

Symmetry – Asymmetry Problem Solving Repetitive Use Injury

Searching for the reason that repetitive use injuries occur can be difficult and frustrating. With a traumatic injury the cause is obvious, but with repetitive use or overuse injuries, identifying the cause is more challenging. Identifying the cause(s) of a repetitive use injury is critical; otherwise, it becomes a recurring injury. For a number of years I have used a conceptual framework to sort out what could be contributing to the development of repetitive use injuries. This is based on the assumption that there are three potential explanations for the occurrence of repetitive use injuries.

1. The first is using it too much, too fast, too soon. Even if you have the body of superman/superwoman, if you do too much, too fast, too soon, something will break down.
2. The second explanation is doing it on a funky system. The condition of what is being used is significant. If the anatomical structure is weak, limited or impaired, there is increased risk of break down.
3. The third issue is doing it funky. If the manner in which you perform an activity or exercise is faulty or incorrect, that can lead to an injury.

When problem solving an injury or pain, one of the first questions to consider is, "Where it does hurt?" The location of a repetitive use injury can provide some direction in terms of what diagnostic testing is needed to identify potential cause(s) and the type of intervention. Because of the phenomenon of "referred pain", it is important to recognize that where an individual perceives the pain may not always be accurate. A classic example is with an individual suffering a heart attack who may complain of left arm pain. In this example, the problem is in the heart muscle but the pain is referred to or is perceived as being in the arm. In this case of course, it would be wrong to provide treatment to the arm since treatment needs to be directed at the heart. Fortunately, a general rule is that referred pain does not cross the mid-line of the body. If the pain is perceived on one side of the body, the actual lesion or other source of pain will be on the same side.

If there is a repetitive use injury, or pain on both the right and left side of the body, it is most likely related to doing too much, too fast, too soon, and/or doing it funky. It is unlikely related to doing it on a funky system, especially if there are bilateral abnormalities weaknesses or limitations.

If there is a repetitive use injury or pain on one side of the body and the activity/exercise is a symmetrical activity such as swimming, running or biking, it is most likely related to doing it on a funky system. It is unlikely related to doing too much, too fast, too soon, and it is unlikely related to doing it funky. If the activity/exercise is symmetrical, the excessive use or funky use would adversely affect both sides of the body.

Diagnosis and Treatment

1. If the problem is related to doing too much, too fast, too soon the diagnosis is dependent on obtaining a good history of training and exercise level in order to see if there is an appropriate progression of exercise/activity level. Obviously, treatment requires moderating training and exercise levels, cross training and rest.
2. If the problem is related to doing it on a funky system, the diagnosis requires an in depth orthopedic examination, and treatment requires addressing the weakness, limitations and impairments. When conducting an in depth orthopedic examination, the assumption is that there should be symmetry between the right and left sides of the body. In reality of course, asymmetry is more the rule. Some asymmetry is explained by dominance. That is, being right handed or left handed. The body has a preferred or dominant hand, foot/leg, eye and ear. The dominant pattern may be consistent or mixed. That is, an individual could be right handed, left footed and right eyed. In terms of strength, a 15% variance between the dominant side and non-dominant side is considered normal. Having greater than 15% difference between the right and left sides of the body in terms of muscle size and strength is considered abnormal.
3. If the injury or pain is related to doing it funky the diagnosis requires motion analysis, and treatment requires coaching to correct faults. Assessing asymmetry of movement between the right side and left side of the body can be a qualitative and/or quantitative. Subjective judgments about the quality of the movement can be made as to whether movement is symmetrical or faulty in comparison to the expected ideal movement pattern. A quantitative fault is measurable such as by degrees of movement and speed of movement and also is judged to be either symmetrical or asymmetrical or less than the expected ideal measurement.

If analysis of movement identifies asymmetrical, faulty **movements** when swimming, running and biking, **they are** more likely related to anatomical structural faults (weakness, limitations and impairment) than poor coordination, poor skill or just faulty movements. Once the anatomical structural weakness and limitations are addressed or corrected, coaching

and training (gait training, stroke mechanics, and drills) may be needed to correct the faulty skill or form faults. Motion analysis serves a significant role in diagnosis but visual feedback of movements can also be an excellent intervention or treatment.

Assuming that repetitive use injuries are related to doing too much, too fast, too soon, doing it on a funky system and/or doing it funky, the location of the pain/injury gives some direction to the diagnosis and treatment.