



# Health Solutions

The Knowledge for Health

HOME :: June 24, 2010

HowTo

Research

Protocols

eBooks

eLibrary

Videos

Products

Case Studies

Contact

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## Injury Recovery Support

[Printer Friendly PDF](#)

### Fast Track:

- [First Aid](#)
- [Second Aid](#)

## Overview

Injury recovery is always rate limited by something. The question is what...

This HowTo provides a general guideline to optimize healing for injuries with primary focus on joint and connective tissue. We assert there are three cofactors in injury in any healing rate:

- Building Materials
- Garbage Disposal
- Energy



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Cells know how to put themselves back together. The challenge is to optimize the environment so they can do it as quickly as possible.

Rapid healing is a survival advantage - and is not fundamentally limited by the organism, but by the efficiency of the organism repairing itself.

## Injury Basics

Several factors that govern the injury process:

1. Initial trauma damages tissues;
2. Inflammatory process "closes off" the injury area (and sacrifices nearby tissue);
3. Reconstruction restores the area to normal.

Accelerated recovery therapy involves three principles:

- Manage inflammation to minimize secondary damage;
- Optimize nutrients including oxygen during recovery;
- Optimize waste product flow out of the injury area.

## Modulated Inflammation

Inflammation is a balance of good and bad. Good: Inflammation causes the body to initiate healing. Bad: Inflammation inhibits nutrient delivery and waste disposal from the damaged area.

Caveat: inflammation causes secondary damage where adjacent tissue dies, inflates the healing job beyond the initial damage.

This image shows a zone of necrotic tissue around the original injury. Note the "dead zone" is much bigger than the apparent trauma area.



Secondary damage that develops after the initial trauma, usually represents the bulk of tissue. Minimizing the "secondary damage" by controlling initial inflammation limits the amount of healing required. Anything which reduces secondary damage reduces healing time because it makes for less healing.

An initial trauma causes plasma and lymphocytes to flow to an area. This movement brings the both nutrients and oxygen to support the healing process.

Plasma oxygen saturation has two influences:

- Oxygen and nutrient rich plasma enables more tissue near the injury to survive while depleted plasma permits more local damage. Oxygen/nutrient availability is inversely proportional to inflammatory tissue damage;
- Healing efficiency for non-vascular tissue is proportional to the nutrients and oxygen available in the plasma;
- Post traumatic Oxygen/Nutrient availability results from plasma concentration and mobility of the plasma.

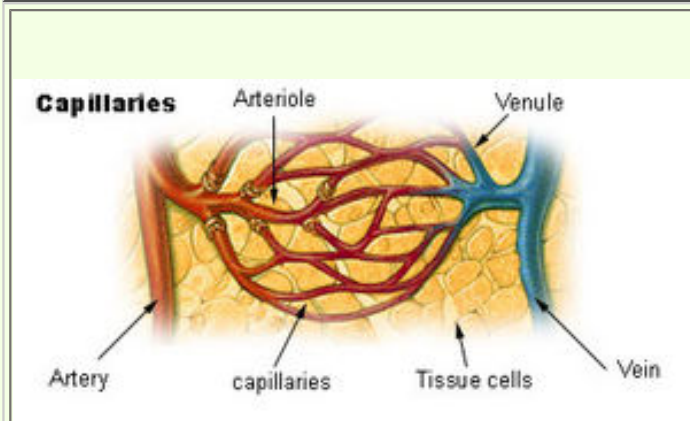
These factors control the healing speed. Individuals with high plasma oxygen levels and successful digestion heal much faster, up to 10x, than expected:

1. Less secondary damage from inflammation;
2. Connective tissue has more energy, oxygen and nutrients to rebuild itself.

## **Diffusion Nutrient Pathways**

Joint injury that involves [tendons](#), [ligaments](#) and [cartilage](#) are slow to heal because these tissues have a very poor blood supply due to a near or complete absence of capillaries which deliver blood, which delivers nutrients and oxygen to most of the body. This absence is unique to the handful tissues in the body which "heal slowly" if at all. This is true for all non vascular tissues, including eye structures, larynx, and many more.

This image shows bruising indicating internal bleeding which damaged the blood flow to the primary injury. The body must restore blood flow before it can start healing the initial damage.



Non vascular tissue, aka slow healing tissue, must receive nutrients and oxygen by [diffusion](#), or [plasma](#) transport, which occur independent blood flow. Blood flow is important because it gets nutrients and oxygen as close as possible to a target area so that nutrients/oxygen diffuse shorter distances.

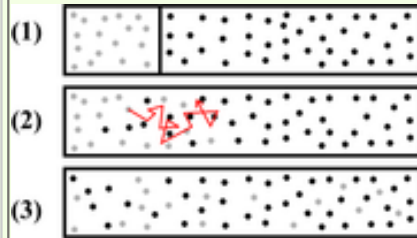
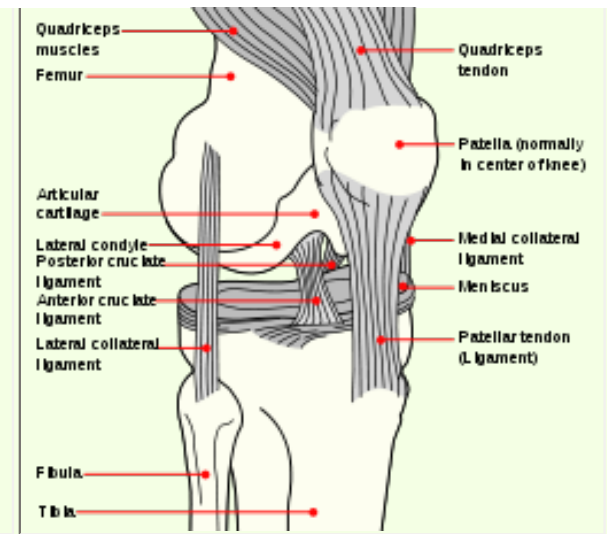
Connective tissue does not have capillaries which bring blood close to connective tissue. Nutrients and oxygen must reach these tissues by other mechanisms.

Chronic issues with tendon and ligaments, like [tendonitis](#), etc. reflect [metabolic](#) breakdown in non-vascular tissue. Deterioration in diffusion pathways that deliver nutrients and oxygen cause tendonitis and chronic connective tissue issues. Diffusion pathway breakdown has multiple factors that inhibit or prevent healing:

- Decreased nutrient/oxygen solubility from local trauma toxins;
- Trauma stress reduces systemic oxygen availability ([Manfred von Ardenne](#));
- Trauma increases systemic nutrient demands,

which decrease local availability.

Note the bulk of the connective tissues. The efficiency of diffusion mechanisms control nutrient and oxygen availability to connective tissue.



Injury amplifies the diffusion pathway challenge. Concurrent damage to vascular structure, and waste from damaged cells further inhibit or block diffusion pathways. This is why connective tissue heals slowly compared to vascularized tissue, muscle, bone, etc.

Diffusion is the statistical process of dispersion based on random motion instead of directed flow.

From a therapy view, restoration of diffusion pathway performance accelerates healing of non-vascularized tissue. The Model:

1. Limit damage with inflammation management,
2. Restore vascular performance;
3. Support Cleanup;
4. Optimize Saturate Nutrient Mobility
5. Supply systemic Saturate Nutrients;
6. Maximize Tissue Oxygen to injury with saturate pathways.

## First Aid

First Aid for injuries. Stabilization is always a first priority.

Protocol	Inflammation Role	Until
<a href="#">RICE</a>	Limit inflammation by mechanical and thermal methods.	24 hours
<a href="#">PEMF injury</a>	Aids inflammation management. Strengthens surrounding tissue decreasing collateral damage. Aids arterial constriction reflex to reduce bleeding/bruising. Improves oxygen desaturation to damaged tissues. Strengthens cells in the damaged area improving survival of marginal tissues. <a href="#">Improves blood dispersion aiding nutrient and waste flow.</a>	Pain stops
ePad Injury	Locally increases <a href="#">zeta potential</a> to aid dispersion of waste products by providing free electrons to the injury site. Dispersion inhibits pathogen colonization, and replication. Reduces congestion in nutrient pathways.	Healing Complete
<a href="#">OMST Trauma</a>	Limit tissue hypoxia damage by local increase of oxygen partial pressure. Omit "heat" while ice is in use.	
Homeopathic <a href="#">Arnica</a> the injury	Helps reduce bruising, swelling. Mechanism unknown.	No Discomfort
Homeopathic Oral <a href="#">Arnica</a> & <a href="#">Hypericum</a>	Arnica helps reduce bruising, swelling. Hypericum aids neurological response injury. Mechanism unknown.	24 hours

Prompt and effective first aid can reduce injury damage by 50-80%, and reduce recovery times proportionally.

Energetic support of damaged tissue is a new principle::

- [PEMF is a well researched method with multiple collateral support effects including injury recovery;](#)
- [Modulation of Zeta Potential with local antioxidants.](#)

Healing is triggered by inflammation. Inflammation is a balance. It is important not to "suppress"

inflammation beyond stabilization. In other words conservative use of "anti-inflammatories" is advised.

## Second Aid

Second aid optimizes the organism to support the injured area by feed and flow to/from the injury site. Feed and flow are the keys. This protocol optimizes availability and delivery of agents which limit healing rates:

	Role	Use
<a href="#">PEMF Injury</a>	Aids healing processes rate limited by energy. Increases nutrient/oxygen diffusion by inducing <a href="#">electroporation</a> which improves nutrient/oxygen availability to non-vascular tissue. Aids oxygen desaturation.	On discomfort + 2x daily 15-30 min.
PEMF <a href="#">Liver</a>	Support whole metabolism detox and energy.	Daily. Increase from 3 min by 3 min
PEMF Hips <a href="#">bone marrow</a>	Aid production and release of stem cells to aid regeneration of injured area.	Daily. Increase from 6 min by 3 min
ePad Injury	Increase injury area zeta potential to support incoming nutrients and outgoing waste.	Continuous
<a href="#">Colloidal Silica</a>	<a href="#">Antioxidant</a> decreases <a href="#">ORP 1000+ mV</a> by increasing electron availability. Increase systemic <a href="#">zeta potential</a> aiding <a href="#">RBC</a> dispersion and systemic nutrient and oxygen availability. Aids collagen synthesis.	Daily 1200 mg
<a href="#">Stem Cell</a> Nutrients	Feedstock to optimize stem cell production	Daily 600 mg
<a href="#">Hyaluronic Acid</a>	Promotes successful inflammation. Use topically also.	Daily 150 mg
<a href="#">Collagen</a> Feedstock	Building materials for collagen.	Daily 15000 mg.
<a href="#">Vitamin C</a>	Aid collagen synthesis. The body uses large amounts of vitamin C during healing.	Daily 3000 mg
<a href="#">Anabolic</a> Joint Spray	Alcohols aid anabolic metabolism for healing. Improve oxygen (See Oxysock) availability for non-vascular tissue.	3x daily & with oxysock if avail

<a href="#">OMST Systemic, 36h and/or 15 min athletic</a>	Optimize oxygen plasma saturation to support non-vascular tissue. Optimize tissue oxygen availability.	Daily
<a href="#">OMST Oxysock</a>	Increases oxygen partial pressure to injured site by diffusion and plasma partial pressure. Limits secondary tissue <a href="#">hypoxia</a> .	Daily

## Product Support

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