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## CLOSING IN ON GENDER GAP?

# Women can't catch up with men

Gina Kolata

Beijing: No matter what happens in the men's marathon here on Sunday, one thing is all but certain. The winner will run the 26.2-mile course faster than the winner of the women's marathon last Sunday.

Constantina Tomescu of Romania on her way to winning the marathon this week in Beijing. The woman who won, Constantina Tomescu of Romania, was fast, of course, finishing the race in 2 hours 26 minutes 44 seconds — more than a minute ahead of the second-place finisher. But for a variety of intrinsic biological reasons, the best women can never run as fast as the best men, exercise researchers say.

Women are slower than men in running, in swimming, in cycling. Whether it is a 100-meter race on the track or a marathon, a 200-meter butterfly swim or a 10-km marathon swim, the pattern holds.

And even though some scientists once predicted that women would eventually close the gender gap in elite performances — it was proposed that all they needed was more experience, better training and stronger coaching — that idea is now largely discredited, at least for Olympic events. Researchers say there is no one physiological reason for the gap, although there is a common biological thread.

"To a large extent, it's a matter of testosterone," said Dr. Benjamin Levine, director of the Institute for Exercise and Environmental Medicine at Presbyterian Hospital and the University of Texas Southwestern Medical Center in Dallas. "That's why systematic doping of women is even more effective than systematic doping of men. That's why the East German women were so much more successful than the East German men."

The hormone affects everything from muscle size and strength to the size of the heart to the amount of oxygen-carrying blood cells in the body to the percentage of fat on an athlete's body. Every one of those effects gives men a performance advantage.

Testosterone, Levine said, gives men what he calls a bigger and better-fueled engine. Their skeletal muscles, which do the work during exercise, are bigger. And their hearts, which provide fuel for the work, are bigger, too.

It is not that every man is inherently better than every woman. "A very lean, well-trained woman will be faster than a less lean, less fit man," he said. But that is not the issue in the Olympics, where the men and women are among the world's best.

Even when scientists correct for the fact that men are bigger than women — and bigger animals or humans have bigger hearts — men's hearts are still larger than the hearts of women. Exercise makes hearts grow, but male hearts grow more than female hearts, Levine has found.

He recently conducted a study that recruited sedentary men and women and trained them to run a marathon. At the start of the study, Levine said, the men's hearts and the women's hearts were the same size relative to the size of their bodies.

"Gram for gram, they had the same size hearts," he said. "We trained them for over a year. Heartbeat for heartbeat, they had the same training."

And the result? "The women's hearts did not grow anywhere near as big as the men's hearts," Levine said. Another factor comes into play. Because men have more testosterone, they have less fat and more muscle than women. NYT NEWS SERVICE

