Enduring Questions -- Does Stretching Prevent Injuries?

Everyone knows that flexibility is good for runners, right?
Too bad medical research doesn't agree.

by: Amby Burfoot

Editors are generally a timid and bookish lot. You'll find few Purple Hearts in our ranks, and few of us trying out for Fear Factor. In two decades at Runner's World, I've gone to the brink of combat just once.

It happened 10 years ago at the annual meeting of the American College of Sports Medicine. I was attending a slideshow on "Stretching and Running Injuries," and the speaker kept making fun of Runner's World. His data on Honolulu marathoners indicated that runners who stretched got injured more often than those who didn't. After each of his statistical slides, he'd project pages of Runner's World with articles like "9 Best Stretches for Runners." The message was clear: the editors of this magazine must be lost in space.

Hey, wait a minute, that's me. When the lights came on, I rushed to the microphone, huffing, puffing, and expanding my chest to its full 38 inches. I felt my testosterone surging. This dude was in trouble. "Thanks for the fascinating paper," I said. "I'm just curious. If stretching doesn't work, why do runners keep doing it?" So much for my Terminator fantasy.

These days, as the running population keeps booming, the question of stretching's value is more important than ever. No wonder a recent report from the Centers for Disease Control received so much attention. It, too, cast doubt on the effectiveness of stretching, concluding, **"There is not sufficient evidence to endorse or discontinue routine prerun or postrun stretching to prevent injury among competitive or recreational athletes."**

I always thought the folks at the CDC worked around the clock on SARS, HIV, and the biohazards of sci-fi movies. These people have time for sore Achilles tendons? Stephen Thacker, M.D., the study's head author, assures me he has spent many years in public health surveillance, epidemiology, and infectious diseases. But, he says, obesity is costing the United States more than $100 billion a year, and the CDC believes that more exercise could reduce this healthcare burden.

"We want to promote physical activity," says Dr. Thacker, "but we have to look at all the things that either encourage or discourage exercise, such as the amount of time it takes to exercise, and the injuries you can get. We look for the science before we make any recommendations."

For Dr. Thacker's paper "The Impact of Stretching on Sports Injury Risk: A Systematic Review of the Literature," he and his colleagues pored over nearly 100 other published medical studies on the subject. Their key conclusions: stretching does increase flexibility; the highest-quality studies indicate that this increased flexibility doesn't prevent injuries; few athletes need extreme flexibility to perform their best (perhaps just gymnasts and figure skaters); and more injuries would be prevented by better warmups, by strength training, and by balance exercises, than by stretching.

Ian Shrier, M.D., a past president of the Canadian Society of Sports Medicine, has been drilling into the stretching literature since the early 1990s. In a 1999 paper titled "Stretching Before Exercise Does Not Reduce the Risk of Local Muscle Injury," Dr. Shrier lists five reasons why stretching shouldn't be expected to work. Among them: stretching won't change eccentric muscle activity (when a muscle simultaneously contracts and lengthens, as in downhill running), which is believed to cause most injuries; stretching can produce damage at

the skeletal level; and stretching appears to mask muscle pain, which could cause the exerciser to ignore this key pre-injury signal. He concludes: **"The basic science and clinical evidence today suggests that stretching before exercise is more likely to cause injury than to prevent it."**

This is certain to come as a shock to many runners. In a recent Runner's World Online Poll, 89 percent of respondents said they try to make stretching "a regular part" of their program. Stretching has worked for them, so why should they stop? "I was sidelined with an IT band injury, but my PT taught me some new stretches," one runner wrote. "Since then, I have not had any problems." Many others stretch simply because it feels good.

It's easy to understand why flexibility has fans. I want to be flexible--not rigid--in my life, especially in my thinking. Likewise, we all know that tall buildings and long bridges are built to be flexible. Their flexibility enhances their strength in the face of hurricanes and earthquakes. No doubt: Flexibility is good.

Until you consider runners' relationship with "motion," which is another word for flexibility. Runners try to avoid too much motion. We wear orthotics to prevent overpronation. We wear knee straps to prevent too much lateral movement. We do crunches to build a rock-hard midsection. Flexibility sounds like a great idea, but has definite drawbacks for runners.

The best research on stretching and injury prevention has been done with military recruits. Military training has much in common with exercise, and the Army has a huge interest in keeping injuries to a minimum. In one study, titled "Physical Training and Exercise-Related Injuries," a U.S. Army research team found that trainees with the highest and lowest flexibility had the highest injury rates. They were, respectively, 2.2- and 2.5-times more likely to incur an injury than trainees with average flexibility. Apparently, when it comes to flexibility and injuries, don't try to be all that you can be. Settle for average.

Surprisingly, the best-known stretching-for-runners team in the United States, the father-son duo of Jim and Phil Wharton, agree with the medical research conclusions. "We don't even use the word 'stretching' anymore," the Whartons say. "It conjures up an image of static stretching--of holding still for too long, like the tension created by a tug of war. That can actually weaken the muscle-tendon connection."

The Whartons promote AI ("active, isolated") flexibility exercises. These exercises move the muscle and joint gently and progressively to the point of slight tension, then immediately release the tension, and then repeat 10 times. There's no static-stretching hold for 10 to 30 seconds. "This promotes healthy blood circulation and lubrication to the joint," say the Whartons, whose fans include Deena Kastor, Alan Webb, and Khalid Khannouchi.

Since older runners would seem to have much to gain from stretching, I call Ed Whitlock, who last fall became the first 70+ runner to go sub-3:00 in the marathon. But Whitlock is afraid of setting a bad example. You see, he doesn't stretch. "I get the greatest return on my time by piling on miles," he says. "I don't want to dump on stretching. We all need to find our own way. But you can do too much and get injured."

The CDC's Dr. Thacker agrees. "If the time you spend stretching," he says, "causes you to lose time from something else--more running, strength training, or stability exercises--then you might be better off spending the time on that something else." Or take the middle road: stretch in the evening while you're watching TV. I like the Wharton approach, where you keep moving through your stretches--into them and out of them. That seems like a natural way to make you feel better. And it won't cut into your training time.