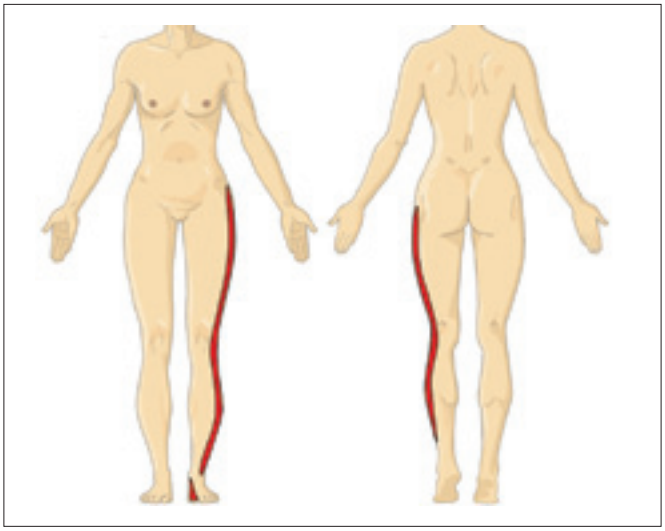

Figure 2: Radicular pain.

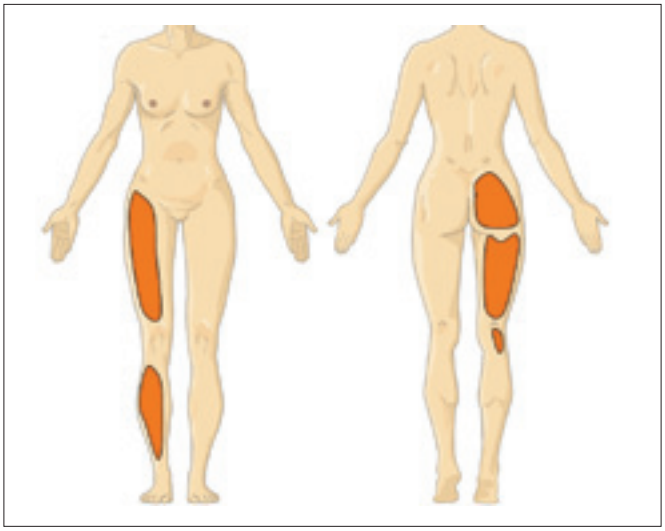

Figure 3: Somatic pain.

Evidence based medicine shows people presenting with acute somatic LBP have four complaints, all of which need to be addressed by the therapist. (4; 5):

1. I can't move
2. I hurt
3. I can't work
4. I'm scared

"... the body needs to be able to have an emergency response, such as when you wake up on the wrong side of the road with a truck coming at you: you need to react."

In the absence of red flags, imaging and investigation in the non-athletic population with lumbar somatic pain are not necessary and can be counterproductive (6–8).

Red flags:

- Trauma
- Age <16, > 50 with first onset
- Past history of cancer or IV drug use
- Systemically unwell
- Cauda equina symptoms/signs
- Worse at night
- Thoracic pain

So, what are the structures that can cause somatic pain?

Smyth and Wright performed experiments where they probed different structures in the back to see what caused pain (9). They divided the structures into those that always caused pain, those that frequently caused pain, those that rarely and never caused pain. The results are listed below:

Structures that hurt in the lumbar spine:

Always hurt:	Dermis
	Endplate
	Posterior annulus
	Inflamed DRG
Frequently hurt:	FJ capsule
Rarely hurt:	Periosteum
Never hurt:	Muscle
	Fat

However, it is the small nerve fibre system that is critical for causing pain. Anywhere there is a small nerve fibre, there can be pain. The small fibre system is anywhere there is fascia, with different densities of fibres in different fascia and between individuals. A nerve can hurt if you bend it; it still functions as a nerve and conducts, but the small fibres in its sheath can generate nociception.

Small fibres are in synovium, their numbers are usually very small, but if the synovium is inflamed, the number of small fibre branches increases exponentially (there is still the same number of nerve cell bodies, but their branches increase in number). Normal articular cartilage is aneuronal, but neovascularisation of the underlying bone from cartilage damage carries in small nerve fibres, allowing nociception. There are few small fibres in the centre of bone, but there are lots in periosteum. A normal Intervertebral disc has small fibres in the outer third of the annulus, but a disc in which there is internal disc disruption will have a much higher density of small fibres, that penetrate further into the disc. The reality then, is that anywhere there is bone, periosteum, synovium or fascia, pain can be generated.

Despite the many billions of dollars in direct and indirect costs per year in low back pain, Anthony Schwarzer's study (10–12) is still the only prevalence study using diagnostic blocks. There were flaws with this study, which have caused the disc number to be too high, and facet joint and sacroiliac joint numbers to be too low, but the major problem with this study was a Type II error. To get into the study, an experienced clinician felt you needed disc treatment.

The prevalence numbers from this study were:

Disc	40 per cent
Facet joint	15–45 per cent
Sacroiliac joint	13–30 per cent

Several authors have listed the hip as an additional source of pain (13–15).

There is excellent research into physiotherapy diagnosis and treatment of somatic low back and pelvic girdle pain, based on signs and groups of signs, that is outside the scope of this article. We should be proud of the leading role Australian researchers are taking in this area.

It is possible, probable even, in the chronic patient or someone who has suffered multi-trauma, for the patient to have mixed Somatic and Neuropathic pain. Some patients even have radicular, neuropathic and somatic pains at the same time.

The concept, espoused by third party payers, that someone can drive a car into a tree at 100KPH, or fall ten metres onto concrete, and suffer one injury, which should be resolved after six weeks, is blatantly ridiculous.

Conclusion

It is critical that any therapist working in back and pelvic girdle pain is able to recognise the type of pain a patient presents with. The world's greatest physiotherapist is not going to make any difference to someone with radicular pain and will probably only worsen someone with neuropathic pain. These people need urgent referral to a pain specialist or surgeon. There are currently randomised controlled studies going on around Australia looking at new injectable treatments for radicular pain, with promising pilot study data.

Mixed somatic and neuropathic pain may be amenable to physiotherapy, but both therapist and patient needs to be conscious of the fragility of this pain.

Central sensitisation with somatic pain may be amenable to conservative treatments, but if the sensitisation progresses, these patients need urgent referral for anti-neuropathic pain medication. Straight lumbar somatic pain warrants a dedicated period of physiotherapy and rehabilitation. Failure to improve by three months, however, should lead to referral to a pain specialist.

Dr Bruce Mitchell

MBBS, FACSM, FACSP, FASMF, MPainMed, FIPP

Bruce is a sports and interventional pain physician, and a Research Fellow at the University of Melbourne, Centre for Health, Exercise and Sports Medicine (CHESM). He has a special interest in the management of hip, buttock, back and groin pain; and in neuromodulation. He is an active researcher in these fields and has published extensively. He is a Fellow of the American College of Sports Medicine and has completed a Masters of Pain Medicine. He recently completed the International Fellowship of Interventional Pain Practice.

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

The keys to business success

To help make the most of your business, *Sport Health* brings you the following business insights.

Why you need a vector file of your business logo

Brought to you by Papercut

A vector file of your logo is one of the most valuable items you can have in your business brand kit.

What is a vector file?

It's a file that was created in Adobe Illustrator or a similar drawing program. It's called a vector file because these programs create designs that are based on a series of points and lines instead of pixels. Graphic designers create vector files so that logos and other images can be easily converted to a wide range of sizes without distortion.

What might you need it for?

If your design requires your logo to be enlarged or reduced, the vector file will easily scale up or down and maintain a clean, crisp result. A vector file can scale up to the size of a billboard without altering the quality.

Vector files are on a transparent background – so you can layer the logo over a new colour without having fuzzy edges or a white box. For example, if you need to place your logo in an advertisement with a dark background, then the logo will sit neatly on the background. Vector files are easy to modify with the correct software. If you need to change the colours for any reason (perhaps you have a 3-colour logo but you're printing 2-colour promotional items to save money) – then your vector logo is easily changed.

Who might need it?

Printers, graphic designers, website designers, advertising companies, sign designers, t-shirt and promotional product printers will all require your logo in a vector format.

How can you tell if you have one?

Go through your set of logo files and look for a file that ends in **.ai .eps** or even **.cdr**. If you don't have any of these, but you have a high resolution PDF of your logo, you can ask a designer to try opening that file to see if it's a vector file in disguise.

What if you don't have one?

If your designer only gave you a JPEG of your logo, then never fear. When you have a need for a vector file, a designer can trace the JPEG logo for you and create a vector. Just make sure to get a copy of the new vector file – and to archive it for future use.

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. For more information visit www.papercut.net.au

How to make your business worth more without you

Brought to you by Peter Rankin – Davidsons

*"My customers will be with me until the day I die".**
*"My business is my identity".**
*"My business is my superannuation".**
Sound familiar?

What does reducing key person reliance mean to you?

A business owner that relies heavily on its owner is not as valuable as a business that is not reliant on its owner. Many business owners don't understand how reducing or minimising the risks of key person reliance can significantly improve the value of their business.

Compare the following valuation scenario of the same business when key person reliance is reduced or minimised.

	Business key person reliant	Same business not key person reliant
Business profit	$200,000	$200,000
Business cap rate**	3.05	3.5
Business value**	$610,000	$700,000
Value improvement		$90,000
Improvement per cent		14.75 per cent

Buyers will pay a higher price for a business that can be easily integrated into their current business or smoothly transitioned to a new principal. They will want some comfort that the business' key customers and staff will stay with the business once the current owner departs.

What can you do to reduce or minimise the risks of key person reliance?

There are many different business and risk management strategies business owners can implement to reduce or minimise key person reliance. The table below provides some suggested examples.

Strategies	Actions
Business	**1. Business systems:** introduce systems into your business. For example, a good quality stock management system will reduce reliance on the owner's product and services knowledge.
	2. Client relationship management: establish customer relationship management protocols so staff can manage key customer relationships.
Risk Management	**3. Management succession:** invest in the professional development of your key staff so they can eventually share in part ownership (succession planning) of the business. The very nature of some businesses means it is difficult if not impossible to reduce or remove key person reliance. A specialist surgeon is an example of an occupation that will always be key person reliant. In this case where key person reliance cannot be removed or reduced the purchase of business insurance is considered an effective risk management strategy.

START assessing the impact of key person reliance on your business by completing an outline business valuation. Your accountant or financial planner is best positioned to provide advice on key person reliance, business valuation and business and risk management strategies to reduce, remove or minimise the risk from key person reliance.

* Quotes from proud small business owners.
** Business Value determined by Bstar's Bank Accredited online Business Capitalisation Rate Calculator.

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

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Employers choose Facebook for screening candidates

Brought to you by Angelique Lele, General Manager, Sportspeople

SPORTSPEOPLE
www.sportspeople.com.au

More than a quarter of employers use social media to check out potential new hires, and Facebook is the site of choice, according to new survey findings from Telstra.

The poll of 1,255 employers found that one in four respondents screened candidates' profiles on social networking sites.

The most popular tool for background-checking candidates was Facebook (41 per cent), followed by LinkedIn (31 per cent) and Twitter (14 per cent).

Some 44 per cent of employers said an applicant who posted derogatory comments about their current workplace was unlikely to be hired, followed by discriminatory comments (37 per cent) and posts with confidential information (32 per cent).

Sportspeople raised this issue last year after talking to a group of students at a University who were unaware of what their online footprint can say about them. It may sound a bit egocentric, however searching for yourself on Google can be a wise career move. Your facebook profile may be set to 'private', however that drunken profile picture may still be visible to potential employers who are increasingly utilising the internet to do background checks on potential employees. Of course this could also work in your favour if you have appealing and professional results.

Here are some tips to improve your online profile:

- Set your Social Networking profiles (Facebook, MySpace etc.) to 'private' and remove any incriminating photos.
- Create and manage a blog, or a professional LinkedIn profile, as search engines rank those extremely highly, which helps guarantee your site ends up on the first page of search results.
- Remember that many posts online are permanent or very difficult to remove, so be thoughtful when you decide to post online (e.g. comment in an online forum).
- Be prepared to answer to any incriminating information that can be found.
- Search your name in combinations. Your profile may disappear amongst all the other John Smiths', however if searched with the name of a previous employer/school/hobby then you might become more visible.

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

Starting your own practice

Podiatrist and owner of Windy Hill Podiatry, Matthew Mollica discusses the considerations to think of when starting your own practice.

Shortly after graduating from Podiatry in the mid-1990s, I took the step of opening my own practice, not knowing all of the pitfalls, obstacles and headaches that lay in wait. Podiatry, like so many health professions, affords one the opportunity to practice in a myriad of settings, either public or private, within a multi-disciplinary group setting, or by themselves. The rewards can be great, but so too the frustrations and difficulties.

Starting a practice from scratch presents a clean slate, with a wealth of opportunities ranging from where exactly to establish a practice and what to call it, to formulating a mission statement, a set of values, and other guidelines that become the foundation of what hopefully becomes an established, recognised and successful clinic.

The following is a collection of observations compiled through the last 16 years, dating back to the time of establishing my own practice in the mid-90s. These are presented in no particular order, as well as my fuzzy memory will allow!

University does a good job of putting us at the 'start line' so to speak, in that it arms graduates with many tools they will require to commence their professional career, with regard to vocational knowledge. University does not however, arm us with all the necessary tools to survive and thrive within a corporate world. One in which legislation, compliance and liaison with third parties takes up ever-growing time.

Seeking the advice of a more senior mentor, or even similarly aged colleague from a more business-oriented/commercial field may be invaluable to young Health Science graduates thinking of starting their own practices. There are simply so many bodies to speak with, and so many pitfalls to avoid. The notion of a senior clinician filling a mentoring role is also of great clinical benefit as the words and lessons from someone who has 'been there and done that' can be worth its weight in gold.

Local council, leasing companies, yellow pages, AHPRA, specialist registration bodies, professional indemnity providers, income protection insurance agents, superannuation organisations, business name registration, Tax Office, HICAPS, credit card/merchant services, Telstra (or other IT/telephone provider) and countless other organisations will all become intimately familiar to you.

"The sense of satisfaction from starting something on your own and watching it grow can be immense." Therein lies the opportunity to realise your own vision and have things done the way in which you want them to be done. This brings us to an important point, in that it is important to allow room for growth. In the early days, your practice may seem very small and not at all busy. I remember sitting behind my desk for hours at a time with no patients, often returning home at the end of a 9am to 6pm work day having treated two people. These days, less than two decades on, there are several practitioners working alongside me, each of us with waiting lists longer than we would like, producing almost unavoidable delays for new patients and people with acute needs. At the time of a business first starting out, it is important to recognise that things will get busier, your clinic more and more hectic, and your shelves of patient files more and more full. Your life will also get busier. Heaven forbid you get married and have kids on top of it all!

"Too often, things can go sour when a practitioner is blinkered, and focuses solely on what they can do, rather than recruiting others to assist."

It is important to plan ahead and put systems in place (from day one) that will allow your clinic to meet the demands the future will bring. This may mean renting or purchasing a space which is of sufficient size so as to allow room for expansion, or even selection of a name for your clinic which will allow expansion to include other practitioners in times to come. Whilst many extol the virtues of practicing under your own name, selecting a clinic name which becomes the title for a group is also worthy of consideration.

"…I took the step of opening my own practice, not knowing all of the pitfalls, obstacles and headaches that lay in wait."

Registering the name of your clinic is an important and often forgotten step. Contacting the business registration body within your State or Territory is relatively straight-forward and relatively inexpensive. It involves little more than completing the paperwork and paying the requisite fee, as is the case with acquisition of an ABN or other requirement. One word of caution – dozens of unscrupulous people seeking commitment for advertising dollars seem to have access to the names and contact details of people who are new recipients of business name registrations. These people will contact you and try to leech money from you for advertising. A quick 'no, thank you' and hang up should suffice…

Be very clear in how you wish to position yourself and your services, and how this is presented to the community at large. Do you see yourself and your clinic as a general practice offering services to those patients with a variety of needs, or are you more of a specialist? Reading *Sport Health*, it would be safe to assume that a passing interest in sports medicine is a minimum. Your name, advertising strategy and even logo and letterhead, may wish to reflect this speciality. The same can be said of advertising strategy and even the décor/interior of your clinic.

"Starting a practice from scratch presents a clean slate, with a wealth of opportunities…"

There is always a tendency for practitioners to focus on what they themselves can do to help the patient, but experience has taught me that a good referral network is one of the most important tools a practitioner can possess. Knowing who to refer to, when to refer and what other practitioners can do, is a very valuable skill. One cannot start too early in their professional career to develop this. It can be a great help for patients and clinicians alike. Too often, things can go sour when a practitioner is blinkered, and focuses solely on what they can do, rather than recruiting others to assist.

Many new businesses, irrespective of their nature (retail, IT, health, personal services, hospitality and others) fail in the early years due to financial pressures and management errors. Seeking help from a qualified financial planner and tax accountant will help reduce the risks of failure. Consulting these people from the outset is worthwhile, as it allows a sound structure to be put in place and budgets to be formed. This can relate to a myriad of fiscal factors such as superannuation, quarterly Business Activity Statement and GST-related issues, lease and purchase of essential clinical equipment, patient billing, employment costs and PAYG tax, and other monetary issues related to the running of a business in this day and age.

"The sense of satisfaction from starting something on your own and watching it grow can be immense."

Preparing oneself mentally for the unrelenting pressures of owning and operating your own business is something I suspect few people do. Owners of small businesses and particularly sole practitioners may lock the front door at night, but the thoughts of their clinics and patients never really leave their minds. There are tremendous highs and lows with patient treatment success and patient difficulties, with the constant demand as well as the highs and lows of patient interaction proving a significant load for many clinicians to carry.

Certainly there are many benefits to be enjoyed from starting your own clinic and watching it mature as you grow into your profession. These joys and rewards are not without responsibilities, and they only come with organised and diligent effort, both in managing your business, and in working every day as the best clinician you can be.

Matthew Mollica

Podiatrist
Windy Hill Podiatry

Tennis anyone?

An interview with Dr Tim Wood, Sport and Exercise Medicine Physician and Chief Medical Officer of the Australian Open.

What is your professional background?

I have been a Sport and Exercise Medicine physician since 1995 having completed my Fellowship training through the Australasian College of Sports Physicians, and have worked in full time solo private practice in Hawthorn, Melbourne since that time. Apart from my involvement with tennis, I was the AFL Draft Camp medical coordinator for many years, club doctor with the Geelong Football Club (AFL) from 2006–11 and worked for the Melbourne Rebels (Rugby Union) in their inaugural season in 2011. Recently I have taken on a new role as one of the doctors for the Richmond Football Club (AFL). I am also currently the Vice President and Dean of Education of the Australasian College of Sports Physicians.

Tell us a little about your current role outside of the Australian Open.

I have a good relationship with local GPs and physiotherapists and treat a broad range of sporting and non sporting individuals, with an age range of 4–97.

> "Finding yourself in Andre Agassi's room with Steffi Graf also there was quite an experience."

Sports injuries take up about 60 per cent of my work. Common injuries that I treat include: extensor tendinopathy (elbow), plantar fasciitis, and various shoulder, hip and knee pathologies.

I view one of my roles is to encourage patients to undertake some form of regular exercise for 30 minutes each day and provide them with advice on what program would be suitable for their age, ability and interest.

I occasionally see some of the more complex chronic pain patients, having completed a Masters in Pain Medicine in 2000, and do independent medical examinations for WorkSafe.

What is your role at the Australian Open and how did you become involved in working with tennis players?

Towards the end of 2001 I was approached by Tennis Australia to see if I was interested in working at the Australian Open. After a series of interviews, I was appointed chief medical officer of the tournament. The 2012 Australian Open was my 11th.


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Are there other practitioners you work closely with in your role? Tell us a little about these working relationships in terms of handling the tennis players.

In the player medical centre a nurse greets and triages the players as they come in. Up to 40 to 50 per cent of our work consists of general practice type problems, i.e. coughs, colds, and sore throats. Three Sport and Exercise Medicine physicians – Anik Shawdon, Gary Zimmerman, and Hugh Seward work with me plus a general practitioner, Jenny Altermatt. In the locker rooms where the players change there are both ATP, WTA, and Australian physiotherapists and massage therapists who attend to the players. If they are concerned with an injury they will refer players to us in the medical centre.

We also have onsite diagnostic ultrasound each day from 6–8pm depending on demand and this year we are using a shockwave therapy machine where appropriate.

What are some of the more common medical/ fitness issues tennis players have? And how do these injuries usually occur?

Fifty to sixty per cent of injuries that we deal with are tennis related injuries which range from shoulder pain of multiple aetiology, elbow, wrist, back, knee and foot pain. We also see a lot of tendinopathy as players are returning from their off season (November/December) when they see us. Players increasing their training load too quickly and the hard courts can stir up the tendons so we see patellar, Achilles, and elbow tendinopathy (extensor and flexor). We are also seeing more non-dominant wrist injuries with the popularity of the double-handed backhand.

> "During the peak of the tournament we would treat up to 40 to 50 players a day but in the last few days the numbers drop off."

One of the most common acute muscle strains on court is that of the rectus abdominis on the non-dominant side with serving. We see about 8 to 10 a year. Hips are also starting to become an issue with the change in technique putting more rotation and stress on hips.

Sometimes we may come across an injury for the first time. In my first year we had players complaining of a vague aching pain around their elbow which we subsequently diagnosed as distal humeral bone marrow oedema. We have seen it over the years since and have gone on to publish a paper in the *British Journal of Sports Medicine* and notify the worldwide tennis community. I now see it in some of our juniors who are playing high intensity and high level tennis through to some of the seasoned professionals in their mid 20s. Currently we are developing an interest in posterior instability of the shoulder in tennis players as a number of players have recently had surgery for this condition.

What does a typical day at The Australian Open consist of?

The clinic is open 10 days before the main draw (January 6 this year) at 9am each morning. A meeting occurs at 8.30am with the physiotherapists reporting on the players that were seen the previous day so all medical staff are up–to-date and can ensure the players that need to be followed up on are. Matches start at 11am. During matches we need to be available via walkie talkie to do court calls with physiotherapists should a player become unwell, incur an injury or request to see a doctor. The medical clinic closes half an hour after the last match finishes.

During the peak of the tournament we would treat up to 40 to 50 players a day but in the last few days the numbers drop off.

Have you seen any change in terms of medical treatment during your time at The Australian Open?

I think our knowledge of tennis injuries has advanced as have our facilities. A facility revamp now sees us with access to a reception area and two consulting rooms where previously we only had one for the first few years. There is better coverage with two doctors on during the day. Our knowledge of injuries has also certainly changed with the increased prevalence of two handed backhands, and the speed of the game. We have seen some injuries emerge over the last 10 years that weren't seen prior to my involvement.

Tell us your most interesting encounter while working at The Australian Open?

One of the most memorable encounters was on the eve of my first tournament, being called by the former tournament director, Paul McNamee and asked to go to the Como Hotel to see Andre Agassi who had a wrist injury that led to his withdrawal from the tournament. He was seeded number 1 at the tournament and he was on a plane home before the first ball had even been hit. It actually gave Lleyton his best chance to win an Australian Open but unfortunately he was getting over chicken pox and he was knocked out in first round. Finding yourself in Andre Agassi's room with Steffi Graf also there was quite an experience.

Picture left: Andy Roddick takes medical time out with Dr Tim Wood (right). © Getty Images.

BE ACTIVE 2012

OCT 31 – NOV 3 2012 SYDNEY AUSTRALIA

BE ACTIVE 2012

OCT 31 – NOV 3 2012 SYDNEY CONVENTION & EXHIBITION CENTRE

CALL FOR PAPERS

The organisers of 'be active 2012' to be held at the Sydney Convention and Exhibition Centre, Australia, between 31 October – 3 November 2012, invite the submission of abstracts that address the overall conference theme "be active 2012" in sports science, sports medicine, physical activity promotion and sports injury prevention.

We encourage all researchers, practitioners, policy makers and students who wish to present their work to submit abstracts for presentation at the ICPAPH, the ACSMS, or the NSIPC.

ACSMS and NSIPC will again be offering The Australian Sports Medicine Federation Fellows Awards. A complete list of awards and conditions will be posted on the website

All abstracts must be submitted online at WWW.BEACTIVE2012.ORG and must be received by 31 March 2012.

WWW.BEACTIVE2012.ORG

AUSTRALIAN CONFERENCE OF SCIENCE AND MEDICINE IN SPORT

"Sport and exercise medicine – Theory, practice and research"

INTERNATIONAL CONGRESS ON PHYSICAL ACTIVITY AND PUBLIC HEALTH

"Active futures – Evidence informing change"

NATIONAL SPORTS INJURY PREVENTION CONFERENCE

"Sports injury prevention – Why bother?"

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What are the highlights and challenges working at the Australian Open and with elite sportspersons?

One highlight is working with a great team of doctors, nurses and physios. We have had a stable team now for a number of years that the players can feel comfortable with. It is fantastic to come together with local and ATP and WTA physios and share our knowledge and expertise. It is a privilege and pleasure being able to assist these players, for them to have the confidence and trust in us to deal with their injuries and respect our advice.

A challenge is the different injuries, the ones you don't see in any other sport. You learn to recognise these types of injuries and provide good sound advice to manage them, i.e. whether it is safe to continue playing or whether to withdraw from the tournament.

Have you been inspired by anyone you work with/ treat at the Open?

Certainly Andre Agassi at the start of my involvement and what he achieved in tennis and after his retirement. Subsequent to that the professionalism of Roger Federer in everything that he does. He is an absolute gentleman to deal with. I think he fulfils the criteria of a good role model in sport, with his humility and graciousness in victory or defeat. He shows all his emotions whether winning or losing. You would have to look up to Roger as someone to aspire to.

What advice would you give other sports medicine professionals looking to work with elite sportspeople or at an elite event?

I think number one is to be passionate about the sport you want to work in. Spend time learning as much as you can about the sport and injuries that it throws up, the challenges of looking after those athletes both during competition and between events. Volunteer to watch, listen in and learn from those already treating in that sport. Finally read up as much as you can in journals and attend conferences.

"Fifty to sixty per cent of injuries that we deal with are tennis related injuries which range from shoulder pain of multiple aetiology, elbow, wrist, back, knee and foot pain."

Inaugural IOC Advanced Team Physiotherapist Course

Delegates and presenters from the Inaugural Advanced Team Physiotherapist course. **Front row:** Hugh Saweni (PNG), Charleen Silcock (Cook Islands), Epenesa Young (Samoa), Sharlene Nand (Fiji), George Regenvanu (Vanuatu), Mark Brown (Presenter). **Middle row:** Alysha Blackwell (NZ), Chelsea Lane (NZ), Liana Cole (Australia), Maria Constantinou (Presenter), Godfrey Waidubu (Nauru), David Zuker (Presenter). **Back row:** Peter Georgilopoulos (Presenter), Ross Smith (Presenter), Erin Smyth (Australia), Brooke Cranney (Australia) Craig Allingham (Presenter). **Other presenters not pictured:** Dr Peter Friis, Julie Gilbert, Bruce Rawson, Jeff Murray, Greg Craig.

SMA recently received funding to hold a physiotherapy course for Olympic Team physiotherapists from a range of Oceanic countries.

Thanks to funding from the International Olympic Committee, physiotherapists from several Oceania countries had the opportunity to attend the first IOC Advanced Team Physiotherapist course, held last November in Brisbane. Having been nominated by their National Olympic Committees, participants from throughout Australia, New Zealand, Papua New Guinea, Fiji, Cook Islands, Vanuatu and Nauru had the opportunity to gain high level training to improve their ability to prevent and manage injuries and medical conditions in their role as Team Physiotherapists.

While the IOC Medical Commission has overseen and funded through Olympic Solidarity several similar Advanced Team Physician courses internationally for doctors, this was the first such course for physiotherapists. Sports Medicine Australia and the Australian Olympic Committee were invited by the Oceania National Olympic Committee (ONOC) to develop and coordinate the course. The Course Coordinator was Mark Brown, the SMA QLD Executive Officer and a Sports Physiotherapist who has worked at several Olympic Games. Mark pulled together a stellar list of health professionals with extensive experience working with Olympic and other international athletes from several disciplines to present the course. Mark paid particular credit to the assistance of Lauren Fitzgerald, the Manager of Sports Services from the Australian Olympic Committee in the development of the course, and also to David Zuker, Australia's first Olympic Team Physiotherapist who is now a committee member of the ONOC Medical Commission for his assistance and insights.

The course units were based largely on The Olympic Movement Medical Code, the IOC Sport Medicine Manual and IOC Consensus statements and other evidence based guidelines, as well as the core competencies expected of Sports Physiotherapists as defined by organisations such as the International Federation of Sports Physical Therapists and the Australian Physiotherapy Association. In developing the course special consideration was given to the limited resources likely to be available to physiotherapists working in developing countries, or while working with travelling athletes and at sporting venues.

Participant feedback was very positive with most of the delegates expressing the hope that similar courses could be held on a regular basis in the region. Chair of the ONOC Medical Commission Dr Chris Milne said the course was very timely in the lead up to the London Olympics. *"Many of the physiotherapists in our region have limited opportunities to participate in this sort of training. The training provided may expose participants to information that helps them to improve the level of care and the performance of an athlete. These are very important outcomes for many of our Oceania nations."*

Celebrating five years of sports training to Japanese students

Japanese students from the 2010 program presenting a signed football to Trish Donoghue, SMA ACT Executive Officer.

SMA ACT Executive Officer, Trish Donoghue recently headed to Japan to celebrate the 5th anniversary of SMA ACT's intercultural exchange program.

In 2007 the start of an exciting new intercultural exchange program between students from Fukuyama Heisei University in Japan and SMA ACT began. The program was established to assist students studying within the sports medicine industry, and to provide them with the opportunity to travel to Australia to broaden their course learning outcomes, teaching curriculum and expose them to the resources and professionals which SMA and Australia has to offer.

SMA ACT Executive Officer, Trish Donoghue travelled to Japan on November 12, 2011 to celebrate the program's five year anniversary and visit a number of other Universities who have a strong commitment to international exchange programs within the sport related field.

Whilst in Japan two other universities expressed delight in SMA ACT's visit, particularly Hiroshima University of Economics, noting that the timing was exactly right for their students. This University has just started a new program, 'Sports Management' and is eager to offer their students the opportunity to participate in future exchanges.

We look forward to potentially working with these new Universities and to the continuing success of the program.

Trish Donoghue

Executive Officer, SMA ACT
trish.donoghue@sma.org.au

"The program highlights the wealth of resources which ACT has to offer and provides an opportunity for Japanese students to study sports medicine from a different perspective whilst experiencing Australian culture and language."

"The fact that the students are willing to travel so far to take part in our program reaffirms Sports Medicine Australia's reputation as a world leader in injury prevention initiatives and courses."

Peter Garbutt, SMA ACT President

"It was very nice to have SMA ACT visit Hiroshima, Japan! The visit has given us many positives to strengthen the links between SMA ACT and Universities here in Hiroshima."

"The President and Vice President of Fukuyama Heisei University were very impressed by the visit. The President mentioned that the SMA ACT program is the best in regards to the contents, preparation and hands on approach based on students' needs among other programs that are offered at the University. In addition, at Fukuyama Heisei University, two athletes who participated in the lecture given by Trish Donoghue, who were in the Japanese Olympics team, were enthusiastic enough to chase her back to the faculty room to ask more questions."

Hiroshi Yoshikawa, President, American Dream, Inc., Coordinator of the exchange in Japan

Trish Donoghue presenting President Dr Noriyoshi Taguchi and Vice President Onari Kiyoshi M.D.,PhD. of Fukuyama Heisei University with a certificate to mark the 5th anniversary of the program.

Shockwave Therapy Continues to Revolutionise the Treatment of Chronic Tendon & Other Musculoskeletal Disorders

chattanooga

Shockwave therapy is a modern and highly effective treatment option in orthopaedic & rehabilitation medicine

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Today the use of radial shockwaves or Radial Pressures Waves (RPW) has been successfully extended to a large range of therapeutic and wellness applications.

Although there is debate over the exact mechanism by which Shockwave therapy works, it is generally agreed that revascularisation plays an important role, with new and increased blood flow promoting tissue healing and regeneration. Several other factors are also believed to play a role in the reduction of pain and improved healing.

Chattanooga extends Shockwave range with addition of new Mobile RPW

Chattanooga, the world's leading rehabilitation brand and part of DJO Global, reinforces its commitment to the Shockwave modality with the introduction of the Mobile RPW.

80% of patients report improvements after only two or three treatment sessions*

The effectiveness of Shockwave therapy varies depending upon the specific condition being treated, but many physiotherapists and podiatrists have reported 80% or more of their patients have experienced an improvement in their symptoms after just two or three sessions.

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Mobile RPW

Radial Pressure Wave therapy is indicated for:

Myofascial Trigger Points (MTrP)
- Localising and deactivating trigger points

Activation of Muscle and Connective Tissue
- Increasing circulation
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Disorder of Tendon Insertions
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- Tendinosis calcarea/supraspinatus-tendon
- Radial and ulnar humeral epicondylitis
- Achillodynia
- Retropatellar pain syndrome
- Tibial edge syndrome
- Proximal Iliotibial band friction syndrome/trochanteric
- Insertional tendonitis

Shockwave by Chattanooga

The Chattanooga Intelect RPW and Mobile RPW are compressed air-ballistic shockwave generators. Shockwaves are generated with a precision ballistic mechanism in the hand-piece which accelerates a projectile by compressed air. The motion and weight of the projectile produce kinetic energy which translates into sound energy in the form of an acoustic wave.

The Intelect RPW offers a host of features including a colour screen, full clinical protocols and anatomy guides, and a unique intensity ramp up system. While the Mobile unit offers many of the Intelect's features combined with the added flexibility of full portability.

For more information about Shockwave therapy and the Chattanooga range of products please contact DJO Global.

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Does supinator play a role in lateral elbow tendinopathy?

APA Sports Physiotherapist Jim Mack examines the motor control mechanisms of the elbow.

What do we know about motor control of the elbow? The article by Coombes et al. (2009) on an integrative model of lateral epicondylagia proposed three interrelated components in our understanding of the condition: (1) local pathology, (2) pain system changes, and (3) motor system impairments. Their article presented an excellent review of the literature in these areas.

"While studies support the use of eccentric training, it has not been shown to be superior to concentric/eccentric training..."

In the area of motor control, reduction of pain-free grip, strength and activation deficits of the flexors and extensors and the upper limb in general, muscle morphological changes and sensorimotor changes, which can be bilateral, have been demonstrated.

There are reports of significant strength imbalances in the dominant arm of elite baseball pitchers and tennis players with a 15–30 per cent increase in isokinetic wrist flexor/pronator strength, but not extensor/supinators. In tennis players, dominant arm wrist flexor, extensor and pronator strength is increased by 10–25 per cent but not supination (Ellenbecker et al. 2010). These authors suggested this is a necessary imbalance for optimal performance and that this imbalance should be regained in rehabilitation post-injury.

The recent focus on dynamic rehabilitation for lateral elbow tendinopathy has been on eccentric exercise. While studies support the use of eccentric training, it has not been shown to be superior to concentric/eccentric training (Andres & Murrell 2008, Coombes et al. 2009, Malliaris et al. 2008). The rationale for eccentric exercise has more to do with local pathology than motor system changes.

Vicenzino (2003) and Bisset et al. (2006) outlined a program of general upper limb conditioning, mobilisation with movement (MWM) lateral glide and pain-free grip, radiohumeral mobilisation, taping and addressing proximal impairments. Bisset et al. (2006) showed this program to be superior to corticosteroid injection at 52 weeks, and wait-and-see at six weeks. The program included concentric/eccentric extensor and pronation/supination strengthening.

"More specific research… is needed to better understand the motor control mechanisms of the elbow and to enhance exercise programs."

In 1997 I presented the results of a simple clinical trial of 16 patients who underwent a program developed by Helen Burfield and myself, which focused on restoring dynamic stability to the lateral elbow. Figure 1 illustrates changes in 14 patients with a recent tennis elbow over six weeks, from an average self-rating of 30 per cent to an average 83 per cent at discharge (100 per cent being normal).

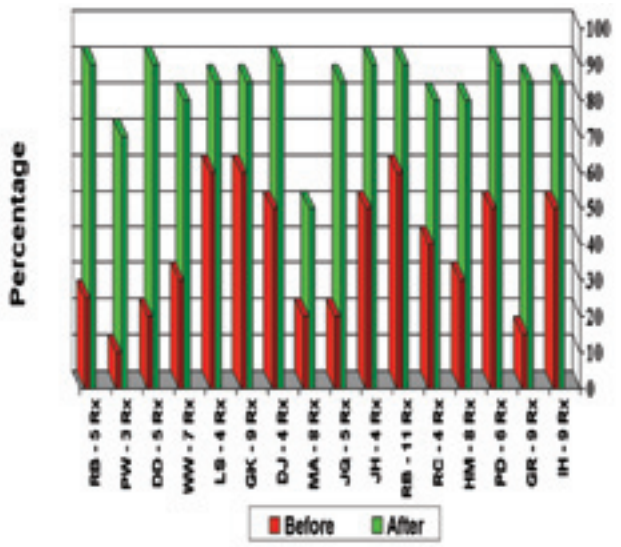

Figure 1. Mack and Burfield clinical trial 1997. Changes in self-rating (100 per cent being normal).

The passive structures (lateral collateral ligaments, capsule and bony articulation) offer little resistance to varus and distraction in the extended position (Ellenbecker & Mattalino 1997).

We focused in particular on the possible role of supinator, suggested by Stroyan and Wilk in 1993, in the stability of the radiohumeral and superior radioulnar joints. Supinator is the deepest muscle in the proximal radius. It is a broad, oblique and single joint. It has a more superficial attachment to the lateral epicondyle and lateral ligament and a deeper origin on the supinator crest of the ulna. It wraps around the proximal radius and has an intimate attachment to the annular ligament. It is therefore ideally placed to stabilise the radiohumeral and radioulnar joints statically and eccentrically in gripping and lifting tasks in pronation. The extensors, anconeus, biceps and triceps can also compress the lateral elbow. Biceps can control pronation but is insufficient at end-range extension where the lateral elbow tendinopathy problems generally occur. In this position there is a mechanical disadvantage to stress overload due to the medial sloping lateral epicondyle, which creates a fulcrum over the prominent radial head (Ellenbecker & Mattalino 1997).

Bozkurt et al. (2005) found the deeper fibres of supinator attached to a synovial fold of annular ligament between the head of radius and capitellum, which the authors proposed may prevent compression of the synovial fold in pronation and restore its position in supination. Apart from some anatomical studies, there is scant interest in the literature in the motor control role of supinator. The main interest is whether it should be surgically released along with extensor carpi radialis brevis and extensor digitorum communis in recalcitrant tennis elbow, and the supinator's role in the entrapment of the posterior interosseus nerve (Erak et al. 2004).

"It is not until there is good control of pronation and improved functional pain-free grip strength that eccentric/concentric extensor, flexor strength is included."

Clinically, shortening of the flexor pronator muscles is almost always found on the symptomatic side in lateral elbow tendinopathy. Interestingly, we have also found this shortening in the symptomatic side in medial elbow tendinopathy, medial thrower's elbow problems and even overuse wrist problems such as carpal tunnel and ulnar instability/compression. This fits with the concept of strength imbalances shown in trained throwers and tennis players. Michael Waters (2005), in an honours project on a single case study, found the wall flexibility test for flexor pronators that we have used clinically to have an intratester reliability of 0.99 (ICC 1,1). This test is described in Figure 2.

Our program focuses initially on stretching and soft tissue release of flexor pronators using the wall, as in Figure 2, but keeping the palm fully on the wall. The tighter hand needs to be lower on the wall. Stretching of extensors may be delayed if painful, but soft tissue release can be done on day 1 to unload the origin. Passive mobilisation of the head of the radius can also be done on day 1 in most cases utilising an AP, lateral glide and supination direction. This allows the radial head to move more easily into its stable supinated close-pack position. The olecranon compresses laterally with excessive pronation as well as posteromedially in extension due to accessory abduction. Mobilising and releasing these areas assist in regaining ulnarhumeral restrictions. Taping or a rotational elasticised brace is used to help stabilise the lateral elbow and unload the extensor origin (Figure 3).

A lateral glide localised to the head of radius is used while practising bringing the hand down into a functional grip lift position (Figure 4). This can initially be done pain-free using a ruler and progression can be made to a heavier weight such as a dumbbell or hammer. Pain-free grip is included once adequate control of forearm pronation is achieved, usually after two to three weeks. A flexed position of the elbow is used to reduce tensile and compression forces on the common extensor origin. Extensor carpi radialis brevis and extensor digitorum communis as well as the superficial head of supinator have been shown to exert the most tensile force on the lateral epicondyle (Erak et al. 2004).

Figure 2. The symptomatic right arm displays shortening of flexor pronator muscles. A reliable measurement can be made by asking the patient to start with the hands lower down on the wall, keeping the elbow crease and wrist parallel to the floor and middle finger vertical to the floor, and moving the hand up the wall as far as possible, keeping the palm fully in contact with the wall. The measurement is taken from the pisiform to the floor.

Figure 3: (above left) Taping is used to supinate, laterally glide and compress the radiohumeral joint; (above right) a custom-made elasticised brace is an alternative to taping and can be used in the long term.

Vox pop

At the recent ACSMS 2011 Conference SMA asked conference delegates their opinions on the following question:

What are some of the gaps within your profession?

"As I live in regional Victoria, access to professional development is difficult."

John Cooney, Physiotherapist, VIC

"There is: relative lack of training in musculoskeletal/ sports medicine compared with other disciplines e.g. physio; significant time constraints; and limited ability to properly assess and manage sports medicine/ musculoskeletal problems especially if there is a second or third problem in a consultation."

John Manderson, General Practitioner, VIC

"There is a lack of communication/braining storming among the profession regarding issues in the community."

Lionel C Lim, Sports Doctor, WA

"Within the profession of exercise physiology, there is too little consensus on almost all academic content; wandering accreditation guidelines from NUCAP with ESSA; too little cooperation between ESSA and SMA; and there is a need for an exercise physiology working group that spans ESSA and SMA."

Robert Robergs, Professor, NSW

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SPORTS MEDICINE AUSTRALIA RECOMMENDED

Figure 4: (above left) Lateral glide of head of radius while eccentrically controlling pronation; (above right) pain-free gripping with lateral glide of head of radius.

It is not until there is good control of pronation and improved functional pain-free grip strength that eccentric/concentric extensor, flexor strength is included. The cervicothoracic, shoulder and neural structures are examined early and appropriate treatment given in conjunction with elbow management. General arm strengthening, addressing proximal biomechanics and posture, is included as early as possible with care not to aggravate lateral elbow pain on gripping. Time frames vary with severity and pain system changes, but generally patients are advised that progress can be gradual over several months.

Medial elbow tendinopathy is treated with a very similar program. The emphasis is on achieving supination and pronation strength with more general lateral glide just distal to the elbow joint and avoiding a valgus position in supination. We have observed that when supination is restricted by flexor pronator tightness or intra-articular changes, a more valgus position is used when turning into supination. This would likely traction the flexor origin and ulnar nerve.

Elements of this program are also used for thrower's elbow problems, overuse forearm myofascial pain and tendinopathies and wrist problems, in particular ulnar wrist abutment such as triangular fibrocartilage complex injuries.

In their 2009 review, Coombes et al. stated that the most effective exercise protocols in treating lateral elbow tendinopathy are not clearly established. More specific research—as has been done in the lumbopelvic region, shoulder and knee—is needed to better understand the motor control mechanisms of the elbow and to enhance exercise programs.

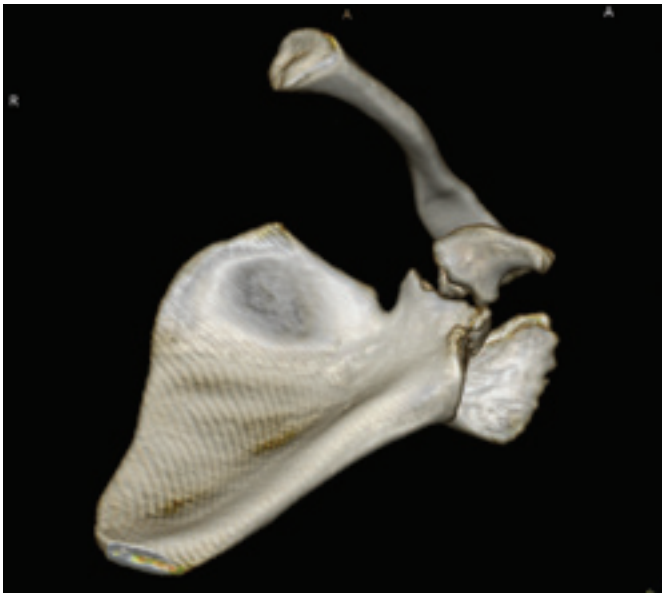
"Clinically, shortening of the flexor pronator muscles is almost always found on the symptomatic side in lateral elbow tendinopathy. …we have also found this shortening in the symptomatic side in medial elbow tendinopathy, medial thrower's elbow problems and even overuse wrist problems such as carpal tunnel and ulnar instability/compression."

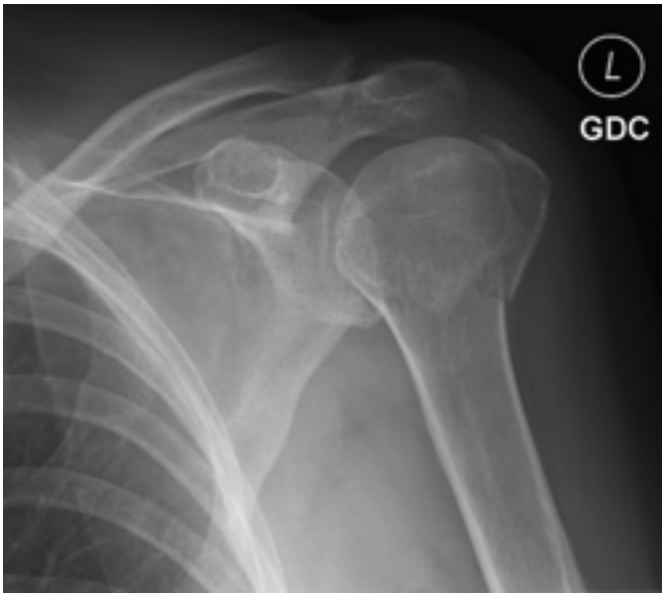
Jim Mack

Jim Mack completed his Masters in Sports Physiotherapy in 1993. He was National Chairman of Sports Physiotherapy Australia from 1998 to 2000 and presided over the period when the APA titling process for Sports Physiotherapy was initially formalised. He is a partner at Adelaide Sports Physiotherapy and is a casual lecturer and tutor on the master's program at the University of South Australia. His special interests are the elbow and foot.

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

Appropriate use of diagnostic imaging in sports medicine





Left: High-tech imaging is becoming more affordable and more readily available. Right: Plain x-ray if often the only imaging required.

Australasian College of Sports Physicians (ACSP) President, Dr David Hughes highlights that with medical imaging becoming more affordable and more readily available health practitioners must ensure that they have the appropriate training to make informed decisions about the efficacy and safety of such medical imaging in specific clinical scenarios.

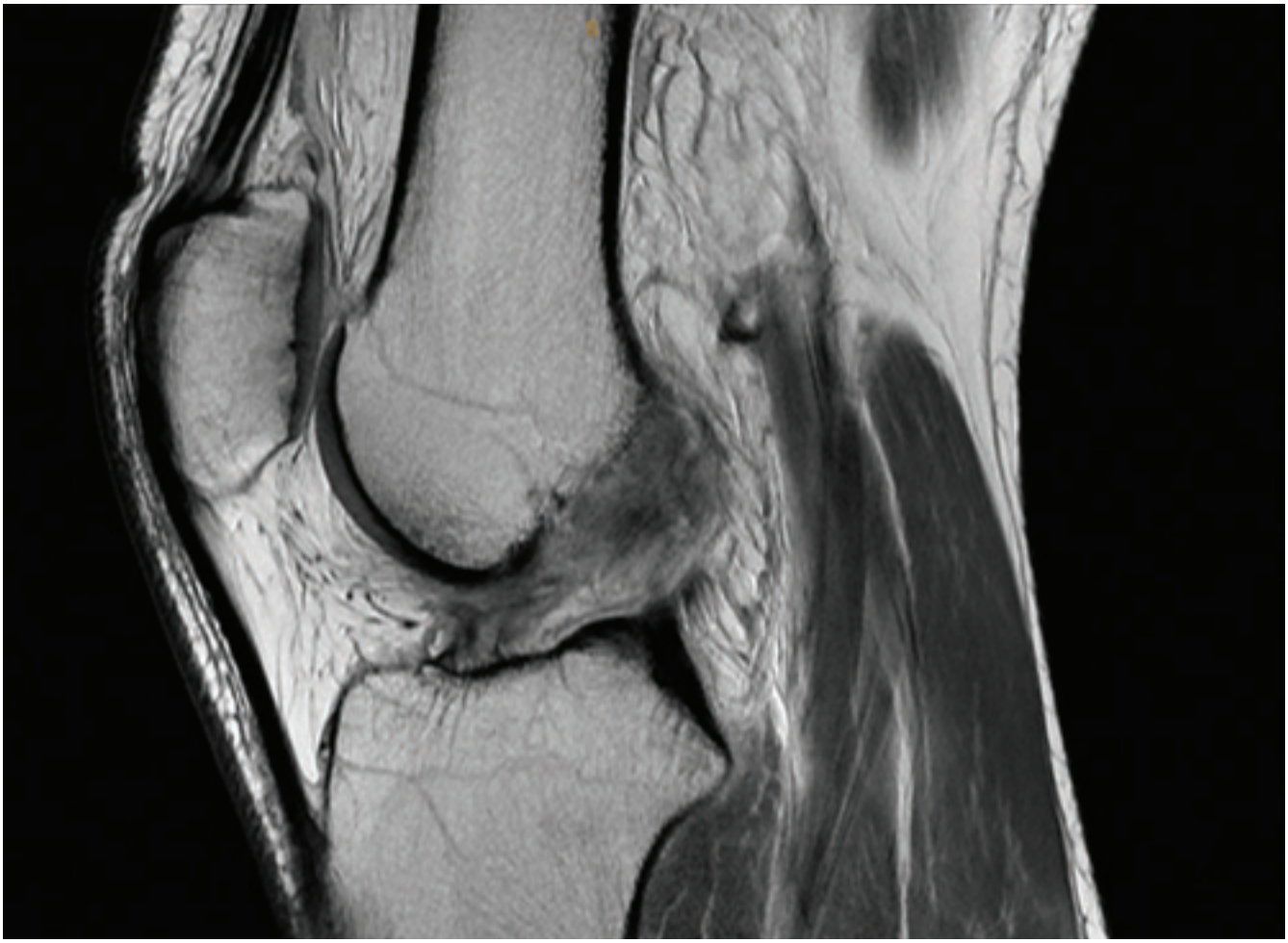
When I first started practising sports medicine in 1992, there was no MRI machine in Canberra. Patients requiring an MRI had to travel to Sydney and could be expected to part with about $1,000 (a lot of money in those days) for the privilege. Technological advances have meant that the number of MRI machines operating in Australia has increased considerably. It has also meant that the average fee charged per imaging service has decreased significantly. However, only a portion of MRI machines are 'licensed' by the Australian Government as being eligible for a Medicare rebate. In recent years, those radiology practices that have a non-licensed MRI machine have tended to reduce their prices to ensure that the out of pocket gap is not significantly different for a scan performed on an unlicensed machine, relative to that performed on a licensed machine. In summary, an individual undergoing standard MRI of the knee can now generally expect to be out of pocket around $200–$300.

The fact that there are many more unlicensed than licensed machines means that Medicare has no involvement in many MRI scans performed. In order to access the Medicare rebate on a licensed machine, a patient needs to have a referral written by a recognised specialist. Patients referred for an MRI by an SEM Physician can access the Medicare rebate whereas those patients with a referral from a general practitioner or an allied health practitioner (physiotherapist, podiatrist, chiropractor, osteopath) do not receive the Medicare rebate.

> "Performing MRI on patients without a clear diagnostic indication can lead to excessive and unnecessary intervention for patients."

Most SEM Physicians that I speak with agree that they have noticed a significant increase in the number of patients presenting with diagnostic imaging films that have been ordered by allied health practitioners. Such medical imaging, in my experience, has included plain x-ray, ultrasound, CT, MRI and on one occasion, a nuclear medicine bone scan. While referrals from allied health practitioners may not in certain circumstances attract a Medicare rebate, the decreasing cost associated with medical imaging has meant that patients are often happy to pay the out-of-pocket expense and not worry about the Medicare rebate, for the sake of convenience.

This raises the issues of safety and efficacy in the use of medical imaging. The advanced training program of the Australasian College of Sports Physicians (ACSP) dedicates a great deal of time and effort instructing Registrars regarding the appropriate use of medical imaging referral. Appropriate use of medical imaging involves issues far beyond cost. Health practitioners should not presume to order medical imaging unless they have received specific training relating to the efficacious and safe use of such imaging.



MRI is an appropriate first line modality where soft tissue injury is clinically suspected.

"…medical imaging is no substitute for careful history taking and thorough physical examination."

To utilise medical imaging in an appropriate fashion, the referring practitioner must have a good understanding of which medical imaging modality will provide the most useful information when suspecting a particular condition. An example is the patient who presents with symptoms and signs which are clinically suggestive of advanced osteoarthritis in the weight-bearing compartments of the knee. An MRI would confirm the existence of osteoarthritis but is highly unlikely to be useful in the ongoing management of the patient. Weight-bearing plain x-ray would be the most appropriate form of investigation in this setting, providing the practitioner with information regarding the loss of joint space, associated degenerative changes and alteration of alignment. The practitioner will in most cases be able to make a judgement as to whether persistence with conservative treatment is appropriate or not. In the event that the condition is deemed to require arthroplasty, an orthopaedic surgeon would prefer to see a weight-bearing plain x-ray than an MRI in planning the surgical intervention.

Similarly, in many bony fractures, an MRI might be able to confirm the fracture but a plain x-ray will also do this and will provide more useful information in terms of alignment, comminution and other factors which will govern treatment decisions.

Conversely, where the history and clinical examination strongly suggests acute disruption of one or more of the major ligaments of the knee, MRI is an appropriate first line of investigation. MRI will provide the information required regarding the ligamentous and other soft tissue structures of the knee. If the MRI indicates coexisting bony injury, the practitioner can make a judgement as to whether there is an indication for further plain x-ray or CT imaging.

As high-end medical imaging becomes more affordable and more readily available, there is a tendency to rely on medical imaging when assessing a condition and when formulating a management plan. Patients themselves will sometimes present with an expectation that medical imaging is required in the assessment of a particular condition. All health practitioners should remember that medical imaging is no substitute for careful history taking and thorough physical examination. It is the findings of the history and physical examination which should inform the need or otherwise for medical imaging, and not vice versa.

"An MRI should not be performed as part of a 'diagnostic fishing expedition'."

Safety is very pertinent in the appropriate use of medical imaging. Medical imaging is the main source of man-made exposure to ionising radiation in most Western countries. Exposure to ionising radiation carries a risk in the long term of malignancy and genetic damage. Quantification of that risk is difficult and debatable. Suffice to say, exposure to ionising radiation should be kept to a minimum. Some published papers have suggested that up to a third of radiological investigations are partially or totally inappropriate (Picano 2004). Unnecessary or inappropriate examinations expose patients to risk without benefit and are a threat to the effective allocation of resources (Mendelson 2007). Practitioners referring patients for medical imaging must ensure that the investigation is clinically required, has the potential to alter clinical management and will minimise exposure to ionising radiation while delivering the required information.

"Appropriate use of medical imaging involves issues far beyond cost."

Particular patient subgroups require special consideration when ordering medical imaging. Females have a slightly increased risk of adverse results from exposure to ionising radiation, compared with males. Children, because of the greater number of rapidly dividing cells and the greater life expectancy, are at higher risk of adverse outcome from exposure to ionising radiation than adults. Any exposure to ionising radiation in children must be carefully considered and potential benefits weighed against potential risks. All females of weight-bearing age should be asked whether they could possibly be pregnant before referral for imaging which involves exposure to ionising radiation.

It is not sufficient to say that MRI provides no radiation therefore no harm can be done. An MRI should not be performed as part of a 'diagnostic fishing expedition'. MRI has the potential to deliver a high level of false-positive results, revealing 'pathology' that has nothing to do with the patient's symptoms. The detection of a spurious 'abnormality' can have serious consequences for the patient, potentially leading to unnecessary interventions.

A recent study involving MRI of asymptomatic hips in professional hockey players in North America showed that 56 per cent of these asymptomatic individuals were reported as having 'labral tears' by more than one radiologist specialising in musculoskeletal imaging (Silvis 2011). Obviously as these research subjects were asymptomatic, no intervention was required in relation to the MRI findings. Had one of these patients presented with groin pain however, they may well have undergone hip arthroscopy on the presumption that the labral tear was the cause of their groin pain. Performing MRI on patients without a clear diagnostic indication can lead to excessive and unnecessary intervention for patients.

"As high-end medical imaging becomes more affordable and more readily available, there is a tendency to rely on medical imaging when assessing a condition and when formulating a management plan."

Medical imaging is not required unless it is going to alter the clinical management.

Lovell and co-workers (Lovell 2006) demonstrated that substantial amounts of bone marrow oedema at the pubic symphysis can occur in asymptomatic elite junior soccer players, but such oedema is only weakly related to the development of osteitis pubis. Elite athletes who are diagnosed with osteitis pubis are often stood down from vigorous sporting activity for significant periods of time. Relying on medical imaging alone to make such a diagnosis is inappropriate and could result in an elite athlete missing a significant amount of playing and training time unnecessarily.

> "The fact that there are many more unlicensed than licensed machines means that Medicare has no involvement in many MRI scans performed."

Health practitioners can understandably feel under pressure to refer for medical imaging in order to defray medicolegal risk. There is a perceived disconnect (accurate or otherwise) between judgements made in court rooms and evidence-based clinical decision-making, including decisions over whether to order medical investigations. The key to solving this dilemma lies in education and appropriate medical record-keeping.

All health practitioners who presume to order medical imaging must be familiar with the evidence-based guidelines which indicate the need or otherwise for medical imaging in particular clinical situations. Health practitioners must maintain medical records which articulate the information upon which they based their decision to refer or not refer for medical imaging. Applying evidence-based guidelines to decision-making and maintaining accurate medical records will provide the dual benefits of ensuring patients are not needlessly exposed to ionising radiation and decreasing medicolegal risk to the health practitioner.

Medical imaging is not a substitute for a detailed history and thorough physical examination.

Using MRI for a 'diagnostic fishing expedition' is bad medical practice and dangerous.

In summary, medical imaging across a range of modalities is becoming more affordable and more readily available for patients. Health practitioners can experience pressure from patients and from their own desire to minimise medicolegal risk, to refer patients for medical imaging. However, health practitioners who refer patients for medical imaging must ensure that they have appropriate training to make informed decisions about the efficacy and safety of such medical imaging in specific clinical scenarios. Medical imaging is not a substitute for taking a detailed history or performing a thorough physical examination.

Dr David Hughes

President

Australasian College of Sports Physicians

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

Discipline group news and events

Australasian College of Sports Physicians (ACSP)

News:

- **Change of address**
  ACSP has recently relocated to Hobart, Tasmania. Please note the new contact details:

  Suite1, Level 2, 13–17 Castray Esplanade,
  Battery Point, TAS 7004 Australia
  Phone +61 3 6224 4449 or 0800 22 777 8
  (from NZ only)
  Fax +61 3 6224 4456
  Email acsp@bigpond.com

- **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
  - Opportunity for collegial interaction

Applications for Associate Membership forms can be obtained by contacting the College as per above.

Upcoming events:

- ACSP Clinical Sports Medicine 2012: Upper Limb
  March 4, 2012
  Sydney, NSW

  To be confirmed shortly

For more information visit www.acsp.org.au

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

News:

- The APS CoSEP held their AGM on October 7, 2011 in Canberra – at the annual APS conference. A CoSEP themed day was held that included the AGM in addition to a range of paper presentations and forums.
- A National Athlete Counselling Support Network has been launched by the National Institute Network (NIN) across Australia. Its focus is supporting athletes preparing for the 2012 London Olympics and Paralympics – for further details please contact your local State Sporting Institute/Academy.

For more information visit www.psychology.org.au

Exercise & Sports Science Australia (ESSA)

Upcoming events:

- **Research to Practice**
  5th Exercise & Sports Science Australia Conference and 7th Sports Dietitians update

  Jupiters Casino, Gold Coast, Queensland
  April 19–21, 2012

  Keynote speakers: Professor Tim Noakes, Professor Romain Meeusen, Professor Peter Brubaker, Dr Roanne Segal and Australia's own Professor Robert Newton will deliver the Frank Cotton Memorial Lecture.

  For more information visit
  http://www.essa.org.au/conference2012
  or follow us on Twitter @conference2012

For more information visit www.essa.org.au

Sports Dietitians Australia (SDA)

News:

- Registrations are now open for our highly regarded 4-day Sports Nutrition Course in Canberra, and places are filling fast in our popular Nutrition for Exercise and Sport Course, across Australia. More information can be found on our website www.sportsdietitians.com.au or follow us on Twitter @SportsDietAust.

Upcoming events:

March

3 Nutrition for Exercise & Sport Course – Queensland (Brisbane)

Nutrition for Exercise & Sport Course – Western Australia (Perth)

10 Nutrition for Exercise & Sport Course – South Australia (Adelaide)

April

19–21 ESSA/SDA Conference – Gold Coast, Queensland

May

4–7 Sports Nutrition Course – Canberra (AIS)

19 Nutrition for Exercise & Sport Course – Victoria (Melbourne)

26 Nutrition for Exercise & Sport Course – New South Wales (Sydney)

June

16 Nutrition for Exercise & Sport Course – ACT (Canberra)

For more information visit www.sportsdietitians.com.au

Sports Doctors Australia (SDrA)

News:

- At the recent SDrA Teleconference (December 12, 2011) plans were put into place to have a major medical contribution at the be active 2012 conference (October 31 – November 3, 2012), including the very popular hands-on Sports Medicine Emergency Course led by Associate Professor Shane Brun.

Upcoming events:

- SDrA Fellow, Dr Neville Blomeley, is the Chair of the National Faculty of Special Interest (NFSI) Sports Medicine Network, being developed by the Royal Australian College of General Practitioners (RACGP). A further NFSI Teleconference is planned for February and Dr Blomeley is developing a 'forum' for discussion of sports medicine cases, requesting/inviting commentary by other members of the network.

For more information visit www.sportsdoctors.com.au

Sports Physiotherapy Australia (SPA)

News:

- Planning is underway for the 2012 ACSP SPA Workshop to be held in Melbourne on April 20–21, 2012. The theme is 'Injury Prevention' and will be held for members of ACSP and Titled Members of SPA. This follows on from the very successful workshop held in Canberra in 2010. Speakers will include leaders in the field of injury prevention.

For more information visit www.physiotherapy.asn.au

The *Journal of Science and Medicine in Sport*

The role of music in sport

Recently Grant Schofield, JSAMS Associate Editor, conducted a podcast with Professor Peter Terry regarding his latest study which looks at the role of music in sport and exercise and how it can affect performance and motivation.

Professor Peter Terry's study, titled *Effects of synchronous music on treadmill running among elite triathletes* which features in Volume 15 Issue 1 January 2012 of The *Journal of Science and Medicine* looks at the potential benefits of music amongst triathletes. Their perceived exertion, lactate, Vo2, moods before and after, feelings and time to exhaustion were assessed with two different types of music: silence and music which matched their stride rate (the study looked at two kinds: motivational music and neutral music).

Main findings

- Triathletes ran for longer to exhaustion with both types of music as compared to no music.
- Triathletes enjoyed running more while listening to motivational music as compared to the other kinds (silence and neutral music). Even though the neutral music kept them running for longer they didn't enjoy it!
- Psychological benefits require motivational music.
- Running economy is better while listening to music as compared to listening to no music.
- Mood changes are less negative when listening to motivational music.

This study shows that music in sport can certainly affect performance and motivation. It is therefore crucial in sport where music is allowed that the music is chosen carefully.

Tips to choosing the right music

- Match the music to your activity and the psychological effect you want to experience, (e.g. loud, fast, rhythmical, bass-driven music is great for psyching yourself up before interval training).
- Consider the intensity of the activity – you will need faster music if you are running at a faster pace.
- Consider music that creates motivating images in your mind. It may be used to associate with popular culture such as the film Rocky or to personal memories.
- Match the tempo of the music to your expected heart rate during your training session.
- Choose music that contains positive affirmations of running such as 'keep on running' or 'work your body'. Positive statements such as 'moving on up' or 'I believe' can also have a motivating effect.

Listen to the 'Music and sport' podcast and/or view the research paper, *Effects of synchronous music on treadmill running among elite triathletes* at jsams.org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