

Study Uncovers Key to Preventing Back Pain in Runners

Working on the deep core, not the abs, is essential to becoming a better runner

The Ohio State University Wexner Medical Center

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NEWS PACKAGE



SUGGESTED TEASE	SIT-UPS MIGHT GIVE YOU A SIX PACK, BUT THEY WON'T NECESSARILY GIVE YOU THE RIGHT CORE STRENGTH YOU NEED. COMING UP, NEW RESEARCH THAT EXAMINES WHAT CAUSES CHRONIC PAIN IN RUNNERS AND THE EXERCISES TO HELP YOU PREVENT IT.
ANCHOR LEAD	IF YOU'RE A RUNNER, YOU'VE PROBABLY HEARD THAT YOU SHOULD DO CORE EXERCISES. BUT NEW RESEARCH FINDS THAT HAVING A SIX PACK WON'T MAKE YOU A BETTER RUNNER, AND NEGLECTING THE MUSCLES THAT TRULY SUPPORT YOUR BODY CAN HAVE PAINFUL CONSEQUENCES. BARB CONSIGLIO HAS THE DETAILS.
(PACKAGE START) ----- CG: Courtesy: The Ohio State University Wexner Medical Center :00 - :03	(Nats - Stepping onto treadmill) :02
Shots of Kayla running on treadmill	BEFORE SHE BECAME A PHYSICAL THERAPIST, KAYLA BORCHERS WAS A COMPETITIVE RUNNER, AND EVEN THOUGH SHE WORKED HER CORE, SHE HAD CONSISTENT LOW BACK PAIN. :07
CG: Kayla Borchers Experienced low back pain	<i>"It felt like just muscle tension and just a dull ache."</i> :04
Shots of runner in laboratory	IT'S A COMMON COMPLAINT AMONG RUNNERS, BUT THE TRUE CAUSE HAS BEEN UNCLEAR. SO IN A NEW STUDY LED BY AJIT CHAUDHARI (CHOW-dree) AND HIS TEAM AT THE OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER, RESEARCHERS EXAMINED RUNNERS' MUSCLES USE DURING ACTIVITY.
Shots of motion capture cameras	USING MOTION DETECTION TECHNOLOGY AND FORCE-MEASURING FLOOR PLATES, EXPERTS BUILT SIMULATIONS THAT SHOW HOW EVERY BONE IN THE BODY MOVES, AND THE PRESSURE ON EVERY JOINT WHILE RUNNING.
Shots of runner on floor panels	THIS ALLOWED THEM TO VIRTUALLY MANIPULATE THE STRENGTH OF EACH MUSCLE. :25
Shots of researchers	
Shots of runner simulation	<i>"What if you turned off certain muscles, so they were</i>

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<p>CG: Ajit Chaudhari, PhD Ohio State Wexner Medical Center</p>	<p><i>weak, fatigued, not well conditioned, what does that change? What other muscles would have to take up the slack? And what are the effects of that?"</i> :12</p>
<p>Drone shots of runner</p> <p>Graphic: Deep core vs superficial core</p>	<p>WHAT THEY FOUND IS THAT BACK PAIN IS COMMONLY CAUSED BY WEAK DEEP CORE MUSCLES THAT ARE USED TO STABILIZE THE BODY. NOT TO BE CONFUSED WITH SURFACE MUSCLES LIKE THE ABS THAT MANY RUNNERS TYPICALLY FOCUS ON. :10</p>
<p>Shots of runner in lab Dr. Chaudhari (CG'd earlier)</p>	<p><i>If those deep core muscles are not contributing, then that's increasing, or likely to increase, the loads on your spine in a way that may lead to low back pain. :11</i></p>
<p>Shots of Kayla doing plank exercise</p> <p>Dr. Chaudhari (CG'd earlier)</p>	<p>SO CHAUDHARI SAYS SKIP THE SITUPS, AND OPT FOR EXERCISES THAT FORCE YOU TO HOLD YOUR BODY IN PLACE. :04</p> <p><i>"Exercises that are really focused on stabilizing your core, especially on unstable surfaces, that's what's really going to make you a better runner." :08</i></p>
<p>Shots of Kayla doing core exercises</p> <p>Shots of Kayla running on treadmill</p>	<p>KAYLA NOW RECOMMENDS THESE EXERCISES TO HER PATIENTS AND INCORPORATES THEM INTO HER OWN FITNESS ROUTINE.</p> <p>NOW, SHE'S NOT ONLY PAIN FREE, BUT FASTER THAN EVER. :08</p>
<p>Kayla Borchers (CG'd earlier)</p> <p>Shots of Kayla doing core exercises (PACKAGE END) -----</p>	<p><i>"I am able to go out and run further and stronger and faster than what I used to, and I'm not running as much as I used to." :07</i></p> <p>AT OHIO STATE WEXNER MEDICAL CENTER, THIS IS BARB CONSIGLIO REPORTING. :03</p>
<p>ANCHOR TAG</p>	<p>EXPERTS SAY THERE IS A LOT OF MISINFORMATION OUT THERE ON THE BEST WAY TO STRENGTHEN YOUR CORE, BUT THAT ANYTHING WITH A LARGE RANGE OF MOTION IS USUALLY JUST WORKING THOSE BEACH MUSCLES, AND WON'T STRENGTHEN THE DEEP CORE.</p>

SOCIAL MEDIA

<p> Share it! Suggested tweet:</p>	<p>Researchers @OSUWexMed examine the true source of back pain in runners. What you can do to prevent it: http://bit.ly/2Bltz0M</p>
<p> Suggested post:</p>	<p>Having six-pack abs won't make you a better runner, and researchers at The Ohio State University Wexner Medical</p>

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	Center say neglecting the muscles that truly support your body can have painful consequences. http://bit.ly/2Blitz0M
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EXTRA BITES

<p>CG: Ajit Chaudhari, PhD Ohio State Wexner Medical Center</p>	<p>Dr. Chaudhari says overworking other muscles strains the back: <i>“To get the same effect on the motion they may have to work harder or do more, in which case it might pull the spine in a little bit harder, or in a slightly different direction.”</i></p> <p>Dr. Chaudhari describes how they create the simulation: <i>“We make measurements of both how they move, and the dimensions of their body, then we can use that information to scale that generic model to be subject specific, and then apply the motion that we measured in the lab to then create the simulation that’s specific to that person.”</i></p> <p>Dr. Chaudhari describes some deep core exercises: <i>“That may be that you’re standing on an unstable surface, or you’re trying to do a side plank, or you’re trying to even just stand still while tossing a medicine ball with somebody, those are all exercises that emphasize that stabilization, as opposed to moving through a large range of motion.”</i></p> <p>Dr. Chaudhari says the simulation measures the force on joints: <i>“From the forces at the ground, we can calculate what are the forces in every joint of their legs and of their spine as they’re running around the lab.”</i></p> <p>Dr. Chaudhari says a strong core doesn’t mean six pack abs: <i>“If you look at great runners, they don’t typically have a six-pack but their muscles are very fit. And not just the muscles you can see but the muscles that are underneath that, deeper.”</i></p> <p>Dr. Chaudhari says muscles compensate, but it leads to injury: <i>“Your body is able to compensate in a way that allows you run essentially outwardly the same way, so you may not even notice. But that’s increasing, or likely to increase, the loads on your spine in a way that may lead to low back pain.”</i></p>
<p>CG: Kayla Borchers Experienced low back pain</p>	<p>Kayla says a stronger deep core helped her as a runner: <i>“So I started tuning into activating those deep core muscles and I started to notice a change in my running.”</i></p>

CG: Kayla Borchers
Experienced low back pain

Kayla says doing deep core exercises put an end to her pain:
"I incorporated more of those sorts of exercises into my training routine, and I didn't get that onset of achiness, just like it was a muscle ache in my low back, and what I've now found out is it was most likely those larger muscles doing the work that the smaller stabilizing muscles should have been doing."

Kayla says her pain was caused by working the wrong muscles:
"You can have a strong rectus abdominis or your six pack muscles. I did, but I wasn't activating my deep core, and so when you're not activating those more stabilizing muscles, then the spine isn't getting the support that it needs."

References

¹*Biomechanical consequences of running with deep core muscle weakness*, **Journal of Biomechanics**, Volume 66, January, 2018. Online:
<http://www.sciencedirect.com/science/article/pii/S0021929017306929>

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