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PHYS ED

Finding Your Ideal Running Form

By Gretchen Reynolds August 29, 2012 12:01 am

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Gretchen Reynolds on the science of fitness.

Can people become better, more efficient runners on their own, merely by running?

That question, seemingly so innocuous, is remarkably divisive at the moment, with running experts on one side suggesting that runners should be taught a specific, idealized running form, while opponents counter that the best way to run is whatever way feels right to you.

Little published science, however, has been available on the subject of whether runners need technical instruction or naturally intuit the skill. Now a timely new study suggests that new runners eventually settle into better running form — just by running more.

For the study, which will be published in the September issue of the journal Medicine & Science in Sports & Exercise, researchers with the Bioenergetics and Human Performance Research Group at the University of Exeter in England turned to a group of adult women who'd recently joined a running group.

The group's members were planning to embark on a 10-week, self-paced running program, with a half marathon race as the incentive at the program's conclusion, for those who wished to compete.

All of the women who agreed to be studied were healthy, in their 20s or 30s, of normal weight, and completely new to the sport of running.

At the lab, the women were fitted with motion-capture sensors, heart rate monitors and other measuring equipment and asked to run on a treadmill while being filmed. Afterward, the scientists calculated each runner's aerobic fitness, particular running biomechanics or form, and running economy.

Running economy, also known as running efficiency, is a measure of how much oxygen a person uses to run at a particular pace — in essence, how hard it is to run at that speed. Efficiency is considered one of the determinants of running success. A more economical runner requires less energy than others and presumably should be able to run farther or faster.

The novice runners in the new study were not especially economical at first, as is typical of new runners.

But then they were barely running at the start. For the first week or so, they alternated running and walking, with the goal of becoming able to run for 30 uninterrupted minutes.

Each woman trained on her own and at her own pace, although once a week they convened for a group session, with a leader encouraging and exhorting them but not otherwise offering running advice or coaching.

None of the novice runners became injured. None lost weight.

But over the course of the 10-week program, they did become better runners, as subsequent laboratory testing showed. Their speed and endurance increased — not into national-class range, but most were able to run for 30 minutes at a pace of about 12 or 13 minutes per mile. And they became notably more economical, with their ability to use oxygen increasing by about 8.5 percent.

How the women became more economical seems clear to the study's authors. They changed, in subtle ways, how they moved, in an unconscious effort to make running easier.

Perhaps most interesting is that most altered their form similarly. During the toe-off portion of each stride, they began bending their knees and flexing their ankles slightly more, so that their legs became more flexed as they left the ground, says Isabel Moore, a researcher at the University of Exeter, who led the study. Being more flexed or bent, the legs could

The women were all somewhat wobbly in the rear foot when they began running. After 10 weeks, they were more stable when they struck the ground.

As a group, most were rear-foot strikers, meaning that their heels made contact with the ground first, although several naturally landed on the middle of the foot. None changed how they landed during the 10 weeks, which conflicts with the advice of many of today's running-form coaches, who often advocate landing on the middle of the foot or on the forefoot to improve running performance and reduce injury risk.

The results "raise an interesting question in regards to teaching people to run," Ms. Moore says. "If runners can self-optimize," as the women in this study seemed to do, then "maybe we should teach runners to learn to understand how the movement feels to them," she says, rather than completely change how they run to one standardized form or another.

Of course, this was a small, short-term study of a very specific type of runner: novice, adult, female and slow. Whether the findings apply equally to young, experienced, male, or swift athletes is unclear. It's also impossible to say whether the women's self-selected running styles would reduce or contribute to their injury risk over the long term, Ms. Moore says.

But she adds that the overarching message of the study is probably relevant for most runners. "You can optimize your gait naturally," she says, "by becoming more conscious of your running movement and how it feels." Your body, at least in the early stages of becoming a runner, can be a fine and knowledgeable coach.

Most of the women in the program did, after all, finish the half-marathon, Ms. Moore says, and several, even now, are still running.

Correction: August 29, 2012

Because of an editing error, an earlier version of this column misstated the average pace at which women in the University of Exeter study were able to run after 10 weeks of training. Most were able to run for 30 minutes at a pace of about 12 or 13 minutes per mile -- not 12 or 13 miles per minute.