

Ross' Precision Health & Fitness Newsletter
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Understanding Chronic Muscle and Joint Pain

Hello everyone, I hope you are all doing well and still working towards your health and fitness goals. I recently realized that it has been over 9 months since my last newsletter, so I decided it was time to start writing again. Well actually I have a little more free time now and more importantly I thought of something I wanted to write about. I have also become more motivated since a number of you have inquired about new newsletters since I stopped writing. Anyway, thanks and I hope you enjoy my latest issue.

As with some of my previous newsletters, this one will really revolve around the article, but I want to give a little background about why muscle and joint pain is the topic of this issue. Muscle and/or joint pain is a problem for everyone, at least during some periods in their life and while I create workouts to minimize unnecessary pain, I seldom really explain the mechanisms involved in causing, preventing, and correcting aches and pains, especially chronic ones.

I dealt with this topic somewhat during my 8th newsletter, which was about flexibility and stretching, but I know that chronic pains are more complicated than most people realize and they can be deceptively difficult to correct, especially if you do not understand what is going on inside your body. Honestly it is often tough for people who know what they are doing and there is usually some trial and error involved in the process.

While reading this article will not make you able to diagnose precise muscle problems and as there are over 600 muscles in the body, determining specific muscle issues is a challenge even for experts. In addition, once minor issues worsen, they start involving additional muscles and the areas that hurt are often different from the areas where the discomfort originated. Instead I hope to teach you the basic mechanics behind muscle problems and pain so you will ideally be able to recognize general areas that have minor issues and address them before they become chronic problems. Now on with the article.

Featured Article
Understanding the Important and Often Misunderstood
Relationship Between Exercise, Stretching, and Muscle/Joint Pain
Part 1

These days it is common knowledge that aerobic exercise and resistance training are both beneficial for people of all ages. However, many people do not realize that performing a certain type of exercise does not guarantee you will receive all the benefits associated with that form of training. More importantly, exercise can also have negative effects on the body if the overall training program is not well rounded.

One problem is that exercise programs are usually only discussed with regards to the positive physical changes they will have on your body and not how they will make your body feel. This happens for many reasons, but a primary reason is that programs are designed to match specific goals. When most people talk about their goals they almost always make statements about looking better or performing better, but rarely are their specific goals about feeling better. This is not to say that people are not concerned about feeling better, but there is a natural assumption that any exercise program will automatically make you feel better. Unfortunately this is not necessarily the case.

While it is true that exercising almost always results positive mental changes and increased energy, improvements in how your muscles and joints feel are not as common. One reason is because muscle and joint changes occur over a longer period of time and the effects of exercise are not easily measured. Also a number of factors outside of your actual workouts, such as nutrition, posture, stretching, and normal daily activities will affect the way your muscles and joints feel. Luckily learning how each different variable affects your body is not essential and you can get a good idea about the health of your muscles and joints by learning some basic information.

This article will focus on the information you need to understand, prevent, and correct most common muscle and joint aches and pains you may experience. This includes general causes of joint and muscle pain, potential negative effects of exercise, and what you should do to decrease pain and improve the health of your muscles and joints. While having a basic understanding of anatomy is certainly helpful, I hope to teach you how paying attention to your body will give you most of the information you need to prevent chronic muscle problems and keep your body feeling well.

While it would be nice to say people rarely have aches or pains, the truth is everyone has at least some minor issues and most people have at least one significant muscle or joint problem. In many cases exercise does not cause these problems, but exercising often points out existing problems people did not know about. I sometimes hear people say they never had muscle problems until they started exercising, but this is almost never actually true. Poor exercise technique or bad program design can certainly result in pain, but most people who do not exercise have problems they are unaware of, because of their body compensates and masks the symptoms.

The human body is exceptional at compensating for minor muscle and joint problems to minimize aches and pains. In cases of acute injury, such as a sprained ankle, this is very useful, because it decreases your discomfort by engaging uninjured muscles, allowing the injured area to heal. Unfortunately this compensation mechanism more commonly works to prevent pain and awareness of minor muscle problems that will not heal without specific interventions such as stretching or strength training.

Due to the body's compensation system, these problems will actually become worse and eventually your body will no longer be able to prevent you from feeling pain. To make matters worse, by the time you eventually feel significant discomfort the problem

may have been going on for months or years. At this point you will have a chronic muscle problem that may take a lot of time and dedication to repair.

The best strategy for avoiding significant muscle and joint pain is identifying and correcting minor problems before they become major ones. While this may sound like a daunting task, it becomes much easier once you understand how your body actively compensates to keep you from feeling pain. In addition exercise will help bring these issues to your attention, but we will get to that later. For now let's look at what causes muscle and joint pain and how your body compensates to minimize your discomfort.

Some aches and pains are related to bones, ligaments, or tendon injuries, but the vast majority are directly related to chronic muscle issues. Even many joint problems are caused by muscle tightness, weakness, or imbalances between different muscles. While these problems can be very complicated, they generally follow the same basic progression, which makes them easier to understand and eventually correct.

Chronic muscle problems usually begin as the result of an injury, poor posture, weakness, tightness, or overuse. However regardless of the way the problem starts, one of the earliest signs of trouble will be tight muscles. Muscle tightness or poor flexibility does not always result in muscle pain, but muscles or joints that hurt will always involve tight muscles. Therefore all things being equal, looser muscles are less prone to problems than tighter ones.

While you probably already know that tight muscles can cause pain, you may not know why the pain occurs or how your body responds to having tight muscles. A little muscle tightness is not going to have a dramatic effect on how your muscles feel, but if a muscle gets too tight knots can develop. Just having a knot will not cause muscle pain, but when the knot is pulled or stretched too much it can be painful. Initially the pain will be minor and may just feel a little uncomfortable or even just stiff. However this feeling is all your body needs to start applying its compensation system to keep you from feeling additional discomfort.

This is the point where you really want to intervene to stretch and loosen the muscle. It is important to know that you are not just trying to make the muscle feel less stiff, but your real goal is to increase the length of the muscle. All muscles have an ideal length or range of movement and the closer the muscle is to its ideal, the better it will feel and function. When a knot exists it means the muscle will not be able to stretch to its ideal length because the movement and flexibility will be decreased in the area of the knot.

It may be uncomfortable when you stretch a knotted muscle, but you are going to have to stretch it somewhat to help break up the knot and regain normal range of motion. However be careful not to stretch the muscle too hard or you can end up damaging the muscle instead of helping it. Also keep in mind that knots are not like other types of muscle problems or injuries which require rest to heal. Knots will not improve if left alone and will actually become much worse over time. After your muscle recovers some of its lost range of motion, it will feel better, but it is still important to keep stretching,

because there will probably still be some knotting left and the discomfort will quickly return if it is left alone.

Again, you probably know that knots are bad, but you may not know how your body responds to having knotted muscles. When you pull or put too much stress on a tight muscle you will start to feel discomfort and the muscle will contract in order to prevent any more stretching or stress on the problematic area. When the tension is released you will feel less or no pain at all, because the pain accompanies activity of the injured/knotted portion of the muscle.

The reality is that your body is more concerned with preventing feelings of pain than it is about correcting muscle problems. Once your brain recognizes that a particular muscle hurts when it is activated, it looks for ways to avoid using that muscle or at least the problematic area of the muscle whenever possible. Then when you perform certain movements you will essentially be having the same motion, but you will be using slightly different muscles than you would if your muscles were fully functional.

This is very similar to what happens if you sprain your ankle or have any other leg injury. In those situations you end up putting less weight on your injured leg and your uninjured leg assumes more of the work than usual. However if your leg takes a long time to recover, you may start feeling pain in the uninjured leg. This is because the muscles in the uninjured leg become overworked since they have to do significantly more work than usual.

The big difference with minor muscle issues, such as knots, is the adjustments made by your body to protect the muscle are much more subtle and you may not even realize they are happening. Unfortunately, even though the changes are minor, they can still lead to overworked muscles. It just happens over a much longer period of time and these changes are also more difficult to reverse.

The main problem is that while your body is protecting you from feeling the sore muscle, it is not necessarily healing. If the muscle is suffering from an overuse injury it will need the rest to heal, but often this is not the case. Muscle tightness, which is the most prominent issue related to aches and pains, is exactly the type of problem that cannot be treated by protecting the muscle and preventing it from being used.

As discussed in greater detail in my stretching and flexibility article, tight muscles are shorter than their optimal length and they will not regain length on their own. In fact, muscles kept in a shortened position, which is what happens when your body is protecting them, will continue getting even shorter. This is because when your muscle does not use its full range of motion, your body basically decides that you do not need the full motion, so it will start dropping individual parts of the muscle fibers (sarcomeres), which will further decrease the length of the muscle.

This is part of the reason why chronic muscle problems usually get worse over time. After some muscle length is lost, your body will still keep compensating to prevent

feeling pain, so it will eventually have to keep the muscle in an even shorter position, which will result in more lost muscle fibers. Without intervention, the cycle will continue until you feel pain during small movements or the muscle may even hurt while you are completely still.

At this point there will be visible postural changes (uneven shoulder or hip height, slumping of the shoulders, altered spinal curve, etc.) and/or a large area of muscle with excessive tightness or limited range of motion. The tightness and limited motion result from the surrounding musculature being constantly kept so tight, because they are still trying to prevent discomfort associated with the muscle. In many cases these muscles will contract so hard they will become overworked and cause pain separate from the original muscle problem.

These situations are very uncomfortable and frustrating, because you will have almost constant discomfort. Eventually the protective muscles will have to rest and when they do you will feel increased pain from the original muscle issue. At this point you will have essentially worn out all the muscles in the area, but they will keep trying to help you feel better, even when they need to rest. This is the point where most people seek medical intervention or start taking pills to help their muscles relax.

In addition to these problems there is a separate, but related issue that occurs. Since the “helping” muscles are kept tightened for so long, then develop altered neurological patterns. Basically this means that the muscles become reprogrammed to stay tight and contract all the time or as much as physically possible. As a result, part of the long-term treatment for injured areas must involve reeducating the overworked muscles and teaching them how to relax again.

While as usual I have already written more than I intended, I also want to provide a brief note about joint pain. Obviously if you tear a tendon or ligament you will have joint pain, but most joint pain is the result of tight muscles. This is an oversimplification, but since muscles are connected to joints (by ligaments) when a muscle is tight it will put extra stress on the joint. Basically, if a muscle becomes tight enough it can cause pain in any joint it connects to.

For example since both your quad and hamstring muscles connect to the knee, excess tightness in either muscle can cause knee pain even if there is no real damage or injury to the knee. Also, the tightness does not have to be directly by the knee to cause problems. Even if the tightness is up towards your hip, since the muscles are connected they will still pull on your knee. This is another reason why maintaining good flexibility is so important.

I think this is a good place to stop for now and hopefully you have a general understanding of how chronic muscle problems develop over time. While these problems are certainly complex and may start in many different ways, the treatment will almost always involve getting the injured muscles to move, lengthen, and relax. However this will be covered in the next newsletter.

WRAP UP:

Well that's it for my first issue of the year. I am not sure when I will finish the next one, but I guarantee it will not take another 9 months. My goal is to have it finished sometime next 4-6 weeks, but hopefully sooner than later. Also, as with this newsletter, I am not going to wait until the 1st of the month as I did in the past to send out new issues. Since I do not have a specific deadline I will send it out to you as soon as it is finished.

Also, I am still interested in receiving your questions, topic requests, comments, or suggestions about anything you would like to see in future newsletters. Best wishes and keep striving for improved health and fitness,

Ross