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The Gym Rag

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By Julie Sopchak

Inflammation has certainly become a buzz topic in the world of health and wellness in the past few years. Everyone is focused on how to reduce inflammation levels within the body and make sure we're not sapping our energy with an excess of this biological process. Last month, we ran an article that briefly touched on inflammation, but just didn't have the space to really get into it. So this month, we thought it might be a good idea to help everyone understand this process a little better: what it is, what is taking place, why it *can* be bad, but also why it is essential for your body.

First off, inflammation is a **reaction** from your body to any kind of disruption to cellular function or integrity. When a cell from any kind of tissue - muscular, organs, bone, skin, etc. - gets busted or attacked, the inflammatory process kicks in to **heal** that problem.

That takes us into the next point you should understand about inflammation: it is a **restorative** process - it's how our tissues regenerate and get better. Without it, every time we get sick or hurt, we'd never get better.

Luckily, for easy learning and digestibility, inflammation happens in four fun stages: acute, sub-acute, chronic-maturation (re-modeling), and chronic-perpetual. We'll take a deeper look at all of these and what it means for you.

Keep readin'...

Come hang out with us Saturday, Aug. 5 for NEFF's First Annual Open House! Bring your family & friends for some food, games, and exercise-related events.. NEFF style!

We'll be having food catered from Fletcher's, the hot new BBQ spot in Longmeadow, and Frigo's, beloved staple of the weary strength coach.



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NOT A TYPO



Step by step:

The first thing we need to do is establish some type of example so everyone can follow along and understand all of these principles in a practical way. So let's say you're playing golf for the first time this season. You get to the first hole, set your tee, and approach the ball. You line up your shot, fix your grip, then initiate your swing. Right at the top of your backswing, you feel a painful "POP" in your back. The pain is enough that you can't continue the remainder of your round.

Welcome to the acute stage (Onset to 4-6 days)

The one thing we know right now is you irritated something in your back, so some of those tissue cells got busted. We're gonna play this out like a crime scene:

That "pop" is the crime, and right when those cells get injured, they send a 911 call to the police (some nearby mast cells). They come in and block off the area with hyaluronic acid; it literally forms a bubble around the damaged area to prevent particles and debris from spreading around and to also prevent you from moving that part of your body so it can start the healing process without interruption. Then, the mast cells call for backup. They spit out some histamine which expands the space between the cells in your capillaries so other cells and nutrients can get to the area through them. This increased blood flow is why the area feels hot and is red. Pain sensitivity is increased and there's an inability to use the affected area. Again, these are protective mechanisms. Remember last month we mentioned not trying to walk it off like a baddie? Yeah, this is why.

So far, all this stuff is happening within the first **48 hours** after the injury, so the key here, like last month, is **protection**. Once damage control is done and the scene is under control, the cleanup crew comes in - leukocytes (white blood cells) and monocytes to get rid of any bacteria and dead tissue. After that first 48, we're going to have a few more days of this stuff, but you can start moving the area passively, like a puppet. If done correctly, it'll feel better each day with symptoms tapering off as we glide into...

The sub-acute stage (Lasts another 2-3 weeks-ish)

As we move into the next phase, it's important to remember that these stages overlap and that's it's not a hard switch on/switch off mechanism. That being said, now that we've cleaned everything up, we're gonna start rebuilding so we can get back to normal function.

We have a *huge* showing of fibroblast cells that synthesize and smack down new collagen. So we're just making new tissue and we are going *hard*. Eventually, acute stage symptoms will subside and disappear but remember, even though you feel good, **you are still not healed yet**. If you start messing around with things in this stage, you're going to slow down or even potentially disrupt the process completely.

Do start moving around a little bit, though. Remember last month we mentioned *gradually* increasing movement because you will be able to get through a larger pain-free range of motion. Light exercise can resume as long as symptoms do not return or become worse. Remember, movement is important, but don't overdo it.

Onward!...



Second Annual Arts & Brew

The East Longmeadow Cultural Council will host its second annual Arts & Brew on Saturday, June 24 from 1 to 5 pm at Brew Practitioners, 45 Baldwin St. The event will feature live music, artists, authors, live demos, food trucks, and a kids' tent.

Collegiate Strength Program

College and NEFF athletes will have access to an **OPEN GYM** format **4:30p-5:30pm** on Mondays and Wednesdays to execute programs prescribed to them individually through a NEFF coach.

Training is focused on functional movement patterns and developing strength, power, speed, and agility while reducing injury risk.

The package includes 1:1 training sessions to learn movements which will then be executed independently.

Chronic - maturation/remodeling (Another couple months or so)

Let's say you've been staying pretty diligent with your rehab. You've been slowly building on the pain-free ROM in your back, and you haven't had any flare ups of acute stage symptoms. All of the connective and muscle tissue cells that have been laid down are now going to mature into full-on cells of those tissue types (cell formation and maturation happens in stages, too).

As collagen fibers become thicker, they are going to orient themselves in a way that responds to the stresses getting placed on them. This is important, because young collagen will start to adhere to surrounding tissue. If it's not stressed properly, those adhesions can restrict movement and cause pain, which might be more familiarly referred to as **scar tissue**. This tissue has a window of time it can be remodeled (about 8-10 weeks), and after that it's more or less unresponsive to it.

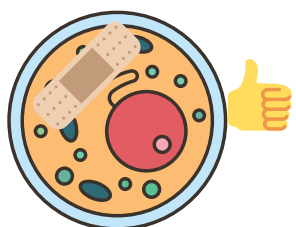
At this point, you should be pretty much pain-free through the intended ROM until pressure is applied right at the end, like you would normally feel. The area is likely still going to be weaker, and there might still be some loss of function, but restoration of that function begins now.

Chronic perpetual (Til we figure it out)

If we do the first three stages perfectly, we shouldn't even get to this one. So either you done messed up, or your body is having a hard time dealing with stuff (see sidebar). In a nutshell, this stage represents what happens when that healing tissue is irritated and you get re-occurring pain and dysfunction. So that acute/sub-acute stage stuff is being *perpetuated* indefinitely. It might also be good to sit and think about *how long* this process really takes. We're probably looking at a few months, honestly. So if you injure something and you're feeling good about a week later, you might think you're healed and ready to go back to the driving range; this is where most re-injuries happen. Technically it's not even a re-injury, you're just aggravating the one that's already there.

Tissues that are trying to heal will never quite be able to, so they'll remain weaker and not able to transmit or absorb force properly, which can lead to further injury. Scar tissue is likely to build up, and we already know why that can be an issue for your tissues.

On the other hand, you might be doing everything right and still feel like you're spinning your tires. If this is happening, we have to figure out *why*. We'll want to take a broader look at what's going on *around* the injury and make sure other joints and tissues are working appropriately. For all we know, the reason you hurt your back in the first place is because of poor mechanics somewhere else, a muscular imbalance, joint instability, over/underuse, stiffness, what have you. The idea is that a problem somewhere else might be putting excessive stress on tissues not meant for it which has built up over time until eventually...**POP!**



CHRONIC INFLAMMATION

Chronic inflammation is persistent, long-term inflammation that can stay active for months to years and can be very damaging over time. There are several reasons this could be happening, from repeated acute injury, consistent exposure to toxic chemicals, autoimmune disorders, and even diabetes, cardiovascular disease, arthritis, and allergies.

That's not all! Risk factors like age, obesity, diet, smoking, and stress can also trigger excessive inflammation. So like, there's a lot of stuff setting off inflammation, but the degree to which it occurs and how much that affects an individual is going to vary.

How do you know if chronic inflammation is blowing up your life? Symptoms can include things like pain, chronic fatigue/insomnia, mood disorders (depression/anxiety), GI issues (diarrhea, constipation), weight gain/loss, or frequent infections. Unfortunately, these symptoms can be linked to many other things, so it's a tough call and difficult to pinpoint.

You can take some control, however, mostly through your diet:

DECREASE

- **Processed sugars:** soda, fructose corn syrup, and other refined sugars can lead to chronic disease and inflammation.
- **Saturated and trans fats:** soybean/corn oil, and baked goods.

INCREASE

- **Fruits and veggies!** C'mon, you knew it was coming. Pro tip: try eating more organic to avoid all the pesticides.
- **Fiber, nuts, green/black tea, curcumin, and fish/sesame oil** all have anti-inflammatory properties.
- **Micronutrients:** Magnesium, Vitamins D/E, zinc, and selenium.
- **Exercise!** It's not dietary but it's been shown to help.

As always, consult a professional to assess what your specific needs may be.