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What to expect after an injury – correction versus compensation

When your car is damaged in an accident you expect the mechanic to repair the car so it is as good as new. This is possible because the mechanic can replace broken parts. Is it a reasonable expectation from your healthcare professional that if you suffer a traumatic injury the results from the treatment intervention should be as good as new? This question came to mind when a client who had suffered a low back strain most likely a "slipped disc" asked me "does this mean I will be dealing with this injury the rest of my life".

It seems reasonable expectation that when you experience a traumatic injury to expect the healthcare professional to help you repair the injury to as God made it. Continuing with the car repair analogy, unfortunately it is not always possible to replace injured tissues or body parts. The human body can repair and heal some injuries to as good as God made it. However, some injuries are so severe they cannot be repaired or end result of the repair process is scar.

A problem resulting from a traumatic injury is either corrected or compensated for. For example some broken bones can heal. The two broken ends of the bone line up in correct anatomical alignment the body grows new bone across the break, the new bone eventually reshapes itself and you are good to go. A minor cut of the skin the body has the ability to regenerate enough skin to repair the laceration without a scar. Some lacerations are more severe and cut heals with a scar. The scar does the job of keeping bacteria out, but it does not look as good as new. A minor muscle stain may heal back as good as new; however some muscle tears do hot get back together or the muscle forms a scar between the torn ends of the muscle fibers. The scar tissue in the muscle is not as flexible and cannot contract in the same manner as the original muscle tissue.

There is an old adage "it is better to break an ankle than sprain an ankle". There is a great deal of truth to this statement. Some tissues heal better than others. Bone tissue generally has good blood supply and excellent ability to heal; whereas ligament and tendon tissues have tenuous blood supply and are notoriously poor at healing. Often a torn ligament the loose ends never connect back together, reconnect but they are permanently stretched/lengthened, or reconnect with scar tissue.

What happens when the injured tissue dose not return to normal? Generally the body has a tremendous ability to adapt and compensate or impairments and imperfections. Compensation is the ability to substitute, replace, or to do something else. If you have experienced a traumatic orthopedic injury and the final outcome of the traumatic injury was not a complete repair or correction, it is quite likely that there is some degree

of compensation that has or is occurring. A physical therapist can help determine if the compensatory movement is the most appropriate.

The client who suffered a back strain the examination determined that there was too much movement of his lumbar spine in the direction of flexion that is bending forward. The tissues around the injury in the low back were over stretched or torn leading to pain. So when he sits in a chair the lumbar spine takes the path of least resistance and frequently slumps into lumbar flexion. If the lumbar spine is too loose in direction of flexion the adjacent joints, the hip joints may compensate by becoming stiffer in an attempt to compensate for the excessive movement of the lumbar spine in direction of flexion. Tight stiff hip extensor muscles (hamstring muscles) may be compensation. Hamstring stretching exercises are a common treatment in management of low back pain, but in this case a more appropriate treatment would be to avoid stretching the lumbar spine in direction of flexion, while trying to stretch the hamstring muscles.

The answer to his original question of "will I be dealing with the rest of my life", is yes. Commonly traumatic injuries such as a sprained ankle, shoulder dislocation, or hamstring pull increases the probability of you experiencing the injury again. There may be an increased risk of re-injury because of incomplete healing or repair of the traumatic injury, and/or incomplete rehabilitation process.

If you experience a traumatic injury like a broken collar bone, pulled calf muscle, torn ACL ligament have patience allow the injured tissue to heal before returning to sports. Go through a thorough the complete rehabilitation program to regain strength and function, maximize the rehabilitation process in order to decrease risk of recurrence of re-injury, and to minimize risk of compensatory injury.

A common belief is that when healthcare is provided with a sports medicine philosophy the intervention is designed to return the individual to full function as quickly as possible. There are situations when returning to full function as quickly as possible is a mistake. Returning to full function too quickly without complete healing and repair of the injury can occur because of the remarkable ability of the human body to compensate for impairments and weakness.

Bottom line:

- The outcome of a traumatic injury is either repair or correction, or compensation
- Return to full function after a traumatic injury as quickly as possible is not always the most appropriate approach