Anatomy for Runners

UNLOCK YOUR ATHLETIC POTENTIAL FOR HEALTH, SPEED, AND INJURY PREVENTION

JAY DICHARRY

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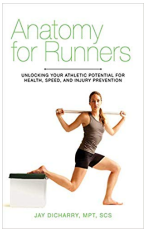

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NOTES

KEY POINTS

Why Do You Run?
Performance, fun or health?

A Little Biomechanics
A little understanding goes a long way

Why Runners Get Injured
Muscle Imbalances and too much load

Reduce Your Injury Risk
By.....

Correcting Your Imbalances

Don't Just Run
Do other movements too

"So together, we'll embark on a mission to tackle two main points:

1. Anatomy: What are your parts and what is unique about them? And how does running affect them?
2. The Athlete Within: Learn how to optimize the function of your parts to combat injury risk and improve performance and with specific exercise prescription and form tips."

Jay Dicharry from Anatomy for Runners

This is a really cool book. I loved reading it. I was a runner but now I'm not a runner, I'm a walker but since reading it I've been dabbling back into a little bit of running and I've found it really fun. Chapter 9: 'Assessment and Development of the Athlete Within—Redefining the Body You've Come to Know and Love' is worth the price of the book alone. I really enjoyed doing each one of the assessments and then focusing my efforts on the exercises Jay recommends. I believe that a huge variety of movement is key to optimal biological function but it was super fun to focus on a specific set of ideas and movements for a while and watch myself progress. If you are runner you need to read this book and if you are one of the 80% of runners that will get injured this year then you should have read it last year. It's great.

"While moving the runner forward against the clock is what counts, it's how the body uses its chassis to stabilize in the lateral and rotational planes to move forward that affects our injury and performance potential. This book is aimed at redirecting that focus. You'll understand how your anatomy works together to answer common questions and become a better runner."

"If you approach running by combining the theory of movement, a thorough understanding of the individual's strengths and weaknesses, and training loads, you can begin to find answers."

Do you understand your training loads? Your strengths and weaknesses? If not it's time to find out. Jay has an incredible knowledge base and I highly recommend this book. Get it.

Why Do You Run?

"And lastly, what are your goals? Before anyone can say what is the best way to run, you have to come to terms with why you run and what running means to you. Running for fitness at an easy pace is a great way to stay healthy for the long term. It does require certain attributes from you, but at a lower threshold. On the flip side, if your goal is to beat your personal record (PR) at all costs, it's also fairly easy to describe how you should run. While there is no research to show that running fast is hurtful, it requires more mobility and more force. Do you have it? Because if you don't your fast form is going to set you up for overuse injury and compromised efficiency. If you want to crank up the pace, you have to earn it"

"If you want to crank up the pace you have to earn it." I love that line. If you are running a small amount at low pace then the loads your system has to deal with won't be as high as if you are running at speed up and down hills. We all know that gravity is loading our body all the time. When we are standing we experience 1G of force or load. If you are 70 kg like me when you are standing still your body is experiencing 70 kg of load. When we are walking it increases to around 1.5-1.75 Gs or 105-122.5 kgs. Your body is now dealing with more load and when you have imbalances these bigger loads can cause trouble. When we run the forces increase more. Now your body has to deal with 2-3 Gs or 140 kg to 210 kg of load. All running requires a set of skills and physical attributes and if you are missing strength or mobility somewhere eventually it will show up as an uncomfortable feeling in the body, especially if you are loading yourself with a whole heap of high load running. Why do you run? If it's for fun then low load walking might be a great place to start. If it's for high performance sport then low load walking and getting rid of imbalances in your muscles is still key for your continued running pleasure.

A Little Biomechanics

"Running is a skill. Kids do a lot of dynamic sports that develop varied movement skills. As we move on in life, we begin to narrow our training focus. We do less of the "other stuff" and more running. Then we do even more running. And still, more running. Running is a great way to strengthen the cardiovascular system and the muscles that move us forward in one plane. However, running does not directly strengthen the muscles that stabilize us in the lateral and rotational planes. These muscles are critical with respect to injury and performance potential. We create imbalance as the muscles that propel us forward get a much larger training stimulus to improve than the muscles that stabilize us. The more time and focus we give to one thing, the worse we get at everything else."

We all know that if we drive a car with poor suspension and wheel

alignment sooner or later we are going to have to get some repairs done and that it's going to cost us more to fix later than earlier. Smart car owners get their wheel alignment checked and their suspension looked at as soon as they notice a problem. How many runners do that? When you notice that you have a problem (aka a sore knee after a run or a sore toe). What do you do? Stretch a bit and hope the problem will go away? Or do you do your best to find out exactly what is happening in your body and what you need to do to get better? Many runners don't know why they are sore and so keep running hoping that things will get better. But there are people out there (Jay included) who can help you see where your biomechanics are failing and give you the right information and movements so that you can get better.

This is really important if all you do is run. As the quote above mentions if you are only running then the muscles that stabilize you in the rotational planes are not getting a training stimulus. You will have imbalances that must be rectified if you want to run without causing damage to your tissues.

"Sometimes it's not what we do to the body that causes injury (like following a bad training plan), but rather a breakdown within the runner. Perhaps they don't have enough mobility at a specific joint, which forces excessive motion at another joint. Maybe a muscle imbalance prevents them from stabilizing the body. Or it may be a limp that has crept its way into their stride over the years of which they are unaware. Any one of these can act independently or in combination to load the body excessively. It's time to shift our focus to a concept called causative biomechanics, and it's the aim of the rest of this book"

Optimal biological function requires a huge variety of movement. You can't just move some of your tissues and expect all of them to stay healthy. Only the tissues you use will continue to develop. The ones you don't use aren't needed (according to the body) and so those tissues become less and less healthy. Running does not require all the muscles in your body. However to help your body deal with the forces of running it's vital that your stability muscles are up to speed.

"Most problems in overuse injury result from an inability to stabilize the rotational and frontal plane alignment of the joint as it moves through a normal path"

Understanding a little about Biomechanics and loads will help your running dramatically. Get the book to find out more.

Why Runners Get Injured

"What causes injuries? Most runners don't sustain major traumatic events like falling off of a cliff. The thing that gets runners is compounding microtraumatic loads applied to the body mile after mile."

It's common for someone to come and see me with pain in their knee or back and for them to say "but I didn't do anything. I didn't fall or sprain my knee, I didn't lift anything big or heavy. Why am I sore?"

It's usually because of micro trauma. Slow increases in micro damage that doesn't get time to repair before your next run.

"If we have enough mobility to move at each and every joint for the motion required to run then there really isn't much of a problem. However, runners that lack motion in specific areas: A) move more from somewhere else to make up the difference, B) alter their gait mechanics, or C) both. These compensations create imbalances in tissue stress over the long term."

Many runners lack the ability to extend their hip. If you run with tight quads and hip flexors your body must find another way to extend your leg behind you. Many runners compensate by extending their back, STOP doing that. Work on lengthening your quads and hip flexors and get the movement happening at the hip.

"Continuing to train full volume and full speed on an injured area will result in tissue breaking down faster than its capacity to heal. A lot of runners walk the tightrope—they never fully recover from their initial injury and continue to overload the body just to the point where they are teetering on reinjure. F.I.T. should be modified to allow healing"

I hope you are starting to get an idea of what you need to do to reduce pain and run with more freedom. First allow your body to heal by not loading it too much, then give it time to recover and find out why it's sore. To do this you must work out your muscle imbalances and work on rectifying them.

Reduce Your Injury Risk

"Instead of focusing on the return to running, the aim should be to determine what unique mechanical factors caused the injury and normalize the tissue repair along the way"

"Poor biomechanics alter the path of stress and strain through the tissues and break things down"

As I mentioned in the introduction Chapter 9: 'Assessment and Development of the Athlete Within—Redefining the Body You've Come to Know and Love' is worth the price of the book alone.

In this chapter Jay takes you through all the areas of your body and gives you a simple exercise to test your function. If you fail any of the tests then have a look at the correctives Jay suggests and start there.

Remember

"The alignment of the bones, the muscles, tendons, and ligaments is critical to pressure exerted on the surfaces of the joints."

If you want your joints to stay healthy make sure you are loading them correctly.

"The goal is to optimize the combination of dynamic stability, soft tissue mobility, and running form to produce the most efficient runner"

If you do this you will dramatically reduce your injury risk. How can you have dynamic stability, soft tissue mobility and form? Work at it. Correct your imbalances and focus on your form.

Correcting Imbalances

"Correcting imbalances is all about moving smarter, not stronger. You should never attempt high intensity strength and plyometric exercises until you have mastered specific stabilization of the parts. Why? Unstable levers cannot tolerate high loads. If you can't generate specific force from the right muscles to stabilize against these loads, the body compensates. Athletes develop poor movement skills because they don't know any better. Simply adding more volume, more intensity, and more challenge to runners with poor local control is about as effective as drunk driving."

Have you got stable levers? Can you generate specific force to deal with the increase in loading running creates? Do you know what position your joints should be in? Do you understand what a neural pelvis is and have you got enough hip extension?

Correcting imbalances takes time. First you must assess and find what imbalances you have. Then you must develop a protocol to systematically reduce and eliminate these imbalances. I've dedicated this entire year (and probably next year) to increase my hip mobility in all planes. My protocol involves correctives that I do on a daily basis. It involves walking hills and it involves feeding my body with loads of healthy food and water.

Correcting imbalances won't just help with your running it will help enhance your health. Get on it. If you need some help, get some.

Don't Just Run

"Running is a pretty constrained movement pattern that tends to ignore our comprehensive athletic skill development. We need to expand your skill set. Go outside your comfort zone and push the limits of your stabilizing muscles"

Running should not be your only physical activity. If you are having

problems with your body increasing the amount of running you do will not help. We all need to cross train on a micro and macro level. Do you ever walk? Do you have a basic body maintenance program that is specifically designed to correct your imbalances? Do you always run on flat surfaces or do you hit the trail?

"As mentioned at length in the first half of this chapter, the first step is moving smart. Runners in general have a lot of bad habits and movement skills that need to be "cleaned up" before any higher intensity type program is begun"

Are you moving smart? Have you eliminated all your bad habits? I hope so but if you haven't pain free running awaits you. All that is required is a little more understanding and dedication to correcting your poor movement habits.

About the Author of 'Anatomy For Runners'

Jay Dicharry

Jay has a Masters of Physical Therapy degree from Louisiana State University Medical Center and is a Board- Certified Sports Clinical Specialist. Jay built his international reputation as an expert in biomechanical analysis as Director of the SPEED Clinic at the University of Virginia. He has written two books including of course this one 'Anatomy For Runners and his second book which I am excited to read is called Running Rewired: Reinvent your run for stability, strength and speed.

About the Author of this Move Note

Hazel Boot

Hazel has a degree in Exercise and Sports Science. She is also an Anatomy Trains Structural Integrator and a Restorative Exercise Specialist. She works with clients to improve movement and reduce pain. She loves reading and geeking out on movement books. She writes notes on the books she loves to help others learn faster.

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I hope you enjoyed the content of this note but please remember that it is not medical advice and should not be used as such