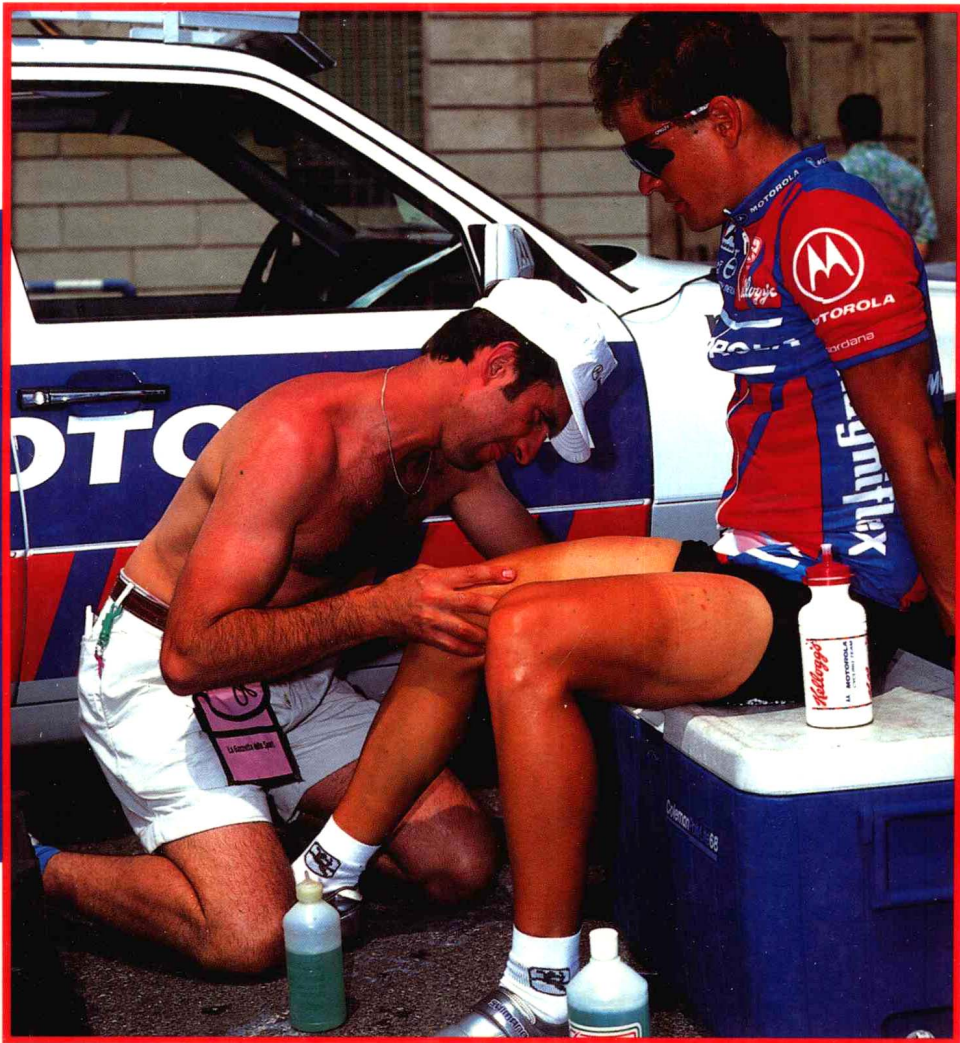


THE COMPLETE GUIDE TO

Sports Massage



Tim Paine

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Sports Massage

Tim Paine

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To my mother and father, for their unceasing love and support,
and my wife Fid for her endless patience.

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Introduction

With more and more people participating in an increasing number of sports at all levels, there is a growing demand for professionally trained people who offer a variety of sport-related skills. Massage has been used for thousands of years and in recent decades has re-emerged as an accepted method to enhance the physical, physiological and psychological wellbeing of the active person.

As you will discover in this book, the demands placed upon the professional sports massage therapist are many. In your day to day work you will be required to practise in a number of settings and draw on a wide base of knowledge. You will also be required to appreciate the workings of the human body,

understand the effects of exercise and the benefits of massage, and to undertake a sound training and extensive practise in order to perfect your skills.

Having decided to enter the field of sports massage *The Complete Guide to Sports Massage* will provide much of the information needed to accompany your training. From the science of sports massage to the much broader range of skills required for you to help your clients, you will gain much of the knowledge and practical skill required to help you qualify and start a successful practice.

Tim Paine
July 2000

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• PART ONE •

About sports massage

Chapter 1

An introduction to sports massage

♦ What is sports massage ♦

Sports massage is a form of massage involving the manipulation of *soft tissue* to benefit a person engaged in regular physical activity. Soft tissue is connective tissue that has not hardened into bone and cartilage and includes skin, muscles, tendons, ligaments and fascia (a form of connective tissue that lines and ensheathes the other soft tissues). Sports massage is designed to assist in correcting problems and imbalances in soft tissue that are caused from repetitive and strenuous physical activity and trauma. The application of sports massage, prior to and after exercise, may enhance performance, aid recovery and prevent injury.

♦ Where did sports massage originate? ♦

Massage is recorded as one of the earliest forms of physical therapy and was used over 3000 years ago in China, India and Greece. Its popular use in the Western world is largely due to the work of Per Henrik Ling (1776–1839), who developed the form of massage now known as *Swedish massage*. Ling developed his own style of massage and exercise to help fencers and gymnasts, gaining international recognition in the process. Many of his ideas have formed the foundations of modern sports massage. Today, there are many forms of massage available to assist us in maintaining our health and wellbeing. Sports massage has been accepted in America, Canada and Australia for many years now, while in the UK, the practice only became known and more widely used in the 1990s. Very few courses were available until then (see also p. 3).

◆ The benefits of sports massage ◆

How does sports massage benefit people who exercise?

Sports massage benefits people who exercise by assisting in the processes of *over-compensation* and *adaptation*. During and after exercise, the body's systems adapt to cope with the increased stresses placed on them. These adaptations affect the muscles, the bones, the tissues, the nerves and the brain. In the right measure and at the right frequency, regular exercise enables the body to cope with increased levels of stress (overload), which allows the body to exercise at higher intensities or for longer durations. This is possible because of a process called overcompensation. While the body is recovering from overload as a result of exercise, the body overcompensates to increase its power of resistance to future stress.

How the body overcompensates or adapts to exercise depends on the type of stress placed on it. Training programmes for fitness or sport are based on the principle of *specificity*, which states that the adaptations will be specific to the type of stress. For example, a soccer player, who requires bursts of explosive power over short distances, will need a training programme that includes specific exercises to improve speed. On the other hand, a marathon runner, who requires a high level of aerobic efficiency to complete the long distance, needs a training programme that focuses on improving endurance.

The manipulation of soft tissue prior to and after exercise promotes physical, physiological and psychological changes that aid performance and particularly recovery. Some examples of the benefits for the exerciser are:

- ◆ the release of muscle tension and pain;

- ◆ the removal of waste products such as acetic acid and carbon dioxide;
- ◆ reduced discomfort from DOMS (delayed onset muscle soreness) as a result of vigorous exercise;
- ◆ and improved posture and flexibility.

Further details on the effects of exercise and sports massage on the body, and on how sports massage can aid the exerciser (hereafter referred to as the 'athlete'), are explained in Part Two of this book, *The science of sports massage*.

Who can benefit from sports massage?

Anyone who engages in physical activity for the purpose of sport or fitness – irrespective of age, level of fitness or level of training – can benefit. Athletes with injuries or problems that are inhibiting performance will find that the stimulatory effects of sports massage encourage the healing process. Recreational and competitive athletes following a regular training programme will benefit during recovery, and through the early detection of any problems arising from training stress. Athletes engaged in sporting events or competitions can benefit before, during and after the event, depending on whether the need is for the release of muscle tension, relief from soreness, relaxation, etc.

◆ Sports massage and sports therapy ◆

Sports massage is one of the skills utilised in the practice of sports therapy. In addition to massage, sports therapy also includes the management and treatment of sports injuries, exercise therapy and rehabilitation, and sports nutrition.

♦ Is sports massage a ♦ recognised form of therapy?

Sports massage has become more popular as the number of people participating in sport and fitness and the physical demands placed on athletes has increased. Many athletes are being introduced to sports massage and are increasingly aware of the benefits. While it is a recognised practice in the United States, Canada, Australia and some European countries as mentioned above, acceptance in the UK has been a slow process. In addition, a lack of scientific evidence to support the anecdotal benefits of sports massage has hindered its development.

Research in sports medicine, however, is revealing more information about the effects of exercise and injury on the human body and its systems, which can now be utilised in the study of sports massage. As a result, sports massage is becoming more widely accepted by athletes, sports scientists, coaches and industry bodies as a means of enhancing performance, aiding recovery and preventing injury.

While there is currently no national governing body responsible for setting professional standards of practice for sports massage, the National Sports Medicine Institute has formed a committee to draw up minimum criteria for the teaching of sports massage. A register of teaching organisations that meet these criteria has now been established for the public: this is available through the National Sports Medicine Institute (*see* p. 165).

♦ How is sports massage ♦ different from other massage?

While other forms of massage, such as Swedish or holistic massage, have some aims in common with sports massage – such as physical and mental relaxation – sports massage is specifically designed to assist athletes in their sport or fitness activities. A sports massage therapist is concerned primarily with:

- ♦ muscular and skeletal alignment;
- ♦ how exercise affects the body's systems;
- ♦ and how massage can promote or reduce these effects to the benefit of the athlete.

Many of the aims of sports massage, such as injury prevention and the promotion of recovery from exercise, are therefore quite different from the aims of other forms of massage.

♦ When is sports massage ♦ contraindicated?

Contraindications are circumstances in which sports massage might or would be detrimental to an athlete's health and wellbeing, so it is vital to know what they are and understand how to assess them.

The sports massage therapist must ask about some contraindications prior to starting, as a preliminary check. Others will become evident if present, by observation and palpation (*see* Chapter 8, pp. 74–6) during the treatment session. Once you have asked your questions, a good way to complete your history-taking is to verbally summarise your client's history and then add: 'Are there any injuries or conditions that we have not yet covered, and are you taking any medication

that you have not yet told me about?’ This is all-encompassing and will prompt your client to tell you about anything which might have been missed. If the client does have a condition which may be contraindicated, and you feel that they should be referred back to their GP, try to raise the subject tactfully and without alarming them. Reassure them by saying that you are not medically trained, and it would be wise to have a GP check this for you.

Sports massage can be contraindicated in any of the following circumstances.

When the client has a temperature over 100°F, or is feeling unwell

In these circumstances, the onset of illness may be accelerated by massage. If there is an excess of toxins in the body that is causing the client to feel unwell, both exercise and massage will increase the circulation of these toxins and exacerbate the condition. It is therefore advisable to refrain from both exercise and massage to allow the body's own defence mechanisms time to deal with the infection and to recover.

Acute traumas

Open wounds, recent bruising, muscle tears, sprained ligaments, contusions, chilblains and burns must be avoided during their acute healing phases. During this phase, the damaged soft tissue will be in the early stages of healing and susceptible to further trauma if recently healed blood vessels are reopened by massage. For further information about soft tissue healing and injury management, see Chapter 12.

Skin infections

Look for any sign of skin infections on the surface of the skin such as swelling, redness, heat or pain. Any attempt to massage in the vicinity of these areas may spread the condition. The infection may also be passed on to you and possibly others.

Tumours

Where there is swelling which is inconsistent with recent bruising, avoid this area until you know what the cause is. If in doubt, advise the client to check with their doctor. This may be a tumour, which is an abnormal mass of tissue. If the tumour is malignant – a term used to describe a condition getting progressively worse, and spreading – massage may encourage the spread to secondary sites.

Diseased blood vessels

Phlebitis

Phlebitis refers to a condition of inflamed veins, often accompanied by blood clots (see below).

Thrombosis

A thrombosis is a blood clot, commonly occurring in the deep veins of the back of the legs where it is known as a *deep-vein thrombosis*. When a thrombosis is dislodged, it can have serious – and even fatal – consequences if it reaches the heart or lungs. This is a condition that is usually predisposed by a number of factors, including: a period of prolonged bed rest, varicose veins, an impact injury or heart disease. The condition may be detected by using the following as a guide: when you apply pressure to the area you will feel particularly firm swelling in a localised area, and the client will experience pain.

There may also be some swelling or discolouration distally – below the site – as blood collects behind the thrombosis.

Varicose veins

See below.

When the patient reacts adversely to treatment

If a person reacts adversely to treatment and there is no apparent reason, stop the massage and seek advice. In such cases the usual effects of massage may be detrimental.

Undiagnosed symptoms

If you encounter signs or symptoms of a condition you are not sure of, ask your client to obtain permission from their doctor for sports massage therapy. Be tactful when broaching the subject with your client so you don't alarm them unnecessarily.

The following conditions need not necessarily be contraindicated but do require considerable caution before the therapist proceeds. They are therefore shown separately.

Pregnancy

If you are massaging someone who is pregnant, extra care should be taken during the first 16 weeks, and the areas of the abdomen and lower back must be avoided during this time. If your client has experienced any problems or sickness during the early stages of pregnancy, ask them to

seek permission to receive sports massage from their doctor. In the latter stages of pregnancy, finding a comfortable position for your client for their massage may be the only problem you encounter. (Special couches are made for this purpose.) Some women find massage beneficial in removing oedema (or swelling) around the ankles, and relieving aches in the lower back.

Diabetes

Diabetes is not contraindicated if it is properly managed. If your client is able to exercise they are unlikely to suffer any adverse reaction to massage. However, since massage stimulates blood circulation, blood sugar levels may be affected and your client should be aware of this so that they can adjust their medication accordingly.

Varicose veins

Varicose veins occur when valves in the veins fail and prevent the flow of blood back to the heart; this causes a pooling of blood, commonly in the legs. If someone has varicose veins that could be damaged by massage they will usually be under medical supervision and possibly awaiting surgery, so a simple check with your client will give you the information you need. If they are able to exercise, light effleurage (*see* Chapter 9, pp. 81–2 for information on this technique) properly applied in the direction of the heart is generally harmless. Varicose veins should not be confused, particularly after exercise, with blood vessels that have become prominent due to physical exertion.

The sports massage therapist

Becoming a good sports massage therapist requires dedication, hard work, sound knowledge of the areas described below, and plenty of practice. Most people who embark on this form of training already have a keen interest in sport or rigorous physical activity. While you do not need qualifications to start with, you will need to learn anatomy and physiology, become confident at 'touching and handling' your clients, and be a good communicator.

♦ What a sports massage therapist needs to know ♦

A sports massage therapist requires a wide range of knowledge and practical skills covering the following:

- ♦ anatomy and physiology;
- ♦ the effects of exercise on the human body and its systems;
- ♦ the physical, physiological and psychological effects of massage;
- ♦ how sports massage works to aid the athlete;
- ♦ how to assess problems;
- ♦ massage techniques and how to apply them to each part of the body;
- ♦ stretching techniques;
- ♦ first aid;
- ♦ injury management;
- ♦ safety in sport and exercise.

This book covers all these areas in detail to assist the student or new practitioner of sports massage. The information is also useful reference for those athletes, coaches and other industry professionals who wish to know more about how sports massage can aid performance and prevent injury.

As discussed early in Chapter 1, the sports massage therapist is concerned with the manipulation of soft tissues. It is important to recognise how much the sports massage therapist must know – and indeed, how much they are expected to carry out under professional practice. While they must be skilled in assessing a client's physical condition (*see also Chapter 7*), there is a line to be drawn between this and the diagnosis of traumatic injury and other conditions. This requires more extensive training and is often the realm of the medical practitioner or physiotherapist. If in any doubt, the client should always be referred on to an appropriate specialist.

Once a diagnosis has been made by a suitably qualified person, the sports massage therapist may often provide treatment which will benefit the client. For example, musculo-skeletal imbalances (*see pp. 56–9*) may often arise as a result of a traumatic injury – and these may be accurately assessed and treated by the sports massage therapist. For this reason, many sports massage therapists will often work in tandem with other sports-care specialists.

◆ Do you need to be fit and active in sport? ◆

Sports massage is physically demanding and may involve long and continuous periods of strenuous work. As a therapist you need to have the strength and endurance to cope with extended periods of demanding physical activity. Your health and wellbeing are your most important assets, and overdoing it because of a lack of physical fitness can be detrimental to both you and your client.

As well as physical fitness, a therapist needs good mobility and flexibility to massage effectively. Good posture is essential, and guidelines on posture for massage are provided in Chapter 9.

While you don't need to be an active sports participant, knowing as much as you can about a client's activity will help you to understand how conditions may arise. It will also ensure you can provide sound advice that is relevant to your client's activity.

◆ Where is sports massage practised? ◆

The sports massage therapist will be expected to carry out different forms of massage in various circumstances and surroundings: in a treatment room, at a sports event, on a sports field, at the trackside or in changing rooms either before, during or after a race or event. These venues may be noisy and crowded, unlike the tranquil environment often associated with other forms of massage that are aimed at relaxation. Furthermore, a therapist will often work among teams and large groups of people such as coaches, players, trainers and other sports therapists. Whatever the circumstances, it is essential to maintain a professional and confidential,

one-to-one client relationship. Information about setting up a treatment room for permanent or for temporary use is provided in Appendix 2, *The treatment room*.

◆ Do you need insurance to practise sports massage? ◆

It is important to have *public liability* and *professional indemnity insurance* once you are qualified. Although it is unlikely that anyone will have reason to claim against you, it does provide your clients with the reassurance that you have adopted a professional approach – and that in the event of an accident while in your treatment area, they would be covered by adequate insurance.

For an annual premium of £60 at the time of writing, Independent Professional Therapists International (IPTI) provides all-risk insurance cover to the sum of £1 million (*see* p. 165 for contact details). This covers you for any damage or harm caused to your client while in your care. This might result from an accident, such as someone tripping over a badly placed doormat, or from negligence – for example, if harm were caused to your client by a particular technique you have applied. Both situations are very rare, but it's best to be covered.

The £1 million mentioned above is not a ceiling, and can be increased for an additional premium, which may be necessary if you are dealing with elite and highly paid athletes.

♦ What equipment does a sports therapist need? ♦

To practise sports massage you will need a basic kit that includes the items detailed below.

Portable couch

If you intend working in sport, it is almost certain that you will have to travel to sports events, either with teams or individuals. It is therefore important to have a well-constructed, portable couch that folds in half, and a tough and durable carrying case to protect it from damage during transit. *See Appendix 1 for further information on the massage couch.*

Bath towels and couch cover

You will need at least two bath towels. One may be folded and rolled to support your client behind the knees in the supine position (lying on the back), and under the ankles in the prone position (lying on the front). The other towel may be used to cover your client for comfort and/or warmth. It is important to use bath towels, as smaller towels often prove inadequate for these purposes. A pillow or a third bath towel is also recommended for supporting your client's head when they are lying in the supine position.

Some form of towelling cover for the couch is essential and the best ones available on the market have an elasticated edge that holds the cover in place. If you are working in the field it is advisable to have a roll of tissue for additional covering for the couch (it should match the width of your couch), which you can replace between massage sessions. This is often necessary because you may be working

with athletes who are muddy or, at the very least, perspiring.

Flannels

A supply of flannels is useful, particularly at sports events, for removing dirt and excess oil. Flannels are used with sports cologne (*see below*) for the removal of oil. They will become grubby quickly, so it is sensible to have a number in reserve.

Massage oil and sports cologne

There are various forms of *massage oil* available, and what you choose depends on your own preferences and those of your clients. The purest form of vegetable oil with little or no fragrance added is recommended to reduce the possibility of adverse skin reactions. Some essential oils may be added in very small quantities for general use, such as lavender and lemongrass, which are known to be effective muscle relaxants. However, if you are going to use essential oils in massage you should undertake appropriate training in aromatherapy – essential oils are contraindicated in some conditions, such as pregnancy. *See Appendix 3 for guidelines on using essential oils in sports massage.*

Sports cologne is used for removing any excess oil at the end of a massage session. Although most of the oil is usually absorbed into the skin, clients like to be assured that it will not rub on to their clothes after the massage. You may also find, particularly at events with large numbers of participants, that it is impossible for the organisers to provide washing or showering facilities, either for the athletes or the sports massage therapists. In these situations, sports cologne is ideal for removing any dirt from your client and for cleaning your hands before massaging. Finally,

when working at sports events, and particularly in pre-competition situations, you will probably find that many athletes prefer not to have the oil left on when competing – sports cologne is therefore ideal in these circumstances.

Talcum powder

Talcum powder is a widely used massage medium, although oil tends to be preferred. It is advisable, therefore, to have a small container of talcum powder with you for occasions when a client prefers this to massage oil. This may be the case in some competitions, such as aerobics, where the competitors are not allowed to appear with any type of oil on their skin.

♦ Guidelines on personal hygiene ♦

As physical contact is the essence of sports massage, the appearance and personal hygiene of the sports massage therapist are of the utmost importance. Hair should always be clean and tied back when necessary to avoid contact with the client. Special attention should be given to your hands: nails must be kept short and the skin must be kept clean at all times. Always wash your hands between treatment sessions. If this is not possible when you are working in the field, cologne is a very effective substitute (*see above*).

Additional guidelines for the sports massage therapist are provided in Chapter 14, *Tips for success*.

• PART TWO •

The science of sports massage

Chapter 3

The principles of human anatomy and physiology

Knowledge and an understanding of the human body and how it functions is the starting point of sports massage theory. The more we understand about how the body functions, what may interrupt this functioning (such as trauma and injury), and what influence increased activity has on the systems that combine to make it function, the more the sports massage therapist can use their skills and knowledge to advise their clients. This chapter looks at the various systems that make up the body, and how parts and movements of the body are described. The information in this chapter is intended only as a foundation and further study is encouraged (*see p. 164 Recommended reading*).

First, a few definitions:

- ◆ *Anatomy* is the study of the structure of the human body and its component parts.
- ◆ *Physiology* is the study of how the body and its systems function.

◆ The body systems ◆

There are 10 major systems that function within the human body.

The skeletal system

The skeletal system is the framework of the body, and comprises approximately 206 bones and their associated cartilages. The bones of the head, neck and trunk contribute to the *axial skeleton*; those of the limbs form the *appendicular skeleton*.

The muscular system

This is responsible for moving bones at joints and consists of skeletal muscle in association with tendons and ligaments. Two other muscle tissues are also described: cardiac muscle, aptly named, as it is found only in the heart; and smooth muscle, which is widely distributed in the walls of many hollow tubes in the body (e.g. the gut and blood vessels).

The cardiovascular (circulatory) system

This is responsible for transporting the blood around, so that cells throughout the body can be supplied with oxygen and nutrients and their waste products removed. The cardiovascular system includes the heart and blood vessels (principally arteries, arterioles, capillaries, venules and veins), and is closely related to the *lymphatic* system. This consists of blindly-ending lymphatic vessels, and is concerned with removing excess tissue fluid and returning it to the blood system via the great veins in the neck.

The respiratory system

The respiratory system comprises the lungs and their associated airways (e.g. the nasal cavity, larynx and trachea). It is concerned with allowing oxygen and carbon dioxide to be exchanged between the blood and the air.

The digestive system

This system is concerned with the ingestion of food, the absorption of the products of digestion, and the excretion of indigestible waste products. It extends from the mouth to the anus and includes the oral cavity, pharynx, oesophagus, stomach, small and large intestines and various associated glands – notably the liver, pancreas and salivary glands.

The nervous system

Comprises the brain and spinal cord (which together form the central nervous system), as well as peripheral autonomic nerves (which together constitute the peripheral nervous system). The nervous system enables the

body to adapt to changes in either the external or the internal environment.

The excretory (urinary) system

Comprises the kidneys, ureters, bladder and urethra. It is concerned with producing, transporting, storing and excreting urine. (*Note: Other systems, including the digestive, respiratory and the integumentary systems, also remove waste products.*)

The endocrine (hormonal) system

Consists of the endocrine glands – including the pituitary, adrenal, thyroid, parathyroid, pineal, testes and ovaries, and the pancreatic islets of Langerhans – which secrete hormones directly into the bloodstream. These hormones affect a wide range of body functions. For example, the pituitary gland secretes hormones affecting skeletal growth, the development of the sex glands and the functioning of other endocrine glands; and the adrenal glands produce adrenaline and noradrenaline.

The integumentary system

This comprises of the skin and its 'appendages' (hairs, sweat glands, sebaceous glands and nails).

The reproductive system

Comprises all the sexual organs concerned with reproduction.

In sports massage the two most important body systems are the *skeletal system* and the *muscular system* (also described collectively as