



## THEME

Musculoskeletal  
medicine



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# Sports medicine meets musculoskeletal medicine

## BACKGROUND

Sports medicine is a popular topic pervading the media and has a clear core focus of treating athletes and promoting exercise. While there is considerable overlap with musculoskeletal medicine, the latter is less well known and less well defined, focusing more on spinal pain problems.

## OBJECTIVE

This article highlights some of the similarities and differences between sports medicine and musculoskeletal medicine.

## DISCUSSION

Musculoskeletal medicine has evolved out of the need for doctors to help manage spinal pain problems at a time when the only other interested practitioners were chiropractors and osteopaths.

**The Australian Association of Manipulative Medicine was formed in 1971 from a subgroup of the Australian Association of Physical and Rehabilitation Medicine. The initial focus was on training doctors how to examine the spine and to treat with manual therapy. In 1982 the name was changed to the Australian Association of Musculoskeletal Medicine to reflect a more holistic and evidence based approach. In 1987 the association published a comprehensive curriculum of musculoskeletal medicine, which set out the body of knowledge and the clinical skills associated with the discipline, leading to the formation of the Australasian Faculty of Musculoskeletal Medicine (AFMM) to raise the profile of the discipline and to seek specialist recognition.**

The main distinguishing feature of doctors trained in musculoskeletal medicine is the ability to assess spinal and peripheral joint pain problems from a biomechanical point of view and to correlate these findings with radiological features and psychosocial aspects. Therapies are multimodal incorporating manual therapy, exercises, and psychological approaches, as well as medication to control

pain and needle interventions including dry needling (or acupuncture) and fluoroscopically guided injections.

## Similarities between the disciplines

- Both deal with problems of the musculoskeletal system
- Both require detailed biomechanical assessment of injury mechanisms and aggravating/relieving factors
- Both are skilled in peripheral joint examination and administering joint injections
- Both involve an active multidisciplinary approach to management of injuries
- Both promote exercise in the prevention and management of chronic diseases
- Both are not yet recognised as a distinct specialty.

The differences between sports medicine and musculoskeletal medicine are outlined in *Table 1*.

## Physiotherapy perspective

### Indications for referral to a musculoskeletal physician

Typically the patient has predominant spinal injury or a possible component of spinal referred pain, with or

**Table 1. Differences between sports medicine and musculoskeletal medicine**

	<b>Sports medicine</b>	<b>Musculoskeletal medicine</b>
Age of patient	Average 25 years, mostly 10–40 years	Average 40–50 (range 10–80 years)
Duration of complaint	Acute to chronic (hours to weeks)	Mainly chronic (months to years)
Point of contact	Primary – at sporting ground	Secondary – tertiary referral
Pathology	Often clear cut	Not clear
Investigations	High correlation with acute injury	Poor correlation with chronic pain
Psychosocial factors	Less important in recovery	Usually important in recovery
Spinal therapies used	Refer on to others	Manual therapy, injections

without positive investigative findings. If dealing with a compensable injury, psychosocial factors may be important. The patient may lack motivation, therefore a multidisciplinary approach is vital. Patient education and allaying of fears regarding degeneration and re-injury is important. A positive reinforcement approach focusing on function and goal setting rather than pain is encouraged.<sup>1</sup>

Patients with known pathology such as disc prolapse are referred for conservative management. Where there has been a lack of progress with manual therapy and exercise, referral to a musculoskeletal physician to consider epidural and other fluoroscopically guided injections may be useful, before or as an alternative to surgical opinion.

### **Sports medicine**

A survey of patients attending sports medicine clinics in Melbourne (Victoria) in 2001 identified the average age as 25 years (range 7–82 years), 70% of whom were male and 60% of whom had sports insurance coverage.<sup>1</sup> A physiotherapist assesses the patient to identify the source of the injury, and will then commonly refer to the sports physician for a second opinion on diagnosis and management. The physician may choose to arrange investigative procedures to confirm diagnosis and the extent of the injury. Cortisone injection may be used to settle inflammation, and referral for surgery organised when joints are internally deranged. Accurate prognosis is important, as key sporting commitments often influence treatment goals. Increasingly, sports physicians are seeing patients seeking more detailed information about exercises for general health and also for chronic medical conditions. Liaison between the sports physician, physiotherapist and coach/team management is critical to a good outcome.

### **Case study**

Andrew Allen, aged 35 years, presents with 6 week history of right lateral shoulder pain which came on initially while playing tennis and is now aggravated by his work in a warehouse. He initially attended his general practitioner who diagnosed a likely impingement syndrome and prescribed nonsteroidal anti-inflammatory drugs (NSAIDs) and a break from tennis. After a couple of weeks of only mild improvement, Andrew saw his local physiotherapist who concurred. Local ultrasound (level II evidence), massage and a home exercise program (level II evidence) were prescribed. After a variable response, other therapies were trialled including mobilisation and unloading with taping. The physiotherapist remains concerned that there may be a component of referred pain from the lower cervical region (remembering deltoid has a C5 innervation). Andrew sees an osteopath who tells him that he has a dropped shoulder and then sees a chiropractor who informs him he has phase II degeneration in his neck and that he requires long term care. NSAIDs don't help much and are now upsetting his stomach. He is confused about what is wrong and begins to worry about losing his job and doesn't sleep well. He searches the internet and learns about 'prolotherapy'.

Andrew goes to see his GP who discusses options with him:

- If there are clear-cut signs of supraspinatus impingement, a subacromial injection of cortisone could be given – both from a diagnostic and therapeutic viewpoint
- Acupuncture or dry needling to local muscle tender points may be helpful
- Investigation with an X-ray and/or ultrasound if the diagnosis is uncertain or if night pain is prominent
- A work site visit or referral to an occupational therapist to assess work factors
- Referral to a specialist for opinion – orthopaedic surgeon, rheumatologist, sports physician or musculoskeletal physician.

### **Case discussion**

The choice of specialist may be determined by patient preference. There is little point in considering surgery at this early stage. The rheumatologist's recommendation will most likely be a cortisone injection to the subacromial bursa, however a detailed assessment of contributing

biomechanical factors may be worthwhile by either a sports physician or musculoskeletal physician. If the pain is over the top or back of the shoulder, spreading up to the neck, or if the site of pain is changing, there is more likely a spinal component. Assessment of segmental mobility and irritability of the spine may give clues to contributing biomechanical factors and is arguably best assessed by a musculoskeletal physician.

### Case management

A range of manual therapy approaches has not helped, suggesting a change in direction is needed. There may be an inflammatory component or a component of centrally mediated pain. Does he sleep reasonably? Is a low dose tricyclic worthwhile? Have the exercises been appropriate? It is important to go over these with the patient: (a) to see if they have been doing them and (b) to assess their usefulness. Postural factors need to be assessed. Clear explanation and education of the patient is also vital in gaining cooperation from the patient and preventing fear avoidance behaviour. The use of plastic models and diagrams is helpful.

At Andrew's age of 35 years, any ultrasound and radiological changes are more likely to be significant, but if the patient was 55 years or over the incidence of degenerative changes increases and the correlation with pain diminishes – requiring careful interpretation of findings.

The management of the spinal pain component initially may involve postural exercises, dry needling or local anaesthetic injections into tender muscles to see if the pain can be altered. Corticosteroid injections directed at the zygapophyseal (facet) joints in isolation are unlikely to be of benefit,<sup>2</sup> however injections given in combination with mobilisation and stretching can often get the patient over a difficult hurdle. A pragmatic multimodal approach to managing spinal complaints has been best described by Blomberg<sup>3</sup> and provides evidence of long term efficacy. Fluoroscopically guided injections are becoming more widely used. In more severe and chronic cases radiofrequency denervation of the nerves supplying the zygapophyseal (facet) joints may provide relief of the neck pain for up to 12 months, but must be performed according to strict protocols. Injections are rarely a cure but may provide a window of relief through which the patient can progress to multidisciplinary rehabilitation.

### Conclusion

There is considerable overlap between sports medicine and musculoskeletal medicine, but the demographics

of the patients attending tend to define the disciplines. Maintaining a holistic approach is important in addressing all aspects of a patient's pain experience.

Conflict of interest: none declared.

### References

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