



Soft Tissue Therapy Magazine

## Beijing 2008

The soft tissue wrap-up

### Paralympic glory

STT Brett Robinson gives his perspective

### Finding balance

How STTs can help their clients achieve it

### Literature review underway

Industry to receive more evidence for benefits of massage

### Spare ribs

How breathing patterns lead to muscular injury

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## Editor's note

### Why is the world so busy...



**B**eijing has come and gone and thoughts now turn to Indian Commonwealth Games as the next big event on the sporting calendar. As per usual, the therapists that will eventually provide service at these games are already working and travelling with Commonwealth sports. If you want to get involved, I suggest you start making contact with these sports to ensure they are covered for soft tissue therapy – you never know your luck.

Beijing confirmed the progression of soft tissue therapy as being the most efficient and effective form of treatment for our elite athletes. Both the STTs and physiotherapists worked side by side treating the athletes in a very similar fashion – soft tissue work. The physiotherapists' move from machine-based work to hands-on work has come through outcome-based clinical evidence over the years. Our challenge is to now hold on to this form of treatment as our own. If we don't, our referral for such work will disappear to the physiotherapy lobbying juggernaut.

Congratulations to the Australian Association of Massage Therapy for the introduction of the research foundation and initial literature research for our industry. This will hopefully become a nationally endorsed program that all therapists about the nation can draw from, add to and benefit from. The time has certainly come to step out of our comfort zone with regard to evidence-based treatment. Providing evidence in the future will certainly integrate us into the greater health system and bring new medical referrals, consumer and insurance confidence and greater prospects for the younger generation currently coming through our education system.

Keep an eye out for a one-day soft tissue therapy conference in Melbourne. RMIT will be hosting the conference in late November this year. As usual, the day will promote integration between health professionals, with podiatrists, chiropractors and STTs all presenting on the day. Look on the STT website at [www.softtissuetherapy.com.au](http://www.softtissuetherapy.com.au) for your registration details.

*Yours in Soft Tissue Therapy,  
Brad Hiskins*

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#### Soft Tissue Therapy eMag

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# The wrap-up from the Beijing Olympics



Not only was the Beijing Olympic Games the world's premier sporting extravaganza, it was also a cultural experience. Beijing delivered in all aspects of the games, from the perfectly finished Olympic Village, immaculate venues, timely transport and ever-so-happy and helpful volunteers. China is to be congratulated for delivering such an incredible experience and for allowing the athletes of the world to shine. It was truly a great Olympic Games.

**By Brad Hiskins**

I have been fortunate enough to provide soft tissue services to four Olympic Games. Each has been special in its own way. As any participant will tell you, the first is special simply because it's your first. The enormity of it, the cameras, the athletes, the world's attention and you're right in the middle of it. My second was Sydney, a home Olympics with a massive home crowd. The pride of the country was on show. My third was in the home of the Olympics, Athens. Another unique experience that oozed tradition. And now, Beijing where China gave us an example of what they can achieve on so many levels, both in sport and major event management.

In Beijing, the integration of the Sports Medicine Team was the best I have witnessed. The clinic was set up more like a traditional clinic at home, with a separate waiting room and numerous treatment rooms. In past games, we have had open spaces in large tent-like structures or portable rooms. Although you would expect more interaction in a large open room, the smaller cubicles with

two to three therapists in each room allowed close interaction and communication between the physiotherapy and soft tissue professions. Swapping assessment and treatment protocols and technique administration was a regular occurrence. This environment encouraged best practice treatment of the highest quality. We all learned something and the athletes loved the service provision.

The Headquarters and Recovery Centre Soft Tissue Team did us proud. Feedback from all relevant sports bodies has been collated and once again soft tissue service provision rates as an essential service. The booking system was completely computerised. Statistics were also stored on computer – a very important resource when planning for future Games.

Statistics that show the amount of service provided over the Games reflects the high priority athletes and coaches place on our industry. This gives us a sound platform to develop sports service provision here in Australia and to build a legitimate professional future within professional and amateur sport.

The stats from the Games suggests that the HQ staff alone provided 765 treatments during the Games. This does not count

the treatments provided by sport-specific therapists from sports mentioned below (see STTs to individual teams). Below is a statistical breakdown of which sports utilised our service with HQ. Please note that some sports had their own therapists (for example, football) and those statistics are not provided within this table (stats provided by Tony Ward from the Australian Institute of Sport).

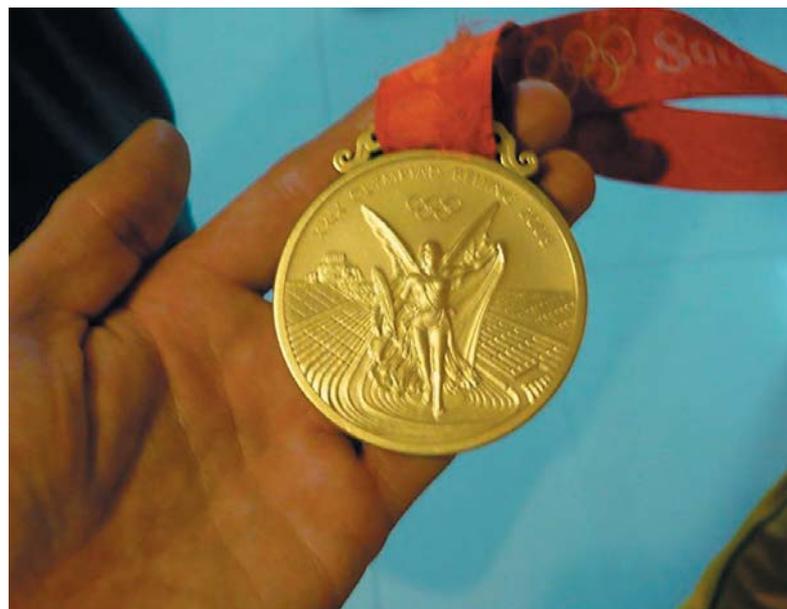
### Soft Tissue

Sport	Bookings	Hours
Archery	10	11.50
Athletics	8	4.75
Badminton	9	13.50
Basketball	87	47.25
Beach volleyball	18	10.75
Boxing	8	6.00
Canoe kayak (flatwater)	23	14.75
Canoe kayak (slalom)	16	8.75
Cycling (road)	1	0.75
Cycling (track)	0	0.00
Cycling (BMX, MTB)	1	0.50
Diving	42	22.00
Fencing	8	5.00
Football	0	0.00
Gymnastics (artistic)	9	16.00
Gymnastics (trampoline)	6	4.00
Hockey	134	87.50
Judo	35	19.25
Modern pentathlon	0	0.00
Rowing	78	46.75
Sailing	1	0.50
Shooting	0	0.00
Softball	16	8.25
Swimming	29	16.25
Syncro swimming	28	14.75
Table tennis	30	14.50
Taekwondo	8	4.00
Tennis	22	13.25
Triathlon	9	5.75
Water polo	66	34.25
Weightlifting	8	4.25
Wrestling	27	14.75
Officials – no sport	28	25.00

The nitty gritty of the games experience is an extensive one. Without delving into every hour of our activities, the basic run-down saw a lead party arrive some time before the Games started. Bernd Adolph (deputy head of service for STT) and I arrived with two physiotherapists, a doctor and our administrator, the wonderful Linda Philpot, to set up the Australian medical clinic.

Four 12-14 hour days were required to get the clinic into working order before the athletes arrived. The entire HQ team, requiring a rather large clinic, was comprised of:

- seven soft tissue therapists (STTs);
- six sports physiotherapists;
- five sports physicians;
- a nutritionist; and
- a psychologist.



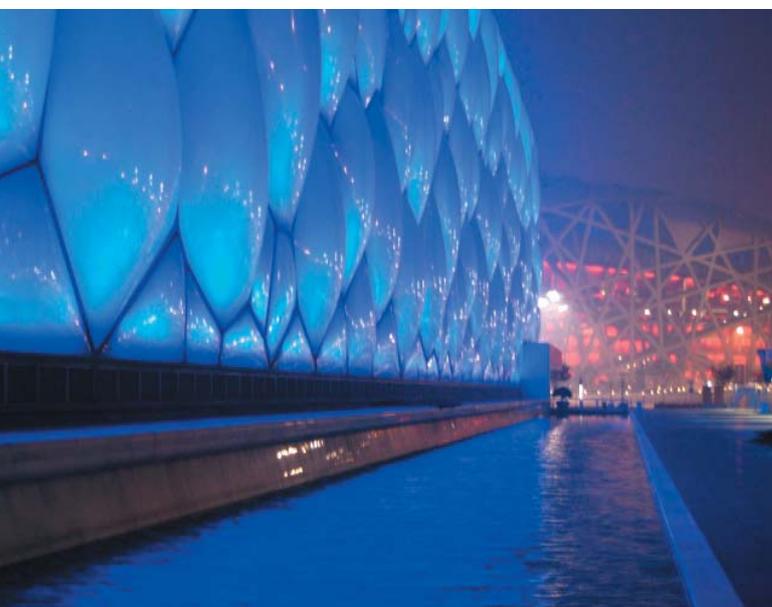
HQ therapists were Brad Hiskins (Head of Service), Bernd Adolph (deputy head of service), Howard Arbuthnot (STT and acupuncture), Narelle Davis, Tricia Jenkins, Katie Pettifer, Tony Bond. There were two people at the recovery centre – Delwyn Griffith and Stuart Hinds.

There were also STTs with individual teams:

#### Sport-specific accredited STTs

Athletics	Bruno Rizzo
Cycling	Christine O'Connor
Swimming	jo-anne Yeoman-Hare + Paul Clinch
Shooting	Darien Roach
Rowing	Tanya Thornton
Men's Soccer	Paul Scott

Continued on page – 6 ↘



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#### None accredited

Triathlon	1
Recovery Centre	3

Before our feet touched the ground, bookings started racking up and it was a case of ‘all hands on deck’.

The clinic was open from 7am until 10pm, although on quite a few occasions we operated well on into the night. The therapists reported for duty in a staggered format to correlate with the arrival of the athletes. A system of rotating rosters – early, day and evening shifts – ensured therapists avoided physical and mental fatigue. The rosters were adjusted according to demand.

We, the entire HQ staff, met each mid-morning to discuss the issues that arose from the day prior, the events of the day and coordination of treating therapists. Issues from stationery to acute care were discussed, a typical clinic meeting that you might be involved with at home, the only real difference probably being the emotional side of the Games – that is, everyone being aware of the possible emotional aspect of individual athletes and coaches during that day. This is a huge part of the Games and one that can be very emotionally draining after 4-5 weeks. Hence, support from your colleagues and awareness of your emotional outlets is paramount.

Treatments were half an hour in duration. There is simply not enough time to treat for any longer due to the small time frames a team may have to receive their treatment. Hence the turnover is quick and your recovery between treatments is about zero. Due to this continual treatment nature, every time you had a break it was another time to walk to the village dining hall (a massive 15,000 seat tent) and eat. In fact, it often felt like that was all you were doing, eating. And before you could blink the day was over and you fell into bed, alarm ready for early the next morning.

An Australian recovery centre, similar to one that operated at the Athens Olympic Games, was in operation in Beijing. The centre was equipped with cold pools, a weights centre, a stretching area, a nutrition recovery centre, swimming recovery pools and a recovery massage centre. This area, serviced by STTs Stuart Hinds and Delwyn Griffith, was for the exclusive use of Australian athletes. This was situated about 30 mins from the Olympic Village and offered the athletes a mental break as well as a physical one.

STTs and physiotherapists worked side by side throughout the Games, utilising the skill sets of each industry to provide a best practice environment. Notably, 99 per cent of the work delivered by both industries was soft tissue work, highlighting the effectiveness and efficiency of our skill set. I hope that we, as an industry, realise the potential of our skill set and take ownership of it because soft tissue work is quickly becoming the main technique utilised by most physical therapy industries.

For those interested in becoming a STT at future games, please refer to the my article in the previous *STT eMag*. Keep in mind that the sports section of our vocation still remains highly voluntary.

My heartiest congratulations to the Australian Medical Team, specifically the Soft Tissue Team, for a job well done and a very big thank-you to the athletes of the world for providing such a magnificent spectacle.

# One world, one dream

This is the motto that all members of the Australian team aspired to at the Beijing 2008 Paralympic Games. Brett Robinson, an STT working at the Paralympics in Beijing, gives his perspective on this incredible event.

**A**s a therapist, not only was it an honour to be working with these elite athletes – who I personally don't think get enough recognition – it was also an eye-opener to be a part of an amazing clinic set up.

With recovery staff, physios, soft tissue therapists and doctors all working together, and a poly-clinic near by with instant scans available for injury diagnosis, it's no wonder athletes who have been to several Paralympics were saying it's the best medical set-up they've ever had.

As a soft tissue therapist for the Athletics team, a typical day would consist of an early start to assist athletes in the first events. As the athletics program was set up with morning and evening sessions, we would do swaps, so the therapists would treat at the track for half the day and back at the clinic in the village for half the day.

The days were often very long, with the Athletics team consisting of 47 athletes. Even with a 10pm staff meeting at the end of each day, this wasn't always the end of treatment time, especially with athletes needing pre- and post-event specifics.

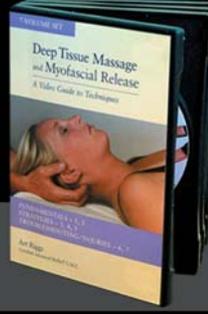
It's impossible to pick one highlight from these Games. Every moment is an experience in itself – from eating in the dining hall with so many different countries, and seeing first-“hand” athletes with no arms eating their dinner with chop sticks, using their feet! Being a spectator at gold medal and record-breaking events, not only in athletics, but wheelchair basketball, swimming – everything. Seeing athletes you've been treating do PBs, win medals and break world records – that's amazing.

My involvement with the Australian Paralympic Team began when I was an athlete myself at the Australian Institute of Sport. I trained as a sprinter under former Ukrainian Head Paralympic coach and now Australian Paralympic coach Irina Dvoskina, which is how I know from experience that these Paralympic athletes are competitive to the able body athletes at a national level. They put in the same amount of time, effort, commitment, and dedication as the Able Bods, whilst battling with their dis-ability.

Therefore undoubtedly the major highlight for me was to sit in the stands of the 'Bird's Nest' and watch my old training partners, who I now treat, win gold medals and break world records. To share that athlete/coach bond in both aspects was very emotional.

They're the goosebumps I'll never forget, they're the tears I'll never regret showing, that's the pride and emotion that makes being a soft tissue therapist at events like this unbeatable!





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# AAMT Literature Review Commences

In good news for the industry, a literature review on the use of complementary therapies for the treatment of medical conditions is underway, with hope that the results will provide remedial and therapeutic massage professionals with further information on the benefits of their practice.

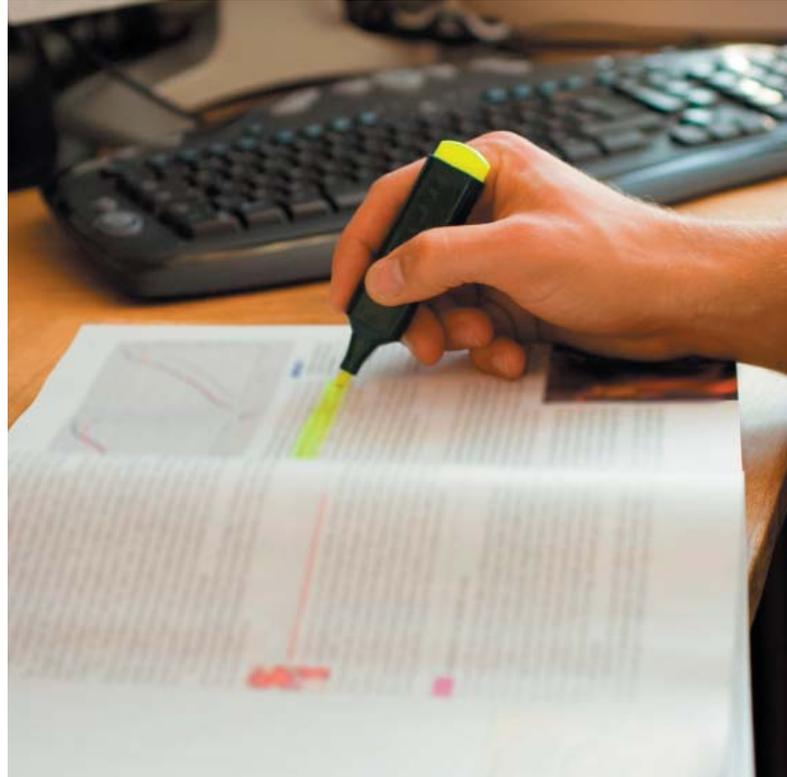
By **Tricia Hughes**

**T**here is evidence of widespread and increasing public interest in the use of complementary therapies, both medicines and physical therapies, for the treatment of medical conditions. Authoritative information about these therapies and their possible benefits or adverse effects on individuals is required to enable health professionals to respond to the needs of clients. This information is also required to generate an increased understanding with medical professionals and allied health in reference to remedial and therapeutic massage.

AAMT is pleased to announce that a Literature Review is underway, conducted by Dr Ken Ng, AAMT member, and supervised under the auspice of RMIT University. Dr Ng has a Bachelor of Medicine and Surgery, is a Level IV Fitness Instructor and holds a Diploma of Remedial Massage. In research, Dr Ng has worked with the University of Melbourne Department of Physiotherapy, Sports Science Institute of South Africa and the Centre for Health, Exercise and Sports Medicine. With a Diploma of Remedial Massage from the South School of Natural Therapies in 2005, Dr Ng also has a history of both spa and sport massage. Professor Marc Cohen, Professor of Complementary Medicine School of Health is the supervisor for this project. The review will obtain summaries from current information from published clinical trials, systematic reviews and observational studies about the effectiveness and safety of remedial and therapeutic massage therapies for improving symptoms and musculoskeletal function.

The review is primarily, but not limited to, targeting treatment of acute, sub acute and chronic musculoskeletal conditions. The review is to explore the evidence, safety and effectiveness of functional conditions and disorders resulting from pathophysiological conditions such as cancer, diabetes, and cardiovascular disease. The aim of the review is:

- To develop a Body of Knowledge (BOK) in abstract that is accessible to members, students and massage therapy colleges from the AAMT website with relevant links to research data from credible sources.



- To integrate information from the AAMT to the Australian Massage Research Foundation for further advancement of massage.
- To develop a BOK that massage therapists can use for the purpose of self-education in assessment and treatment plans with clients receiving therapeutic and remedial massage.
- To develop a BOK that can be used as a basis for further research and available through the Australian Massage Research Foundation website.
- To develop a BOK to be used as a basis for AAMT literature, marketing collateral and editorial.
- A document of the BOK in a summarised and cross tabled document as an AAMT resource.
- An article that summarises the BOK, identifying key findings that is suitable for publication in AAMT journal and a peer-reviewed publication in health.
- A presentation of the BOK and significant outcomes at the 2009 AAMT Conference, to be held 22-24 May 2009.

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# The back pain treatment industry: what's it worth ?

Back pain – cured forever! Pretty unlikely, eh? So you think that you understand the back pain industry? Would you like to do us all a favour and summarise the 34,700,000 links that you would receive in a 0.10 second Google search! How can there be so much information on back pain? And if there is so much known about it, why does back pain still exist?

By Geoff Walker

**T**he back pain juggernaut has taken a relatively new step forward with the recent release of the non-steroidal anti-inflammatory (NSAID), Nurofen Back Pain. Wow, a drug that is so specific that it can selectively relieve back pain while ignoring a painful shoulder? Who knows – maybe so! The Nurofen website also helps us to understand a holistic approach to “healing mind, body, and spirit” through aromatherapy, physiotherapy, chiropractic, osteopathy, acupuncture, among others. One strange omission is remedial massage therapy... why don't we fit into the “holistic approach” of pain control?

We are one of the first lines of defence. As remedial massage therapists and soft tissue therapists, we see a steady stream of clients coming into our clinics with back pain. So most of those 34,700,000 website links are probably missing the mark. Back pain is still one of the leading types of pain and discomfort that we see in our clinics every day.

The complaints we hear come in all shapes and sizes. But they can be summarised like this: “my back hurts *or* I can't move without pain *or* I'm scared to do anything *or* I can't do my job properly”. We are presented with as many clinical presentations as there are clients. So how do we address so many variations of a common theme?

No doubt we have all had a miserable, broken client come to our clinic pleading with us to take the pain away... so how do we do it, or not do it? Whenever a person is in ‘real’ pain, they are at perhaps one of the weakest moments in their life. They will do anything to get relief. They will promise

you riches beyond your wildest dreams and an assurance of life-long dedication to you and your practice – which doesn't sound too bad.

### Why me?

Their pain can be frustrating, debilitating, excruciating, or just plain old painful. The main thing our back pain sufferers want to know is, firstly, when will it go, and secondly, what the hell caused it! Instinctively, the owner of the back pain wants to know ‘what happened’ and ‘why me’... so they can avoid it happening again. That's smart!

### Oh, you have a bad back... (ka-ching, ka-ching!)

This is where the journey, the myths, the conjecture, the educated guesses, the scare tactics and the big machines come into their own – and let's not forget, the big dollars! It can cost thousands and thousands of dollars to treat back pain – with no promises of any solution. Yet, it remains a fact that we still don't have the ‘conclusive research’ to offer any of our back pain clients any guarantees or assurances that they will be fixed.

Even without conclusive evidence (which is vastly different to evidence-based treatment),

therapists will line up to offer their opinion (educated or otherwise) on why back pain exists in a particular person. Any number of rational reasons will be cited for the cause of someone's back pain by a variety of healthcare professionals. But why our obsession with identifying a Holy Grail of back

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pain – why must we have a final, single, inexplicable source of back pain? Often clients will come into our clinics explaining that they have been here or there for treatment, having spent a small fortune, with no alleviation of their back pain.

The remarkable aspect of all this is the number of different reasons offered for the same back pain, in the same person. Here's some of my personal favourites – all these 'problems' were identified, in one person, with lower back pain, over a period of about 18 months.

#### **Ever heard any of these little gems?**

"Ah, yes, but I have one leg longer than the other – my massage therapist says that is causing my back pain."

"My chiro says my spine is out of alignment."

"My physio says my hips are out."

"You see, because I'm overweight, it pulls my back forward and causes the pain."

"I had a knee re-co years ago and because I favor that leg, it causes my back pain."

"Well, my podiatrist says that my foot rolls inwards causing my hip to turn in and causing pain in my back."

"My yoga instructor says that my body is too stiff."

"My Pilates instructor says my transverse abdominus is really weak."

Come on ... is this for real?

#### **Ego is not a dirty word**

If all of us as healthcare professionals put aside our egos, our desire to help, our need to be a miraculous healer and the thought of our bank balance, might we say that there is a remote chance that we just don't know what the cause of back pain is? That simply, it isn't one strange anatomical feature gone wrong? Couldn't it be that there are a number of factors contributing, or lord-y forbid, a reason we haven't thought of yet?

The big but is, we don't actually know what causes back pain – and dare I say, no-one does.

Nevertheless, it seems that most healthcare specialists and professionals still feel obligated to identify a particular structural problem as the root of someone's back pain. As though this one thing, this one problem, independent of every other bodily function

and bodily structure is uniquely responsible for this person's incessant back pain. Who really has the experience, qualification, or guts to make these calls?

There are many toothless tigers when it comes to diagnosing back pain. Oops – did I say diagnose, sorry – let me start again. I should say... there are many toothless tigers when it comes to generating evidence-based, educated, and meaningful conclusions about a treatment strategy based on a case history, family history, lifestyle factors, and a physical assessment. (Yes, that's better. That's not diagnosing.) When a client presents with back pain, we simply speculate based on what we see, hear, and feel, but above everything else, it is still only an impression, not a conclusion.

#### **Ah, you're just getting old...**

There is a certain sensibility that exists in our societies about back pain. Some people expect to get back pain, so why shouldn't they get it sooner or later – if they expect it (aka invite it) into their life, why wouldn't they cop it? Often, an older person will say "oh, my back aches, but what should I expect, I am 85 years old", as if it was inevitable that they would be struck down with this condition. Rubbish! If that were the case, all 85-year-old people would have back pain, but they don't.

Still further, back pain has developed quite a reputation for being mysterious and intangible. It's as though the back is this

fragile house of cards, constantly on the brink of collapse, and that if disturbed it will come crashing down. But we know better, don't we?

The back is a myriad of supports, struts, levers, and counterbalances that are beautifully engineered to give us the ability to move. Best of all, it is tough! Sitting, standing, bending, twisting, running, climbing, and bungee-jumping are a fraction of the tasks we ask our backs to do every day. And remarkably, there are more people without back pain than with it.

#### **Pretty useless, but still cool...**

#### **Magnetic Resonance Imaging (MRI)**

Let's face it, these are great machines. Very impressive. Suffice to say, they have become the trap-door answer to all number of complaints. If all else fails... go get an MRI, they'll find something bulging, pointy, or too narrow and blame that for your pain, then the mystery will be solved – right?

Now, while the MRI shows, in great detail, all manner of structures and bumps that may be causing 'the pain', it also shows things that don't cause pain – like a spondylolisthesis or stenosis. Now, let's use these as an example.

Spondylolisthesis and stenosis are actual, physical, structural problems that can be seen and measured on our wonderful MRIs, but, unfortunately, people who have these problems don't necessarily have back pain – now why is that? Surely an actual boney dislocation (spondylolisthesis) or a narrowing of the vertebral canal, i.e. the very tube that the spinal cord traverses through, is certain to be causing nasty back pain and maybe wild neural symptoms... but it's not necessarily the case. People live with these, pain-free.

If it is true that bones can be markedly dislocated in the absence of pain or dysfunction, it pokes a rather large hole in the whole chiropractic thing. The whole premise of the chiro is that tiny, itsy-bitsy, little dislocations (called subluxations) cause pain and organ dysfunction that may require two treatments per week for 12 months in order to resolve.

#### **Show me an x-ray and I'll show you a subluxation**

Now, our chiropractic friends may have part of the puzzle, but to say that subluxations are the root cause of back pain and/or

**The back is  
a myriad of  
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dysfunction is plain misleading to say the least. If subluxations and/or spinal canal narrowing caused back pain, then every person with spodylolisthesis and stenosis would have back pain, but they don't.

In fact, there have been enough quality studies done now which demonstrate chiropractors cannot agree on what a subluxation looks like. In these studies, an x-ray is shown to a number of chiropractors and they are asked to point out the subluxation/s. You guessed it – there are a variety of answers as to where the subluxation/s are. To add insult to injury, these chiropractors were able to point out numerous subluxations in people who had no pain and had no symptoms of any pain. So, does that mean that those individuals just couldn't feel any pain?

The premise of the chiropractic basis for treatment is that the human body, in all its glory and god-given wonderment has an innate healing ability – fair enough, and seemingly, true enough. It is, however, peculiar that the body's god-given ability to heal itself extends to every single organelle and cell in our body, except those of the spine, where fortunately, the chiros can pick up the slack for god's little oversight.

But I digress. Back to the MRI... so how can we rely on the story the MRI is telling us? Truth is, we can't rely on it. The MRI can be used to add weight to a position or impression, but to say that it will categorically provide 'the answers' is plain wrong. It is a tool.

### **Exploratory surgery – no thanks. Emergency surgery – sure!**

Hmm. In my opinion, these are ab-sol-ute last resorts. We have all heard the horror stories about surgery gone wrong, and the complications of staph infections in hospitals. The number of times that I've heard, "I wish I had never had the surgery" or "it's never been right since the surgery" begs belief. But surgery continues as a legitimised and common treatment option for back pain.

And by the way, who would ever submit to having exploratory surgery where the surgeon opens you up to have a look around. They are telling you that they have no idea what is going on, but would like to have a look around inside your body to see if they can see a... I don't know what they are hoping to find. The MRI hasn't shown

anything substantial and orthopaedic tests are inconclusive, so what's left – the concept of exploratory surgery. How bizarre. Wouldn't you have loved to have been there the first time a surgeon suggested that to a patient – "You want to what? What for?"

Now at the risk of coming across as medico-phobic I should outline where surgery, and medicine for that matter, fits into the treatment paradigm. First, I acknowledge that I am not an expert in surgical procedures, but, at the same time, I am not devoid of commonsense either.

Surgery is a miracle when it comes to emergencies. In instances of emergencies, the medical system has got it all down to a tee. If you're seriously injured and lose an arm or finger, there's a really good chance that they will be able to sew it back on – that's great. If you have a cardiac arrest, you will have a darn good chance of surviving if you're close to hospital. Likewise, to have unconditional pain relief via drugs when recovering from a catastrophic injury is great too – even pain relief from a broken bone is most welcome.

This is where our current system thrives, and probably what drives us to continue putting our hands in our pockets to donate to all those good causes to do with health.

### **Let's declare war on back pain... Or then again, let's not**

But our medical system's ability to manage and 'cure' diseases of civilisation is poor. The likes of diabetes, arthritis, cancer, heart disease, and back pain are, at best, contained. There is no curing of anything – it's all management, albeit with the scalpel, or poisoning via drugs, or irradiation (which is carcinogenic in itself).

Just for one moment think about the amount of money that has been spent on research into cancer and then know that people still get it, live with it, and die from it every single day. We've been fighting this battle, hard, for over 30 years – and we're losing worse than ever before. In 1970 cancer affected one in 30 people. Now, 30 years on and an estimated \$30 billion later, the stats are now one in three! How is that a good system? It seems that whenever our Western societies "declare war" on anything, we end up worse off. Just consider 'the war on drugs', 'the war on terrorism', 'the war on cancer', 'the war

on poverty', 'the war on graffiti', 'the war on starvation'... aren't all these 'wars' being lost?

### **Who's your new drug addicted friend?**

More alarmingly, in the USA, up until May 2007, chronic pain sufferers were being prescribed a 'new, non-addictive' wonder drug called OxyContin. Well, it turns out that OxyContin was as addictive as heroin and caused just as much pain and misery as heroin – including deaths, broken homes, and family breakdowns. The Purdue Pharma drug company and its directors were fined \$634 million for deliberately misleading the US Government and the general public. The only reason that this story ever saw the six o'clock news was because a staffer leaked the story via a couple of company memos that clearly identified that the company knew the drug was highly addictive but continued to market it as safe and non-addictive. Is it really worth the risk? It makes me wonder if it's the first time a drug company has ever knowingly delivered a harmful product to consumers.

### **So what's the point ?**

Well, my point is, we as remedial massage therapists and soft tissue therapists have a beautiful set of unique hands-on skills. These skills are not used so distinctly or skilfully within any other profession.

Given the risk versus benefit analysis, our community would be better much healthier opting for safer, less risky, treatment options for back pain. While declaring soft tissue therapy safer than drugs and surgery, I do acknowledge that this is based on anecdotal evidence rather than research found in a peer-reviewed journal.

However, and in conclusion, one fact that is well known in peer-reviewed journals is that back pain will resolve itself in 4-6 weeks in 90 per cent of cases. This stat remains consistent with or without treatment.

Perhaps this is the one stat that all healthcare professional should be declaring at our first assessment and consultation with all new back pain clients. We should tell them that, at best, we may be able to dull the intensity of their back pain.

I wonder how many clients would pay their money and hang around.



# Severe injury to the right brachial plexus

He had nerve grafting surgery that was only mildly successful with reinnervation to only a few muscle groups in his forearm. He had gross weakness and wasting of his deltoid (axillary nerve), biceps/brachialis (musculoskeletal nerve) and triceps. He had some preservation of finger and wrist flexion and some small muscles in his hand.

A neurophysiological examination showed the following:

- F waves to abductor minimi are delayed;
- F waves to the abductor pollicis are delayed to some degree;
- Terminal motor latencies are delayed;
- The sensory conduction were reasonable, although absent in the right median and somewhat delayed in the right ulnar nerves;
- EMG sampling showed fibrillation potentials but no action potentials in the right biceps and deltoid;
- Right tricep shows occasional action potentials; and,
- Right brachioradialis shows no action potentials.

In essence, this neurological result mimicked what we saw clinically – no deltoid or bicep activity, a little tricep activity and decent small muscles of the hand activity. Hence the client could use his hand minimally but had no way of flexing his elbow or moving his shoulder (except for pec and lat capabilities which were very minimal).

Treatment initially focused on mobilising the extensive scarring from the surgery. The scar was heavily bound down and offered little to no movement of the structures about the scar. Pain was alleviated with the use of dry needling through the spasmodic forearm. Exercise direction was provided for the use of his active latissimus dorsi and pectoralis major.

The client was convinced to seek the further intervention of surgery after he was convinced that this treatment would only help him in a very limited manner.

The surgeon agreed to operate. Surgery involved removal of the client's left gracilis and associated nerves (the main pedicle of

motor branch of the obturator nerve to the gracilis), plus arteries and veins. A skin island was also removed with the gracilis to prevent shearing when implanted in the patient's arm.

The gracilis was then implanted in to the patient's right arm and sutured approximately to the clavicle and then to the distal biceps tendon (biceps remained in the arm). The gracilis was sutured to the belly of the biceps and tensioned adequately. The arteries and veins were attached. The remaining obturator nerve was then attached to a portion of the accessory nerve (usually attached to the upper trapezius).

When the patient returned from surgery, treatment consisted of mobilising the newly forming scar, promoting scapulothoracic stability and encouraging the client to attempt activation of the gracilis. This was performed by heightening the activity of the neural system by getting the patient to tightly squeeze my hand and then shoulder shrugging (activate upper trapezius which would then activate the gracilis). While doing this activation, the patient had to imagine bending the elbow to create the subconscious activity.

The first 12 weeks were frustrating, with no palpatory nor visual activity of the gracilis (which was what the surgeon suggested). Scars were enormous and much tethering occurred. The forearm was also locked into pronation, hence much treatment into supination was necessary.

At 12 weeks the first sign of activity occurred with palpatory sense – I felt it contract. At 14 weeks, the first sign of visual activity with isometric contraction. At 15 weeks, the client could activate the gracilis without shoulder shrugging or squeezing my hand – it was now a conscious effort only. At 16 weeks there was the first sign of elbow flexion – only very mild but it was there!

During this time, there was irregular muscle spasming of the upper trapezius and posterior scalenes. This was treated accordingly and has now subsided.

The patient has offered me the first beer when he can get one to his mouth.

## By Brad Hiskins

**A** 51-year old male presented with a history of a severe injury to his right brachial plexus following a water-skiing accident. After hitting a log while racing at over 100km per hour, his right brachial plexus was torn.

# Balance: vital and achievable through a systematic approach

Rob Granter discusses how soft tissue therapists can help their clients find balance through assessment and active balance control.

**A** life lived in balance. What a fantastic achievement to be able to truly achieve balance in all aspects of our lives, especially physically and emotionally.

This can apply to us personally as therapists, as athletes, fathers, mothers, mentors, or great community members.

For many of us, this is a fundamental tenet of our work as therapists – to help our patients achieve physical balance in relation to soft tissue length and strength.

We assess posture as a fundamental starting point for this exact reason – postural balance translates to optimal efficiency of our musculo-skeletal system, whether it be in static positions or through any movement. If we have optimal efficiency, then we allow the physical system to function at its potential and reduce the possibility of soft tissue overload.

## Assessment

Several restraints can limit the assessment processes available and allowable for the sports soft tissue therapist.

Clinical size restraints may limit the ability to assess functional movements and prevent anything more than ‘cubicle assessment’. Also many sports soft tissue therapists work in multidisciplinary settings, where it is the key role of other health professionals to provide specific movement analysis.

There are, however, ample assessment processes that allow us to plan an effective treatment plan and to help the athlete create this all-important balanced physical environment.

Static observation and the measurement of skeletal landmarks, movement analysis through joint-specific single plane and functional active movements, passive

length testing movements and resisted contractions can all act as monitors of physical balance.

Even though active movements are the real deal, I have always placed great importance on passive length testing movements as vital indicators of forces acting on the body. They can give the therapist a ‘window’ into the athlete’s body.

If we do nothing more than assess, plan and implement a treatment strategy that achieves equality of forces assessed through passive tests, then we have done a great service to our patient.

## Active balance control

It stands to reason that active balance control is also essential for any activity where fluid controlled motion is required. The results of movement performed in a context of improved balance and heightened neuromuscular awareness and control is again optimised function and reduction of overload and potential injury on the soft tissues.

The process, however, to improve balance can be very challenging (it certainly has been for me). It seems to be a skill which is difficult to acquire.

It is my goal, therefore, to discuss a method to make this learning process more effective and easier to implement and monitor.

Let us apply a system which analyses standing balance by a simple structure based on cardinal movement planes, the frontal, saggital and horizontal planes.



This is easy to implement, allows ease of assessing balance deficient and provides a fun, logical way to progress the learning process to achieve your desired outcomes that are specific for your needs.

**Step 1:** Establish what the balance requirements are in relation to your specific activity, in terms of the cardinal planes in which balance is required. For example, the golfer needs balance in the frontal and horizontal planes, the runner in the saggital and frontal planes and the tennis player in all three main planes.

**Step 2:** Test your ability to maintain balance in the required planes one at a time. Start with NO MOVEMENT (one legged standing, left then right). If you struggle with this, then this is your starting position to develop better control.

If you are OK with this, then add challenges in the frontal plane using

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upper limb movements. Abduct one arm to vertical, abduct the other arm to vertical.

If you struggle with this, then this is your starting position to develop better control.

If you are OK with this, then add challenges in the saggital plane using upper limb movements. Flex one arm to vertical, flex the other arm to vertical.

If you struggle with this, then this is your starting position to develop better control.

If you are OK with this, then add challenges in the horizontal plane using upper limb and trunk movements. Abduct the arms to 90° and rotate the trunk to 90° to the left and to the right. If you struggle with this, then this is your starting position to develop better control.

**Step 3:** Put in place a plan to achieved your desired balance control outcomes in a step-by-step method progressing through the exact same frontal, saggital

and horizontal plane progressions.

Once you have achieved balance control with arm movements in the three planes, you can progress to using lower limb movements in the three planes.

The next progression can involve trunk movements in the three planes.

Your brain is no doubt already thinking how you could progress the learning process to the next levels, the functional sports-specific levels.

#### **Shifting the visual reference point**

The next progression can involve using other variables such as altering the visual reference point.

The starting level can be performing the above arm, leg or trunk movements with a fixed gaze on a specific object. Once competency is achieved, progress to movements with a moving gaze, not fixed on a specific object.

Once competency is achieved with this level, progress to movements with eyes closed.

#### **Always gain self-competency before teaching others**

So the challenge is issued. Implement the process yourself. Some friendly competition among your fellow therapists as to who will achieve the set levels of competency first will increase the fun and help to motivate you to practice these steps. On doing the process, you will be amazed at how your balance control will accelerate.

In the next issue, I will explore the ability to accelerate the process for those struggling to achieve the desired results with a focus on foot stability and mobility.

Until next time, may you achieve balance in all aspects of your lives and reap the rewards of optimal function and reduction of physical and emotional injury.

*Rob Granter is Director of the Australasian College of Soft Tissue Therapy.  
www.acstt.blogspot.com*

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# Spare ribs

Spare ribs are what I refer to in my practice as the ribs and their associated muscles that are overused during breathing, namely the upper accessory respiratory muscles. Overuse in these upper respiratory muscles can lead to multiple pathologies of the upper and lower body. Overuse can also have a detrimental effect on sporting performance, stress levels and overall health. By increasing your knowledge of how we breathe, I hope to give you the tools to think outside the square and reinforce your current treatment approach to this area of the body.

By Andrew Curry

To influence breathing patterns, you need to have an understanding of how this system works. Breathing is regulated by the autonomic nervous system, and occurs with the exchange of gases between the atmosphere and the lungs. Respiratory muscles change the size of the chest cavity. This change in

size allows pressure changes to occur between the internal environment of the lungs and the atmosphere. When the chest cavity becomes greater in size, air enters the lungs because the atmospheric pressure is greater than the internal environment of the chest cavity. When the chest cavity becomes smaller in size, the pressure gradient is greater internally, compared with the atmosphere and air exits the lungs. Inspiratory and expiratory muscles

allow this expansion and contraction to occur when breathing. A list of muscles separated into breathing in (inspiration) and breathing out (expiration) is below.

My interest in breathing increased when training as a Pilates instructor with Penny Latey. Penny Latey's 'Modern Pilates' approach places a significant emphasis on breathing. Breathing well helps to connect to your core abdominal stabilising muscles which are utilised during active expiration. By increasing your awareness of these core muscles during breathing, you can indirectly achieve better activation of these muscles for their core stabilisation role of the spine and pelvis.

Assessment of breathing is integral to achieving an understanding of how breathing muscles and fascia may be influencing your client. Whilst your client breathes, you assess the movement that occurs in the thoracic cage, abdomen and neck/shoulder areas. You may see a combination of patterns highlighted below or individual patterns. There are three breathing patterns utilised by the body during active breathing.

1. Bellows
2. Piston
3. Siphon

When the abdomen is isometrically contracted, inspiration during active breathing tends to be resisted. This forces the ribs to elevate and expand more, to allow an increase in air intake. This is referred to as bellows or thoracic breathing.

When the abdomen is not isometrically contracting, abdominal muscles eccentrically lengthen during inspiration. The movement of air is down towards the pelvic bowl, into

Passive Muscles (Passive Inspiration)	Lower Accessory Muscles (Active Inspiration)	Upper Accessory Muscles (Secondary Active Inspiration)
Diaphragm	Diaphragm	Scalenes
External Intercostals	Levator Costarum	Sternocleidomastoids
	External Intercostals	Rhomboids
	Internal Intercostals	Trapezius
		Serratus Anterior
		Pectoralis Maj/Min
		Serratus Posterior Superior
		Subclavius
		Thoracic Erector Spinae

Passive Muscles (Passive Expiration)	Lower Accessory Muscles (Active Expiration)	Upper Accessory Muscles
Diaphragm, via elastic recoil	Transverse Abdominus	Not applicable
Internal Intercostals	External Oblique	
Supported by Abdominals	Internal Oblique	
	Rectus Abdominus	
	Internal Intercostals Posterior	
	Transverse Thoracis	
	Serratus Posterior Inferior	
	Lattisimus Dorsi	
	Quadratus Lumborum	

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the pelvic floor. The lower accessory muscles assist in expiration. The pyramidalis muscle tightens the lowest part of the abdominal wall to assist during expiration. This is referred to as piston breathing.

A second type of active inspiration occurs with the upper accessory muscles being the driving force in increasing the size of the chest cavity. This type of breathing is also referred to as siphon breathing.

In clinical practice, the overuse of upper accessory muscles by our clients contributes greatly to our pay packets! The action of these muscles should be reserved for when we are recovering from the extra effort required to run up a hill, or during other times where respiratory distress is apparent. This is why I refer to the upper accessory

muscles as the “spare ribs”. They should be used for secondary breathing instead of primary breathing. They are not designed to sustain the load of a primary breathing role. They also are postural muscles for the neck and head. Given the weight of the head, these muscles already have significant work to do. Adding breathing to this postural role, it is clear to see how these muscles can be overused. Some examples of why upper accessory muscles can become overused include:

- Weak abdominals;
- Stress;
- Asthma and other respiratory disorders;
- Poor posture; and
- Poor neuromuscular recruitment patterns.

As I am sure you are well aware by now, breathing is a complex activity for the body. Neuromuscular control by

the nervous system to regulate posture and breathing with muscle groups that also have a postural role is quite a complex task. Therefore, any alteration of the neuromuscular system can interfere with neuromuscular control of breathing and posture. This can lead to upper respiratory muscular overuse.

As soft tissue therapists, we are in an ideal position to utilise our current skill set to facilitate normal and efficient breathing patterns. In my experience, treatment can utilise a direct or indirect approach to re-establish normal breathing patterns. A direct treatment approach would focus on treating the upper accessory muscles. An indirect approach to treatment focuses on changing other sites of dysfunction to indirectly alter an overuse/siphon breathing pattern (e.g. treating trigger points in the rectus abdominus which may inhibit the core stabilisers, could

### Bellows

Figure 1: Relaxed



Figure 2: Bellows breathing



### Piston

Figure 1: Relaxed



Figure 2: Piston breathing



### Siphon

Figure 1: Relaxed



Figure 2: Siphon breathing



allow restoration of efficient breathing for active expiration. It would also support lumbo-pelvic posture which supports overall posture. Posture improvement could also facilitate a reduction in upper accessory muscle as a primary group of muscles for breathing.)

To highlight the impact of overuse in the upper accessory muscles, I have a case study to present which was extremely challenging. In 2007, a 20-year-old female client presented with the following symptoms:

- Anterior right shoulder pain;
- Pain increased with running and playing hockey;
- Denial of any incident;
- History of exercise-induced asthma;
- Pain worsens with stress.

Objective examination revealed:

- Positive Hawkins/ Kennedy impingement;
- Discomfort in resisted shoulder abduction with arms by side and during abduction at 90 degrees;
- Pain and apprehension during glenohumeral external rotation with the humerus abducted to 90 degrees;
- Her scapula also appeared to be unstable and protracted during shoulder movement.

Differential diagnosis:

- Subacromial impingement (bursitis or supraspinatus).

Soft tissue treatment addressed trigger point associated pain in the anterior rotators of the scapula and the internal rotator muscles of the glenohumeral joint. After two 45-minute treatments, objective assessment had only changed slightly. This client was then referred to a sports physician for an opinion.

The sports physician assessed her and ordered an MRI. This MRI was inconclusive. MRIs are 97 per cent sensitive. With only a 3 per cent chance that the MRI had missed the pathology, conservative treatment was given. The sports physician recommended further soft tissue treatment and scapulo-humeral stability exercise. The client undertook exercise which was directed by the sports physician. The client did not return initially for any further treatment at that time.

Several months later, this client

presented to me again. This time she was also experiencing headaches. She also reported that her shoulder still gave her trouble when she played hockey and ran. The shoulder pain was not as bad as when she first reported it, but it still gave her considerable trouble. She had not followed her scapulo-humeral stability exercise consistently for longer than one month.

Objective examination revealed:

- Consistent range of motion (ROM) in cervical movement, but all movement occurred from C4 up (stiff thoracic spine and associated T4 syndrome?);
- Positive Hawkins/ Kennedy impingement;
- No discomfort in resisted shoulder abduction with arms by side and during abduction at 90 degrees. Her right scapula elevated by one inch during abduction;
- No pain or apprehension during glenohumeral external rotation with the humerus abducted to 90 degrees;
- Her scapula was unstable, anteriorly rotated and protracted during shoulder movement.

A direct soft tissue treatment approach focused on decreasing the anterior shoulder rotation and scapula protraction. Further treatment sought to increase spinal movement from the C4 down and into the thoracic spine. All treatment areas had a low pain threshold and tolerance (pectoralis major/minor, serratus anterior, upper trapezius, levator scapula, latissimus dorsi and teres major). No change in assessment and pain occurred by directly treating these areas. After two sessions, another approach was required.

Utilising my Pilates breathing assessment strategies, I was able to identify that this client was an upper accessory, siphon breather. Movement of the rib cage and abdomen identified no bellows or piston breathing. Palpation of the upper chest and lower chest intercostal muscles revealed a high level of pain with pain referrals posterior to the scapula. The rib cage laterally and posteriorly was also assessed by palpation. No pain in these areas was apparent on palpation.

An indirect treatment approach was taken. I directed my treatment at the intercostal muscles in the upper chest and lower chest areas. The aim of this was to increase rib cage movement for bellows breathing. Digital pressure to trigger points in these intercostal muscles was the method of treatment. This direction yielded a decrease in pain to site specific palpation relatively quickly (3-5 minutes). After treating a few trigger points in the upper anterior intercostal region on the right side the following observations were noted:

- Headaches had subsided significantly; and
- Anterior shoulder pain decreased. Pain in the scapula region had subsided as well, but this was not reported initially on presentation.

Further treatment focused on the lower anterior intercostals and superior abdominal attachments along the rib margin. The aim of treating here was to increase movement for bellows breathing and piston breathing.

This indirect treatment approach yielded the following changes:

- A decrease in anterior shoulder pain;
- A reduction in upper accessory muscular activity;
- Increased bellows and piston breathing patterns, observed by an increase in lateral movement of the rib cage and abdominal expansion distally.

A core stability program supports this treatment. The aim of this is to improve posture and support the bellows and piston breathing patterns. Strategies to manage stress and asthma were also reinforced to allow the client to manage this condition.

The spare ribs at our local restaurant are a great addition to the menu. Placing the “spare ribs” on your STT treatment menu and recognising the indirect pathologies that lead to spare rib overuse will help you achieve more with your clients when dealing with this area of the body.

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# Can soft tissue therapy be a stimulus for facilitating neuromuscular control and learning?

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## The importance of neuromuscular control

'Neuromuscular control' refers to the interaction between the neural and muscle systems and the resulting control of movement patterns and muscle recruitment patterns. This interaction is fundamental to all movement; a coordinated neuromuscular system effectively translates cardiorespiratory capacity into efficient movement. Neuromuscular control is therefore one factor that underpins athlete performance. The link between neuromuscular control and athlete performance is especially important in the context of endurance sports such as running and cycling, i.e. sports for which athletes repeat the same movement pattern over and over again, and who therefore rely very much on the efficiency of their movement. There is also a very strong relationship between neuromuscular control and musculoskeletal injury.

## The example of triathlon

Success in triathlon depends largely on the triathlete's ability to run at maximum efficiency, and thus on optimal neuromuscular control (i.e. optimal movement and muscle recruitment patterns) when running 'off the bike' (i.e. when running after cycling). Therefore,

triathletes rely on their ability to develop a very high level of neuromuscular control for running (i.e. their ability to learn optimal neuromuscular control – or phrased more generally, their ability to learn a very efficient running stride) and subsequently on their ability to utilise this very high level control when running off the bike on race day (i.e. their ability to execute optimal neuromuscular control – to use what they have learned – and not let cycling 'interfere' with neuromuscular control for running). Similarly, triathletes' preparation for competition involves large running volumes and practicing running after cycling.

Evidence of the relationship between altered, or 'underdeveloped', neuromuscular control and musculoskeletal injury suggests that the ability of a triathlete to complete large running volumes in training without injury is also dependent on their ability to learn and use movement and muscle recruitment patterns that are specific to running and not adversely influenced by cycling. Optimal neuromuscular control is clearly critical to triathletes' performance and injury, but our studies of triathletes demonstrate that both interference with neuromuscular learning and interference with neuromuscular execution can occur in triathletes and that this interference has implications for performance and injury.

## Interference with neuromuscular learning

In order to balance the training demands of the three disciplines, triathletes often practice two or three disciplines in one training session or complete separate training sessions for different disciplines with only short recovery periods between these sessions. While this 'multidiscipline training structure' maximises overall training volumes, our research has shown it might actually interfere with adaptation of the neuromuscular system – in other words, the ability of triathletes to learn more skilled and more efficient muscle recruitment patterns appears to be limited, or 'interfered with', because of the way they structure their training.

## Interference with neuromuscular execution

Most triathletes show a decrease in run performance and report a perception of impaired coordination when running off the bike. While fatigue is likely to contribute to this perceived incoordination and loss of run performance, these effects may also be due to interference with neuromuscular control independent of fatigue. If this is the case, addressing fatigue alone (i.e. training our athletes to become 'fitter' and more fatigue resistant) will not necessarily improve their ability to run off the bike. Indeed, our research has shown cycling can interfere with neuromuscular control of running independent of fatigue. While a mere 20 minutes of cycling has no direct effect on running neuromuscular control in most (70 per cent) highly trained triathletes, we did show that running muscle activity is affected by a mere 20 minutes of cycling in 30 per cent of highly trained triathletes. We also showed that this altered muscle recruitment is associated with reduced run economy (i.e. greater oxygen consumption and therefore less efficient running) and 2.3 times greater likelihood of a history of exercise-related leg pain (i.e. a history of shin pain, tibial stress fractures etc).

## Why would soft tissue therapy be an effective stimulus for facilitating neuromuscular learning and execution?

Soft tissue interventions, although rarely linked to neuromuscular control and learning in their efficacy, are a vital component of our management of performance and injury in endurance athletes, including triathletes. Neuromuscular control is clearly one factor that underpins athlete performance and musculoskeletal injury. Our research has also shown that interventions such as taping, orthotics and plyometrics appear to provide a stimulus to the neuromuscular system that may facilitate greater learning (i.e. greater neuromuscular adaptations) and improved execution (i.e. improved neuromuscular control during competition – in other words,

an improved ability to use the high level of neuromuscular control that has been learned, rather than using a suboptimal level of neuromuscular control). While there is little evidence to support the efficacy of soft tissue therapy as such a stimulus for influencing neuromuscular learning and execution, there is a logical argument to suggest it may be effective in this way. The effectiveness of soft tissue interventions, for example, achieving an immediate change in localised muscle tone and localised recruitment, and the link between soft tissue intervention and improved athlete recovery, provide a basis for such an argument. On this basis, there is a strong case for future research investigating the effectiveness of soft tissue interventions as a stimulus for facilitating neuromuscular learning and execution. We suggest the possible effects of soft tissue interventions on neuromuscular learning and execution should definitely be considered by soft tissue therapists in their clinical decision-making process.

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