



Sooner is Not Always Better than Later – Healing Recovery from Injury

Sooner is not always better than later when recovering from an injury.

Page | 1

Biological tissues adapt to physical stress in a predictable way. There is a threshold where physical stress results in a positive adaptation of the tissue, that is, tissue grows larger and stronger. Conversely if there is insufficient physical stress tissue wastes away gets smaller and weaker.

Recovering from an injury there are 3 possibilities. One is not enough exercise and activity, too much rest delaying recovery, the proverbial couch potato. Another is exercise and activity which is too much, too fast, too soon leading to re-injury or delayed recovery. Finally the amount of exercise and activity is just the right amount leading to optimal healing and recovery.

How quickly, an injury heals is primarily determined by biology. Scientists have a pretty good handle on how injured tissues heal. Unlike Salamanders the super heroes of regeneration who can replace lost limbs, damaged lungs, and injured spinal cords humans are not very good at regenerating injured tissues. In Humans there are some differences in healing processes depending on which type of tissue is injured. Depending on the circumstances some injured tissues can heal back to as good as new for example bone. Some tissues when injured the final result is scar tissue for example muscles, tendons, and ligaments. Scar tissue is not the same as the original tissue it looks and functions differently.

Across all types of tissues there are 3 general phases of tissue healing. The first phase is *acute cellular reaction phase*. There is bleeding, clotting, swelling. This is analogous to repairing crack in the wall; the patching material is in liquid form. The second phase is often called the *fibroplasia phase or proliferative phase*. The liquid patch material starts to solidify and “set up”. This is when cells start to form a scar or scab bringing the injured parts back together. The third phase is called *scar maturation phase*. This is when the liquid patch material starts to cure finishes “setting up” and needs sanding, shaping and fresh coat of paint. A scar is completed.

Unfortunately, there is little modern medicine has identified that actually speeds the progression through the 3 phases of tissue healing. Anti-inflammatory medicine, electrical stimulation, massage, early exercise, copper bracelets, acupuncture, dry needling, kenesiotape, infra-red treatments, laser therapy, and “tiger balm” have not been shown to speed the tissue healing process.



When it comes to effects that exercise and activity has on the 3 phases of tissue healing, I have described the 3 phases of tissue healing as:

- *rest and protect* is acute cellular reaction phase
- *on the fence* is fibroplasia phase
- *push and build* is scar maturation phase

Page | 2

During the first phase acute cellular reaction, it is important to rest and protect the injured tissue. Stretching and strengthening exercise will disrupt the injured tissue during the first phase of tissue healing.

During the second phase fibroplasia, an approach best described as “on the fence” is appropriate. Continue with some rest and protect, but gradually introduce more exercise and activity, gradually progressing to “push and build activities”.

Finally the last phase scar maturation is where more aggressive exercise/activity is indicated.

Tissue healing is going to go as fast or as slow as “Mother Nature” allows. There is more opportunity to screw up the healing process delay recovery or re-injury than there is to speed up the healing process. Using what we know about the biology of tissue healing we can speed up or slow down the rehabilitation process.

For muscle, tendon, and ligament injuries the general time frame for the stages of tissue healing are as follows:

- *Rest and Protect* phase is 1 day to 10 days from the date of injury
- *On the Fence* phase is 5 days to 6 to 8 weeks from the date of injury
- *Push and Build* phase is 3 weeks to 12 months from the date of injury

Using the date of injury is a starting point to determine the phase of tissue healing, but some injuries it is difficult to determine the date of injury, such as repetitive use injuries which develop over a period of time. Various factors such as preexisting disease, previous injuries, medication, and other factors can alter the time frame. A smart health care professional can use clinical examination process and objective measures to help determine the phase of tissue.

Initiating exercise and activity after an injury there are 2 possible mistakes which can delay recovery and healing. One mistake is not doing enough activity and exercise delaying recovery. The other mistake is doing too much, too soon, too fast delaying recovery. Most individuals have enough self-awareness of their motivations and



personality traits to be able to make a safe bet as to which mistake they are more likely to make during the healing process.

There are some injuries that I believe when exercises and activity is initiated too early. Frozen shoulder (adhesive capsulitis) it is well documented that the tissue healing process occurs over a relatively long period of time, as much as two years. Trying to exercise, move, and stretch an adhesive capsulitis during the prolonged acute cellular reaction phase (rest and protect phase) is very painful, and does not resolve the problem sooner. In my experience plantar heel pain can require a very long time to resolve. There may be a relationship between stretching the plantar fascia too early prolonging healing process delaying the healing. There are guidelines suggesting early mobilization after a cervical whiplash injury is better than prolonged use of protective cervical collars. The tissue healing process of significant neck sprain is the same process as a significant knee sprain. Avoiding use of a cervical collar during acute cellular reaction phase may delay healing.

If you have a history of overuse injuries, and more likely to do too much too soon, hedge your bets. If you are uncertain whether you should do more exercise and activity, don't do it. Take a chance and rest and protect over a longer period of time, do fewer repetitions, do fewer sets, do less miles. Recognize the drive to get better sooner can lead to denial or minimization of important symptoms. There are times when "no pain no gain" attitude is helpful, there are times when a "no pain no gain" attitude is harmful. Consultation with a smart healthcare provider can help identify objective criteria to rest or to push.

A common belief is "sooner rather than later". The sooner you act the better. This is not always true, especially when it comes to healing injuries.