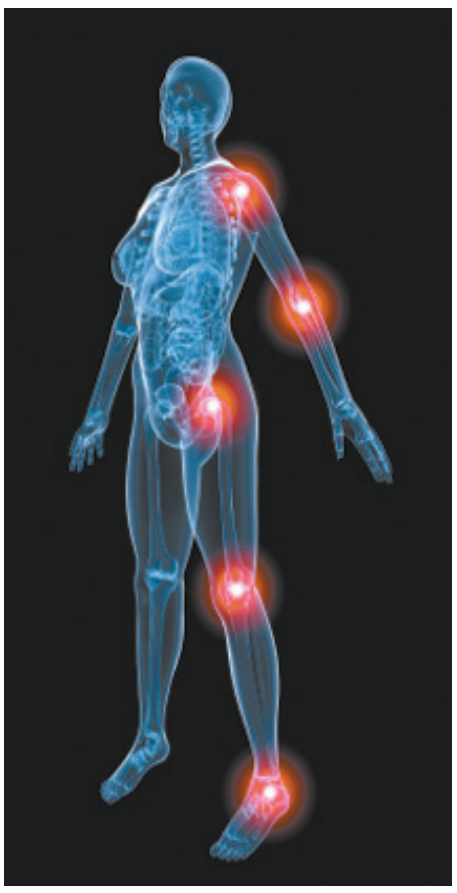
THE WELL TEACHER

Chronic pain and physical activity: Where to start?

by Lloyd Richard, BScOT Reg (NS), BSc Kin
Occupational Therapist and Kinesiologist

A very common question I ask during my initial interview with a new client is what their normal day to day routine is like. A common response is, "...not much because I try to avoid things that hurt and everything hurts." A normal response to pain is to stop the activity that causes the pain. When the pain is acute, this is often a good idea because it prevents us from damaging ourselves further. A person in chronic pain is in a very different situation.

For these individuals, rest may cause the pain to abate temporarily over the short term, but over the long run rest can result in joint stiffness, muscle-shortening and tightening and weakness. If this occurs, recovery becomes more difficult because when the affected areas are finally exercised, additional pain will result from the stiff joints and shortened muscles. This new bout of pain often results in the perceived need for more rest and a vicious cycle develops. This scenario is one reason why it is crucial for chronic pain sufferers to gradually and systematically increase their activity to near normal levels.



People who experience chronic pain often believe that they have to rest until their pain subsides before they can try to live normally again. A sedentary lifestyle is commonly adopted in the mistaken belief that immobility will ensure a pain free state. Unfortunately, this response feeds further into the pain cycle. In order to break the cycle, action must be taken: one cannot wait for the pain to go away before taking further steps. Convincing a client that activities may heighten their pain in the short term but improve their condition over the long run is one of the biggest challenges any therapist has to undertake. For clarification purposes, this is in reference to chronic pain which a physician has determined will not be made worse by physical activities.

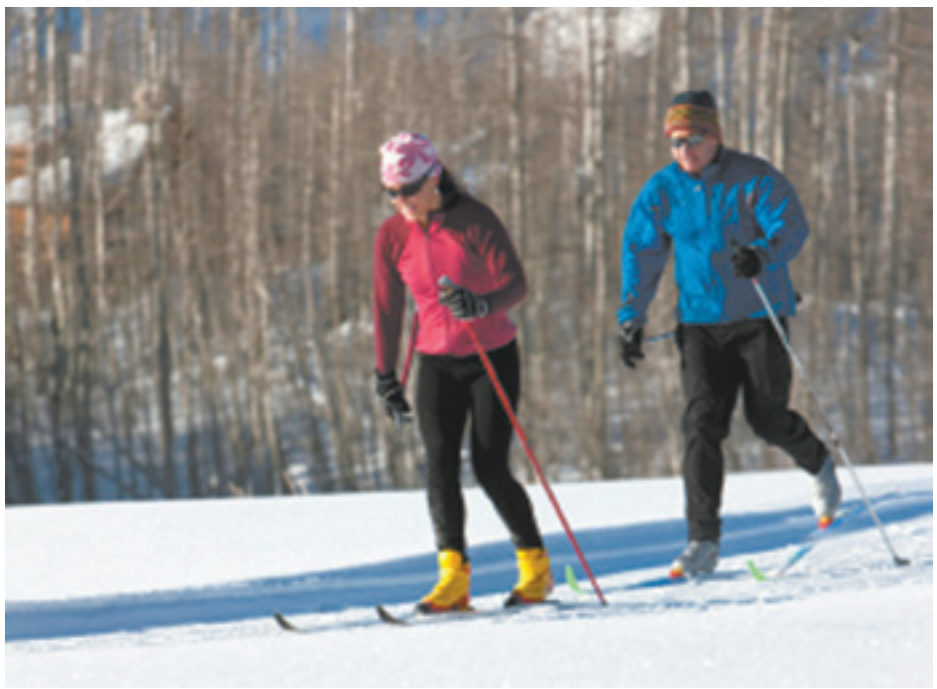
It is often helpful to differentiate between three basic kinds of activity or exercise:

1. Anxiolytic exercise, which is intended to reduce anxiety and tension.
2. Everyday activity such as household chores, shopping, etc.
3. Exercise that involves strengthening, flexibility and stretching to counteract de-conditioning.

Anxiolytic exercises include aerobic exercises such as swimming, jogging, brisk walking, and cycling, and non-aerobic exercises such as yoga and Tai Chi. Anxiety can lead to pain when it causes muscular tightening and spasms. Anxiolytic exercises allow the body to relax and reduce pain. This takes place through two different mechanisms. First, the exercises noted above typically involve moderately used muscle groups. Studies show that moderately used muscle groups are less likely to spasm and tighten up compared to little used muscles. Second, there is evidence to support that endorphins, our body's natural morphine-like substance, are released during sustained physical activity. In the advanced stages of endorphin release, the sensations of exhaustion and pain subside and are sometimes replaced by a period of euphoria. Including anxiolytic exercises into one's pain management strategy is an important way of controlling pain and can help reprogram the brain's pain system.

Individuals with chronic pain report that everyday activities are often wholly or partially controlled by their pain. Having your life controlled by pain is a frustrating experience. Let me share a commonly reported scenario. Your symptoms are particularly aggravated and your household jobs build up over the course of several days. Finally, after several days of rest you attempt to catch up on all of your chores during one afternoon. By the end of the day, your symptoms are starting to ramp up quickly and before you know it you are searching for your pain control medication. You are angry that even one day of "normal" activity is more than you can cope with. This commonplace scenario creates an unfortunate connection: your body learns that engaging in activity in the future will result in sharp increases in pain. Learned pain becomes an ingrained part of the pain system and avoidance behaviours often develop.

To undo the damaging pain/activity association there are four concepts that will assist in reprogramming the pain system: baselines, shaping, pre-pain cues and pacing. To reintroduce an activity, first establish a baseline. A baseline is a measure of how long you can perform an activity until there is a sharp pain increase (this could be measured in time, distance, repetitions, etc). Once the baseline is established, divide this measure in half; this is now the short term goal for the activity. This activity can now be safely completed and not associated with distressing increases in pain. Now for the shaping part. Shaping is the process of gradually increasing an activity on the basis of a pre-planned schedule. Start with the half value determined above then gradually add time, distance or frequency working back up to the baseline value. By sticking to a systematic routine, it will often be found that he or she can return to the baseline level without a sharp increase in pain. Patience



is the most important consideration at this point. Do not try to shape an activity too quickly. Plan to take two to three weeks to build back up to your baseline measure. The purpose is not to finish the activity but to reprogram the pain system; you want your behaviour to become independent of pain so that you no longer anticipate discomfort when exercising. Once you have worked back to your baseline, you can re-establish new baselines and create new goals for yourself. Another means of establishing a baseline is to recognize pre-pain cues. A pre-pain cue is often manifested in the form of tightness or mild discomfort in an affected area that quite reliably signals an imminent increase in pain. The cue, rather than the pain itself, can become the signal to stop an activity. By utilizing a pre-pain cue and working to that limit, you can gradually increase your activity before the onset of the pre-pain cue.

The strategies of establishing baselines, shaping, and pre-pain cues are all part of the general principle of pacing. Pacing can be applied to any activity. The key is to maintain a schedule that is not dictated by changes in pain. Do not wait until the pain builds up to the point that it forces you to do something; always plan ahead so that you are preventing the increase, allowing you to stay in control.

People with chronic pain commonly give up their regular exercise programs and quickly become de-conditioned. People with chronic pain become de-conditioned for three basic reasons:

1. Activity is avoided because it is painful.
2. Braces and canes are used over the long term.
3. Protective responses develop.

When people stop participating in regular activity or regular exercise, negative effects can develop rapidly. Studies have suggested that we lose up 1.5 per cent of our strength and muscle mass per day when completely sedentary. This strength and muscle mass then takes up to twice as long to regain than it took to lose, even with very vigorous exercise programs. Even short periods of inactivity can have long-lasting effects which can lead to more disability in the long run. Braces and canes can often lead to muscle imbalances and secondary posture issues leading to additional problems that make recovery all the more difficult. Protective responses, such as limping to avoid putting weight on the painful side, result in overstressed joints and additional muscle imbalances often result in more pain.

Whatever the reason for de-conditioning, there are specific re-conditioning exercises you can do. Properly exercising an area can reduce stiffness, strengthen muscles to help support the area and increase blood flow. Exercises selected may have to address some of the muscle imbalances noted above. An effective exercise program can act to improve the functioning of the area and can reduce signals that are feeding into the pain system. You may need assistance from a physiotherapist, occupational therapist or kinesiologist in developing your program to account for your special needs. Overall, exercising can be highly beneficial in allowing you to regain control of your chronic pain if you follow the guidelines above. Good Luck.

Lloyd Richard is an occupational therapist and kinesiologist who has been practicing for 12 years. He owns and operates his own consulting company in Halifax and can be reached at lloydrichardot@eastlink.ca or 902.223.3561.

did you KNOW?

The Early Intervention Program (EIP) invites NSTU members to sign up for our Wellness email list at ***Be_Well@nstu.ca***.

Please contact Erin at ekeefe@nstu.ca to provide her with your NSTU email address. The ***Be_Well@nstu.ca*** list will provide information about the EIP and other wellness topics.