide motor innervation to the supraspinatus. The nerve then continues inferiorly and laterally to traverse the spinoglenoid notch before supplying the infraspinatus muscle. More proximal pathology therefore is likely to cause denervation of both supraspinatus and infraspinatus whereas more distal pathology is likely to cause denervation of infraspinatus only. The nerve also receives sensory afferents from the glenohumeral joint, the AC joint, the subacromial bursa and the scapula.

The athlete presenting with a suprascapular nerve palsy may be difficult to diagnose, early in the condition. While they may complain of a vague discomfort and weakness around the shoulder initially, there may be no obvious atrophy. Within weeks however there will often be the classic atrophy and scalloping affecting the supraspinous and/or infraspinous fossae and disordered scapula rhythm with overhead movements.

Long thoracic nerve syndrome is sometimes referred to as 'backpacker's shoulder'.

"Suprascapular nerve injury is the most common neuropathy around the shoulder."

A profound suprascapular nerve palsy with marked weakness of both supraspinatus and infraspinatus leaves the shoulder vulnerable to traumatic injury where the athlete is involved in contact sport. Expectant management is usually the order of the day for this condition. Most cases will gradually recover over a period of several weeks to several months. The athlete can be active during this time with gentle rehabilitation and appropriate physical activity, remembering that the shoulder may be vulnerable.

Long thoracic nerve pathology

Palsy of the long thoracic nerve is often referred to as a 'backpacker's palsy' due to the propensity of this nerve to be compressed as it travels between the first rib and clavicle. This nerve is a pure motor nerve arising from spinal roots C5, C6 and C7. It supplies motor function to the serratus anterior muscle. The serratus anterior muscle in turn arises from the first – eighth ribs and inserts on to the costal surface of the vertebral border of the scapula. The serratus anterior muscle is crucially important in stabilising the scapula against the posterior wall of the thorax. By stabilising the scapula, the serratus anterior provides a means whereby other muscles can generate movements of the humerus, using the scapula as a stable base.

"The athlete will often complain of discomfort which is not due to the palsy itself but due to the abnormal forces acting on the periscapular soft tissue structures, secondary to the instability."

When there is compression of the long thoracic nerve, there is significant loss of scapular stability giving the classic 'winging scapula' appearance. The athlete will experience significant upper limb dysfunction and have difficulty lifting any weight above shoulder height, because of the lack of scapular stability. The athlete will often complain of discomfort which is not due to the palsy itself but due to the abnormal forces acting on the periscapular soft tissue structures, secondary to the instability.

Apart from compression, the long thoracic nerve can be injured by a direct blow to the neck/shoulder junction or by forceful traction on the shoulder.

"The clinician assessing the athlete with shoulder pain and/or weakness however needs to be aware of the possibility of a nerve entrapment syndrome."

Summary

Shoulder pain and weakness is commonly due to post-traumatic or mechanical issues in the athlete. The clinician assessing the athlete with shoulder pain and/or weakness however needs to be aware of the possibility of a nerve entrapment syndrome. Initially the condition may be difficult to differentiate from more common mechanical pathology. Patient review, careful history and thorough examination will usually reveal the nature of the condition. Shoulder examination should always include assessment of scapulothoracic rhythm by observing the patient from behind, during overhead movements. Expectant management and reassurance, while addressing biomechanical predisposition, is all that is required in the majority of cases.

"The athlete presenting with a suprascapular nerve palsy may be difficult to diagnose, early in the condition."

David Hughes

President
Australasian College of Sports Physicians

Discipline group news and events

Australasian College of Sports Physicians (ACSP)

News:

Call for membership:

- ACSP is the professional body representing training and assessing Sport and Exercise Medicine (SEM) Physicians in Australia and NZ. Associate Membership is open to all registered medical practitioners with an interest in the field of SEM and applications are now invited. Benefits include: weekly news bulletins, sport and exercise medicine journals, MOPS, professional education activities, collaborative research opportunities, discounted conference registration and opportunity for collegial interaction. Applications for Associate Membership can be obtained at www.acsp.org.au, or phoning 03 6224 4449 or emailing acsp@bigpond.com

Upcoming events:

- **27th ACSP Annual Scientific Conference**
  November 18–21, 2012
  Coolum Golf Resort and Spa
  (formerly Hyatt Regency Coolum)
  Registration opening shortly online at www.acsp.org.au

For more information visit www.acsp.org.au

Australian Psychological Society College of Sport and Exercise Psychologists (CoSEP)

News:

- CoSEP continues to liaise and actively advocate for the field of sport and exercise psychologists with national sporting organisations, institutes, and government agencies re: employment considerations, applied practice, research and ethical considerations.
- Regular CPD sessions and peer network consultation groups for members and non-members from industry across multiple states have been established. This has included joint events staged in conjunction with various universities and institutes (e.g. AIS, State Sporting Institutes, UQ, UC). Visit the CoSEP website for contact details of State Section members, www.groups.psychology.org.au/csp/state_sections/
- Ongoing liaison and collaboration with a range of international sport and exercise psychology associations (e.g. Sport Psychology Council, ASPASP, ISSP) and national associations (i.e. SMA, NESC) has occurred to enhance information sharing across networks for the benefit of members, including negotiation of reciprocal membership of some associations at no cost to CoSEP members.

Upcoming events:

- APS Annual Conference
  September 27–30, 2012
  Perth
  www.apsconference.com.au
- CoSEP Themed Day including 2012 AGM
  be active 2012 conference
  November 2, 2012
  Sydney
- Association for Applied Sport Psychology
  Annual Conference 2012
  October 3–6, 2012
  Atlanta, Georgia, USA
  www.appliedsportpsych.org/conference

For more information visit www.psychology.org.au

Exercise & Sports Science Australia (ESSA)

News:

- ESSA have introduced their final Amnesty period for exercise physiology accreditation. The Amnesty ends on November 30, 2012 and is for exercise physiology professionals who can show at least five years full time equivalent (FTE) practice, graduated from a degree in Exercise Science/Sports Science/Exercise Physiology prior to January 1, 2008 and who cannot meet the current AEP application requirements. To be eligible to apply for accreditation during this period you MUST:
  - Be a financial exercise science/full member of ESSA. It is a prerequisite for Accreditation as an Exercise Physiologist that the candidate has a degree from the field of exercise and sports science and has previously met all criteria for eligibility as an exercise science/full member of ESSA.
  - Have completed your university degree before January 1, 2008.
  - Submit a detailed statement of your scope of practice and evidence of at least five years FTE of employment (does not have to be consecutive or recent) as an exercise physiologist.

For more information or to download an application form visit essa.org.au/membership/accreditation/amnesty-accreditation or call 07 3862 4122.

Upcoming events:

- ESSA National Road Shows 2012.
  - Post-operative management following orthopaedic surgery, Part 1. Common knee surgeries: "Evidence-based, clinically designed rehabilitation leads to better outcomes."
  - Cancer and exercise recovery.
  - Exercise & diabetes – Assessment and prescription.

For more information on the Road Shows and other continuing professional development courses/events visit essa.org.au/education/ce-courses/

Sports Doctors Australia (SDrA)

News:

- SDrA has taken out an electronic subscription to the *British Journal of Sports Medicine* (BJSM) commencing with the July 2012 edition. All members will now receive an emailed BJSM each month. SDrA Vice President Associate Professor Gavan White has provided the guest editorial in the July edition with a focus on primary care sports medicine.

Upcoming events:

- SDrA has been working hard to involve itself with an increased clinical content at the annual Sports Medicine Australia conference. Specifically the Sports Medicine Emergency Care Course (SMECC) will be run again by SDrA immediate past President Associate Professor Shane Brun. It will run over six hours with hands-on stations and will start on the first morning of the conference. Participants will need to register specifically for this. There are also three Symposia being conducted with significant SDrA input:

1. Platelet Rich Plasma (PRP) and modern tendinopathy treatments.
2. Joint aspiration and injections, including corticosteroids.
3. Sudden cardiac arrest in sport.

For more information visit www.sportsdoctors.com.au

Sports Physiotherapy Australia (SPA)

News:

- SPA continues to run frequent professional development events. A joint injury prevention workshop was recently held which was attended by titled APA Sports Physiotherapists and ACSP Sport Physicians.
- SPA and SMA are having ongoing discussions to determine how we can combine courses and events to best suit both member groups.

For more information visit www.physiotherapy.asn.au

Sports Dietitians Australia (SDA)

News:

Come and see us at the Human Kinetics stand at the be active 2012 conference, October 31 to November 3, 2012.

Upcoming events:

September

4 SDA Update Conference

22 Nutrition for Exercise & Sport Course – NT (Darwin)

15 Nutrition for Exercise & Sport Course – QLD (Brisbane)

15 Nutrition for Exercise & Sport Course – WA (Perth)

October

27 Nutrition for Exercise & Sport Course – ACT (Canberra) – TBC

For more information visit www.sportsdietitians.com.au

The *Journal of Science and Medicine in Sport*

The *Journal of Science and Medicine in Sport* (JSAMS), published by Sports Medicine Australia (SMA), is the major refereed research publication on sport science and medicine in Australia. The Journal provides high quality, original research papers to keep members and subscribers informed of developments in sports science and medicine. Produced for SMA six times a year by Elsevier Australia, it reflects SMA's commitment to encouraging world-class research within the industry, and its commitment to the continuing education of its members. Journal articles can be found at jsams.org.

News

JSAMS has recently received an Impact Factor of 3.034 (up from 2.542 in 2010). This significant increase on 2010 once again realises the highest Impact Factor in the Journal's history, and now ranks it 8th out of 84 journals in the Sport Sciences category (up from 10th in 2010). This is a great achievement and thanks goes to Journal Editor, Professor Greg Kolt, and the Elsevier team who compile the Journal.

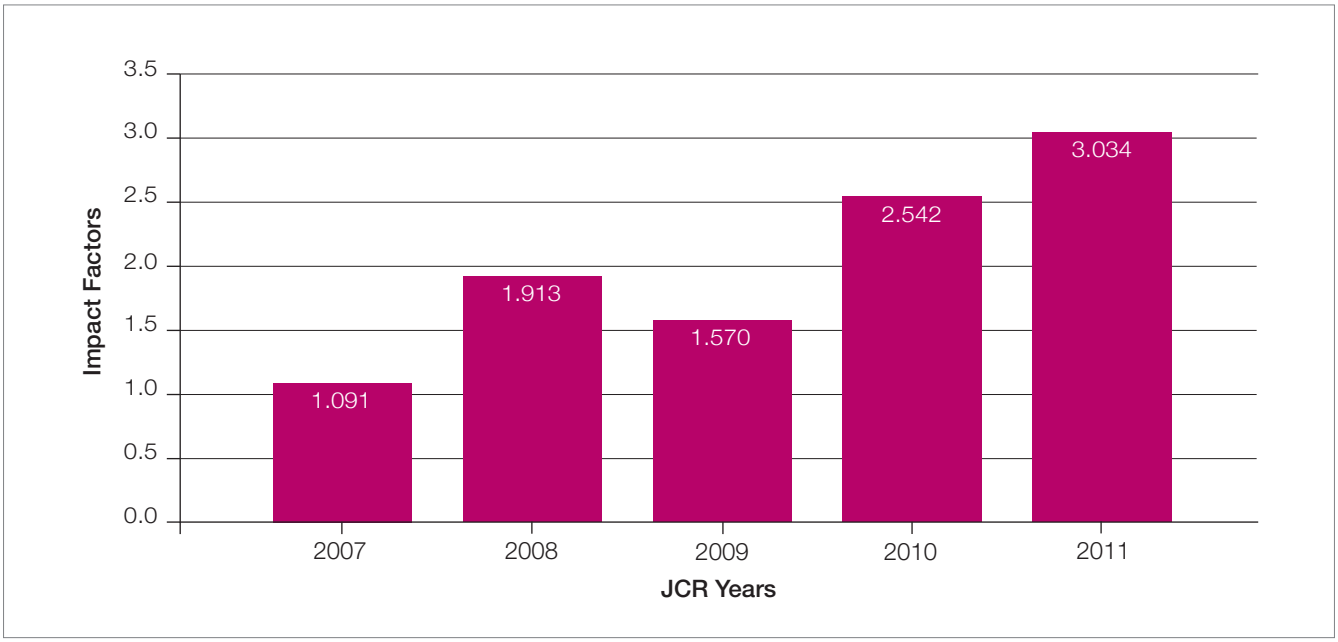
What does Impact Factor mean?

The Impact Factor is an important, albeit retrospective, indicator of a journal's quality. It is a measure of the number of current citations to articles published in a specific journal in a two year period divided by the total number of articles published in the same journal in the corresponding two year period. Impact Factors are usually published in mid-June (i.e. it takes about six months for the calculations and checks to be made). Citation behaviours and Impact Factors vary markedly between disciplines but it is valid to compare those for journals in the same field and to note trends over time. To assist this process Journal Citation Reports categorise journals in a number of fields within which they can then be ranked by Impact Factor.

Podcasts

Listen to interviews with authors discussing their work and the latest from JSAMS, via podcast at jsams.org or through iTunes by searching *Journal of Science and Medicine in Sport*.

Impact Factors from 2007–2011



Top 20 Sport and Exercise Science and Medicine journals

Mark	Rank	Abbreviated Journal Title *(linked to journal information)*	ISSN	JCR DATA						*Eigenfactor®* Metrics	
				Total Cites	Impact Factor	5–Year Impact Factor	Immediacy Index	Articles	Cited Half–life	*Eigenfactor®* Score	*Article Influence®* Score
	1	SPORTS MED	0112–1642	6646	5.155	5.770	0.574	61	8.7	0.01036	1.602
	2	EXERC SPORT SCI REV	0091–6331	1862	4.491	3.957	0.857	28	8.8	0.00341	1.333
	3	MED SCI SPORT EXER	0195–9131	24428	4.431	5.017	0.741	293	9.3	0.03607	1.404
	4	BRIT J SPORT MED	0306–3674	7592	4.144	3.790	1.104	193	5.9	0.01800	1.016
	5	AM J SPORT MED	0363–5465	14958	3.792	4.427	0.626	313	7.6	0.02745	1.163
	6	J APPL PHYSIOL	8750–7587	39387	3.753	4.103	0.790	405	>10.0	0.05464	1.273
	7	AUST J PHYSIOTHER	0004–9514	809	3.481	2.625		0	7.5	0.00147	0.713
	8	J SCI MED SPORT	1440–2440	1984	3.034	2.770	0.330	88	4.5	0.00584	0.710
	9	J ORTHOP SPORT PHYS	0190–6011	3272	3.000	2.980	0.645	93	8.5	0.00527	0.723
	10	SCAND J MED SCI SPOR	0905–7188	3087	2.867	3.024	0.577	163	5.7	0.00776	0.848
	11	EXERC IMMUNOL REV	1077–5552	354	2.789	3.950	2.333	6	6.1	0.00086	1.175
	12	J SHOULDER ELB SURG	1058–2746	5242	2.747	2.818	0.283	230	6.6	0.01213	0.802
	13	J SPORT EXERCISE PSY	0895–2779	2227	2.658	3.476	0.143	42	>10.0	0.00330	0.951
	14	INT J SPORTS MED	0172–4622	5446	2.433	2.264	0.448	154	9.7	0.00770	0.544
	15	ARCH PHYS MED REHAB	0003–9993	14981	2.282	2.655	0.440	284	9.3	0.02057	0.751
	16	SPORTS MED ARTHROSC	1062–8592	447	2.282	2.040	0.408	49	3.5	0.00199	0.622
	17	KNEE SURG SPORTS TR A	0942–2056	4309	2.209	2.254	0.301	339	5.0	0.01230	0.590
	18	EUR J APPL PHYSIOL	1439–6319	10139	2.147	2.321	0.433	321	8.7	0.01725	0.640
	19	J ORTHOP TRAUMA	0890–5339	4713	2.135	2.651	0.165	176	7.6	0.01049	0.847
	20	APPL PHYSIOL NUTR ME	1715–5312	1456	2.131	2.401	0.306	124	3.7	0.00750	0.693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