ARSENAL
PERFORMANCE & REHABILITATION

The Pain-Free Training Blueprint

How to Keep Working Out When You're Hurt

Overview

Injuries are frustrating. You can try pushing through the pain, but eventually your body forces you to stop. It doesn't have to be that way. In most cases, continuing to train, while modifying your workouts and addressing your weaknesses, is actually a smarter approach. This guide will show you how to do this.

3 Rules for Pain-Free Training

#1: Pain is feedback, not a stop sign

Pain may feel scary, but it is ultimately just your body telling you something is wrong. If you perform a deadlift and your back hurts, that's your body telling you it doesn't feel safe handling that activity. It doesn't mean that something is "damaged" or "injured" necessarily, but simply that your body is not equipped to handle the stresses.

#2: Modify, don't quit

Your muscles and joints thrive on movement, meaning that you tend to feel better if you keep exercising. If an exercise hurts, change something about it to make it feel better. If it hurts to bench press, for example, change your grip, equipment (dumbbells, for example), or weight until it hurts less.

#3: Strengthen the weak link

If your body can't tolerate the stresses of a certain exercise, there's usually something you can do to improve its ability to do so. Weak muscles, immobile joints, or poor stability can all cause an exercise to be painful, even if you are strong enough to complete it otherwise. The challenge is in finding the exact issue.

Important Notes

1. Pain can be caused by actual injuries as well. As a general rule, if your pain seems to be tied to a specific exercise, it's probably a mechanical issue. If it hurts all day or with every movement you do, you may have a more serious issue.

2. When modifying a workout, do your best to maintain the stimulus. If it hurts to bench press, don't substitute it with a leg exercise just because it doesn't hurt. Experiment with different upper body exercises to see what feels better.

3 Finding the “weak link” in a exercise can be tricky. You may need to consult with a professional if you’re not sure what’s going on.

Rule #1: Pain is Feedback

Without getting too science-y, pain can be described as a message from your brain to warn you of damage to part of your body. This occurs when something is actually damaged, for example, a broken bone, or when something COULD become damaged, such as deadlifting without adequate spinal stability. In the second scenario, there is not necessarily damage occurring to the spine, but the brain realizes that there could be an issue and tries to get you to stop before you actually do harm something.

Think of pain like a check engine light. This tends to come on in your car well before it stops running, giving you a warning that something is wrong and needs to be fixed, so that you don’t actually end up breaking down. Pain acts in the same way – it is simply a warning that you may “break down” (sustain an actual injury) if you continue without a fix. Fix your engine, and your car continues to run smoothly and never breaks down. In the same way, fix your movement deficiency and your body will continue to perform without a serious injury.

Likewise, we should analyze pain for what it is: a message. It is telling us something is wrong, meaning you should take a level-headed approach to determine the issue and then fix it. If your check engine light comes on, you take the car to a mechanic and find out what the problem is – you don't just stop driving. Likewise, you shouldn't panic and stop exercising if something hurts, but rather find out WHY it hurts in the first place.

Rule #2: Modify, Don't Quit

In nearly any situation, your body does better exercising vs not exercising. Movement improves blood flow, nutrient delivery to your muscles and joints, and lubrication of your joints. All of these things are known to be helpful in healing and pain reduction, so logically this means we would want to keep a a painful joint moving.

So should you just continue to workout if the exercises you're doing cause you pain? Well, it depends. If your current routine causes you excruciating pain, you need to modify or alter the exercises so that they don't cause so much pain. A good rule of thumb is that you can continue with any exercise that causes you less than 5/10 pain (so about half of the worst pain you can imagine). If it's more painful than this, you're causing a significant amount of irritation to that area and delaying its recovery. In this case, your best option is to modify the problematic exercises. For example, if you have intense back pain when you squat, try different modifications, such as reducing your range of motion, using a different type of load, or performing a split squat, and see what feels better.

If your current exercise routine only causes a little pain, you likely don't need to modify it at all. Keep up with your workouts, but also figure out what the problem is and work on it with some additional exercises. Using the squatting example, imagine someone who has mild back pain when squatting, but who is still able to complete their workouts as written. This person would benefit more from continuing to squat, while adding some accessory exercises at the end of their workout (in this case, potentially exercises to address spinal stability or squat mechanics).

Rule #3: Strengthen the Weak Link

There tends to be a reason for why certain exercises hurt. We're going to assume that your exercise routine is not full of ridiculous exercises that the human body simply can't handle. Rather, you're likely trying to perform exercises that plenty of other people in your gym are also doing. The question becomes then, why does something hurt for you but not everyone else?

The answer typically lies in physics. Something about your movement pattern signals to your body that the exercise may injure you. In other words, this causes an odd stress to be placed on your muscle, joint, or whatever hurts. Your brain recognizes that these stresses can eventually break down the tissue, so it tries to get you to stop (by causing pain). There are an endless number of reasons this could happen, but we'll keep it simple for now.

In the majority of cases, movement inefficiencies result from muscle weakness, but not in the way that you might think. Common issues include either A) weakness in muscles that stabilize the joints, or B) relative weakness causing asymmetrical movement. If it hurts to squat, for example, you probably don't just have weak quads, but rather that some of the muscles stabilizing your hips/knees/back are weak, or the muscles of one leg are stronger than that of the other. It's not that you're not strong enough to lift the weight, but that your body can't stabilize itself while you are lifting it.

Common Mistakes

#1: Just resting

If you're hurt, you may need to rest a little to allow the pain and irritation to calm down. This will likely make you feel better in the moment, but this doesn't solve any actual problems. Once you start exercising again, the same pain is likely to pop back up.

#2: Targeting the wrong issue

You may have good intentions in trying to rehab your injury yourself, but you may not even be addressing the right issue. Just because your buddy had success with doing X or Y exercise, it doesn't mean that is what will fix your specific problem..

#3: Quitting too early

Strengthening takes time. People tend to quit a rehab plan if they don't see results immediately, even if the plan would work in the long run. Making a significant strength improvement takes 6-8 weeks, so you have to ride it out that long. Using the same principle, people that see quicker improvement tend to stop doing the exercises that helped them and return to their normal routine. Without a lasting strength change, the pain is likely to return.

How Do I Apply this to My Situation?

Now that you've learned the theory, we need to figure out how to actually implement the information into your training. The information does nothing if you continue to do exactly what you've been doing all along. Planned, concrete changes are needed to make actual progress toward your goals. The next section will walk you through this process.

Step 1: What is the Pain Telling You?

If pain is a message, then we need to know how to interpret that message. On a basic level, we know that something is wrong if we're having pain, but we need to dig a little deeper to find out specifically what the issue is. For the purpose of this document, we need to determine if pain is caused by a "mechanical issue" – meaning a local tissue irritation caused by the body's inability to tolerate the stresses of an exercise. If your pain is a mechanical issue, that's when it can be addressed using the principles in this guide.

When analyzing pain, we must consider a variety of different factors:

- Is the pain from a known, specific cause?
  - Yes (ex. I twisted my ankle) → likely not a mechanical issue
  - No (ex. my ankle hurts when I run) → mechanical issue
- What triggers the pain?
  - A specific exercise → mechanical issue
  - Any movement or all the time → you may have some actual tissue damage (an actual "injury")
- If it doesn't hurt during a specific exercise, does it hurt at a predictable interval after a certain exercise (ex. you know your back will hurt the day after deadlifts)?
  - Yes → mechanical issue
  - No → likely not a mechanical issue

- What relieves the pain?
  - Simply stopping the exercise → mechanical issue
  - Warming up → could be a mechanical issue but not definitive
- If you took a break from working out and then resumed the same exercises, would the pain likely return?
  - Yes → mechanical issue
  - No → potentially overtraining or related to increases in exercise volume
- When performing the painful movement, have you found any specific actions to be effective in at least reducing the pain (such as using certain warm up exercises, changing your form, etc.)?
  - Yes → mechanical issue
  - No → less likely to be a mechanical issue but not definitive

If the majority of questions are answered with the option that says “mechanical issue”, then that’s probably the message your body is sending you. In this case, this is your body telling you that it does not feel safe performing the problematic motion and trying to get you to stop as a result. For us, this is good news, as it likely means that there is a way to make your body feel safe in the motion through improvements in strength, stability, ROM, movement quality, etc. We’ll break down how to do this part in step 3, but for now we at least know what the body is telling us.

Step 2: Modify your Workout

If you've determined you have a mechanical issue, we need to modify your existing workout to stop irritating your joint/muscle/tendon/etc. We've already discussed why complete rest is a bad idea, so we want to simply alter the existing program to allow you to keep working out, but in a way that causes less pain.

Here are our go-to methods for modifying exercises. Use whatever option makes sense for your situation, as there is no single right answer.

- Reduce ROM (don't go as low/far)
- Change stance/grip (ex. wide vs narrow grip)
- Change to unilateral (single arm/leg exercises)
- Use lighter weight and higher reps
- Change your form (ex. elbows in vs out)
- Slow down
- Add a pause or tempo
- Change equipment (dumbbell vs barbell)
- Add external support (machine vs free weight)

It's likely that making one of multiple of these changes will help reduce your pain. It may not fully eliminate it, but that is not the expectation. We're simply looking to reduce the irritation so that we can keep training while we work on a solution.

Step 3: Fix What Needs Fixed

Disclaimer: Determining the deeper cause of a movement-related pain is complex and cannot be fully explained in a short document. You may need professional analysis to get a clear answer. With that said, here's a general framework for trying to tackle it on your own.

You're probably already aware of some of your physical shortcomings, and these are fairly likely to contribute to your pain. Things like being inflexible, weak, or uncoordinated may show up as part of a self-depreciating joke, but they also are common contributors to pain as well. Here are some of the more common issues.

Poor flexibility/limited ROM

Limitations to your range of motion can cause issues at both the affected joint or ones nearby. If your shoulder is stiff, it can certainly hurt when you try to make it move through ROM it doesn't have. This makes sense to most people. However, it can also cause pain at other joints if excessive motion is forced on them when the limited joint cannot achieve this motion. In this example, a restricted shoulder could cause elbow pain if extra motion is forced on the elbow to compensate for the shoulder.

The Fix: Improve your ROM with mobility exercises

Weakness in stabilizing muscles

The muscles that drive the motion are not always the same muscles that stabilize the joint. Larger muscles tend to move the joint, while smaller muscles support the joint through this motion and keep it moving correctly. If some of the smaller muscles are not strong enough to keep the joint moving smoothly, you're likely to have pain. Using the shoulder example, weakness in the rotator cuff (the small stabilizer muscles) can cause pain with overhead lifting, even if the deltoid (the large muscle that drives the motion) is strong.

The Fix: Strengthen the stabilizing muscles through targeted exercise

Being stronger on one side of the body

Your body is an efficient machine and will accomplish what you ask of it in the most effective way possible. So, if you need to lift an object (or any other task) your body will use the strongest muscles available to do so. This becomes problematic if one limb is stronger than the other, as one side will provide more of the force needed and cause the movement pattern to become uneven. This becomes an issue for one of a few main reasons.

1. The stronger side takes on more load (this would lead to pain on the stronger side)
2. The weaker side cannot tolerate the load that the stronger side can (this would lead to pain on the weaker side)
3. Uneven stress is placed on a central structure as a result of uneven movement (more common in back injuries)

The Fix: Use single arm/leg exercises to strengthen the weak side

Poor mechanics

Even if you don't have a specific weakness or mobility issue, you can still have pain if an odd stress is placed on your body from simply moving in an odd way. You may have all of the physical attributes necessary to perform a movement safely, but simply can't execute them in a coordinated fashion. For example, you may have great mobility in your hips and ankles, strong stabilizing muscles in your legs, and perfectly symmetrical strength, but if you can't figure out how to squat with normal mechanics then you might still have a problem, even though no individual factor is technically "bad".

The Fix: Use lighter weights and work on your exercise form

Poor load tolerance

Perhaps the most basic issue is simply your tissues' inability to tolerate the load placed upon them. In simpler terms, your joints/muscles/etc. are not used to doing what you're asking them to do. This stimulates pain as a protective response. This is why you tend to be sore after you play a sport or try an activity that you haven't done in years.

The Fix: Dial back the volume to a level you can tolerate and then gradually increase it

Real-Life Examples

Let's run through a couple examples to hopefully clear up these concepts in your mind:

Scenario 1: Knee pain with back squats

Description: Jason is a powerlifter who has been having pain in his right knee every time he does back squats as part of his training program. He has a meet coming up and is concerned about taking time off and losing strength. The pain is fairly intense while he is squatting and for several minutes after, but otherwise does not bother him throughout the day. He knows his left leg is weaker than the right ever since he broke his left leg in a car accident several years ago. He tends to have less pain if he completes a thorough warm up consisting of single leg RDLs, lunges, and step ups.

What is the pain telling us? Being that he primarily only has pain during the exercise and it is improvable with a targeted warm up, this is likely a mechanical issue that can be fixed.

How should he modify his workout? Potential modifications include doing pause squats, splits squats, or reducing the weight, depending on what feels best.

What needs fixed? His issue is likely stemming from a strength deficit in his left leg in which it is unable to tolerate the same load that the right leg can. Therefore, he should work on single leg strengthening exercises until both legs have equal strength.

Scenario 2: Back pain with overhead movements

Description: Kelsey is a functional fitness athlete that has chronic lower back pain. She frequently adds core and back stability exercises to her program to help with this, but not much seems to change. She does notice that it tends to hurt worse the day after she does overhead movements such as strict press or split jerks. Kelsey knows she has poor shoulder mobility and struggles to reach her arms fully over her head..

What is the pain telling us? Even though she does not have pain elicited specifically during a certain exercise, it still shows up in a predictable pattern related to specific exercises (she has more pain the day after doing overhead lifts). This suggests a mechanical issue.

How should she modify her workout? Potential modifications include performing single arm variations of the exercises, performing her overhead exercises while seated, or using shoulder press machines.

What needs fixed? She has difficulty achieving the shoulder ROM needed to perform overhead movements with proper mechanics. To compensate, she likely arches her back, which then puts her shoulders in a better position to receive the bar. Even though she works on her core and back, the deeper problem is that she does not have enough shoulder ROM to avoid arching her back, which then causes pain due to the additional pressure of arching the back under load. The solution is to improve her shoulder mobility, even though the problem manifests as back pain.