

Out of Kilter - Par 1

by Ian King | Fri, Oct 03, 2003

Out of Kilter How to Identify and Correct Imbalances by Ian King Why are you reading T-mag? What's your the main goal? Most likely you want to get bigger, stronger, or perform better athletically. Well, guess what? You're missing something. Your answer should have been, "I want to develop long term joint and soft tissue health which, in turn, will allow me to get bigger, stronger and perform better...."

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Why are you reading T-mag? What's your the main goal? Most likely you want to get bigger, stronger, or perform better athletically. Well, guess what? *You're missing something.*

Your answer should have been, "I want to develop long term joint and soft tissue health which, in turn, will allow me to get bigger, stronger and perform better." If one of your goals isn't to develop joint/soft tissue health, then you can kiss your other goals goodbye.

Let me explain. I've worked with a lot of athletes and there's nothing more frustrating than seeing them sitting up in the bleachers injured at peak competition times. In fact, one of the biggest reasons teams lose is due to injuries. Everyone knows this, but no one seems to pick up on the key here—create long-term joint/tissue health prior to and concurrent with performance enhancement!

Why is this so difficult and rarely done? I have several theories:

Theory #1: It's a conspiracy!

I say this only *partly* tongue in cheek. I actually don't believe physical therapists and similar professionals would really like to see zero injuries. After all, what would they do for a living then?

When working with an athlete or team, my goal has been to put the physical therapist out of work, not because I'm a mean and nasty person, but because the measurement of my success in performance enhancement is based on complete success in injury prevention.

I've achieved this in the past. One physical therapist, whilst in the seaside South African city of Durban (known for its surf and sharks!), put up a sign on his door in the team hotel reading "Gone surfing. Back later". I'd made him largely obsolete! Mission accomplished!

Theory #2: Instant gratification

Most see performance enhancement as instant gratification. They just want to get big/strong/fast/powerful *now*, with no thought of anything else. I liken it to building a multi-story building. What if, as the nineteenth floor goes up, you realize there's a structural flaw in construction on the first floor?

Theory #3: Lack of discipline

Delaying gratification takes discipline. American business philosopher Jim Rohn has a great saying on this. He says the pain of discipline is much lighter than the pain of regret. Yes, it does require what may be perceived as pain to delay performance enhancement for long-term joint/tissue health, but far less than the pain of surgery, chronic pain, or layoffs later on.

Theory #4: Ego and emotional attachment

It goes like this: "I've been training like this for years and my uncle Joe has been doing weights like this for decades. Why should we change? We know what we're doing and we ain't hurt yet!"

My philosophy is to never force my opinion on anyone. I simply assess, predict, and take no pleasure in seeing my predictions come true. All I can do is share what I think, take it or leave it. You can do it my way or you can contribute to some therapist's weekly income, or worse, some surgeon's next European holiday.

So what's the solution? There are a number of alternatives:

- Get the athlete when he's young and before he's done much training and create long-term joint/tissue health via the way he trains and thinks. In other words, do it right when he's just starting the construction of his "building."
- Take the more advanced trainee/athlete, who's somewhere higher in his building than the ground floor, and go back and address the issues. Success in this situation is dependant upon him endorsing the concepts.
- Let the trainee/athlete go his own way until he inevitably finds out I was more accurate in my predictions than he'd hoped. If he's fortunate, he'll be towards the end of his career and only lose a few years. Of course, there are other, later costs for disregarding my advice, like the former racquet sport athlete who had hip replacement in his 30's!

I understand that most of us males until about the age of 35 think we're bulletproof. My lot has been watching the cause and effect relationship of intense training at the highest level for some twenty-odd years now, creating and testing theories of multi-year adaptation. The gyms, tracks, courts, and playing fields have been my laboratory. And whilst not trained in the socially acceptable form of physical therapy, my success has been dependant on creating a training career free of chronic injury and surgery. What follows is an overview of my ideas.

Visual Assessment

My approach is very simple, yet effective. I aim to create what I call "square" athletes, walking examples of the ultimate East German sporting robot! I can see where the challenges lie and I can teach you how to do this in a rudimentary way on yourself.

As the great training mind Charlie Francis might say, "Looks right, flies right." I start with a visual assessment of the way you walk. The way you walk influences the way you run and the way you lift. Yes, the way you lift influences the way you walk in reverse, but remember this—you lift for only a few hours a week.

So work with me on the visual assessment of your posture. I'll share with you a model of posture. It's not everything, but as mentioned above, the way you lift and the design of your training program (eg. sequence of exercises, muscles groups, technique, amount of stretching, etc.) play significant roles.

Before we get into it let me share the basis of my joint/tissue health theory. It's very simple. We all have an optimal relationship of one bone to another. If that relationship changes, even subtly, we risk creating nerve and tissue pressure which creates a loop or feedback mechanism resulting in increased spasm and inhibition of function. A vicious cycle is perpetuated, in part by the body's protective mechanisms.

To correct and rehab, you now need to interfere with that feedback mechanism. This is because this protective mechanism can itself delay or interfere with the healing process. Then you need to identify the cause (as opposed to the symptom) and fix it! Addressing the symptom or taking the surgery route often means the relief is short term and the symptom returns. Sad, frustrating, but true.

Now, let's start out with my postural model to identify potential imbalances. You may be surprised at the absence of reference to strength parameters as a measure of muscle balance. I don't endorse these. Ironically, the same people promoting these concepts are debasing the use of machines such as Cybex to identify muscle balance around the knee. Too many variables contribute to the ability to displace load. For me, strength ratios are of limited value in the true identification at the early stage of potential muscle imbalances.

So, let's get into what I want in my postural model. As you compare yourself to this, you'll likely note a significant difference between your "model" and mine. Yet, if you choose, you can adapt your posture to my model. Is it worth doing? After all, you'll need to memorize and apply it, day in and day out, and this will take effort. I'd say it's worth it, but I'm also quite happy for you to form an alternative opinion. I promise I'll take no delight when, in the years to come, you experience conditions I call predictable and avoidable.

Okay, here we go.

Feet

Your feet should be parallel, shoulder-width apart, and toes on the same imaginary line, i.e. totally symmetrical. They should be like this all the time; never stand any other way!

Failure to adopt this position: If you stand with your feet externally rotated, you're creating shortening of the external rotators which may contribute to lower back or referred pain down the legs at some time in the future. Individuals who stand this way may also inhibit the strength and growth of their external rotators, including their gluteals.

How to check this in yourself: Look down at your feet.

Weight Distribution

Weight distribution should be even right to left and 60% towards the front of the feet, 40% to the back. This is like the "ready stance." Your feet are flat, but weight is forward. This may cause you initially to feel like you're falling forward.

Failure to adopt this position: When you rock your weight back on the heels, this is mechanically less work but can result in the hips being moved in front of the shoulders (vertically) which increases pressure on lumbar joints and nerves, throws the head forward and curves the upper back, resulting in discomfort at any level of the spine or neck.

How to check this in yourself: Feel for the weight distribution. Experiment with various options to get a comparison.

Knees

Knees should be slightly bent, but not much. Just unlock them and definitely avoid hyperextension at this joint in standing or walking.

Failure to adopt this position: Extending the knees increases the anterior rotation of the pelvis. This increases pressure on the joints and nerves of the lower back and may result in pain at the back or referred down the legs. People who typically hyperextend may also have reduced quad development and increased joint wear at the knee.

How to check this in yourself: Force the knees into lockout. If it took no or minimal travel to that position, you're probably too extended. Experiment with different levels of knee bend. You only need the slightest amount.

Pelvis Position Relative to Shoulders

The center of hips should be directly under center of shoulders.

Failure to adopt this position: When the hips are in front of the vertical line of the shoulders, you'll have increased pressure on the lumbar joints and nerves. Remember, when a muscle is excessively shortened or lengthened chronically, it can be inhibited in power and growth. People with this stance characteristic usually have poorly developed gluteals because they're kept in a shortened state too often.

How to check this in yourself: Stand "side on" to a mirror or have someone else assess this from a side position. When the pelvis and shoulders are aligned vertically and you feel you're falling forward, this adds confirmation that you normally stand with your hips in front of your shoulders.

Pelvis Position Relative to Itself

When the top of the pelvis moves forward this is called anterior rotation. When it moves backward it's called posterior rotation. While it's normal to have some degree of anterior rotation, excessive anterior rotation contributes to excessive lower back (lumbar) curvature, which means more pressure on these joints and the nerves coming out from these joints supplying the lower body.

Failure to adopt this position: Jam the lumbar joints up and you'll have reduced power output in the lower body, followed by pain. People with excessive anteriorly rotated hips usually suffer lower back and sciatic pain more often and more severely, and are more likely to experience hamstring, groin, calf, and abdominal wall pain or tearing (or what I call "symptoms of tearing," at least until it manifests as a true tear).

How to check this in yourself: Stand side-on to a mirror or have someone else assess this from a side position. Experiment with degrees of anterior and posterior rotation. This position may only require a subtle adjustment. You aren't looking for a totally vertical pelvis, but are seeking something that approaches this position.

Lower Abdomen

The low abdomen should have constant lower level tension to maintain appropriate degree of posterior rotation in the hips.

Failure to adopt this position: Inadequate firing of these corset-like muscles will leave the pelvis too anteriorly rotated too often, resulting in increased pressure on the joints of the lower back and the nerves coming out from these joints feeding the lower back. So this means less power to the legs and more risk of pain in the lower back, hips, and or leg regions.

How to check this in yourself: Place your hands down along the lower abdomen angling in with the obliques, including just under the belt line. Feel for level of tension with your fingers. You should be able to feel some tension under the skin, especially at and under the belt line.

Sternum

The sternum should be held high. This not only improves lung function (which affects total body health and function), but also ensures the upper back isn't excessively rounded or kyphotic.

Failure to adopt this position: This may result in rounded upper back and less effective lung function.

How to check this in yourself: Experiment with your sternum position. Lift it up as high as you can, lower it down as low as you can. Are you normally close to maximum height? This is ideal.

Shoulders

The shoulders should be back and down, symmetrically. When looking laterally at the shoulders (say, looking sideways into a mirror), you shouldn't be able to see *any* of your upper back because the deltoids are blocking the view.

Failure to adopt this position: This position is key to shoulder health. Failure to master this position can result in a variety of shoulder health issues and also referred pain or challenges down the arms and back through the chest.

How to check this in yourself:

1. From the front: Check that your shoulder height is even by looking into a mirror. If one shoulder is lower, it usually means you're dominating in this arm and that the chest and lat on that side are tighter. This can result in increased neck pain and shoulder issues.
2. From the side: As stated above, when looking sideways into a mirror you should not be able to see any of your upper back. This is a measure of your shoulder blade retraction.
3. From the back: Have someone run his or her hands across your upper back. If he feels his hand catching the medial (inside) vertical borders of your shoulder blades, you're probably still lacking in shoulder blade retraction (squeezing together).

Now have him run his hand up your back vertically. If his hands catch on the lower end of your scapula, you may be lacking in scapula retraction (lower and pulling in towards the body of the lower end of the scapula).

Finally, have him place a hand on each of your shoulder blades to determine if your shoulder blades are sitting symmetrically when in the standing position.

Arms

The arms should be by your side, not out in front. They should be positioned symmetrically by the side of the body, not one in or out more than the other.

Failure to adopt this position: This will reinforce internal rotation of the chest and shoulders, one of the more common shoulder/arm positions evident in inappropriately designed weight training programs (which sums up about 99% of training programs from a joint/tissue health perspective).

How to check this in yourself: Look at yourself front-on in the mirror. Are your hands by your side or are they playing "pocket billiards"? Are they positioned the same right to left?

Hands

The hands should be facing inwards, not backwards.

Failure to adopt this position: This will reinforce internal rotation of the upper arm. This condition will increase the incidence of shoulder and referred pain into the arm conditions.

How to check this in yourself: Face the mirror. Where are your palms facing? Inwards or backwards? Are they symmetrical? (That is, are they doing the same thing?)

Head

The center of the head should be close to the vertical line of the hips and shoulders; not exactly so, but not excessively away from this position. Look to minimise the curvature of the neck.

Failure to adopt this position: This will result in increased neck and head pain, and will also reinforce the hips forward position, as they act together to counterbalance the center of gravity.

How to check this in yourself: If you're by yourself, stand side-on to the mirror and attempt to get a glimpse at your head position. Other methods include experimenting with putting your head more forward and retracting it. Remember, when you retract it keep the chin flat. If you find you have a fair bit of travel back inwards, you're probably standing with your head protruding excessively.

Levels of Dysfunction

Now that we've looked at the basis for my approach to creating long term joint/tissue health whilst developing performance enhancement qualities, let me share with you how this more acutely affects you. The following is based on the old adage, "Little leopards become big leopards and big leopards kill."

1) Subconscious pain: At this level you probably won't be aware of any problems, but the effects of the problem are beginning to manifest. This begins with reduced neural supply and other inhibition of the neuromuscular system. In other words, you're not as strong as you could be but you probably don't realize it. You won't hypertrophy as fast or as much as you normally would either!

2) Conscious pain: At this level you probably are aware of some low level discomfort, but you invariably misdiagnose and ignore it. For example, in sciatic nerve pain, you may at first feel a tightening around the outer gluteal area. If you do get it treated or treat it yourself through some stretching or massage, you're probably addressing the symptom and not the cause.

3) Higher level pain: At this stage you're probably out of training or should be out of training. Continuing to train or not getting the appropriate rehab only causes it to get worse.

4) Immobilization, bed-ridden, long term training interruption: By this stage you're stuffed! If

you got this far, it usually means you don't know how to fix it, nor does anyone with whom you're working. At this time you're really going backwards in other areas.

5) Surgery: Surgery is rarely the answer, but it's the most common solution offered in our injury-based, rehab skilled but not prevention skilled environment our medical and paramedical workers operate in.

If you identify potential challenges early and remove them within a matter of days, you rarely, if ever, suffer interference in training, and surgery and layoffs are never a consideration.

On the other hand, if you ignore them, misdiagnose them, or fail to treat them effectively, you may find they turn into career-threatening challenges. Plan to take about 50% of the time you have had the injury to rehabilitate it. The longer you have it, the longer it may take to remove.

Conclusion

I understand that for some, especially the younger or less injured ones, this info may seem less relevant. It's amazing how facing a serious injury can change one's perspective!

My firm recommendation is don't wait until later in your training career to learn the hard way. Take steps *now* to reduce the incidence and severity of any challenges you may face at the joint and/or tissue level. But I understand we must all learn in our own way and life is full of choices! Choose to be injury free!

[Editor's note: Ian will be addressing this topic in more detail in future articles.]

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