

CROSSFIT IS DANGEROUS!!

Yeah, that's right. I said it. Crossfit is dangerous. I mean it must be, if so many people that do it get sidelined with shoulder and knee injuries. And everyone on the internet says so, so it must be true. Well, let's find out...

From day one we tell our athletes that Crossfit movements are "functional." We're not only looking to improve your performance inside the gym, but out in your daily life as well. The movements and lifts we train mimic the way the human body is designed to move. We squat, deadlift, and press because in our lives we get in and out of chairs (squat), pick things up off the ground (deadlift), and put luggage in the overhead compartment (press). If those things were dangerous, no one would move around at all. We could just lie in bed and have avatars do all the work.

So is the criticism unfounded? How often do we hear:

"Why does my shoulder hurt when I do cleans?"

"Why does my back hurt when I deadlift?"

"Why do my knees hurt when I squat?"

"Am I doing this right?"

Dr. John Zimmer wrote a fantastic article for the Crossfit Journal that explains why the answer to all these questions is "Your form sucks."

When it comes to good form, the same fundamentals that apply in the gym still hold once we set down the barbell and leave the gym.

Now we're getting somewhere. I want everyone to go into the gym tomorrow and fix your form so it looks perfect. Done and done. We can all rest easy that no will ever get hurt again, right? Sure, as long as Barbara Eden crosses her arms with a head nod and magically makes it so. (timely reference?)

How often do we repeat the same cues when coaching an overhead squat?

1. Shoulders externally rotated back.
2. Weight in the heels.
3. Knees out over toes.

And how many people execute those commands perfectly?

Is it because they don't want to, and they're looking to get hurt? No. They can't. They physically cannot put their body in that position...yet. They need to do their homework. There is a key ingredient that helps prevent injury, improves positioning, and opens the door for people to reach their athletic potential.

Mobility.

If you want your body to train like a high performance machine (as a crossfitter that's exactly what you're asking of yourself), you have to maintain it like one. You absolutely need to hit those foam rollers, lacrosse balls, stretch, etc. on a regular basis to keep your parts in optimal working condition. A little daily maintenance goes a long way.

Fortunately, almost all of your movement and positioning errors are fixable – if you start changing your habits and doing your homework.

Whether or not mobility is an issue for someone, acquiring proficiency at Crossfit movements can still be challenging. It's like learning how to drive. Lots of complex things going on, but once your body gets used to it you can focus on the road ahead. We all experienced this on some level when we started behind the wheel. "Ok, the right one's the gas, and the left one's the brake...uh oh, pushed the pedal too hard...time to turn...shit, use the blinker...I have to check all three mirrors!?" Eventually you learn, your body knows exactly what to do, and you're able to eat, text, and drive at the same time (and if you do, please don't ever let me get in your car).

So how do we learn? How do we go from seeing to knowing to doing? I just have one word for you – myelin.

Before I get all scientific on your ass, consider the following situation described by Bruce Holmes, certified USA Triathlon coach.

Imagine you're going to be living in the middle of a forest, and in every direction you look it's shrub and bramble. You're going to have to be able to move about, but you don't have a machete or anything to clear brush with. However, you do have a magical elf standing behind you, and you discover that as you push through the thicket he follows behind and does a quick cut or two to clear the path. So the next time you take that path you've created, it's a little easier. By the hundredth time the "path" is now paved and ready for speed. The only drawback is that the elf is stupid. If you go in a direction you regret and announce, "Well, that was a bad idea." The elf isn't listening. He's still going to improve the path. And the problem then is that the next time you're out in the woods you're liable to mistake that path for a good idea. And when you once again go down it, the elf will be right there with you, clearing even more of the brush. Making it even more inviting for the next walk.

Your body is constantly learning. Every time you move, you are training yourself to repeat those motor patterns. It all happens as electric impulses across the axons of your central nervous system.

Every time you send a signal through your nervous system you create and enhance an insulating sheath of myelin, thus making it easier to repeat that signaling the next time. The more you repeat something, the more myelin gets reinforced, and the stronger the impulse that fires across your nerves. Pretty remarkable system.

But just like with the elf story, things can go awry. If you continue to move incorrectly, you will keep reinforcing those bad habits for your nervous system. Myelin only wraps; it does not unwrap. Regardless of how fast or slow you move, the patterns you create are more likely to be repeated next time.

This is why practice does not make perfect. Practice makes permanent.

One of the most common ways to inhibit quality practice in the gym or any arena is trying to go too heavy or too fast, too soon. This is especially true with crossfitters. Most crossfitters fall into one of two categories when they start. (No, they are not gender specific. The names just sound better that way.):

1. JOHNNY ATHLETE. He played sports in high school and college, either for school or for fun. He has been a regular globo gym attendee for many years, doing workout routines plucked from Men's Health magazine. Considers himself quite fit, but needs to change things up somehow. He works out regularly, supposedly eats right, but has been hitting plateaus lately with his lifting. "How much you bench, bro?"

2. SUSIE NEWBIE. She might have participated in dance, gymnastics, or softball as a kid, but hasn't done any regular exercise in a long time. Her go-to workout for the week is a 45-minute hike where the biggest obstacle is avoiding dog poop. She wants to tone up, lean out, and get in shape. "I just want to look good naked."

I repeat, men and women fall into both of these categories. So no hate mail saying that I'm being sexist, ok?

Both of these members eventually run into the problem of trying to go too heavy or too fast, too soon. Johnny Athlete can't leggo his ego and uses weights he thinks he's strong enough to handle. He might hit all the reps, but at the cost of proper form and technique. Eventually the strength will hit a ceiling and he is severe risk of injury. Susie Newbie is starting to see dramatic improvements in her lifts early on and wants to keep riding the wave of the "novice effect." However, she also has not mastered the movement yet and is at extreme risk of injury by loading up the bar too heavy.

Always always always prioritize form and technique over weight, and even (god forbid!) slow down to make sure you're doing it right. The numbers will come quicker and improve faster down the line if you give yourself the proper foundation of movement.

Let's take a step outside of the gym for a second. Way outside. What does this all really come down to? What's it all about? Why are we here? These are some lofty questions. The meaning of life couldn't possibly be an extrapolation of your clean and jerk, could it?

Everything, and I mean EVERYTHING, boils down to two mechanisms: stress and adaptation.

Disclaimer – Creationist zealots should stop reading now and go pray for a heavier front squat. The grown ups are about to talk science.

Why do humans walk on two feet? Why do bugs look the way do? Why do plants grow the way they do? Why does everything exist the way it does? Evolution.

Evolution: Any process of formation or growth. Development. A change in the gene pool of a population from generation to generation by such processes as mutation, natural selection, and genetic drift.

The only goal in nature is to survive and reproduce. Humans needed a way to run away from large scary beasts that wanted to eat us, so we learned how to walk on our feet. The monarch butterfly figured out a way to deter predators from attacking their heads, by putting spots on their wings. And everyone knows why they should avoid contact with poison ivy. Millennia of stressors to creatures and the environment have caused everything to adapt in a way that prolongs the existence of the species.

Our bodies are no different when it comes to making manual changes in how we look, feel, and perform. We inflict stressors (i.e. weight training) and if we adapt properly, we get stronger. This of course begs the question – Are you adapting properly?

Regardless of your training goals (whether it's to look good for bikini season or deadlift 700 lbs), your stress and adaptation must be dialed in. Step 1, figure out your programming. Most of us have Step 1 down - Crossfit, periodized strength cycles, even globo gym bodybuilder workouts. Decide on a goal and adjust your workouts accordingly. Where many folks fall short is during Step 2, adaptation.

Are you *repairing* your muscles and tissues adequately?

Are you *refilling* your muscles' energy stores?

Are you *warming up* enough to maximize your performance?

Are you *cooling down* properly so you don't do more harm than good?

Are you getting enough *sleep*?

Are you getting enough *vitamin D*?

Are you *eating* enough?

Repairing.

After a workout, you enter a unique 30-45 minute window where your muscles are hungry for two things. The first is amino acids to start repairing the muscle fibers you have just broken down. Turning from a catabolic state (breaking down) to anabolic state (building up) in this window is crucial to utilizing the hard work you just endured. A fast-absorbing bioavailable source, like a protein shake, will do the trick. It gets those amino acids delivered to your muscles quickly and also blunts your cortisol (stress hormone) levels, which have skyrocketed from an intense crossfit workout.

Refilling.

The other thing your muscles are hungry for is an energy refill. High intensity interval training dramatically depletes your muscle glycogen (stored energy in muscles). If you consistently neglect refilling that tank, pretty soon you'll be running on fumes. Ever try to workout four or five days in a row and on that last day you just feel weak and lethargic? Bingo! Again, this 30-45 minute window is ideal to get that energy replaced. High glycemic index carbohydrates get absorbed fast and replete those energy stores for your next workout. Think dates, raisins, pineapple, bananas, etc.

Warming Up.

There's a reason we warm up with dynamic stretches that look like some kind of African mating ritual. Raising your core temperature, getting blood flow into the muscles, and giving your body a heads up that it's about to do some work is vital for making the most out of your workout. Warm muscles are effective muscles. Since it's our job as coaches to lead you through the warm up every class, you don't really have a choice. You will, for the most part, be ready to haul ass at 3, 2, 1, go.

But let's say you're one of those - and I use the term lovingly - nutjobs, who absolutely has to work out at 5am. Maybe you need 10-15 extra minutes before class to wake up and move around a bit, or hit the foam roller to break up some glued-down fascia from sleeping. Regardless of what time of day you exercise, remember that there is a point to warming up so give it the attention it deserves.

Cooling Down.

The cool down phase of your workout is like a safe word during sex. No one really thinks they need it, until one day you wake up so sore it hurts to put pants on.

Here is a post from an icon of the mobility and movement world, Dr. Kelly Starrett:

“Too many times I witness really good athletes perform an excellent warm up, perform heroic feats of strength and wattage, then well, do nothing. People, after strenuous training, you've got to take care of yourself. If you are competing in a brutally short event, you've got to do some cool down. If you are an endurance athlete, you've got to do some cool down. If you are a strength athlete, you've got to perform some kind anti-stiffness protocol. A ton of the problems we see start out as non-cool down adaptation errors. How do you think you got so stiff? Why didn't you “recover” from your last workout? We need to control the things we can control. For crying out loud, go to any olympic track and see how many of those athletes “cool down” on the other track.

Watch the swimming events and witness how many laps the athletes swim after they compete. Even racing horses are cooled down for crying out loud (they are typically better cared for than you btw). Are you performing any cool down? Are you drinking and eating anything in the first 20-30 min window? Or, do you simply go back to work or the couch? I know, I know! Time is crunched. It's hard to fit it all in when you train at elite levels of intensity. A simple guideline is to spend 15-20 minutes cooling down. This could include walking, rowing, [mobilizing] etc. Do it for a week. Budget some time to actually cool down and see how you feel.”

Did you see that key word in there? Adaptation. Exercise is a stress on the body. If you adapt properly from it, you get better. If you adapt improperly from it, you get worse. Pretty basic stuff. Adaptation errors lead to problems with mobility, which lead to problems with positioning, which lead to problems with movement, which lead to problems with performance.

I'll paint a perfect picture for you, again using only one word: Fran. Most crossfitters have done the workout, Fran, at some point. Remember what your forearms feel like afterwards? That's right, so unpleasant that a masturbation joke isn't even funny at that point. Here's what's going on (yep, time for that pesky science again).

Your heart pumps blood out to the rest of your body. Muscles fill up with blood, which allows them work super duper good. What happens to that blood now? Fortunately for us, our body has a way of getting that blood back out of the muscles to make room for more. Otherwise, we'd end up with Popeye arms. And let's face it, that's just not a good look. You'd need custom dress shirts and jackets made, it would be a mess.

The blood gets pumped out of your arms via muscle contractions. During the workout this is obviously happening with every rep, but afterwards you have to help it along. Thus, the importance of a cool down jog, walk, row, etc. In time, the blood eventually makes its way out of your extremities, but you want that adaptation period to be a positive one. If you are simply going to work or getting in your car after a workout, you are setting your body up to recover in a tight and inefficient manner. It's like taking a few extra moments to fold your clothes properly after washing, so they're not wrinkled when you go to wear them again. Tedious but important. Do it.

Sleep.

When we perform any movement in the gym we are always attempting to do it in the most physiologically efficient and safe way. If you have ever felt that twinge in your lower back after just barely sticking a heavy split jerk with an over extended back, you know what I'm talking about. The same concept applies to sleep.

Sleep is where all the recovery happens. Your body repairs and improves itself from the awesomely brutal workout and/or daily activities that day. Don't compromise that adaptation by putting your joints and tissues in a terrible position all night. Try this - lie down on your back and put something under your knees. You'll notice any tension in your lower back go away, and your back will actually be flush against the ground. This feeling is what you should be achieving every time you sleep. Lower back flat, head and neck neutral, shoulders relaxed and down. A.K.A, shavasana, for the yogis out there.

If your bed is too firm, you are keeping tension on your spine. If you can slide your hand under your lower back or can't go a minute without readjusting, it's too firm. Firm beds are for Saul and Mildred, who can't stand up straight to extend out of that hunched over position. Us modern athletes spend much more time in extension and need a softer bed to support a neutral spine. If you're not ready to invest in a new mattress, try something like a foam pad to contour and support your body. And waterbeds don't count...unless it's fitted with zebra-print sheets in a velour-wallpapered love lair.

Also, sleep is when your hormones recalibrate themselves for the next day. Cortisol levels drop at night and rise again the morning to wake you up. HGH and testosterone get released to promote the growth, maintenance and repair of muscles and bones by facilitating the use of amino acids. Every tissue in the body is renewed faster during

sleep than at any time when awake. The immune system upregulates certain disease-fighting agents. So don't believe that saying that "nothing good happens after midnight."

Timing and quantity of sleep is vital, too. The best (deepest) sleep happens between 10pm and 2am, and ideally you're getting at least 7-8 hours per night. Less than that, and the next day your blood sugar will be elevated, you'll be more likely to eat ~300 more calories, and neurological function plummets. Also, you should sleep in pitch blackness. No digital clocks, nightlights, or computer screens. Any light source affects your production of melatonin, hindering quality sleep. The more you deviate from these circumstances, the bigger hole you're digging yourself.

Vitamin D.

This section is not only about Vitamin D, but any supplement your body might need if you are not already getting enough of it naturally. Historically we obtained Vit-D via sunlight, where UVB radiation converts cholesterol into D3. The idea that Superman gets his powers recharged from the yellow sun comes directly from this.

Vit-D is critical in:

- Fat metabolism
- Cancer prevention
- Immune response
- Fertility
- Insulin resistance
- Regulating Types 1 and 2 diabetes
- Cardiovascular disease
- Anti-inflammatory

Unless you consistently spend 30-45 minutes per day out in the sun (without sunscreen), look to supplement with 2,000-5,000 IU per day. Gel-caps or concentrated drops are both good, and Vit. K helps its absorption.

Omega-3 fats are another supplement many of us are deficient in. Unless you are a salmon and sardine-eating superfreak, chances are you could use some help in that department – especially if you are an athlete looking to keep joints, inflammation, and tissue health in check. Benefits include everything from the Vit-D list, plus brain health, hormone balancing, and more.

Wild-caught fish and grass-fed beef are ideal sources of omega-3's, but if you need to supplement aim for about 3g of DHA+EPA per day. Quality does matter, and two brands I recommend are Stronger Faster Healthier and Barleans.

MSM (methyl-sulfonyl-methane) is another catch-all supplement good for everything, and has become virtually unavailable through natural sources (because our soils are so bad). It is a special biological sulfur found in plants, soils, fruits, vegetables, and meats. MSM benefits include: improvement of joint flexibility, reducing stiffness and swelling, improving of circulation, reducing pain in systemic inflammatory disorders such as arthritis, reducing scar tissue, and breaking up calcium deposits, strengthening hair, nails,

and skin, and more. Again, quality does matter, and I recommend Omica Organics, which is the only non-petroleum derived brand.

Magnesium is another typically deficient mineral. If a muscle is short of magnesium, it will have problems relaxing. Cramps and muscle pain result and energy levels will drop. A simple way to supplement this is with powdered magnesium citrate about 30 minutes before bed. I highly recommend Natural Calm.

Eating.

Anyone that has been doing Crossfit, knows someone that does Crossfit, or is Facebook friends with a Crossfitter, has surely heard the term “paleo” more times than they care to remember. And if you’re reading this, I know you fall into one of those categories. There’s a reason we’re so fanatical about it. It works.

There are heaps of wonderful resources out there on paleo eating, so I won’t bore you with specifics. The bottom line is, get your macronutrients dialed in (protein, fat, carbohydrates), and the rest will fall in line. You know the drill: lean meats (or preferably grass-fed pastured meats), vegetables, good sources of fat, some nuts and seeds, some fruit, no excess sugar or processed foods. Depending on your fitness goals, amounts will vary, but its proven anti-inflammatory results will allow your body to function and heal most efficiently.

Check out anything in print or on the web by Robb Wolf, Dr. Loren Cordain, and Mark Sisson, to name a few.

So...

Is Crossfit dangerous? Or do we put ourselves in danger? Be smart about your training. Be smart about how you treat your body in and out of the gym. Communicate with your coaches to help reach your goals and troubleshoot any obstacles. Then, let the awesomeness commence.