

Sports Medicine & Rehabilitation

December 2007

Special points of interest:

- Sports medicine encompasses a wide field of medicine focused on optimizing function
- The sports medicine physician is typically trained in general practice but has added training in many fields applicable to physical activity and disease
- Sports medicine makes use of various professionals to help a patient optimize their function
- Sports medicine is applicable to all ages and patients of all activity levels.

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What is Sports Medicine?

This is a good question! There is a wide variation in what people view as sports medicine. Having practiced in North America and overseas, I can say that the typical view and the most restrictive view is medicine related to treatment of athletes and teams. While this is how sports medicine may have started, most sports medicine practitioners are involved with more than just teams. Sports medicine started to enable athletes to achieve their optimum performance. At the time sports medicine was beginning in North America preventative health and optimal performance was not a consideration for most doctors or patients. This area of medicine was left to those few individuals who chose to excel in physical activity. It soon became clear that to perform at one's optimum one had to be in top physical health. This included physical training techniques, nutrition, adequate rest and appropriate treatment of injuries whether through

rehabilitation or surgery. While this was developing in the sports medicine world, the rest of mainstream medicine was catching on to the benefits of physical activity and preventative health measures. The next step in sports medicine was to recognize that psychological states very much affected one's physical performance. This too is now catching on with mainstream medicine and the public at large. Studies have shown that in any sports medicine centre about 50% of people receiving treatment are non athletic. Why do these individuals come to a sports medicine centre? They come because they or their doctors recognize that the treatment philosophy of the sports medicine team is to maximize one's abilities and performance rather than just eliminate pain. One may think that this element of treatment is not unique in that anyone can push their patient to higher functional goals. The reality is that the secret of

sports medicine is not in the textbook but in the heart and mind of the sports medicine practitioner. It takes one with such a philosophy of treatment to diligently search out all the possibilities of treatment for their patient in order for them to overcome the functional blocks to activity and health they may be confronting. This fact is borne out in practice on a daily basis. Even among sports medicine practitioners there is a wide variation in practice trends. Among physicians, some are more surgically oriented, others medication oriented etc. Some deal with the physical and orthopedic issues alone and others deal with all elements of the patient both physical and psychological. Sports medicine is often organized around a sport medicine clinic where one may find various professionals who work together with the sport medicine physician to provide optimization of physical and psychological functioning both acutely and for the long term.

The Sports Medicine Physician

As mentioned these usually are general practitioners by training but vary considerably and include orthopedic surgeons, gynecologists, ophthalmologists, and other specialists such as dentists. Typically in North America the focus of sports medicine is the orthopedic aspect of the field. In Europe and Israel medical disease and car-

diovascular function has a greater presence in the function of a typical sports medicine physician. According to Canadian standards sports medicine physicians have specialized training and skills that allow them to provide care to all age groups and activity levels. They have an interest in promotion of health and well-

ness and treatment of physical and mental disease states through physical activity. Many physicians have completed a residency in sports medicine and have passed the Canadian Academy of Sports Medicine Diploma examination. In Canada it is required to pass this exam in order to call oneself a sports Medicine physician.

Skills of the Sports Medicine Practitioner



Sports medicine physicians have specialized training in many fields of medicine.

Sports medicine centres typically combine the skills of many paramedical practitioners to provide patients with treatment to optimize function

As mentioned earlier the emphasis may vary between individual physicians however in general sports medicine physicians are trained in the diagnosis and treatment of injuries and illnesses, interpretation of special tests and imaging studies including x-ray and MRI, acute on field trauma care, head injury management, appropriate prescription of orthotics and braces, travel and immunization issues for athletes, environmental issues

affected physical activity including electrolyte and fluid balance, use of supplements and nutritional issues, treatment of specific disease states in conjunction with exercise including diabetes, asthma, osteoarthritis, osteoporosis etc.. Providing guidance and treatment to disabled individuals is another area in which sport medicine physicians provide a valuable resource by helping individuals achieve optimal functioning. It is becoming increasingly clear

that optimizing psychological health is necessary to achieve optimal physical performance and health. This field is generally reserved for high level athletes and top executives. Some sports medicine physicians including myself view this as most probably the most important element in the complete array of treatment considerations offered to patients to optimize health function and recover from disease.

The Typical Sports Medicine Centre Set Up

A typical sports medicine centre will have a sports medicine physician to provide consultation services to referring physicians and to patients. After an assessment the patient will be organized with respect to treatment and investigations. As most patients have orthopedic concerns this will usually involve organizing rehabilitation for them. Investigations are used sparingly as the sports medicine physician has the

experience to diagnose conditions and the comfort to treat them at least initially without relying on investigations for confirmation. Ancillary services are prescribed as needed such as physio or massage therapy, nutrition counseling, and psychological counseling. Sports medicine centres are generally set up to treat a patient's condition as quickly as is feasible depending on the nature of the condition, and the

age and condition of the patient. The goal is optimal functioning ASAP. To accomplish this goal it helps to start treating patients as soon as possible after their injuries or after the development of a given condition. For this reason sports medicine clinics often treat patients three times per week and add functional training and conditioning programs to patient treatments, going beyond standard therapy practices.

Physiotherapy



Physiotherapists use many skills to treat pathology and optimize physical function.

This is the standard rehabilitation professional in most sports clinics. Physiotherapists are university trained professionals whose goal is to promote health and well being through optimizing independent functioning. While physiotherapists are trained in many fields such as cardiopulmonary and neurological disorders, their main function in a sports medicine centre is through treatment of orthopedic conditions and providing optimal functioning in these areas. Physiotherapists can be the first professional a person seeks out for treatment. With more and more publicity about

sports and sports medicine many individuals are seeking out physiotherapists as their first line of treatment. Often in a sports medicine centre the sports medicine physician will consult with the patient and order any necessary investigations and treatment including physiotherapy. At that point the therapist will conduct their own assessment focused on developing an approach to treatment. Treatment consists of education, reducing pain, instituting relative rest of the injured area, appropriate support, strengthening and eventually functional training. Techniques used varies

however a well trained physiotherapist will probably make use of hands on treatment in the form of mobilizations or manipulations, localized massage, specialize stretching and strengthening techniques, and physical modalities such as ice, heat, ultrasound, laser, interferential current, muscle stimulation, and TENS. Quality therapy is usually distinguishable by the use of hands on treatment and education rather than the sole use of modalities. Physiotherapists provide an indispensable service in a sports medicine centre.

Athletic Therapy

Athletic therapists are college trained professionals who deal with athletic injuries and conditions. Apart from their college training athletic therapists have to accumulate on field and clinic management hours and pass oral and written exams. Due to their orthopedic train-

ing and their sports medicine background they are often involved in treating the full array of orthopedic patients alongside physiotherapists and providing functional training or treating patients on their own. Athletic therapists have addi-

tional skills such as taping, brace fitting, orthotic dispensing and event coverage. Due to their involvement in sports medicine and athletes on a regular basis these professionals also lean towards promoting optimal functioning.



AT's have special training in athletic injury management.

Massage Therapy

Massage therapy is a treatment option which is either used in conjunction with physical rehabilitation performed by physiotherapists or athletic therapists or a stand alone treatment. Many conflicting studies have been produced in an attempt to

determine whether massage therapy is a useful treatment modality. In reality all hands on physical therapists use massage to a limited degree in their practice with excellent results. The exact mechanism of action may not be known as in many

areas of medicine but empirical evidence has proven that both by objective and subjective standards, massage therapy is very useful in conditions involving muscular pain and tension, stress, and overuse injuries. It also has a positive effect on

Sports medicine deals with almost any condition which affects the health and or physical activity and functional levels of a patient

Nutrition Counseling

Nutrition counseling in a sports medicine centre can take several forms. Counseling with respect to supplements which can improve performance but do not have banned substances is one area of interest to some athletes. Others including weekend athletes like to opti-

mize their nutritional intake to match their exercise program and weight loss goals. High level and endurance athletes may also need counseling with respect to fluid and electrolyte intake during training and competition. Dealing with anorexia

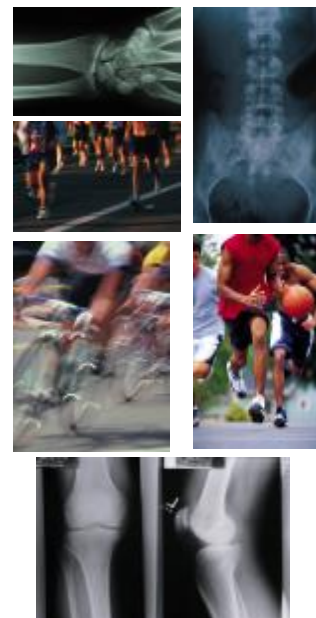
and bulimia while involving some nutrition counseling is primarily handled through psychological counseling backed up by proper nutritional advice. Most of this counseling can be provided by the sport medicine physician or at times a nutritionist.

What Conditions do We Treat?

Most orthopedic conditions are treated at sport medicine centres. Optimizing function and minimizing the need for surgery and drugs is a standard approach however these tools are used when necessary. Standard conditions such as physical injuries whether sport, work related or MVA are all handled at sport medicine centres. Joint problems such as OA or due to rheumatologic conditions are also treated. A typical breakdown of conditions seen in a sports medicine centre in order of frequency is: knee pain, shoulder pain, neck and back pain, lower extremity pain such as tendinosis, plantar fasciitis and metatarsalgia, upper

extremity pain such as tennis or golfer's elbow, wrist tendinosis and injuries, repetitive strain injuries & muscle tension. In addition medical conditions related to or affecting physical activity are also treated. Physical exercise programs for weight loss, osteoporosis, fibromyalgia, asthma, ischemic heart disease, peripheral vascular disease and diabetes among other chronic conditions are also part of the sports medicine repertoire. With these individuals due to the chronicity of their medical conditions and often advanced age, many physical changes may have occurred related to lack of physical conditioning for an

extended period of time. These individuals need physical rehabilitation in addition to advice regarding exercise to get them back to a functional state. Once conditioned they can institute the physical activity recommendations given. With all conditions, sports medicine distinguishes itself by pushing the limits and the envelope of function. There is always the willingness to push forward and improve despite the medical or physical obstacles a patient may be experiencing as long as this is medically safe and feasible. Patients are not written off because of their age or condition but rather respected for their desire to optimize function.



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Who do We Treat?

We treat individuals of all ages and backgrounds whether high level athletes or inactive people. Our goal is to optimize function and prevent recurrences or future disability. In younger highly athletic individuals, despite our physical treatment, we may have to counsel them on reducing the amount of physical activity they are engaged in. Many children are involved in both preschool, school and after school activities. Some even add weekend activities. Many of these children develop overuse injuries and burn out which no amount of

therapy will cure. In these cases we have to counsel the individuals and their parents who may be pushing for this degree of activity, to be more reasonable and take into account the need for rest to provide for recuperation and growth. Related issues such as amount and quality of sleep and nutrition are also reviewed to ensure optimal healing and functional capacity. Many times we have to add conditioning programs to therapy as many children participate in sports without going through adequate conditioning

programs. It goes without saying that the weekend athlete is also counseled with regard to proper conditioning, nutrition and rest. With older individuals we are often involved in selecting the activity best suited to their medical and orthopedic limitations taking into account issues such as osteoarthritis, osteoporosis, balance issues, COPD, diabetes etc. In addition to the presenting injury. Preservation as well as optimization of function is the goal in these individuals.

When to Refer?

Patients should be referred as soon as a condition is identified. The issue here is not can the patient tolerate the pain or will anti-inflammatories be sufficient to reduce the pain to tolerable levels. The real issue is that the patient has a condition, usually physical, that needs correction. Diagnoses such as patellofemoral syndrome, rotator cuff syndrome, lower back pain are descriptors and not specific diagnoses. Without a specific diagnosis appropriate treatment cannot be prescribed. While one may argue that patients will get over their

pain over time this does not mean that the condition has resolved. This may be for several reasons including a reduction or avoidance of activity on behalf of the patient, automatic compensations by the body to accommodate the pathology, or use of medication. It is clear that this state does not signify resolution of the pathology. It is not uncommon when assessing patients with knee, shoulder or back pain to discover that they have had similar problems in the past which "resolved" without treatment. Upon closer

inspection one can identify the loss of physical activity they have endured and the compensations which the body has instituted. The longer the duration of the compensations the harder it is to reverse them. Apart from obvious cases to refer, any cases which do not respond to one week of rest should be referred for assessment. Acute injuries can be referred immediately for assessment and management as many can benefit from either immediate treatment such as with ankle sprains to specialized supports for minor fractures and other injuries.

Psychophysiologic Aspects of Health and Optimal Functioning

The brain is connected to the body through various means including neural connections both voluntary and autonomic as well as through the hormonal system. These connections in turn affect all physiologic systems of the body. This means that what goes on in the brain can have far reaching effects on the body. The brain deals with thoughts and thinking. The brain can be thought of as hardware such as a computer. The software is how we have been programmed or conditioned to react to stimuli. The

thoughts are the result of the processing of internal or external stimuli and these are what trigger various body reactions. In the past psychophysiologic testing was kept in the realm of high level athletes and top executives to promote optimal functioning. At least 30% of people who have chronic back or neck pain have an obvious psychological basis to their condition. Physical treatment alone will fail in the long run. In reality many conditions can be related to psychological stress. The difficulty is that the stressors are

often low grade and chronic rather than acute, intense and easily identifiable. By using psychophysiological testing which consists of biofeedback, neurofeedback and psychological questionnaires, one can identify the psychophysiological reactions in individuals which can lead to pathology. Once identified these issues are addressed by teaching patients self regulation skills. Patients thus learn lifelong skills that promote optimal health.

