sport health

VOLUME 28 • ISSUE 3 • SPRING 2010

Some things change… • Sydney but not the bush • The trade-off between stability and morbidity in reconstructive surgery • The Toronto Charter for Physical Activity: What it means and how it should be used • ACSP President Conference précis • Local treatments for patellofemoral pain: Evidence and practice • ACSMS 2010 Refshauge and keynote speaker presentations • And they're racing: An insight into the Spring Racing Carnival

SPORTS MEDICINE AUSTRALIA

COMMONWEALTH GAMES AUSTRALIA

OFFICIAL SUPPLIER OF TAPES AND BANDAGES TO THE AUSTRALIAN 2010 COMMONWEALTH GAMES TEAM

Elastoplast®

When life gets exciting

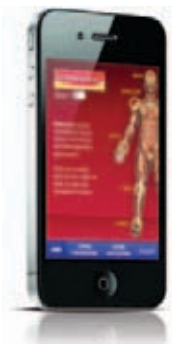
Prevention is better than cure so protect yourself against injury with the Elastoplast Sport range of sports medicine products. Exclusively used by The Australian Institute of Sport and many other elite sports clubs across Australia and New Zealand.

- Rigid Strapping Tapes
- Elastic Adhesive Bandages
- Mouthguards
- Hot/Cold Packs

For all your Sports Medicine needs.
Available from pharmacy, sports medicine wholesalers and supermarkets.

OFFICIAL SUPPLIER
AUSTRALIAN INSTITUTE OF SPORT

MAJOR SPONSOR
SPORTS MEDICINE AUSTRALIA
SAFER SPORT PROGRAMME



Visit iTunes for your FREE Download

Available on the iPhone App Store

BDF Beiersdorf

Beiersdorf Australia Ltd. 4 Khartoum Road, North Ryde NSW 2113
Customer Service: 1800 269 933 toll free

www.elastoplastsport.com

Always read the label. Use only as directed. If symptoms persist see your healthcare practitioner. ® = Reg. TM. Beiersdorf AG.

SPORTS MEDICINE AUSTRALIA

sport health

VOLUME 28 • ISSUE 3 • SPRING 2010

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

Circulation: 4000
ISSN No. 1032-5662

Editors
John Orchard & Cristina Caperchione

Managing Editor
Amanda Wilson

Chief Executive Officer
Nello Marino

Subscription Manager
Brigid Doherty

Advertising Manager
Amanda Wilson

Design/Typesetting
Papercut

SMA STATE BRANCHES

ACT
ACT Sports House
100 Maitland St Hackett ACT 2602
T (02) 6247 5115

New South Wales
PO Box 3176 Rhodes NSW 2138
T (02) 8116 9815

Northern Territory
PO Box 2331 Darwin NT 0801
T (08) 8981 5362

Queensland
Sports House 150 Caxton St Milton QLD 4064
T (07) 3367 2700

South Australia
PO Box 219 Brooklyn Park SA 5025
T (08) 8234 6369

Victoria & Tasmania
Sports House
375 Albert Road South Melbourne VIC 3205
T (03) 9674 8777

Western Australia
PO Box 57 Clarement WA 6010
T (08) 9285 8033

SUBSCRIPTION RATES
Australia A$35
Overseas A$50

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
E members@sma.org.au

Cover photograph – www.istockphoto.com
Content photographs – www.istockphoto.com

Some things change…

Nello Marino is pictured with the ASMF (SMA) flag. SMA will host a SMA historical dinner at the ACSMS 2010 Conference on Saturday 6 November 2010. For more information visit http://sma.org.au/asics-conference/

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**

I was recently inspired to read a little of the history of SMA. No it's not a hobby or pastime of mine to read of the history of the organisation that I've devoted almost a third of my working life to. Rather it was inspired by the need to gain a better understanding of some of the historical attributes of SMA in preparation for the Australian Conference of Science and Medicine in Sport which will have a distinct historical thread through it and will culminate in a conference dinner which we hope will inspire many delegates to drag out those memorable items of clothing or memorabilia which they have stashed away.

Many of our SMA members would be aware that SMA is approaching its 50th anniversary in 2013. This is sure to be a wonderful milestone and a time of certain celebration. Many would also be aware that our first 25 years has been documented in a book titled 'A Healthy Body – The Australian Sports Medicine Federation 1963–1988'. Written by Wray Vamplew the book is a fantastic insight into the history of a significant professional association in SMA.

However reading such a book is not only fascinating in itself, it also offers the opportunity, particularly for those that have played their role in this organisation, to reflect on what has been achieved over a number of years, and to also gain a real understanding of the foresight of a great number of people associated with SMA.

Likewise it also provides an indication of how little movement there has been on a number of issues.

Of particular note and of a topical nature is the issue of drugs in sport. Given I'm writing this piece about a week after the airing of the Ben Cousins documentary and only days after Travis Tuck, another AFL player, has become the first player to be suspended under the AFL's 'three strikes' policy, I thought it was particularly poignant.

According to the section in the book dedicated to drugs in sport, the ASMF (SMA) undertook a 'Survey of Drug Use in Australian Sport' in the early 1980's which covered some 4,000 respondents from 31 sports. The survey results suggested that five per cent of Australian sportspeople were major drug abusers and that twenty per cent relied on drugs, which although mainly alcohol and nicotine, also included substances banned from sport by international convention notably stimulants and steroids. Even by today's standards these are significant figures.

Even more sensational is the following commentary which states 'Australian sportspersons live in a drug taking society: Australia has institutionalised drug use into its work routine via the smoko and coffee break: many of its inhabitants start the day with caffeine or nicotine, imbibe alcohol at lunchtime and in the evening, and finish with a sedative at bedtime; and, of course, recreational use of prohibited substances has increased significantly'. Sound familiar? In fact the only aspect which for many under 30 would be unfamiliar is the term smoko which was the term used for morning or afternoon tea break at which a cigarette was often the usual fare.

Sadly we're still endeavouring to address similar issues. Perhaps there's been some difference in the substances used and I would expect that the illegal recreational drugs referred to would have more likely been cannabis compared to a wider range of cannabinoids and stimulants available to today's user.

Much of this work by the then ASMF led to the establishment of a federal government funded committee to develop a systematic education program on the effects of drug use by sports participants which as suggested by the author, was designed to 'stimulate sports associations to instigate drug testing and to encourage research to address gaps in the knowledge of the time'. This over time would see the committee's brief transferred to the Australian Sports Commission and the establishment of ASDA or ASADA as we know it today.

Drug testing has received its fair share of coverage in recent years. Particularly topical has been the AFL's Illicit Drugs Policy which since its introduction in 2005, has had its fair share of criticism and support. Of interest to many would be some of the following facts:

- In its first year there were about 500 tests. There are now more than 1,500 tests conducted annually, both in and out of competition, with every player tested at least once.
- There are now more target tests than ever before.
- Players coming into the system are educated on illicit drugs.
- More drugs are tested for than previously (addition of ketamine).
- Hair testing has been introduced for indicative testing (a positive hair test is not a strike but enables a player to be target tested under IDP and also receive counselling and treatment).
- Club doctors are informed after each positive test so they are involved in the counselling and treatment.
- The rate of positive tests has gone from 4 per cent of 472 tests in 2005 to .89 (less than one per cent) of 1,568 tests in 2009.
- Doctors have found a number of cases where the illicit drug use is actually a symptom for mental health issues. The drug use wasn't the core problem but was used by players to deal with a more serious issue.

Whilst there is still much work to be done on the issue of illicit drug use in sport and the broader community the above demonstrates great progress on the particular issue of illicit drug testing and some strong strategy in dealing with the issue in an elite sporting code. Whilst SMA isn't responsible for the strategy, as an organisation we have made it clear that SMA supports the AFL and other sporting organisations taking a strong, medically oriented stand on the issue. However I am also guessing that deep down there are a number of SMA members feeling very satisfied that some of the work and foresight shown a great number of years ago is bearing some fruit on the matter.

Nello Marino

Chief Executive Officer
Sports Medicine Australia

nello.marino@sma.org.au
Follow me @smaceo

5 mins with… Professor Wendy Brown

2010 ACSMS Conference Committee, Conference Co-Chair

What is your profession?

My official title is Professor of Physical Activity and Public Health in the School of Human Movement Studies at the University of Queensland, so my 'profession' is teacher and researcher.

How many years have you been in this profession?

I have worked in tertiary education for longer than I care to remember – but my career has included stints in the public and private health sectors, first as an exercise physiologist and health educator, then in health promotion and health service management.

What does your typical day consist of?

I don't think I ever have a 'typical' day; each one is different… but most start with a short bike ride to work, followed by (in no particular order) meetings with my post doctoral researchers or PhD students, telephone conferences with one or another of the Non-Governmental Organisations I work with (like SMA or the Heart Foundation) and governance, policy or project meetings. Sometimes I go 'off-campus' for research or policy meetings, for example with government or industry partners… and yes, I do teach sometimes. Last semester I had a first year class of 400+ students, so I spend quite a lot of time preparing lectures and course materials. On a 'typical' day I try to make some 'quiet' time for writing and for reviewing all the things I am asked to read and review in the course of my job, but generally this part of the job has to go home with me.

What is your favourite aspect of your job?

Its variable nature and the continuing challenge of bringing a public health perspective to Human Movement Studies. I appreciate the opportunities I have to influence public health policy (from time to time).

What has been the highlight of your career?

I think this would have to be the appointment to this position. It was the first chair of physical activity and public health in Australia, a perfect place for me to end up – in a 'chair' doing research on sedentary behaviour!

How did you become involved with SMA?

It was when I was doing my PhD in Newcastle in about 1978 – there was quite an active 'Hunter' branch in those days. In the eighties I was involved in producing the first 'exercise fact sheets' for women in sport with some of SMA's other 'pioneer' women.

Why and how did you become Conference Co-Chair?

I first became involved in SMA conference organisation when I became the 'public health' spokesperson for SMA in about 2002, and shared the 'chair' with Anita Green for the 2004 conference in Alice Springs. After that I continued as a committee member and helped to formulate the decision to have alternating 'large' and 'boutique' conferences (and the decision to take the boutique conferences to 'holiday' destinations like Fiji and Hamilton Island). I was also involved in the decision to amalgamate the ACSMS with the National Physical Activity Conference under the 'Be Active' banner, in 2005 (Melbourne), 2007 (Adelaide) and 2009 (Brisbane). After this year in Port Douglas I will take a break, then return to assist with Be Active again in 2012 when we will partner with the International Congress on Physical Activity and Public Health in Sydney.

What are you passionate about?

Physical activity!

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

Nobody can go back and start a new beginning, but anyone can start today and make a new ending.

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

This is too difficult… for a start I would rather be active with people than eat with them, so perhaps this dinner would have to be during a 'short break' which involved walking, or cycling, or dancing. We would need a cook (Neil Perry or Stephanie Alexander?), entertainment (Julian Morrow?), a navigator and transport organiser (Richard Branson?), and someone to dance with (Paul Mercurio?). And a physio – because all these people (and the other close female friends I would invite) are all at the age where their muscles might need attention at the end of the day. Any volunteers?

Favourites

Travel destination: Anywhere I can walk or cycle – Yorkshire Dales, Andalucia, Tuscany, New Zealand; have never been to South America and Cuba but would love to go there to learn to dance.

Sport to play/watch: Hockey.

Cuisine: Eurasian.

Movie: This year: Alice in Wonderland (Johnny Depp); historically: One Flew over the Cuckoo's Nest.

Song: Very tricky; Layla (Eric Clapton) or Pachelbel's Canon in D major.

Book: This year: the Millennium Trilogy (The Girl with the Dragon Tattoo/Who Played with Fire/Who Kicked the Hornet's Nest) by Stieg Larsson.; historically: When We Were Very Young by AA Milne.

Gadget: Pedometer.

Analgesia in musculoskeletal sprains and strains: Don't underestimate the value of paracetamol.

Why should the use of NSAIDs in acute musculoskeletal injuries be reassessed?

Controversy surrounds the early and aggressive use of NSAIDs in the initial post-injury treatment phase of musculoskeletal injuries.[1] NSAIDs have, at best, a mild effect on relieving symptoms and are potentially deleterious to tissue healing.[2,3]

Prostaglandin inhibition by NSAIDs decreases the inflammatory response, which can have both positive and negative effects.[3] During the first 24–48 hours the inflammatory response is vital as it:[1]

- limits the amount of damage through bleeding
- protects against further damage – swelling to immobilise
- initiates healing via macrophage removal of debris and regeneration

Therefore, decreasing inflammation through NSAID use, can result in increased bleeding at the injury site,[1] slower muscle regeneration[1] and potentially compromise long-term healing.[1–4] There is also no evidence that NSAIDs improve muscle function after injury;[3] and therapy to decrease inflammation does not appear to be necessary for the successful resolution of swelling.[5]

What are the expert recommendations for the analgesic treatment of acute musculoskeletal injuries?

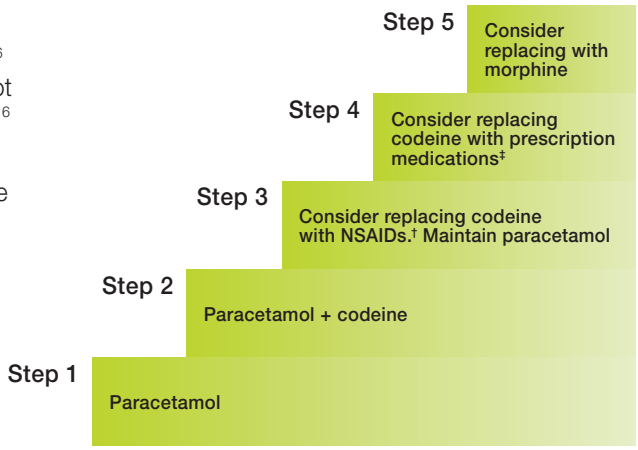
Paracetamol is recommended first line due to its efficacy and side-effect profile.[1,6,7]

Internationally, the World Health Organisation (WHO) analgesic ladder was adapted by Boger and Jones (2005), to provide a step-wise approach in the analgesic treatment of chronic musculoskeletal pain.[6] In general, patients should begin at the first step and only if relief is not achieved, should the patient be moved to the next level (see figure 1).[6]

The National Health and Medical Research Council (NHMRC) in Australia also recommends paracetamol first line for mild-to-moderate acute musculoskeletal pain.[7] Only where paracetamol provides insufficient pain relief, should an NSAID be used.[7]

†With consideration of additional risk factors, e.g. asthma, hypertension, renal disease, heart failure, diabetes, stroke.
‡Including tramadol.

Figure 1.



Adapted from Boger *et al,* 2005.[6]

It's my **first** choice

References: 1. Braund R, *et al. NZ J Physiotherapy* 2007; 35(2): 54–60. **2.** Jones PG. *NZ Med J* 1999; 112(1097): 376–9. **3.** Paoloni JA, *et al. Med J Aust* 2005; 183(7): 384–8. **4.** Magra M, *et al. Clin J Sport Med* 2006; 16(1): 1–3. **5.** Dalton JD, *et al. Annals Emerg Med* 2006; 48(5): 615–23. **6.** Boger EJ, *et al. Musculoskeletal*

GlaxoSmithKline

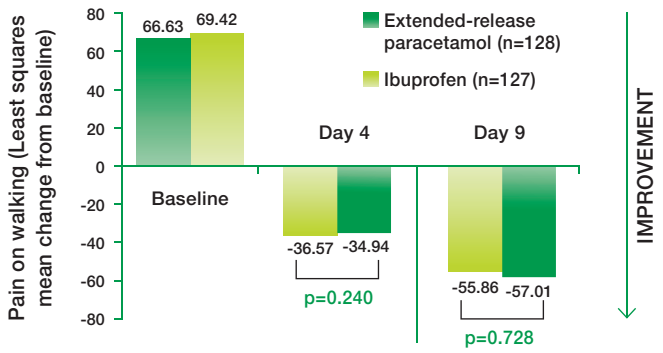
Are there any head-to-head comparisons of over-the-counter NSAIDs and paracetamol in acute musculoskeletal injuries?

Yes, and the evidence suggests that paracetamol is equally as effective as an NSAID in the relief of acute musculoskeletal pain.[5,8–15]

One large clinical trial comparing paracetamol and NSAIDs in musculoskeletal injuries found no difference in efficacy between the two regimens.[9] There is also moderate evidence that paracetamol and NSAIDs are equally effective in relieving acute low-back pain.[11–14] Furthermore, the addition of diclofenac or spinal manipulative therapy to recommended first-line low-back pain care (which included 4 g paracetamol/day), did not aid a quicker recovery.[16]

Another study compared extended-release paracetamol* versus an NSAID (ibuprofen) in the treatment of ankle sprains.[5] This study also showed equivalence, allowing patients to resume normal activities as early as 4 days after ankle sprain injury, (see figure 2).[5]

Figure 2. Extended-release paracetamol* compared to ibuprofen in relieving pain on walking after ankle sprain (intention-to-treat).[5]



Adapted from Dalton, *et al.*[5]

*The extended-release paracetamol product used in this study is a US-based formulation which contains 650 mg paracetamol versus the 665 mg in the Australian Panadol® Back and Neck Long Lasting formulation. Both formulations use bi-layer technology that provides an immediate-release layer of paracetamol followed by a slower, time-released layer of paracetamol to provide up to 8 hours of pain relief.

What are the implications for physiotherapists and sports physicians?

The key message is to not automatically recommend an NSAID for a sprain or strain due to its anti-inflammatory action. Based on the evidence currently available, paracetamol should be the first-choice analgesic for the management of acute musculoskeletal injuries,[1,7] whilst NSAIDs should be reserved for patients with excessive swelling[1,3] or uncontrolled inflammation.[1]

Would Panadol Back & Neck Long Lasting be suitable to relieve acute musculoskeletal pain?

Yes, Panadol Back and Neck Long Lasting is a modified-release, bi-layer formulation that contains 665 mg of paracetamol to provide up to 8 hours of pain relief.[17]

The efficacy of paracetamol depends on adequate and regular dosing. The maximum daily dose of Panadol Back and Neck Long Lasting is 2 tablets three times a day, which provides 3,990 mg of paracetamol/day.[17]

Care 2005; 3: 224–32. **7.** Evidence-Based Management of Acute Musculoskeletal Pain. Australian Acute Musculoskeletal Pain Guidelines Group. National Health Medical Research Council. **8.** Gotzsche PC. *BMJ* 2000; 320: 1058–61. **9.** Woo WW, *et al. Annals Emerg Med* 2005; 46: 352–61. **10.** Roelofs PDDM, *et al. Cochrane Library* 2008; 1: 1–54. **11.** Evans DP, *et al. Curr Med Res* Opin 1980; 6: 540–7. **12.** Milgrom C, *et al. J Spinal Dis* 1993; 6: 187–93. **13.** Nadler SF, *et al. Spine* 2002; 27(10): 1012–7. **14.** Wiesel SW, *et al. Spine* 1980; 5: 324–30. **15.** Kayali C, *et al. Saudi Med J* 2007; 28(12): 1836–9. **16.** Hancock MJ, *et al. Lancet* 2007; 370: 1638–43. **17.** Panadol Back and Neck Approved Product Information.

GLA0109/SH

Sydney but not the bush

One of the frustrating parts of trying to write a topical column in a magazine which takes a month or so to go from layout to the mailbox is that there is potential for it to be completely out of date by the time anyone rips open the plastic around their copy of *Sport Health*, even if they only take 10 seconds to start reading Dr J, which is what everyone tells me they do. Last issue we somewhat dodged a bullet as part of the Dr J title was to be "…Kevin Rudd's health plan…" which we managed to change to the "ALP's health plan" just before the print run. Kevin Rudd the PM was already fish and chip paper by this stage and unfortunately you have to think that the Federal takeover of health has already joined the big reform agenda scrapheap along with the original versions of the emissions trading scheme and mining tax. For this issue I already know how out of date it may be, as the result of the election is undecided as I write, but I'm sure you'll know who the PM is by the time you are reading this. Even though a decade just flies by when you are waiting to get your specialty approved by Medicare, a week is a long time in politics.

Sport and Exercise Medicine is apparently becoming a specialty on November 1 (and we are planning to theme this summer's *Sport Health* edition on this very topic).

Even though the hung parliament issue may be semi-resolved by early spring, the bookmakers are probably paying a dividend of $1.01 that noone from the (new?) Health Minister's office is going to be able to properly negotiate with the Australasian College of Sports Physicians (ACSP) prior to this time about the implementation of the new specialty conditions.

There are many important questions to ask and our preparation towards November 1 unfortunately needs to presume that all will be given the worst possible answer, given that the bureaucrats will have an even greater excuse than usual for complete inertia. Will physiotherapists and other allied health professionals be able to refer directly to sports physicians? Will patients of sports physicians receive rebates that are equitable with the other (most-similar) musculoskeletal physicians like rheumatologists and rehabilitation physicians? Will registrars on the sports medicine training program have their rebates, which were frozen in the early 1990s, linked back to the rest of the medical profession? Will the practices which are training registrars receive funding for teaching like other specialties get? These are some of the questions the ACSP executive can practice asking a brick wall over the next few months. (Continued over →)

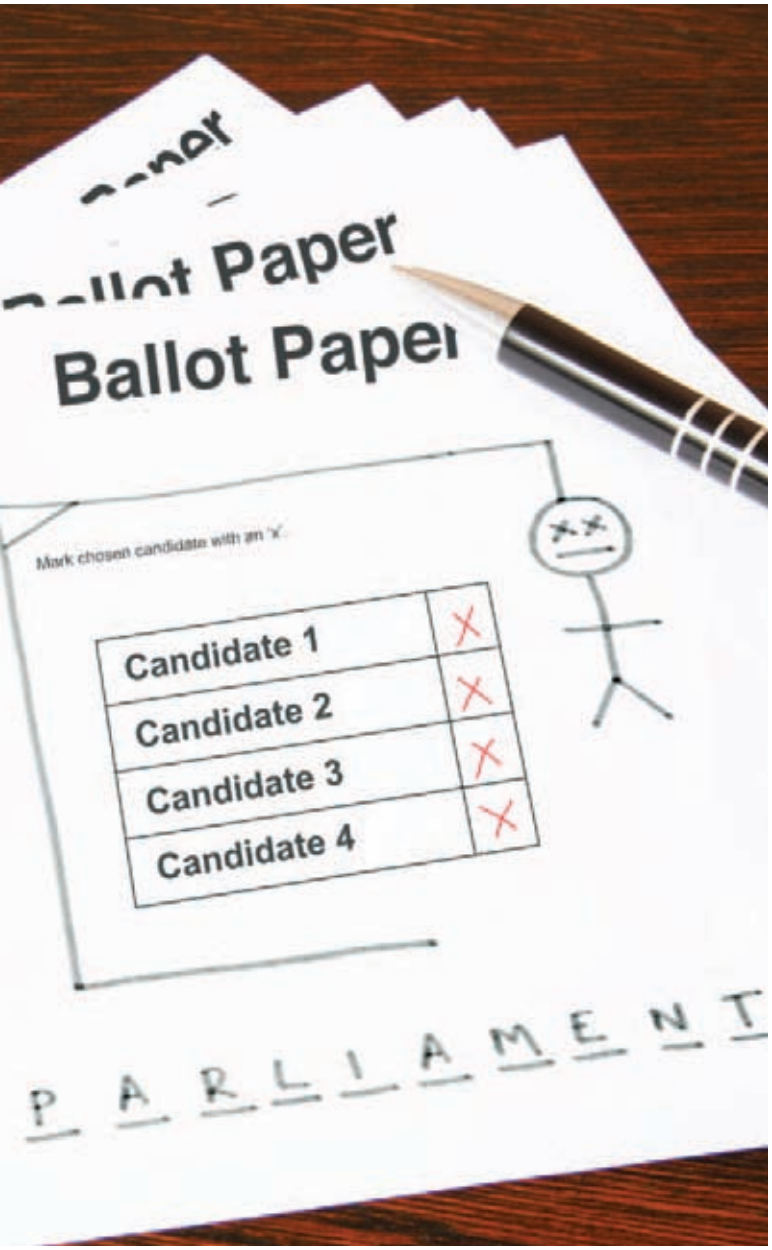
Don't underestimate the value of Panadol® (paracetamol) in soft-tissue injury. Comparative clinical trials and reviews conclude that paracetamol has similar efficacy to NSAIDs in soft-tissue injury.[1–5] The National Prescribing Service recommends paracetamol first line for the management of acute, mild-to-moderate pain associated with strains, sprains, tendonitis and tennis elbow.[6]

When pain relief is necessary, recommend Panadol.

It's my choice

 References: 1. Paoloni JA, Orchard JW. *Med J Aust* 2005; 183(7):384–388. 2. Jones PG. *NZ Med J* 1999; 112(1097):376–379. 3. Dalton JD, Jr., Schweinle JE. *Ann Emerg Med* 2006; 48(5):615–623. 4. Clark E, *et al. Pediatrics* 2007; 119(3):460–467. 5. Yates DW, *et al. Arch Emerg Med* 1984; 1(4):197–203. 6. National Prescribing Service. Optimising the use of OTC analgesics. Pharmacy Practice Audit December 2006.

Sydney but not the bush continued…



Despite all of the reasons to be cynical, I am actually 'net positive' by a long way. The plan to recognise sports medicine as a specialty has been set in motion. Once you are a specialty you are at least at the table. Sports physicians have been almost completely ignored prior to this. If rheumatologists are generating a $120 Medicare rebate per 40 minute initial consultation and sports physicians are generating $65 for the same length and complexity consult (which is possibly what the state of play will be on November 1) at least the ACSP is an officially-recognised specialty body. As such, it can lobby for equitable rebates and needs to be answered to by the Health Minister, whenever this role gets taken up by someone with the authority to make a decision.

Not that sports physicians are going to notice any difference in having a lame duck Health Minister. Over the last 18 years the Health Minister has had the authority to recognise our specialty and has chosen not to (or in Yes Minister/ Hollowmen terms, has chosen to defer a decision to the appropriate committee).

Tony Abbott used his personal love of sport and exercise to try to improve his standing with the voters in the 2010 election campaign, but when Health Minister he did nothing to accelerate the recognition of sports medicine as a specialty. I met him once at a media launch when he was Health Minister and handed him a copy of my 2002 Medical Journal of Australia opinion piece "Australia needs to follow New Zealand's lead on sports injuries". He was good enough to skim read it but laughed off its arguments by saying "surely there is nothing better about New Zealand's health system than ours". How about a lack of back-passing between Federal and State health departments for starters, before we even get to comprehensive coverage of sports injuries by the Accident Compensation Corporation (ACC)? Is it right that only resource-poor New Zealand deems it affordable to pay a living wage to someone rendered quadriplegic playing sport? In Australia the maximum compensation available to someone in this terrible situation is a few hundred thousand dollars, which would last a quadriplegic a few months. To get a living wage you need to be, for example, a drunken driver who has crashed into a pole and can sue the council who erected the pole. To get sensible reform in Australia, you need to have an issue which is dumbed down enough to be relevant to a Poll of a different kind.

A reason for optimism is that one related issue thrust forward on the agenda by the recent election result is the state of rural health. Despite lots of sport being played in their districts and their towns being fine parts of Australia in which to live, there is only one sports physician in Bob Katter's electorate and none in Tony Windsor's or Rob Oakeshott's electorates. Their constituents are probably going to be squealing more about taking a year to get seen by a dermatologist than the fact that they don't have a sports physician in town. Country people are wonderful patients to treat as they are so respectful and trusting, but this can also hurt them. If the local country orthopod wants to do a knee arthroscopy for osteoarthritis or patellofemoral pain, they don't realise what they are missing out on by not having access to a local

sports physician's opinion to suggest otherwise. But there is a chance that the country independents will extract funding for a few hundred extra medical specialist training positions per year and that sports medicine (as a recognised specialty on November 1) may be able to claim a small handful of this funding.

Until there is evidence to the contrary, I remain extremely cynical about the motivations of the AMA. I resigned from this organisation in 2000 when it refused to recognise my training (and following on from this, refused to assist in lobbying the government for its recognition). I have recently written to NSW Workcover to ask what the set fees will be for sports physician consultations under Workcover (with the explicit threat that I will refuse to see Workcover patients if the maximum fee I am allowed to charge is set at an inequitable level). The reply from NSW Workcover was a typical public service one but astounding nevertheless – it was stated that fees under NSW Workcover are 'set' by the AMA, that it is illegal to charge more than this and if I have a problem with the level of fees I need to argue with the AMA, not NSW Workcover. This situation is nothing short of a disgrace.

I have resigned from the AMA because it has had a long-standing view that sports physicians' services are less worthy than other musculoskeletal physicians. If I want to argue the case for equal pay under Workcover for equal services, it is bizarre that to have the right to make this case I have to pay a hefty membership fee to a blatantly political group which unfairly discriminates against my specialty. It is ridiculous that a government body – NSW Workcover – has made the AMA the *de facto* body which is responsible for fee capping. I doubt that in the near future the AMA will change its stance that sports physicians are less worthy than other physicians. But maybe in 2011 I will have completely changed my mind and be thanking the AMA for their bigotry, as the end result could be that my practice is far more pleasant if I have refused to see all Workcover patients as a result of the AMA's stance on my specialty.

One group of patients I will never tire of seeing are the country folk who drive five hours to see a doctor they think will help them with a long-standing problem. Although I could easily see myself working in the country in 20 years time, it won't be happening any time soon. I'm not putting my own hand up to work in the bush at the moment and I don't believe any doctor should be forced into doing so. What I do believe is that if you have enough sports physicians graduating from the training program, then eventually some of them are going to decide that being the only sports physician in Wagga Wagga or

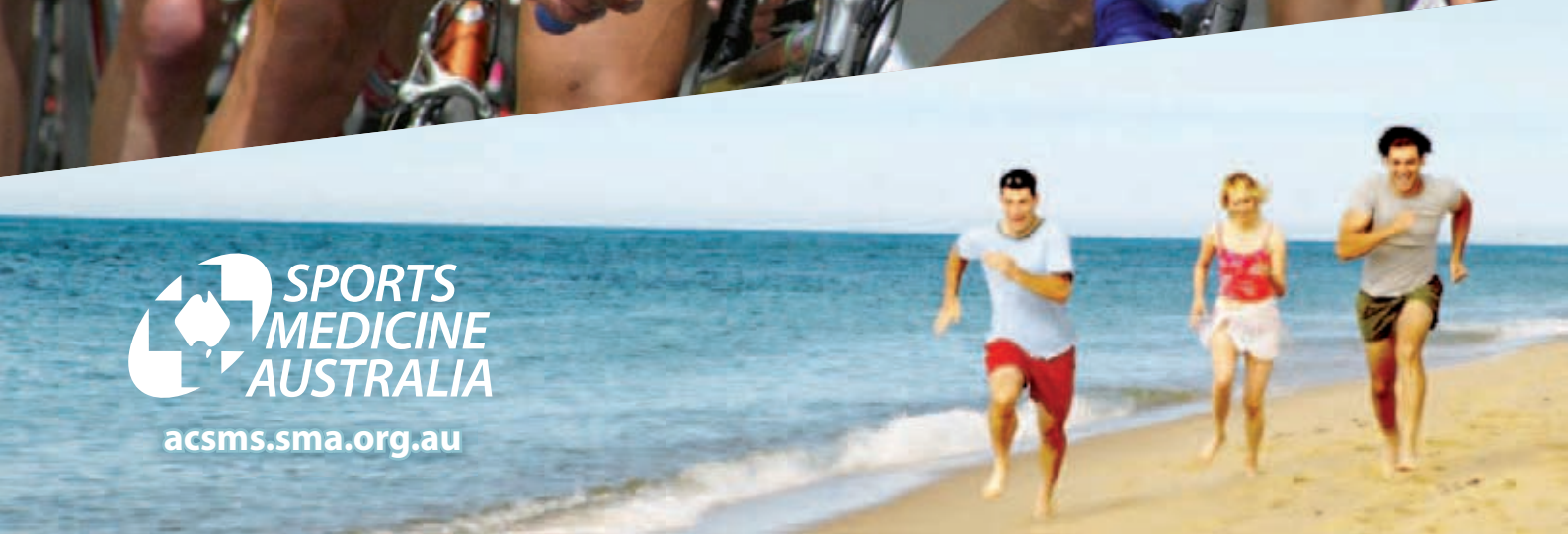
Albury or Coffs Harbour is a more attractive professional and lifestyle option than being the fortieth-most experienced sports physician in inner Sydney. If the country independents can't successfully argue for extra medical specialty training funding, at the very least they will hopefully argue for high speed rail links to the country areas. If there isn't the will to get enough medical specialists trained by our health system, at the very least you can offer country people a fast train to get them into the cities for their appointments.

Dr J

australian conference of

SCIENCE & MEDICINE IN SPORT

Fremantle, 19 - 22 October 2011



SPORTS MEDICINE AUSTRALIA

acsms.sma.org.au

The trade-off between stability and morbidity in reconstructive surgery

Abstract

Traditional orthopaedic teaching has suggested that there is a 'gold standard' operation for every surgical complaint. When a novel surgical technique is proposed, it is often compared to the traditional procedure in a controlled trial to assess which is the 'superior' procedure, using global analyses of function. There has been an evolution of multiple surgical options for particular sports injuries which are difficult to separate using overall scores. This means that the traditional view of surgery needs to be reassessed for diagnoses such as anterior cruciate ligament tears, patellofemoral instability, anteroinferior glenohumeral instability, footballers' groin pain and ankle syndesmosis sprains. For all of these diagnoses, there may be multiple surgical gold standards. The operation which provides the best stability for these diagnoses is not necessarily the one with the least concurrent morbidity, best preservation of joint mobility and quickest recovery time. Depending on the sport, player position, age, level of competition, stage of playing season and patient preference, a different reconstruction procedure may be indicated in different circumstances for the same diagnosis.

Sports medicine is one of the newest medical specialties. Depending on the country it can be a stand-alone physician specialty, a primary care and/or orthopaedic subspecialty or all of the above. In the USA, there is an orthopaedic subspecialty of sports medicine, although in other countries orthopaedic surgeons tend to subspecialise based on region (e.g. knee; shoulder; foot and ankle).

In the field of sports surgery, the majority of joint operations can be roughly divided into arthroscopic debridement procedures, which are less invasive and have a quicker recovery time and reconstructive procedures, which have a longer recovery time as they involve tissue repair. Classical reconstruction procedures include knee anterior cruciate ligament (ACL) reconstructions and shoulder reconstructions for anteroinferior instability. Arthroscopic debridement procedures (such as partial menisectomy) revolutionised sports surgery in the early 1980s with respect to rapid return to sport. Joint reconstructions had an equally revolutionary effect in that athletes who would have previously needed to retire from sport due to chronic instability were able to return to high level play after surgery.

By the late 1980s, middle third bone-patella-bone grafts had been established as the 'gold standard' for ACL reconstructions[1]. In a similar fashion, open Bankart repairs became the 'gold standard' for glenohumeral reconstructions[2]. These operations have a high success rate in terms of return to professional level sport[3]. Their downside is a significant post-operative morbidity and a long recovery period, which have been accepted as being preferable to instability recurrence or retirement. Since the 1990s, alternative procedures have been performed seeking the same results in terms of resolution of instability but with a more rapid recovery time and less associated surgical morbidity. The uptake and preference for the more contemporary procedures has varied from surgeon to surgeon, with the concept of a single 'gold standard' harder to justify.

Management of ACL tears

The ACL reconstruction is the definitive sports orthopaedic operation and one which has certainly led to more publications than any other reconstructive procedure. Despite hundreds and thousands of publications regarding surgery, there are a vast number of techniques for ACL surgery with very little proof of superiority of one technique over another[4]. An exception to this may be that recent publications are reporting superiority in outcomes for femoral tunnels which are drilled through a medial portal compared to using a transtibial approach[5]. Now that the Scandinavian countries have ACL registers[6], real-world outcomes related to surgical technique differences will be better uncovered.

The most commonly-used grafts for ACL reconstructions worldwide are autologous mid-third patellar tendon with bone blocks (BTB) and autologous hamstring tendons (HT)[1,7]. Many papers have compared outcomes between the two and most meta-analyses find that overall clinic outcomes are very similar[4], with the BTB grafts leading to slightly greater stability and the HT grafts leading to slightly less morbidity. Nevertheless there is a worldwide trend (which is more pronounced in Australia and Scandinavia than the USA[7]) towards HT grafts over BTB grafts, as more patients prefer low morbidity over greater stability.

Until recently in Australia, it had been accepted that an ACL reconstruction took a minimum of 6–12 months to recover from. Two historical false starts in trying to reduce the recovery time had entrenched this belief. Artificial grafts had been tried, generally without success, in the late 1980s[8]. Five month return (or less) after autologous graft reconstructions wasn't uncommon in the 1990s, but high profile cases such as Melbourne AFL player David Schwarz[9], who had a very successful return game under four months but reruptured in his second game, has scared many doctors away from advocating early return. In the USA, allografts (cadaver grafts) have been the option of choice for reducing morbidity and speeding up recovery[7]. It is now felt that the quicker recovery is at a cost of reduced stability[10]. Despite the success of Alisa Camplin in returning to the winter Olympics within four months of an allograft ACL reconstruction, this technique has not taken on in Australia like it has in the USA.

Australia may have, however, become a pioneer country in the use of LARS ligaments for ACL reconstructions. The early published series have mainly arisen from Asia[11], but Australia has been the first country where multiple professional football players have taken the LARS option. In 2010, David Rodan in the AFL and Luke Covell in the NRL have made successful in-season returns after LARS reconstructions. The first Australian players to have a LARS reconstruction, Nick Malceski, has also returned to his best form (two years post-surgery) and shown that a LARS ligament can get a good longer-term outcome. It is telling that both Malceski and Rodan took the plunge to have a LARS reconstruction having previously come back from traditional reconstructions on their respective opposite knees. The Covell history provides an example of an athlete type (late in his career and in the final year of his contract) who definitely needs a rapid-return option available. A traditional reconstruction would have meant that he needed to retire immediately after his ACL injury, whereas the LARS option meant he was able to play a good number of games in his last season.

I would be surprised if the long-term stability of LARS ligaments was able to match autologous grafts and expect they will eventually be shown to have a similar profile to allografts, although it is already clear that LARS ligaments are substantially better than the artificial ligaments of the 1980s. However, I've already been surprised at their success so far and it isn't inconceivable that they may become the graft of choice in the future. At the minimum, if we presume long-term stability results similar to allografts, an athlete needs to weigh up the stage of the season (and more importantly stage of their career) when deciding whether to take a high stability/high morbidity option or a low morbidity/quicker return option (Table 1). Even though the LARS technique is the latest trend in Australia, it is worth remembering that there are other options which can lead to a more rapid return than a traditional autograft, including allografts from cadaver, allograft from living relative and repair/conservative treatment for a partial injury.

Figure 1 – Arthroscopic ACL reconstruction

Table 1 – Factors which would affect choice of reconstructive surgical procedure

Factor to consider	Situation where stability is more important	Situation where less morbidity/rapid return is more important
Age of patient/player	Younger player	Older player
Contract status (for professional player)	Early in a multi-year contract	Last year of contract
Stage of season	Late in the season (where return at 2–4 months is not possible)	Early in the season (where return at 2–4 months would be possible)
Type of lesion	Complete rupture with secondary structures damaged	Isolated/partial lesion

Management of shoulder instability

Shoulder instability is another common injury presentation that generally requires surgical management in contact sports. There is now a well-established continuum from rapid return through external rotation brace, arthroscopic stabilisation and open stabilisation without and with a bone graft. As the surgeon moves along the continuum, the recurrence rates for further instability episodes reduce, but the recovery time (and potential for loss of shoulder range of motion) increases. Different surgeons will have a preference for different types of management. The French often use Latarjet procedures in their rugby players as a standard part of the reconstruction[12], but in Australia we prefer more simple Bankart repairs. Perhaps though it should be athlete factors rather than surgeon preference which determine the balance of risk/benefit for each technique (Table 1). Even the staunchest advocate for early surgery in shoulder instability could not mount a serious argument that Buddy Franklin, for example, should have had shoulder stabilisation surgery mid-season in 2008 in preference to opting for non-surgical in-season treatment, which allowed him (and his team Hawthorn) to win an AFL Premiership. Perhaps the options in shoulder surgery for an AFL/NRL 26 week competition (depending on situation) might now look like something in Table 2 (see overleaf).

Table 2 – Stage of 26 week season and best management of anterior shoulder dislocation with soft tissue Bankart lesion

Stage of season	?Preferred management	Recovery time	Matches missed	Recurrence rate
Pre-season at least 6 weeks prior to start of season	Acute arthroscopic repair	4 months	<=8 matches	?15–20%
Pre-season within 6 weeks of start of season	Conservative treatment in external rotation brace	6–8 weeks	<=4 matches	?30%
Week 1 to Week 18	Standard conservative with rapid mobilisation	<=4 weeks	<=4 matches	?40–60%
Week 18 to Week 26 (team not likely to play finals)	Open shoulder reconstruction	6–8 months	Few and of little consequence	?10%
Week 18 to Week 26 (team likely to play finals)	Standard conservative treatment with rapid return to play	2–3 weeks	2 matches	?50% because of fewer matches
Post-finals having negotiated through season with ongoing symptoms	Arthroscopic shoulder reconstruction	4–6 months	None	?15%
Post-dislocation after previous failed surgery	Latarjet procedure	7–9 months	Many but career-threatening injury	?10–15%

Management of patellofemoral instability

Patellofemoral instability presents a very similar management dilemma to glenohumeral instability. It can sometimes be good management to avoid surgery altogether, which allows relatively rapid return to sport but with a relatively high rate of re-dislocation. The surgeon can progressively increase the degree of stabilisation (lateral release, medial patellofemoral ligament repair/reconstruction[13], tibial tubercle transfer) where each upgrade reduces recurrence rate but increases recovery time (and secondary quadriceps wasting). As surgeons reflect patient preference, the low morbidity options tend to be the most popular for both amateur and even professional players. However, the lower-morbidity procedures can fail and in situations where stability becomes of greater importance then there are 'belt and braces' methods to lower recurrence rates even further.

Management of syndesmosis sprains

Management of syndesmosis injuries ('high' ankle sprains) is not as well understood as an entity, but it is established that surgical fixation is sometimes required. Many syndesmosis sprains will respond well to non-surgical treatment, but in some cases, ongoing diastasis after initial management can lead to chronic morbidity (and become a career-ending injury in professional athletes). The cut-off line between non-surgical and surgical management is therefore not easy to define. A sensible anatomical cut-off might be whether or not there is diastasis on a weightbearing X-ray. However, Table 1 reminds us that a recommendation should be based on the whole patient rather than just the lesion. Like the other situations presented, non-surgical treatment can offer a quicker return with low morbidity. In terms of surgical management, there are now multiple options. The traditional method of syndesmosis screw fixation (which generally requires screw removal as a second procedure) has a high success rate but slow recovery rate (and incidence of post-operative stiffness). Flexible wire fixation (e.g. the 'tightrope' procedure) offers a middle ground between screw fixation and non-surgical treatment[14], with a more rapid return but to date without the same proven success in correcting the instability.

Management of chronic groin pain in footballers

If it is fair to say that the pathology in syndesmosis sprains is not completely understood, this admission would certainly apply to the entity known as athletic publagia (or the footballer's groin)! The pathology is potentially any or all of part bony stress lesion, part tendinopathy, part arthropathy and part instability. If that still sounds comprehendible, referred pain from the hip joints, lumbar spine, sacroiliac joints and even the prostate gland or possible infection need to be considered as part of the differential diagnosis. Depending on where you go in the world (and this refers to city and even clinic as much as country), experts can prefer either conservative treatment, minimally-invasive soft tissue procedures, more definitive soft tissue procedures and even bony procedures. General surgeons will prefer to operate from the abdomen down and orthopaedic surgeons at the level of the symphysis and below. Some surgeons prefer the one procedure so much

that it becomes eponymous (Gilmore, Lloyd, Muschaweck) whereas others will perform a multitude of different surgeries depending on the presumed pathology[15]. Despite the enormous grey areas, the principle espoused in this article applies to the footballer's groin. If rapid return/ongoing play is possible and highly beneficial, then conservative treatment should initially be preferred and, if surgery is required, a minimalist procedure such as an isolated adductor release[3] or an endoscopic hernia repair should be the preferred management. For a more protracted case then an open combined inguinal reconstruction/adductor release may be considered[15] or even a bony debridement procedure[16] if there is evidence of significant degenerative change. An interesting extension of this line of thinking is unanswered in 2010: does the ultimate stability procedure (a pubic symphysis stabilisation or even fusion) have a place at the top of the chain in sports surgery? These were not uncommonly performed on athletes in the 1970s, but reports since then have been very isolated[17]. For small joints where the movement can be 'sacrificed' (e.g. a finger DIP joint), fusion is often a better alternative than attempts at repair. For larger joints (e.g. the lumbo-sacral articulation) fusion is known to be an end stage definitive surgical option with the significant issue of late stress transference to nearby joints. Whether the positive (of removing instability/movement) would outweigh the negative (of stress transfer to the hip joints etc.) in pubic symphysis stabilisation is an important question. The principle is consistent with the thesis of this article, however, there appears to be a trade off between stability and morbidity/return time for many of the common sports surgeries.

Conclusion

The concept of the 'gold standard' surgery for a particular condition may be outdated for many of the common sports injuries encountered. Pathology only exists in the context of a patient who may be young or old, high or low demand and with a good or problematic prognosis. Sports surgery has advanced so that multiple techniques have been established for the one pathology. The technique offering the most definitive stability is generally not the one with the most rapid return to sport and lowest morbidity. Table 3 offers a summary of the continuum between the surgical (and sometimes non-surgical) options for some of the common severe sports injuries.

Table 3 – Comparison of stability and morbidity trade-offs

Diagnosis	Least stable Low morbidity Quickest recovery	Medium trade-off	Very stable Higher morbidity	Most stable; highest morbidity
ACL tear	LARS ligament/allograft/ conservative	Hamstring graft	BTB (patellar tendon) graft	BTB + extra-articular augmentation
Bankart lesion	Capsular shrinkage	Arthroscopic Bankart repair	Open Bankart repair	Latarjet procedure
Syndesmosis sprain	Boot immobilisation with accelerated return	Plaster or NWB boot for 6 weeks	'Tightrope' procedure	Screw fixation
Patella instability	Brace	Lateral release/ arthroscopic lavage	Repair/ reconstruction of medial patellofemoral ligament	Tibial tubercle transfer
Footballer's groin	Conservative treatment	Adductor procedure or endoscopic hernia repair	Open combined adductor release/ inguinal reconstruction; wedge resection	Pubic symphysis fusion

John Orchard

Adjunct Associate Professor
University of Sydney

References

1. Bartlett R, Clatworthy M, Nguyen T. Graft selection in reconstruction of the anterior cruciate ligament. *J Bone Joint Surg Br* 2001; 83B:625–634.
2. Langford J, Bishop J, Lee E, Flatow E. Outcomes following open repair of Bankart lesions for recurrent, traumatic anterior glenohumeral dislocations. *Orthopedics* 2006; 29(11):1008–13.
3. Orchard J. Surgical procedures performed at an NRL club over 10 years. *Sport Health* 2009; 27(1):17–29, http://www.injuryupdate.com.au/images/research/NRLsurgerySH.pdf.
4. Spindler K, Kuhn J, Freedman K, Matthews C, Dittus R, Harrell F. Anterior cruciate ligament reconstruction autograft choice: bone-tendon-bone versus hamstring: does it really matter? A systematic review. *American Journal of Sports Medicine* 2004; 32(8):1986–95.
5. Orchard J. When a tunnel downgrade is a surgical upgrade: why getting an ACL register in Australia is so critical. *Sport Health* 2009; 27(2):4–9.
6. Granan L, Forssblad M, Lind M, Engebretsen L. The Scandinavian ACL registries 2004–2007: baseline epidemiology. *Acta Orthopaedica* 2009; 80(5):563–67.
7. Magnussen R, Granan L, Dunn W, Amendola A, Andrish J, Brophy R, et al. Cross-cultural comparison of patients undergoing ACL reconstruction in the United States and Norway. *Knee Surgery, Sports Traumatology and Arthroscopy* 2010; 18(1):98–105.
8. Legnani C, Ventura A, Terzaghi C, Borgo E, Albisetti W. Anterior cruciate ligament reconstruction with synthetic grafts. A review of literature. *Int Orthop* 2010; 34(4):465–71.
9. Richardson J. The prognosis for ACL injuries. *Science Alert*, 2007:http://www.sciencealert.com.au/features/20072310-16481.html.
10. Krych A, Jackson J, Hoskin T, Dahm D. A meta-analysis of patellar tendon autograft versus patellar tendon allograft in anterior cruciate ligament reconstruction. *Arthroscopy* 2008; 24(3):292–8.
11. Liu Z, Zhang X, Jiang Y, Zeng B. Four-strand hamstring tendon autograft versus LARS artificial ligament for anterior cruciate ligament reconstruction. *Int Orthop* 2010; 34(1):45–9.
12. Latarjet M. Surgical techniques in the treatment of recurrent anteroinferior dislocation of the shoulder. *Lyon Chir* 1965; 61:313–8.
13. Camp C, Krych A, Dahm D, Levy B, Stuart M. Medial patellofemoral ligament repair for recurrent patellar dislocation. *American Journal of Sports Medicine* 2010: Epub ahead of print.
14. Cottom J, Hyer C, Philbin T, Berlet G. Treatment of syndesmotic disruptions with the Arthrex Tightrope: a report of 25 cases. *Foot & Ankle International* 2008; 29(8):773–80.
15. Meyers W, McKechnie A, Philippon M, Horner M, Zoga A, Devon O. Experience with 'sports hernia' spanning two decades. *Annals of Surgery* 2008; 248(4):656–65.
16. Radic R, Annear P. Use of pubic symphysis curettage for treatment-resistant osteitis pubis in athletes. *American Journal of Sports Medicine* 2008; 36(1):122–8.
17. Williams P, Thomas D, Downes E. Osteitis pubis and instability of the pubic symphysis. When nonoperative measures fail. *American Journal of Sports Medicine* 2000; 28(3):350–5.

The Toronto Charter for Physical Activity

What it means and how it should be used

Introduction

Despite several decades of convincing accumulated scientific evidence for the health and societal benefits of a physically active population, there is still difficulty in translating this evidence into consistent public policy which reflects best practice in public health. The Toronto Charter for Physical Activity (reproduced on pages 21–26) is an attempt to build a tool to aid advocates and policy makers in understanding how to implement policy that will help get people more active.

Development of the Toronto Charter mirrors other guiding documents in the field of health, such as the longstanding Alma Ata Declaration on Primary Health Care (1978) and the Ottawa Charter for Health Promotion (1986). Such documents provide a framework within which public health delivery, advocacy and policy can operate, and have shown considerable success in promoting relevant health initiatives.

After two years of consultation and development, the Toronto Charter is intended to be a 'unifying tool' for advocates of physical activity to push for greater political and social commitments to support physical activity for everyone, according to Dr Fiona Bull from Loughborough University who co-chaired the committee developing the Charter.

The committee of experts who brought the Toronto Charter together are Dr Adrian Bauman, Dr Fiona Bull, Dr Lise Gauvin, Dr Bill Kohl, Dr Art Salmon, and Mr Trevor Shilton.

The Charter was ratified and launched at the 3rd International Congress for Physical Activity and Public Health, in Toronto, May 6-10 2010. In much fanfare, the delegates at the congress had an opportunity to provide last minute feedback and sign a copy of the Charter. This followed formal feedback from more than 500 individuals and organisations from 55 countries, and provided over 1,700 comments and suggestions.

How should the Toronto Charter be used?

Whilst having the Toronto Charter is noble, its success will and must be judged on its adoption and use as a guiding framework by relevant authorities around the world. Government and non-government organisations alike could benefit from a clear understanding of the Charter and an appreciation of where it can assist in both current and future policies in a range of areas. The mistake must not be made to think only of the Charter in relation to health policies and initiatives. Without considering the Charter in relation to a range of other policy and practice areas (e.g. sport, leisure, and recreation; urban development and planning; transport; sustainable development), limited success will be gained.

With the advent of new advocacy frameworks such as the Toronto Charter, careful thought is needed as to how to embed the message within relevant people. Whilst every effort needs to be made to educate policy and decision makers at national, regional, and local levels, we concurrently need to be educating the next generation of such personnel. With such wide applicability, as described above, we would be hopeful that undergraduate and postgraduate students in any of the relevant fields come to understand and spruik the importance of the Toronto Charter, as they do for documents such the Ottawa Charter for Health Promotion and those more specific to their discipline areas.

With the health workforce becoming increasingly aware of the role that physical activity plays in health and well-being, it is time to band together to manage this issue. The Toronto Charter contains a framework for action that contains four key areas:

1. The implementation of a national policy and action plan.
2. The introduction of policies that support physical activity.
3. A reorientation of services and funding to prioritise physical activity.
4. The development of strong and broad partnerships for action.

To achieve these outcomes will require broad input from a range of health care practitioners, academics, policy makers, and decision makers.

This is an important enough societal issue for all of us to make a contribution to. Perhaps the lasting legacy of this Charter will be to translate good public health practice into useable physical activity and health policy and practice. Australia, as with many countries, suffers from health being a political issue. No health issue suffers more for this than prevention of chronic disease. Investment in prevention is not immediately paid back. Instead, the return on investment, often many times the initial investment, is years down the road. The Charter further reinforces good public health practice, and the substantial social and economic benefits that are likely to flow form such practice. It is our job to go forth and use this charter, and promote its use to others, especially policy makers.

Grant M Schofield

Centre for Physical Activity and Nutrition, Auckland University of Technology, New Zealand

Gregory S Kolt

School of Biomedical and Health Sciences, University of Western Sydney, Australia

The Toronto Charter for Physical Activity

A Global Call for Action

Physical activity promotes wellbeing, physical and mental health, prevents disease, improves social connectedness and quality of life, provides economic benefits and contributes to environmental sustainability. Communities that support health enhancing physical activity, in a variety of accessible and affordable ways, across different settings and throughout life, can achieve many of these benefits.

The Toronto Charter for Physical Activity outlines four actions based upon nine guiding principles and is a call for all countries, regions and communities to strive for greater political and social commitment to support health enhancing physical activity for all.

Why a Charter on physical activity?

The Toronto Charter for Physical Activity is a call for action and an advocacy tool to create sustainable opportunities for physically active lifestyles for all. Organisations and individuals interested in promoting physical activity can use this Charter to influence and unite decision-makers, at national, regional and local levels, to achieve a shared goal. These organisations include health, transport, environment, sport and recreation, education, urban design and planning as well as government, civil society and the private sector.

Physical activity – a powerful investment in people, health, the economy and sustainability

Throughout the world, technology, urbanisation, increasingly sedentary work environments and automobile-focused community design have engineered much physical activity out of daily life. Busy lifestyles, competing priorities, changing family structures and lack of social connectedness may also be contributing to inactivity. Opportunities for physical activity continue to decline while the prevalence of sedentary lifestyles is increasing in most countries, resulting in major negative health, social and economic consequences.

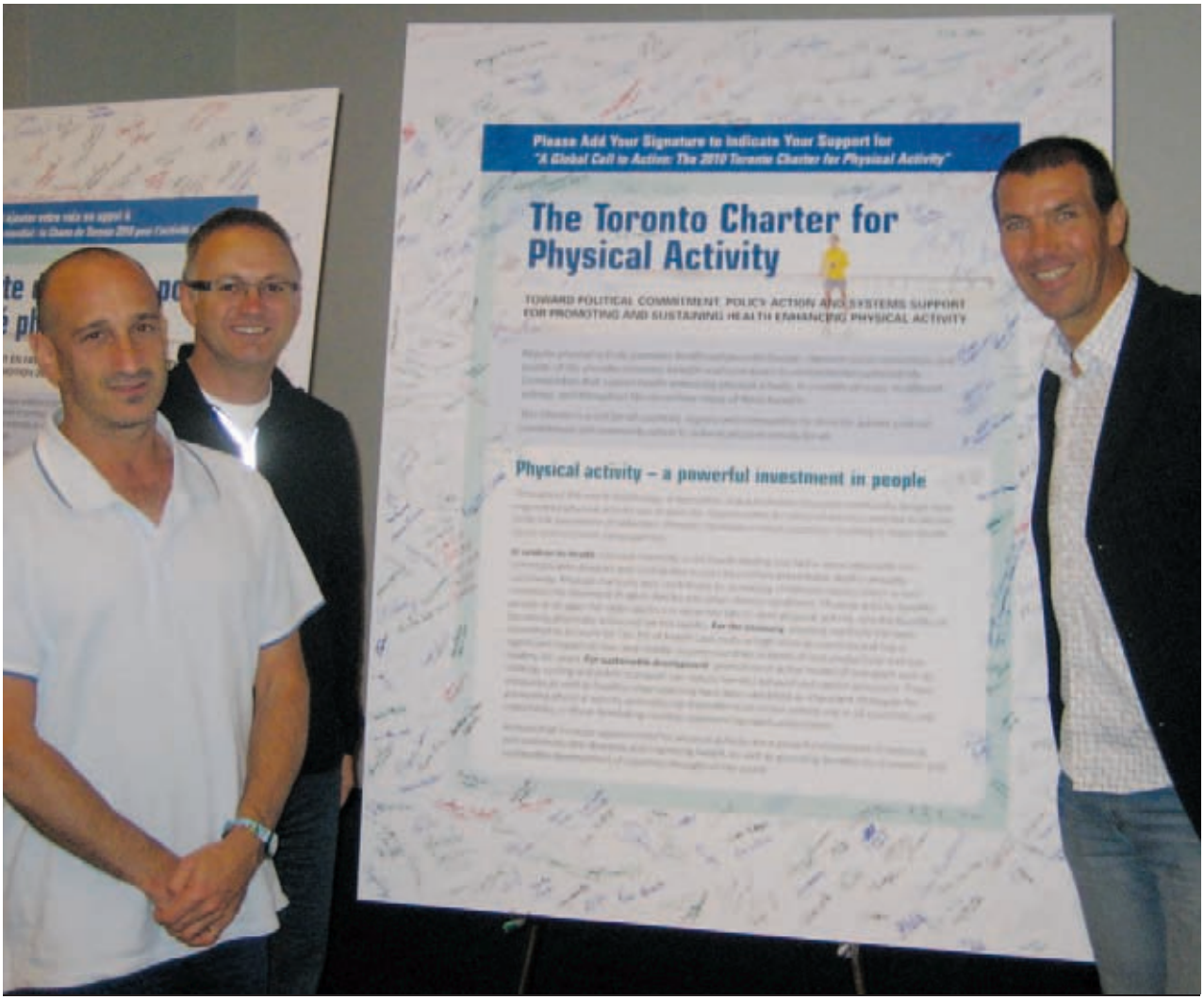
For health, physical inactivity is the fourth leading cause of chronic disease mortality such as heart disease, stroke, diabetes, cancers; contributing to over three million preventable deaths annually worldwide. Physical inactivity also contributes to the increasing level of childhood and adult obesity. Physical activity can benefit people of all ages. It leads to healthy growth and social development in children and reduces risk of chronic disease and improved mental health in adults. It is never too late to start physical activity. For older adults the benefits include functional independence, less risk of falls and fractures and protection from age related diseases.

For sustainable development, promoting active modes of travel such as walking, cycling and public transport can reduce harmful air pollution and greenhouse gas emissions, which are also known to negatively impact health. Urban planning, design and redevelopment that aim to reduce dependence on motor vehicles can also contribute to increased physical activity, particularly in those developing countries experiencing rapid urbanisation and growth. Increasing investment in active travel provides more equitable mobility options.

For the economy, physical inactivity contributes substantially to direct and indirect health care costs and has a significant impact on productivity and healthy life-years. Policies and actions that increase participation in physical activity are a powerful investment in preventing chronic diseases and improving health, social connectedness and quality of life as well as providing benefits for economic and sustainable development of countries throughout the world.

Guiding principles for a population based approach to physical activity

Countries and organisations working towards increasing participation in physical activity are encouraged to adopt the following guiding principles. These principles are consistent with the Non Communicable Disease



Left to Right: Gregory Kolt, Nello Marino and Grant Schofield in Toronto alongside a copy of the Toronto Charter signed by all delegates of ICPAPH 2010.

Action Plan (2008) and the Global Strategy on Diet, Physical Activity and Health (2004) of the World Health Organisation as well as other international health promotion charters. To increase physical activity and decrease sedentary behaviour, countries and organisations are encouraged to:

1. Adopt evidence based strategies that target the whole population as well as specific population sub groups, particularly those facing the greatest barriers.
2. Embrace an equity approach aimed at reducing social and heath inequalities and disparities of access to physical activity.
3. Address the environmental, social and individual determinants of physical inactivity.
4. Implement sustainable actions in partnership at national, regional and local levels and across multiple sectors to achieve greatest impact.
5. Build capacity and support training in research, practice, policy, evaluation and surveillance.
6. Use a life-course approach by addressing the needs of children, families, adults and older adults.
7. Advocate to decision makers and the general community for an increase in political commitment to and resources for physical activity.
8. Ensure cultural sensitivity and adapt strategies to accommodate varying 'local realities', contexts and resources.
9. Facilitate healthy personal choices by making the physically active choice the easy choice.

2

A framework for action

This Charter calls for concerted action across four key areas. This action should involve governments, civil society, academic institutions, professional associations, the private sector, and other organisations within and outside the health sector, as well as with communities themselves. These four action areas are distinct, yet complementary, building blocks for successful population change.

1. Implement a national policy and action plan

A national policy and action plan provides direction, support and coordination of the many sectors involved. It also assists in focusing resources as well as providing accountability. A national policy and action plan is a significant indicator of political commitment. However, the absence of a national policy should not delay the efforts of state, provincial or municipal organisations to enhance physical activity in their jurisdictions. Policy and action plans should:

- Gain input from a broad constituency of relevant stakeholders.
- Identify clear leadership for physical activity, which may come from any government sector, other relevant non government agencies or from a cross sector collaboration.
- Describe the roles and actions that government, not-for-profit, volunteer and private sector organisations at national, regional and local levels should take to implement the plan and promote physical activity.
- Provide an implementation plan that defines accountability, timelines and funding.
- Include combinations of different strategies to influence individual, social, cultural and built environment factors that will inform, motivate and support individuals and communities to be active, in ways that are safe and enjoyable.
- Adopt evidence based guidelines on physical activity and health.

2. Introduce policies that support physical activity

A supportive policy framework and regulatory environment are required to achieve sustainable changes in government and society. Policies that support health enhancing physical activity are needed at national, regional and local levels. Examples of supportive policy and regulations include:

- Clear national policy with objectives for increasing physical activity that state by how much and by when. All sectors can share common goal(s) and identify their contribution.
- Urban and rural planning policies and design guidelines that support walking, cycling, public transport, sport and recreation with a particular focus on equitable access and safety.
- Fiscal policies such as subsidies, incentives and tax deductions that may support participation in physical activity or taxation to reduce obstacles. For example, tax incentives on physical activity equipment or club membership.
- Workplace policies that support infrastructure and programs for physical activity and promote active transport to and from work.
- Education policies that support high quality compulsory physical education, active travel to school, physical activity during the school day and healthy school environments.
- Sport and recreation policy and funding systems that prioritise increased community participation by all members of the community.
- Advocacy to engage the media to promote increased political commitment to physical activity. For example, ‘Report Cards’ or civil society reports on the implementation of physical activity action to increase accountability.
- Mass communication and social marketing campaigns to increase community and stakeholder support for physical activity action.

3. Reorient services and funding to prioritise physical activity

In most countries, successful action to promote physical activity will require a reorientation of priorities in favour of health enhancing physical activity. Reorienting services and funding systems can deliver multiple benefits including better health, cleaner air, reduced traffic congestion, cost saving and greater social connectedness. Examples of actions underway in many countries include:

- **In education:**
  - Education systems that prioritise high-quality compulsory physical education curriculum with an emphasis on non competitive sports in schools and enhancing physical education training for all teachers.
  - Physical activity programs that focus on a range of activities that maximise participation regardless of skill level and that focus on enjoyment.
  - Opportunity for students to be active during class, in breaks, at lunch time and after school.
- **In transportation and planning:**
  - Transport policies and services, that prioritise and fund, walking, cycling and public transit infrastructure.
  - Building codes that encourage or support physical activity.
  - Trails in national parks and preserved areas to increase access.
- **In planning and environment:**
  - Evidence based urban design that support walking, cycling and recreational physical activity.
  - Urban design that provides opportunities for sport, recreation and physical activity by increasing access to public space where people of all ages and abilities can be physically active in urban and rural settings.
- **In workplace:**
  - Workplace programs that encourage and support employees and their families to lead active lifestyles.
  - Facilities that encourage participation in physical activity.
  - Incentives for active commuting to work or by public transport rather than by car.

4

- **In sport, parks and recreation:**
  - Mass participation and sports for all, including those least likely to participate.
  - Infrastructure for recreational activities across the life-course.
  - Opportunities for individuals with disabilities to be physically active.
  - Building capacity among those who deliver sport through increased training on physical activity.
- **In health:**
  - Greater priority and resourcing of prevention and health promotion including physical activity.
  - Screening of patients/clients for levels of physical activity at every primary care consultation, and provision of brief, structured counselling and referral to community programs for insufficiently active patients.
  - For patients with diseases/conditions such as diabetes, cardiovascular disease, some cancers or arthritis, screening by health and exercise professionals for contraindications and advice on physical activity as part of treatment, management and review plans.

4. Develop partnerships for action

Actions aimed at increasing population-wide participation in physical activity should be planned and implemented through partnerships and collaborations involving different sectors, and communities themselves, at national, regional and local levels. Successful partnerships are developed by identifying common values and program activities and by sharing responsibilities, accountabilities and information. Examples of partnerships that support the promotion of physical activity are:

- Cross-government working groups at all relevant levels to implement action plans.
- Community initiatives involving different government departments and non government agencies (for example: transport, urban planning, arts, conservation, economic development, environmental development, education, sport and recreation, and health) working in collaboration and sharing resources.
- Coalitions of non government organisations formed to advocate to governments for the promotion of physical activity.
- National, regional or local partnership forums with key agencies from multiple sectors, and public and private stakeholders to promote programs and policies.
- Partnerships with population sub groups including indigenous peoples, migrants and socially disadvantaged groups.

5

A call to action

A strong body of science supports the benefits of physical activity for health, the economy and the environment. To achieve a greater commitment to increasing physical activity around the world there is an urgent need for clear direction and strong advocacy. The Toronto Charter for Physical Activity outlines four actions based upon nine guiding principles. Implementation of the Toronto Charter will provide a solid foundation and direction for health enhancing physical activity in all countries.

We encourage all interested stakeholders to support the adoption and implementation of The Toronto Charter for Physical Activity and to engage in one or more of the following actions:

1. Show your agreement with the four areas for action and nine guiding principles by registering your support of the Toronto Charter for Physical Activity.
2. Send a copy of the Toronto Charter for Physical Activity to at least five of your colleagues and encourage them to do the same.
3. Meet with decision makers in different sectors to discuss how national plans and policy action following the guiding principles of The Toronto Charter for Physical Activity might positively influence action across sectors.
4. Mobilise networks and partnerships all to support and implement The Toronto Charter.

In turn, members of the Global Advocacy Council for Physical Activity commit to the following actions:

- Translate the final version of the Toronto Charter for Physical Activity into French, Spanish and possibly other languages.
- Disseminate the final version of the Toronto Charter for Physical Activity widely.
- Work with physical activity networks and other stakeholder organisations to further mobilise governments and decision makers throughout the world to increase commitment towards the promotion of health enhancing physical activity.
- Continue to partner with other groups and organisations in order to advocate for health enhancing physical activity throughout the world.

For links to supporting resources and to directly forward The Toronto Charter for Physical Activity to colleagues please visit www.globalpa.org.uk

REPAIR, RECOVER & REFUEL.

The Melbourne Vixens netball team represent their home city in the elite Australia and NZ Championship competition. The Melbourne Vixens includes Australia's best female athletes and a new generation of netball stars, with seven Australian squad members in the team, including recent World Champions Julie Prendergast, Bianca Chatfield and two-time Commonwealth Games gold medallist Sharelle McMahon.

Sports Dietitian Kerry Leech speaks with Sharelle McMahon, captain of the Melbourne Vixens Netball team.

Q. What is your favourite food?
I'm a little partial to chocolate but my favourite meal is chicken and vegetable risotto.

Q. Cereal or toast for breakfast?
Definitely a cereal girl, eating muesli, yogurt and milk helps me to keep going through the morning.

Q. Sharelle, you are working with Netball Victoria as well as playing and training with the Vixens - how do you fit it all in?
I'm very busy. I manage it with a very up to date diary!

Q. So how do you manage healthy meals on the run?
I need to be organised and pack food each morning. It makes drinks like Sustagen important as I can have them in the car on the way to or after training.

Q. What flavour Sustagen is your favourite?
That's easy, Chocolate - I told you I am a chocolate girl!

Q. How do you feel Sustagen helps your recovery?
Netball is a hard game, I tend to come out of each game with a few bumps and bruises. Sustagen after each game helps to get the recovery process started and provides a great source of protein and carbohydrate.

Q. So what now for Sharelle McMahon?
The Vixens are finished for the season but the Australian team has international matches over the next few months against New Zealand and England. So plenty of training camps, travel and tough matches. No slowing down for me!

www.sustagensport.com

VIXENS MELBOURNE

SportsDietitians AUSTRALIA

ACSP President's Conference précis

The last weekend of July 2010 saw the first joint conference between the Australasian College of Sports Physicians (ACSP) and Sports Physiotherapy Australia (SPA) on the *Prevention and Management of Osteoarthritis in the Athlete*.

This was a well-attended and successful event, held at the Australian Institute of Sport in Canberra, with my thanks going to the organising committee for their hard work in bringing the event together, and to the sponsors for their support.

The conference provided a spectrum of research and enabled attendees to be exposed to areas such as animal models and biomechanics that might otherwise not be encountered. Lively discussions that ensued were indicative of the variety of perspectives and interest among the audience, and offered a great chance to informally follow up specific interests.

These discussions showed the virtue in bringing together a diverse group of speakers and delegates. Clinicians in sport and exercise medicine, sports physiotherapists, epidemiologists, biomechanists, rheumatologists and even the laboratory scientists have much to share with each other. It is the insights that all of us would not otherwise receive that make such an event so enriching.

Some key messages from the conference that I felt were especially important were:

The incidence of osteoarthritis across the community is increasing

This is in part related to increasing obesity and inactivity, and possibly what appears to be a declining Vitamin D status. The influence of sporting activity remains unclear, but the evidence of protective benefits in the absence of traumatic injury is accumulating.

There is good reason to assess, and correct, Vitamin D status in anyone with a significant musculoskeletal problem

Joint replacement can be delayed for up to 14 years if Vitamin D levels are maintained. Many injuries in people of all ages, to both joint and bone are associated with low Vitamin D. Often these injuries will respond poorly until the Vitamin D is corrected, as a result of its important effects on both bone and muscle metabolism.

Lack of coordination in care is a major impediment to improvement

At present, there are too many self-interested groups, either duplicating or contradicting advice, much of which is based

on tradition rather than evidence. There is little doubt that government policy will seek to break down barriers between groups and encourage a more cohesive multidisciplinary approach. In an environment such as this conference we felt proud to be at the forefront of such action, and I sincerely hope that the decision makers in government take notice of the good work being done by ACSP and SPA. Whether it happens sooner or later, the advent of accessible electronic health records will have a major influence on patient management, and public funding (or not) of treatment measures.

A number of eminent groups around the world have produced clinical guidelines for osteoarthritis management

Whilst these are evidence based, they are not necessarily logical or clinically useful! In clinical practice, the guidelines should be used as a framework, but sometimes there is no doubt that clinical experience should override the evidence.

As more treatment measures are subject to high quality studies, ideally randomised controlled trials, the major influence of placebo, and the relative impotence of many well-known measures become increasingly apparent

This is not to say that some of our popular measures do not work, but we have to recognise that placebo may make up a large proportion of their benefit. Treatment options where these conclusions have been reached include glucosamine, analgesics, anti-inflammatories, all of the different injections, and arthroscopic washouts. It is not unreasonable or unethical to make use of a treatment where we believe the benefits may be largely placebo. We do, of course, have to consider the cost and potential side effects before going down this path – that is part of combining art and science in good clinical practice.

Among effective measures, the value of even one kilogram of weight loss is repeatedly shown to be the single most useful intervention

Weight loss of five kilograms more than exceeds the benefit of all of the pills, medications, heel wedges, and other related interventions combined. As always, the combination of an effective intervention, that is, weight loss, with exercise, provides even greater benefit. A combination of resistance and aerobic exercise is probably best, but more research is required. This is hardly breakthrough news, but must always be borne in mind when questions about the latest miracle treatment arise. Miracles are usually just that – rare and unpredictable events. Weight loss may be mundane and hard work, but it will work.

Sheets of exercises don't work, but a personalised and guided comprehensive program does

Again, not rocket science, and very much the message we are constantly trying to impress upon our administrators. Patients need the time to receive and implement effective education. This then needs to be followed up to evaluate the response, and progress the treatment regime. This is fundamental to our practice, but so often does not appear to be a model that funding bodies understand. Several comprehensive treatments can work far better than multiple short, cursory reviews.

The medial compartment of the knee is the prime research model in osteoarthritis

The influence of the adductor moment is a key factor in understanding mechanisms and treatments for medical compartment osteoarthritis. The benefit of isolated exercise programs is limited – comprehensive programs will work better. Heel wedges help, but flexible, flat-soled shoes that allow people to feel the ground may be better again. Uneven landing surfaces, with a consequent inability to predict landing forces, increase the adductor moment and risk of damage.

The cause of pain in osteoarthritis remains unknown

Most research is directed at the articular cartilage, but there is no certainty that treating this will make a difference. Animal and human models indicate that disease modifying drugs for osteoarthritis, and not just rheumatoid arthritis, as at present, should be available within the next three years. Doubtless these will be accompanied by a lot of media and marketing fanfare, but it looks unlikely that they will make a real difference, especially when compared to weight loss and exercise.

Future joint ACSP and SPA conferences, looking at other topics, are being considered, possibly again in 2012. I think there is much to recommend events of this nature to really get in touch with the spectrum of research and its applications. There is no doubt that revisiting the question of early onset osteoarthritis in years to come will be well worthwhile.

Andrew Garnham

President
Australasian College of Sports Physicians

PREVENTION IS BETTER THAN CURE.

Wearing the wrong type of sports shoes can be one of the most common causes of sports injuries. Having shoes fitted correctly reduces strain on the entire body and can help your patients to avoid some common injuries. That's why at The Athlete's Foot, our staff are trained in basic foot anatomy and shoe technology to recommend the correct shoe for each and every customer. This knowledge, combined with our exclusive Fitprint® system, guarantees the most comfortable, best fitting shoes every time. To make sure the shoe fits, and fits well, refer your patients to The Athlete's Foot.

The Athlete's foot has over 120 stores across Australia and New Zealand so wherever you are, comfort is just around the corner.

The Athlete's Foot®

www.theathletesfoot.com.au
1800 677 621

5312

Local treatments for patellofemoral pain: evidence and practice

Knee pain is a leading cause of pain and reduced physical function worldwide. Importantly, there is evidence that knee pain in adults is not a self-limiting condition, and that it may precede the development of osteoarthritis (OA) in later years[1, 2]. The most frequent presentation of knee pain in adults less than 50 years is patellofemoral pain (PFP). This common musculoskeletal condition is characterised by a gradual onset of peri-patellar pain that is associated with everyday activities (e.g. stair-climbing, squatting, ambulation and kneeling). Compounding this is the chronicity of PFP. In a prospective study of 63 females with PFP, symptoms persisted in 94% of people at 4 years, and 25% at 20 years[3]. PFP may also result in limitation or cessation of physical activity[4, 5]. Thus, PFP has a substantial impact at the individual level, affecting quality of life and pain-free performance of work-or exercise-related activities in adults. Therefore, it is imperative to determine effective treatments for this painful condition. Conservative interventions are recommended to reduce pain and physical limitations associated with PFP[6–11].

Evidence for multimodal physical therapies

We conducted a rigorous randomised controlled trial (RCT) in 2002, which provided evidence that multimodal physical therapy interventions (including vasti retraining, patellar taping, hip muscle strengthening and soft tissue mobilisation) reduced pain and improved physical function in people with PFP over a 6 week period[12]. More recently, Collins et al[13] conducted a RCT that implemented a similar multimodal regime, observing comparable results. While further rigorous RCTs are required, there is sufficient evidence to support the use of multimodal physical therapies in the management of PFP. Despite this, PFP remains one of the most challenging musculoskeletal conditions managed by clinicians. One likely explanation for the recalcitrance of PFP is the frequently held supposition that the cause of PFP is multifactorial. Therefore, different treatment approaches, targeted to the specific needs of the patient, may be more efficacious.

Vasti retraining

The vastus medialis obliquus (VMO) has long been considered to be implicated in patellofemoral joint dysfunction and pain. As such, many physical therapy interventions have focused on VMO retraining as part of a rehabilitation program. Research has identified a relationship between vasti dysfunction and PFP, particularly the imbalance in the activation patterns of the VMO and the vastus lateralis (VL)[14]. However, conjecture over the relationship between vasti dysfunction and PFP remains[15]. The disparity in the evidence may be attributed to a number of factors, but a likely explanation is that the aetiology of PFP is multifactorial. Individuals with vasti dysfunction comprise a subgroup in the entire cohort of individuals with PFP. While generalised quadriceps strengthening is effective in reducing PFP, the subset of individuals with vasti dysfunction may require specific retraining of the vasti. This is especially the scenario for those with recalcitrant or recurrent symptoms. Vasti retraining follows the usual guidelines for motor retraining programs and has been shown to be efficacious in the management of patellofemoral joint dysfunction when combined with other therapies (patellar taping, hip muscle training and mobilisation)[12, 13]. Furthermore, this combined intervention can improve the onset of VMO activity.

Patellar taping

Taping the patella was first advocated by Jenny McConnell, to improve patellar alignment and VMO activity[16]. Patellar taping involves applying adhesive, rigid, strapping tape to glide, tilt, and/or rotate the patella. Patellar taping has been demonstrated as having significant and clinically meaningful immediate effects on reducing PFP. A systematic review and meta-analysis recently conducted by our research group[17], determined that medially-directed tape decreased pain in people with PFP by 14.7 mm (–22.8 mm to –6.9 mm) on a 100 mm visual analogue scale, when compared to no tape. Importantly, patients can be taught to self-tape, increasing their responsibility in management. Despite the significant immediate effects of taping on PFP, the mechanisms behind the pain relief remain unclear. Proposed taping effects include: (i) changes in patellar alignment; (ii) improvements in quadriceps function; (iii) improvements in the onset or magnitude of vasti EMG activity; (iv) improvements in proprioception. Furthermore, the longer term effects of using patellar taping as an adjunct to physical therapy programs has been evaluated in clinical trials and the results are conflicting. Earlier studies found additional benefit of patellar taping[18, 19], while a more recent paper found significantly greater pain relief in the individuals in the patellar taping group[20]. Based on the available evidence, taping may be advocated as a pain relieving modality, potentially enhancing a patient's ability to perform pain-free exercises and/or activities of daily living.

Clinically relevant predictors of outcome are needed to guide interventions for PFP

In addition to establishing the efficacy of physiotherapy interventions for PFP, studies are required to determine a priori those who will respond favourably to this intervention. Clinical prediction rules enhance clinical decision making and are used increasingly in clinical practice to improve patient outcomes. At present, no studies have looked at clinical prediction rules for multimodal physiotherapy and its components.

Conclusion

Increasingly, therapists are required to make evidence-based decisions regarding the optimal physical therapy treatment for each patient. When treating a patient with PFP, the therapist needs to take into consideration all published evidence, from the systematic reviews and meta-analyses to the case series. However, PFP does not have a homogenous presentation. In light of this, therapists should incorporate the information gained from their clinical assessment of each patient, and use clinical reasoning to ensure that their treatments are patient-specific. This approach should facilitate optimal outcomes for each patient.

Future directions

Future research should focus on the identification of subgroups of people with PFP, and the efficacy of targeted interventions for these subgroups. Continuing research into the aetiology, prevention and management of this painful condition is vital, since PFP is not self limiting, yet little is known about the factors that contribute to its persistence or progression of symptoms and/or joint disease.

Future research should also focus on PFJ OA, a painful condition often affecting adults, with no evidence to support the use of physiotherapy to reduce pain and improve physical function. We are currently undertaking two studies to learn more about PFJ OA. First, we are conducting a RCT of a multimodal physiotherapy intervention for PFJ OA. This project is targeting people aged 40 years and older, with PFJ symptoms and evidence of OA on radiographs. If eligible, they receive eight physiotherapy treatments over a 12 week period (see below or email knee-study@unimelb.edu.au for details). The second study is comparing the biomechanical features (3-dimensional gait analysis, EMG, joint alignments) of people with PFJ OA to a group of healthy, aged-matched controls. So if you are healthy and physically fit and would like to know more about this study contact knee-study@unimelb.edu.au (see below). This could be your chance to be part of a study to understand more about the biomechanics of PFJ OA.

Kay M Crossley

University of Melbourne, Victoria, Australia
Email for correspondence: k.crossley@unimelb.edu.au

References

1 Thorstensson CA, et al., *Annals of the Rheumatic Diseases*, 2004. 63 402–407.
2 Thorstensson CA, et al., *Ann Rheum Dis*, 2008 aheadofprint.
3 Nimon G, et al., *Journal of Pediatric Orthopaedics*, 1998. 18 118–122.
4 Sandow MJ, Goodfellow JW, *Journal of Bone and Joint Surgery*, 1985. 67–B 36–38.
5 Devereaux M, Lachmann S, *British Journal of Sports Medicine*, 1984. 18 18–21.
6 Crossley K, et al. *Clinical Journal of Sports Medicine*, 2001. 11 103–110.
7 Heintjes E, et al., *The Cochrane Database of Systematic Reviews*, 2003. 4.
8 D'Hondt NE, et al., *The Cochrane Database of Systematic Reviews*, 2002. Issue 2.
9 Bolga L, Malone T, *Journal of Sports Rehabilitation*, 2005. 14 72–88.
10 Bizzini M, et al., *Journal of Orthopaedic & Sports Physical Therapy*, 2003. 33 4–20.
11 Vivian D, et al., *Evidence-based management of Acute Musculoskeletal Pain*. 2003, p. 155–182.
12 Crossley K, et al., *American Journal of Sports Medicine*, 2002. 30 857–865.
13 Collins N, et al., *British Medical Journal 2008*. 337.
14 Cowan SM, et al., *Archives of Physical Medicine and Rehabilitation*, 2001. 82 183–189.
15 Chester R, et al., *BMC Musculoskeletal Disorders*, 2008. 9.
16 McConnell J, *Australian Journal of Physiotherapy*, 1986. 32 215–223.
17 Warden SJ, et al., *Arthritis & Rheumatism (Arthritis Care & Research)*, 2008. 59: 78–83
18 Kowall MG, et al., *American Journal of Sports Medicine*, 1996. 24 61–66.
19 Clark DI, et al., *Annals of the Rheumatic Diseases*, 2000. 59 700–704.
20 Whittingham M, et al., *Journal of Orthopaedic & Sports Physical Therapy*, 2004. 34 504–510.

Asics Conference of Science & Medicine in Sport 2010

Port Douglas November 4–6 2010 Refshauge and keynote speaker presentations

Thursday November 4, 2010
9.30am – 10.30am
Mirage Ballroom

‘Exercise science; its role today and through a century’

Bengt Saltin
Director of the Muscle Research Center at the University of Copenhagen

This presentation coincides with the time period during which the field has been an academic discipline at the University of Copenhagen. Established in 1909 primarily as a teaching discipline for physical education students, Johannes Lindhard was the first to become appointed to develop the field. As he was ‘housed’ in August Krogh´s laboratory, research quickly became a key occupation and several of their early joint studies have now become ‘classics’ in the field of exercise science.

Exercise science can be many things. Exercise may be used as an intervention in unravelling regulatory mechanisms of bodily functions or to establish limits for humans to perform or adapt to environmental challenges, but exercise can also be studied to describe demands in specific sports/physical activities and today its role in maintaining health is widely investigated. The applied, main ‘users’ of the knowledge brought about by exercise science research have been the military and industry with sport and medical/health professions to become interested much later.

During this presentation examples of research areas central to the last century will be presented, mostly from the 100 years of research in the Copenhagen laboratory, of which I have been part of for the past 35 years. Examples such as the mechanisms and range of muscle adaption; the true role of the heart in endurance performance; and to quote Jerry Morris why exercise is ‘the best to buy in preventive medicine’, will be discussed. And, the last point to be addressed is whether sport science today is in fact on the right track.

Friday November 5, 2010
9.30am – 10.30am
Mirage Ballroom

‘Are our treatment methods in orthopaedics and sports traumatology evidence based?’

Professor Lars Engebretsen
MD, PhD, Department of Orthopaedic Surgery, University of Oslo, Oslo Sports Trauma Research Center, International Olympic Committee, Medicine and Science Department, Lausanne, Switzerland

This presentation will highlight the current situation for evidence based medicine in orthopaedic sports traumatology. New studies and the current status of the fields of cartilage treatment, ligament reconstruction with a specific eye towards non surgical and surgical treatment, and the relatively new field of prevention of sports injuries will be a focus. This will highlight our current short comings and suggest improvements. The presentation will also be summarised with an example of perfect design, implementation and publication in hip surgery, and with the rules of randomised controlled studies.

A snapshot look at the rules of randomised controlled studies:

1. Studies should be prospective with a clearly defined hypothesis and one clearly defined primary end point. They should be randomised controlled trials with an adequate randomisation procedure and power analysis for the primary end point. Secondary end points should only be used as supportive evidence to the primary hypothesis.
2. Patient inclusion and exclusion criteria should be clearly established and reported. The recruitment rate should be reported, and attempts should be made to account for eligible patients who are not included and those who are lost follow-up.
3. The outcome measure should be validated for use on patients with the injury being researched.

4. Outcome assessment should be made by an independent investigator. The assessment should be in a written form and ideally be completed by the patient without investigator assistance.
5. The timing of the outcome assessment should be clearly stated. Results from various time-points after surgery should not be reported as one outcome. Assessments should be both clinical and functional. The minimum duration of follow-up should be more than twenty-four months.
6. Detailed rehabilitation protocols should be established and reported. Attempts should be made to monitor compliance. The protocols should be applied in a standardised manner to both patient cohorts.

Saturday November 6, 2010
9.30am – 10.30am
Mirage Ballroom

'Genetics and the athlete'

Professor Peter Fricker
OAM FACSP FFSEM(UK)(Hon.) FRACP(Hon.)
Director of the Australian Institute of Sport

There has been a lot of attention paid to the discipline of genetics over the past decade or so, partly because of the wider place of genetics in the public domain and partly because science is pursuing genetics on a number of fronts. Understandably, these two factors are interrelated.

The problem for sport is that genetics as a subject is surrounded by myth, fable and (in my opinion) more than a little disenguity. We need to present the facts on genetics and how this might relate to sport (and therefore the athlete) in all its applications. By these, I mean genetics, genomics, gene technologies, therapeutics, doping and ethics. You can probably think of others.

I am concerned that there are private providers of gene testing services who offer detection of the presence of a gene in you or a family member, but that there is not the requisite level of understanding about what this really means. Certainly such providers advertise their advice to make appropriate decisions on the use of genetic information, but this does not actually mean much when the information needed is unknown, unvalidated, or simply guesswork.

So, what do we know?

We know that genes are the basic physical and functional units of heredity. They are specific base sequences that code for the manufacture of proteins.

In sport a lot of work has been done to look at which genes are associated with particular aspects of sport performance and each year more publications announcing such associations are added to the list. What's missing is the validation of this information such that we know that a particular gene (or combination of genes) is a significant factor in performance. In other words, 'if I don't have this gene I have no hope of becoming a champion'.

Gene doping is a huge concern to sport. Whilst there has been no evidence to date of a gene doped athlete competing at a major event, the World Anti-Doping Agency (WADA) is at the forefront of anti-doping research. It has held a number of international workshops on these particular issues and makes large grants of research funds available for research to establish robust, defensible technologies for the detection of gene doping.

There are, of course, huge ethical questions about the place of genetics in sport. For example, how do we make decisions about the use of screening for particular genes with respect to talent identification, talent selection or tailored training and physical development? Can we exclude people on the basis of the presence of genes which might indicate a risk?

The basis for all decisions on the use of genetic information rests on evidence. We need large studies to establish the facts. We need to assess the **value** of genetic information in determining human performance and in contributing to risk. We need to know just how robust the methodology is for the detection of gene expression before we can insist on athletes volunteering tissue samples for dope testing where gene doping is suspected.

There is more, much more, to be done.

And they're racing…

An insight into the Spring Racing Carnival

With the Spring Racing Carnival in full swing, sports physician and Sports Medicine Australia Member Gary Zimmerman takes us into his world of overseeing the health of our jockeys via his role as Medical Consultant to Racing Victoria Limited.

What is your career background?

I completed my Medical Degree at Melbourne University and undertook training at the Royal Melbourne Hospital. As I was always interested in sports medicine I became one of the inaugural fellows at the Australasian College of Sports Physicians, so I'm one of the 'old' boys.

I suppose in regards to my career I followed in my father's footsteps as he was a GP who looked after Essendon Football Club and jockeys for many years. I, like him, look after an AFL team, the Western Bulldogs, in Melbourne. I've been there for many years now, and I'm also one of the medical consultants at the Australian Open, where I look after elite tennis players when they visit. It's a fun area, because you're looking after highly motivated people who strive to get better, and it's a challenge to achieve that.

I am also in private practice where I treat people from all areas of life with muscular and skeletal injuries.

What is your involvement with Sports Medicine Australia?

When I first started out Sports Medicine Australia was called the Australian Sports Medicine Federation and, especially in my younger days, I was actively involved with the group (I became a member in 1980). It opened a lot of doors for me, such as my involvement with the Olympic movement (I went to the International Olympic Academy as a representative of the Australian Olympic Federation in the 1980s which was a fantastic experience). Currently, I am involved with SMA via its media panel and provide expertise when and where I can.

How did you get involved in working with jockeys?

As my background is in sports medicine, the psychologist for Racing Victoria asked me if I'd be interested in getting involved with treating jockeys. It seemed like history repeating itself as my father looked after a couple of the well-known jockeys right through their careers in the 1960s, so as a kid I knew these guys very well!

What is your role as medical consultant for Racing Victoria Limited?

I oversee the management of Victorian jockeys' injuries to ensure they are fit, well and return to work quickly.

My involvement is not as an on-course doctor, so I'm not at the races, but I am notified after they've been injured. I then liaise with the hospital and medical team, help organise transfers and generally streamline their injury management. I'm on call 24 hours a day, so I am informed of when a jockey gets injured anywhere in Victoria on any given day.

I manage the treatment and look at all the areas that need to be looked at, like exercise, weight management, psychology and rehabilitation. We have a good network and team approach to looking after them.

Part of my role is also to liaise with the family. I speak to the relatives, wives and girlfriends, just to let them know what's going on and reassure them. As you can imagine it would be very traumatic if someone in your family was injured and you didn't know what was going on.

What sorts of medical issues do jockeys have?

Jockeys are athletes by occupation, but they're a unique group in that most of them are lightweight – usually weighing between 50 and 60 kilos – and they sit two metres in the air on a beast that weighs about 500 kilos, travelling at around 60 kilometres an hour. Therefore, these guys don't have a lot of protection. If there's an incident and a horse clips heels, or knocks into another horse or goes over, these guys are propelled through the air like a bullet. Then they've got the problems of the other horses behind them, trampling them and crashing into them. It's a very risky profession but they're a pretty tough group of guys.

Injuries can be simple things like fractures and trauma, but they can also experience major trauma, in which case they're well looked after by the major trauma centres. If the jockey doesn't need a major trauma centre then he or she will usually go to the Epworth Emergency Department.

How do you draw the line between what weight loss practices are acceptable for a jockey's career needs and what is just too unhealthy?

There are supposedly a lot of unhealthy practices that jockeys use to keep their weight down. We understand this is their lifestyle and what goes on in their day-to-day work. Studies have shown that they are chronically dehydrated but able to function cognitively well in their job. Our role is to educate them in proper hydration and dietary advice, alongside consultation with their dietitian, and make sure they're well looked after to prevent negative consequences.

Do you generally get jockeys back on the track quickly?

In the past we had a well-known jockey sustain an ankle fracture during the Spring Carnival. It was managed surgically during the critical racing period and we were able to keep him riding, unbeknown to anyone. He even managed to have a bit of success. As these guys are sportspeople and can make big money at certain times of the year it's important they keep working if they can. We don't want to put them at risk but I enjoy the challenge of trying to get them back as soon as possible with minimum risk.

Who else is in the team?

Des O'Keeffe, CEO of the Victorian Jockeys Association, is a fantastic guy who looks after the jockeys like they are his own children. We have a very good psychologist, Lisa Stevens, welfare officer and person in charge of acute short-term injuries. There are also a couple of people working in risk management. We all have our roles and we have regular meetings where we make sure the jockeys are managed properly.

Does your workload increase during the Spring Carnival?

No, not really. On the big days the racecourse medical officers are the people who do all the acute stuff. I'm not at the racetrack, I don't go to the races all the time, but I'm certainly around in the wings, keeping a low profile and making sure everything that should happen, happens.

What would you say to someone considering a career in sports medicine?

It's a great job because you're always learning. There's not a day that goes by that I don't learn something new. It's a challenge to grow as a practitioner but it's important to try to improve yourself and improve what you do. It's also a very positive area of medicine, it's a lot of fun. While it can be very stressful, especially in the football situations where you have to make quick decisions and there is pressure to get players back quickly while not taking unnecessary risks, it's very rewarding. You don't get bored, I'll put it that way!

And lastly, can you give us a tip for the Melbourne Cup?

The funny thing is I don't bet on horses! I'm not a betting person and I wouldn't have a clue who's running! However, I'd like an Australian horse to win.

Discipline group news and events

Exercise and Sports Science Australia (ESSA)

ESSA in partnership with the Macarthur Division of General Practice (MDGP) have been successful in attaining funding to rollout MDGP's Healthy Eating, Activity & Lifestyle (HEAL) program nationally until 2013.

The HEAL program is an eight week nutrition and physical activity Lifestyle Modification Program that targets adults and adolescents who are at high-risk of developing chronic disease. Allied health providers, namely Accredited Exercise Physiologists and Dietitians facilitate the program, with 150 new facilitators expected to undergo training to deliver HEAL in their local community from January 2011.

"Reducing the burden of overweight and obesity across many Australian communities, and maximising the number of at-risk individuals engaging in regular and accessible physical activity and health education is common to the goals and business of ESSA, and its members," said Anita Hobson-Powell, Executive Officer ESSA.

For all enquiries related to the HEAL program, please contact ESSA National Office, Lyndell Crawford on lyndell.crawford-round@essa.org.au or phone 07 3856 5622.

Sports Doctors Australia (SDrA)

SDrA continues to work closely with the RACGP in the development of the Faculty of Specific Interest in Sports Medicine. This raises exciting possibilities for certain Members and Fellows of SDrA to expand and consolidate their skills and knowledge in sports medicine. It also provides SDrA membership with additional resources and links which were previously unavailable. SDrA values its close relationship with SMA and will continue to strengthen ties and increase involvement at many levels. The respective presidents of SDrA and ACSP continue to explore joint working relations between the two groups and ways of establishing a more inclusive relationship; one that will allow both to collaborate in certain areas so as to improve the profile and provision of sports medicine in Australasia.

For more information visit www.sportsdoctors.com.au

Thomas Myers and his world wide renowned workshops on Anatomy Trains **is coming to Australia!**

In8 Health and www.softtissuetherapy.com.au would like to invite you to participate in this unique opportunity. This is the first time Thomas Myers will visit Australia and teach his Anatomy Trains and Master Classes.

- The workshops will be held in Sydney and Melbourne in early March 2011.
- Seats are limited and already filling up quicker than anticipated.
- Registration forms can be found at **www.softtissuetherapy.com.au** on the homepage adverts or the news section (bottom of page).

More information on the workshops, pre requisites, dates, further reading, can be found at www.anatomytrains.com.au. There are no rain checks so get involved quickly!

Top 10 hottest articles of the *Journal of Science and Medicine in Sport*

April to June 2010

The *Journal of Science and Medicine in Sport*, 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.

The following highlights the most popular article downloads at jsams.org over recent months.

1. Maximising performance in triathlon: Applied physiological and nutritional aspects of elite and non-elite competitions
   Vol. 11, Iss. 4, July 2008, pgs. 407–416
   Bentley, D.J; Cox, G.R.; Green, D.; Laursen, P.B.
2. Vertical jump in female and male basketball players? A review of observational and experimental studies
   Vol. 13, Iss. 3, May 2010, pgs. 332–339
   Ziv, G.; Lidor, R.
3. Physiological attributes of triathletes
   Vol. 13, Iss. 3, May 2010, pgs. 340–347
   Suriano, R.; Bishop, D.
4. Physiological limits to exercise performance in the heat
   Vol. 11, Iss. 1, January 2008, pgs. 66–71
   Hargreaves, M.
5. Does plyometric training improve strength performance? A meta-analysis
   Saez-Saez de Villarreal, E.; Requena, B.; Newton, R.U.
6. A systematic review on the effectiveness of external ankle supports in the prevention of inversion ankle sprains among elite and recreational players
   Vol. 13, Iss. 3, May 2010, pgs. 309–317
   Dizon, J.M.R.; Reyes, J.J.B.
7. Manipulating high-intensity interval training: Effects on VO2max, the lactate threshold and 3000m running performance in moderately trained males
   Vol. 10, Iss. 1, February 2007, pgs. 27–35
   Esfarjani, F.; Laursen, P.B.
8. Nutritional supplementation habits and perceptions of elite athletes within a state-based sporting institution
   Vol. 13, Iss. 2, March 2010, pgs. 274–280
   Dascombe, B.J.; Karunaratna, M.; Cartoon, J.; Fergie, B.; Goodman, C.
9. Predictability of physiological testing and the role of maturation in talent identification for adolescent team sports
   Vol. 9, Iss. 4, August 2006, pgs. 277–287
   Pearson, D.T.; Naughton, G.A.; Torode, M.
10. Anthropometric and fitness characteristics of international, professional and amateur male graduate soccer players from an elite youth academy
    Vol. 13, Iss. 1, January 2010, pgs. 90–95
    le Gall, F.; Carling, C.; Williams, M.; Reilly, T.

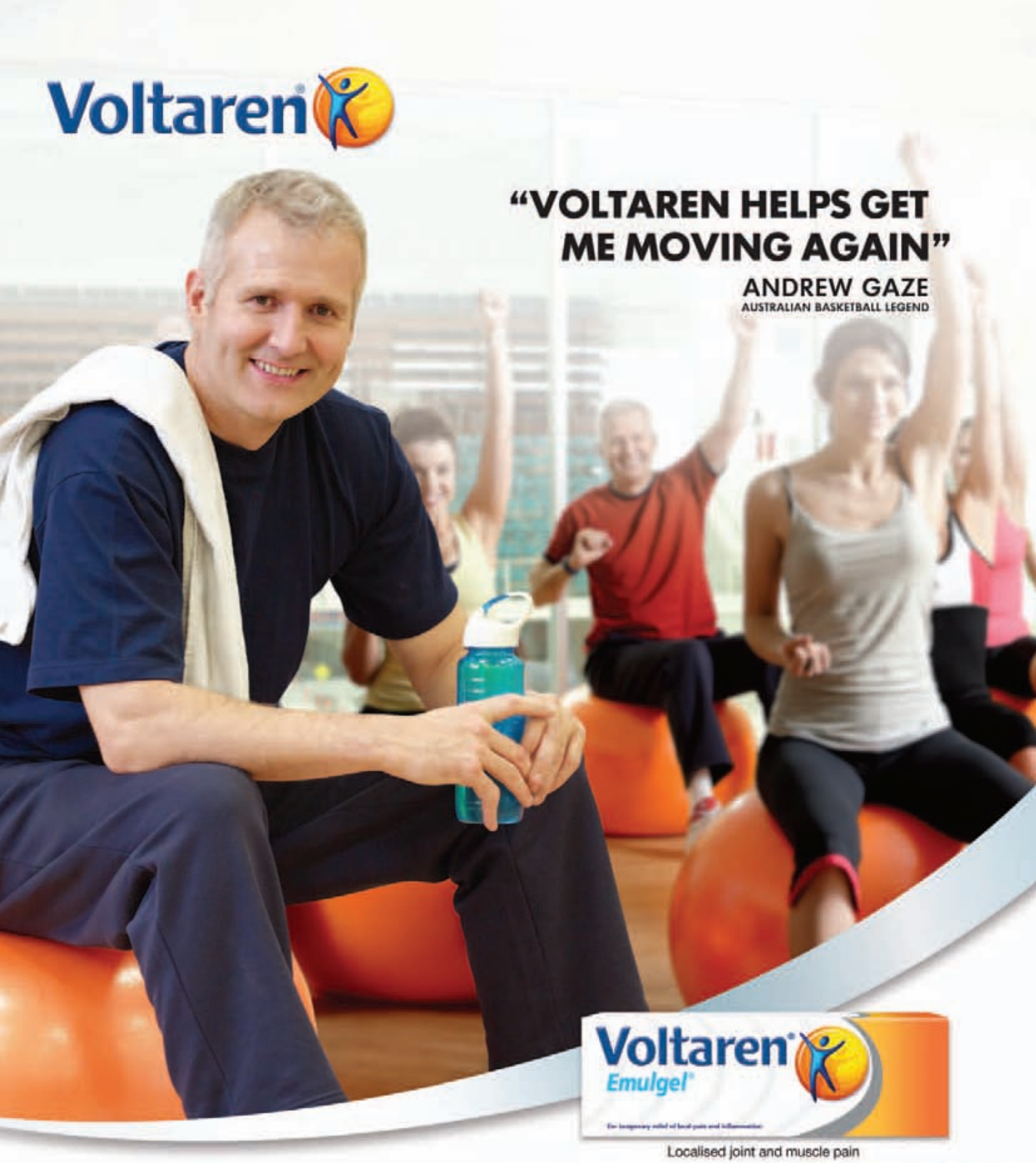
Podcasts

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.*

Voltaren

"VOLTAREN HELPS GET ME MOVING AGAIN"

ANDREW GAZE
AUSTRALIAN BASKETBALL LEGEND



Localised joint and muscle pain

Don't let pain put you on the bench. The Voltaren range contains the proven anti-inflammatory ingredient diclofenac, to relieve pain and inflammation associated with back, muscle and joint injuries. There is a Voltaren product suitable for a range of pain levels, to help get you moving again.

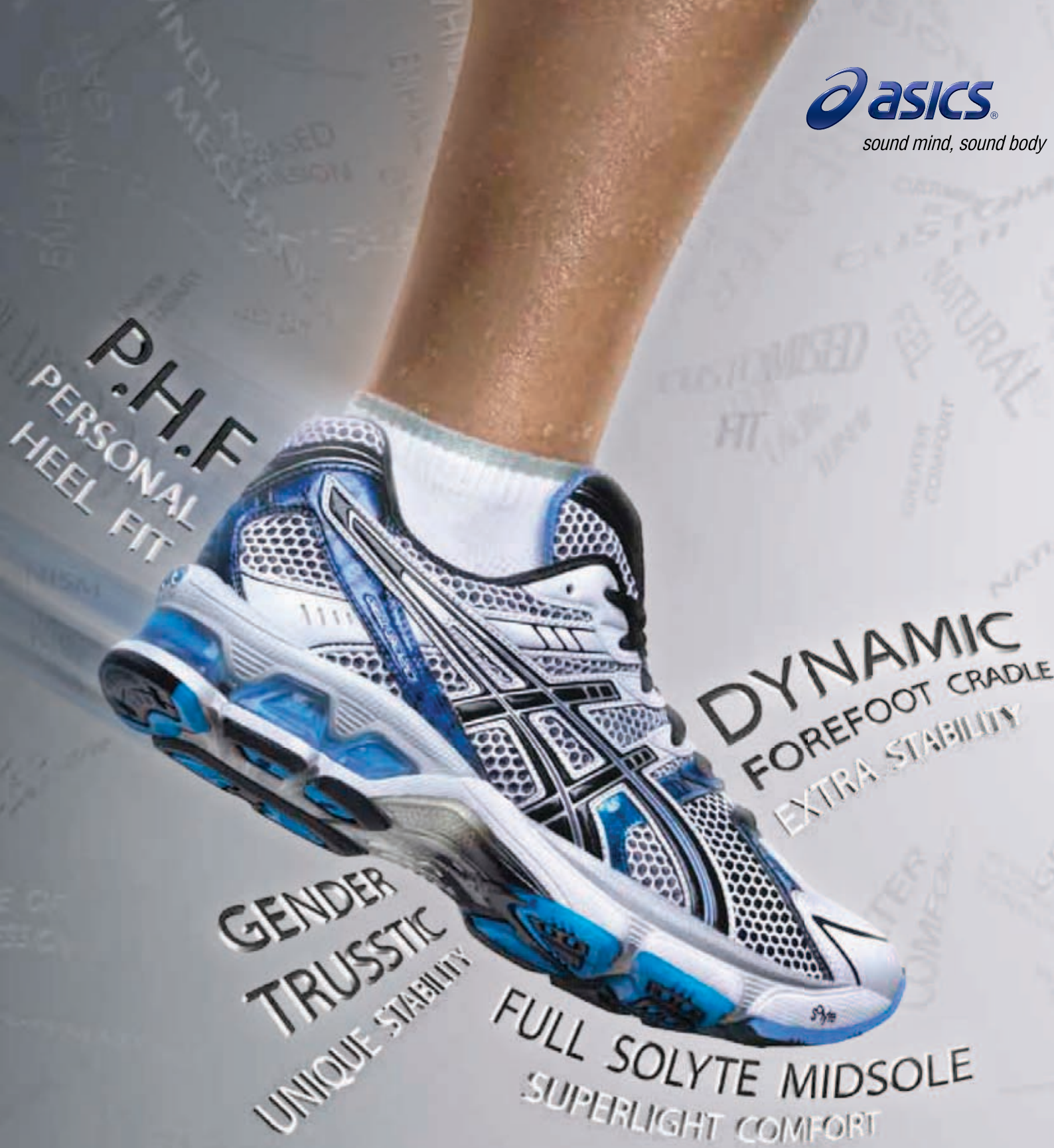
For temporary relief of back and muscle pain

For stronger pain relief that works fast* and lasts up to 8 hours

Sponsors of SPORTS MEDICINE AUSTRALIA

Always read the label. Use only as directed. Consult your healthcare professional if symptoms persist. Voltaren Rapid 12.5 [Incorrect use could be harmful]. Voltaren Rapid 25 [Incorrect use could be harmful, your pharmacist's advice is required]. *When taken at an initial dose of 2 x 25mg tablets. Voltaren Rapid 25 works in as little as 15 minutes.

ASMI 18102-0810



GEL-3020

The all new GEL-3020 is for runners who pronate late in the gait cycle. This development focuses on improved fit and support for this profile of wearer. New features such as Discrete Eyestay Lacing coupled with Biomorphic Fit, PHF, and the soft Bunion Window delivers superb comfort and a customised fit. Also available in a women's version.

For more information on leading ASICS Technology, visit **asics.com.au**, and for the latest product releases, follow us on **twitter.com/ASICSOceania**

SPORTS MEDICINE AUSTRALIA RECOMMENDED