

**Ross' Precision Health & Fitness Newsletter**  
**Issue #14 – 7/7/2008**  
**Preventing and Correcting Chronic Muscle Problems**

Hello everyone, it's time for another newsletter. As with the last issue, this one will essentially be all about the article. After I finished the last newsletter I intended to make this a 2 part article, but after looking at what I originally wanted to include, I realized that there was very little emphasis on the exercise portion of the article. As a result I decided to make this a 3 part article and dedicate this part to the effects of exercise on muscle problems.

However before getting to the article I want to briefly revisit food labels. It has been a long time since I wrote about how to read food labels and what to look out for when it comes to the marketing and packaging of foods. As you may remember anything written outside the actual "Nutrition Facts" box is not monitored or regulated, so companies can basically write whatever they want. Sometimes products display inappropriate statements to make the item sound better or healthier than it really is. Recently I came across an example of this that I wanted to share with you.

The item was an imitation crab product, which as usual had the primary ingredient of white fish. As most people know many types of fish contain healthy Omega-3 oils and on the front of the package it stated that the product was a great source of Omega-3. Then right next to that statement it stated how the product was fat free. Then on the back of the product the nutrition facts showed that there was only a trace amount of fat from some added oil.

Of course the big problem is that Omega-3 oils are fats and there is no possible way that something can be both fat free and a good source of Omega-3. This is one of the most obvious misrepresentations of facts I have seen in quite a while and is a great example of why you should always read the Nutrition Facts including the ingredients list on any foods you buy. Now with that out of the way, let's continue on with part 2 of the article.

**Featured Article**  
**Understanding the Important and Often Misunderstood**  
**Relationship Between Exercise, Stretching, and Muscle/Joint Pain**  
**Part 2**

In the first part of this article I covered the basic mechanisms behind the development of chronic muscle and joint pain. This portion will build on the previous information and focus specifically on the relationship between exercise and chronic aches and pains. This part will begin some more basic physiological information, but then shift to practical information you can use to prevent and possibly even reverse chronic muscle problems.

As discussed in part 1, overly tight or shortened muscles are strongly related to chronic aches and pains due to the long-term adaptations made by your body to prevent you from feeling discomfort. The key to minimizing these issues is therefore to maintain good flexibility and lengthen your muscles after they become tight or stiff. There are many things that can shorten or increase tension in muscles, but stretching is your best tool to alleviate tension and return your muscles to their optimal resting length.

While I assume you all know that stretching and exercise are beneficial for tight muscles, they do have varying degrees of effectiveness depending on how they are implemented. There are even a number of circumstances where either stretching or exercise can make muscle problems worse. To understand which actions lead to improvements it is essential to understand the relationship between muscle tension and muscle activity.

Fortunately this relationship can be understood by looking at something you are hopefully all familiar with: exercise warm-ups. Warming up before strenuous exercise is crucial for healthy muscles and joints, but many people do not really understand why they should warm-up or what a warm-up should consist of. The truth is there are many different types of effective warm-ups, but they all have one primary thing in common.

While this may seem self explanatory, a warm-up must increase the temperature of your muscles. Ironically the simplicity of this statement often leads to confusion about what should be included in a warm-up. Most confusion typically revolves around stretching, because many people equate stretching with warming-up, but they are often completely different things.

Some stretches, such as dynamic stretches (high knee marching, slow deep squats, etc.) are certainly warm-up exercises, but most traditional (static) stretching does not warm up your muscles very much. Static stretching can increase flexibility and relax muscles, but it does not necessarily make for a good warm-up. Increasing muscle temperature will cause your muscles to become more elastic and pliable, which will decrease the chance of experiencing sprains or strains.

Temperature increases can be from dynamic stretching, but they can also be achieved by doing light cardio work or even taking a warm bath or shower. Of course it is also beneficial to do some specific exercises for the muscles you will use during your workout. For example, walking or easy jogging is a great warm-up for running and lifting light weights is good preparation for a heavy lifting workout.

You may find this hard to believe, but there are no credible scientific studies that have found a definitive link between pre-exercise stretching and a decreased chance of injury during a workout. Actually it is your existing level of flexibility that really influences your potential for injury. Consequently people with good flexibility suffer fewer and less severe muscle injuries during their workouts. This is another way of illustrating the importance of maintaining an optimal or at least adequate resting muscle length.

Having said this, some extra warm-up stretching is recommended if you have muscles that are excessively tight. These muscles probably already have at least some minor problems and their initial stiffness results in a greater chance to develop more serious problems or become injured during your workout. In this case, stretching will help minimize the chance of creating additional problems, although the type of workout performed will almost certainly have a greater impact on the health of your muscles.

When it comes to the actual workout it is important to realize that exercise actively shortens the length of your muscles. This is minimized if exercises are performed with good control through a full range of motion, but some shortening will still occur. Also, the more strenuous or demanding the exercise, the more your muscles will shorten. Stretching then becomes essential after exercise to help you return your muscles to their resting length to prevent chronic muscle shortening.

If you do not have as much flexibility as you want, extra stretching will be required to create long-term increases in flexibility, but this stretching can occur at any time. However to maximize the benefits of stretching, your muscles should be at least somewhat warmed up before stretching. This will also decrease the chance of overstretching or aggravating your muscles.

If your muscles become so tight that you experience frequent discomfort or alterations in your posture and movement, you will probably need more than just stretching to return your muscles to optimal health. You will additionally require some specific strength training to correct the muscle imbalances associated with your muscle discomfort. Chances are you will also need to alter some muscle neurological patterns in order to teach your tight muscles how to relax so they can lengthen and heal.

While addressing each individual muscle issue can be incredibly complicated and is only truly accomplishable by trained professionals with extensive diagnostic equipment, there are a number of things you can do to help make your workouts improve how you feel as opposed to further increasing the stress and discomfort of your muscles. The first step is to decide what you want most from your workouts and what is best for your body.

This is tougher than it sounds, because in many cases what you want most may not be what is best for your body. For example, if you want to increase fat loss and overall fitness, your workouts must become more challenging so your body will be forced to adapt and improve. However if you have significant muscle discomfort or imbalances, this type of training will usually make your problems worse.

Continually challenging your body with different exercises, training intensities, etc. is important for health and fitness improvements, but it is also important to realize that your body can only handle so much. There are going to be times where you cannot push yourself as hard or much as you would like and you will have to take it easy so your body can recover.

The problem is that by the time you have significant muscle discomfort you have probably already altered your workouts either by decreasing the overall difficulty and/or limiting the number/types of exercises you perform. As a result you may still be working hard, but chances are you will be making little progress and you will eventually start to lose some of your previous improvements.

At this point, the best thing to do is decrease the overall difficulty of your workouts and focus on improving the muscles that are causing you problems. Of course this is usually hard to make yourself do, because it means you will probably lose more of your previous gains and temporarily move further away from your ultimate goals, but it is unquestionably in your best interest over the long run.

If problematic muscles are continually pushed, they will continue feeling worse and you will be even less likely to make progress. Eventually if the problems become bad enough, you will be forced to limit your workouts more or even temporarily stop training altogether. If this happens it will take much longer to recover and you will lose more of your previous improvements than if you alter your training sooner and allow your muscles to recover before you develop chronic muscle problems.

It is important to remember that exercise and eating healthy are not quick fixes to lose fat or develop a great looking and healthy body. They must be integral components of your lifestyle if you want to keep the benefits you have worked so hard to achieve. Having muscles that function well is one of the most important things you can do to maintain and improve your results over the long run, because you can continue building on previous successes by minimizing down time caused by muscle problems.

As stated above, if you have significant muscle problems, eventually they will force you to decrease the quality of your workouts and you will end up regressing. Unfortunately the most common approach to this situation is just to take time off and let the pain decrease until workouts can be resumed. This is incredibly problematic, because this approach does not directly deal with the original cause of the muscle problem. As a result, exercise can eventually be resumed, but the problem will almost certainly return once the workouts become challenging enough.

This leads to a continuous cycle of improvements and regression, depending on how the problematic muscles are feeling. Since improvements are repeatedly gained and lost this often also leads to frustration and possibly burnout. Trying to work through the pain or work around the problem is never a good long-term solution. The only truly beneficial thing you can do is change your program and focus on improving the muscles that continually cause you problems and hold you back.

Again this is challenging because it forces you to change the way to think about your exercise program and correcting the muscle issues must take first priority even over fat loss, strength, endurance, etc. This does not mean you cannot include elements in your training to help with other fitness components, but they should not be your first priority and they should not dictate the overall type of workout you perform.

In most cases this means you will have to decrease the overall intensity of your workouts and include more rehab type exercises that focus on smaller muscle groups, specifically the ones that are causing you problems. In addition, the more difficult the exercises are, the less likely they will be performed with good form (more cheating will occur). This becomes especially important when you are trying to improve neurological patterns to develop healthier muscle activation patterns (having the right muscles perform the correct actions when your body is challenged).

For example, many people experience back pain due to weakness or incorrect activity of their lower abdominal muscles. A good solution to this problem must involve strengthening the abdominal muscles so they can support the spine and prevent the back muscles from being overworked. Therefore exercises that specifically target the lower abdominal stabilization muscles should be included in a workout routine. However, they are only beneficial if they are performed correctly.

If a person has the mentality that they will do really challenging exercises and work them as hard as possible, the chance the muscle will do what it should are minimal. Since the muscles are weak, they will not be able to do challenging exercises on their own and other muscles (hip flexors, low back, etc.) will be forced to help out. The target muscles will get a little stronger, but this will also teach to your brain to contract the other muscles any time the low abs are contracted, even when they should be relaxed.

This is considered an incorrect neurological pattern and it is exactly what needs to be fixed in order to correct the low back issue. The emphasis must be on improving the strength and ability of the lower abdominals to work on their own. Since they are weak, this must be accomplished with easier exercises, where the abs will need minimal if any assistance from other muscles. The more frequently the abs work by themselves, the more likely you will be to improve that particular neurological pattern.

This does not mean that you won't feel anything during the exercise and you will most likely have to concentrate even more than usual to do the exercise correctly. This is because your body will want to incorporate the additional muscles to make it easier, but your job is to make sure to target muscles (in this case lower abs) are doing as much of the work as possible. When done correctly you will feel the target muscles significantly, but the overall strain on your body may be minimal.

As the target muscles become stronger the exercises actually become more difficult, but initially you still want to focus on minimizing the use of additional muscles. If this cannot be achieved, then the exercise is too challenging. Eventually it will become natural to activate the lower abs by themselves and they will have enough strength to decrease the strain put on your low back. When this happens you should progress to exercises that challenge your low abs and back muscles simultaneously.

There is a common phrase in rehab stating that you should "isolate then integrate." This means that once muscles can work correctly on their own, they should be taught to

work correctly with other muscles, because that is how they work in real life. Just improving the strength of the low abs will not necessarily be enough if the muscles are working incorrectly. This is why having appropriate neurological patterns is so important.

Isolating a chronically weak muscle is really about creating better neurological patterns that improve the way your body functions. Many people try to skip the isolation phase of rehab and instead attempt to strengthen weak muscles by working them in conjunction with other muscles. While this may help the weak muscle improve in strength, it will not necessarily prevent you from feeling similar pains in the future.

As you may have already guessed, the problem is the old faulty neurological patterns still exist and even though the weak muscle is stronger, the way the muscles contract during stressful situations (e.g., exercise) will be the same as it was before. This means that the newly strengthened muscles will not work as hard as they should and the other muscles will still be proportionally overworked. Essentially the mechanism that caused the initial discomfort will cause the problems to progress all over again.

Now when thinking about your muscles, joints, and total body health over the course of your lifetime, it should become apparent that spending the extra time to strengthen your muscular weaknesses and improve their neurological patterns is definitely in your best interest. While you will almost certainly have the urge to quickly resume your regular strenuous training program to achieve your goals, you must take the extra time to adequately prepare your body for the future training sessions.

Many people want to think of exercise like running a race where if they workout hard enough or long enough, they will achieve their goals and everything will be great. Of course with exercise and health, there is no finish line and you always have to work to improve or even maintain previous gains. If your muscles are always stiff, sore, or generally in pain, chances are you will not continue exercising throughout your life and you will lose out on all the positive benefits associated with exercise.

It may be helpful to think of your exercise program like a nutritional program or diet. A nutritional program needs to work with your lifestyle and contain foods that are able to eat. Basically it needs to be sustainable without excessive effort. As I am sure many of you know from personal experience, it does not matter how good a diet is on paper, if it is too restrictive or generally difficult to follow, it will not be successful for very long. The same is true for exercise programs.

If you have frequent pain or discomfort that seems to get worse instead of better, then your program is not sustainable and something needs to change. This almost always means going back to basics by isolating and strengthening weak muscles, stretching and unknotting tight muscles, and reestablishing good neurological patterns. It is common for people to spend most of their time doing exercises where they can use the heaviest weight or that feel most natural or comfortable, but they would have much better long-term success focusing on their weaknesses instead of their strengths.

To sum things up, maintaining long-term improvements with minimal pain is really about minimizing muscle imbalances and having quality neurological muscle activation patterns. When strong muscles start working for weak muscles, imbalances occur and pain will soon follow. Then the response is often to avoid movements that cause pain and continue exercising hard by pushing muscles that don't hurt. This will further increase the discrepancy between the strong and weak muscles, ultimately causing some muscles to be very weak and other muscles to be overworked, both of which will cause discomfort.

The challenge then becomes to break this cycle of overuse and work to improve the strength imbalances between the various muscle groups. While you may have to sacrifice a few months of potential gains over the short term, you will end up gaining many years of consistent improvements that will be maintainable throughout your lifetime. This is all achieved by focusing on improving your weakness instead of improving your strengths. Eventually, when your weakness become close to your strengths (which may take a number of years) you will then be able to push all of your muscles harder with minimal pain and discomfort. At this point will be able to improve even more, assuming of course that you remain consistent with your training.

## Wrap Up:

Well that's it for this issue. As usual this took longer than I expected and I wrote more than intended, but this is a rather complex topic that is worth looking at in greater detail. In the next issue, which honestly may take another 3 months or so, I will get into more specifics about how to improve muscular health and minimize discomfort. For now I hope this portion of the article helps you evaluate your own training program to determine if there are changes you can make to develop a more well-rounded training program that focuses on your weaknesses at least as much as your strengths.

So until next time, keep up the good work and always remember that exercising should always make you feel better, not worse. Take care and best wishes,

Ross