

IMPROVED BIOMECHANICS & TRAINING: IS THE GENDER GAP CLOSING?

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INTRODUCTION: For many years it has been recognized that women were physiologically as capable of running all events from 100 meters to 42 km as their male counterparts.

The number of women participating in all sports has steadily increased, as has their rate of improvement. Whipp and Ward (1992) projected that eventually women's times would converge with those of men. Gender differences in physiological variables of runners have been explored in a number of studies. Bam, Noakes, Juritz, & Dennis (1997) suggested that comparable performances could be expected from athletes who possess similar relevant physiological characteristics. Joyner (1993) concluded that improved competitive opportunities and more difficult training programs appear to be the reasons for the high rate of improvement in women runners.

The purpose of this study was to examine whether, indeed, race times of men and women are converging as predicted by Whipp and Ward (1992).

METHODS: The data set for this study was retrieved from the 1996, 2000, and 2004 Olympic Games and the 2005 World Championships track results posted on the World Wide Web. Times for men and women for running events from 100 m to 42 km were obtained and percentage differences were calculated. The data were analyzed by comparing the gender differences between the first place finishers for men and women in each event and the top seven finishers running in the finals.

RESULTS AND DISCUSSION: The results for each of the methods employed are displayed in Table 1. The mean percentage gender difference between first place finishers, over all events, was $11.45 \pm 1.00\%$ and ranged between 10.10% and 12.65%.

Table 1 Percent Gender Differences $((w-m)/m)*100$

Distance	1st Place	7 Places	Distance	1st Place	7 Places
100	10.42	10.43	1500	12.14	12.07
200	11.43	11.13	5000	10.46	11
400	12.01	12.4	10000	12.4	12.23
800	12.65	13.1	42000	10.11	10.86

Sparling, et al. (1998) examined results from the 1500 m and 42 km events over a sixteen year period ending in 1996 and found that men ran an average of $11.1 \pm 1.1\%$ faster than women in the 1500 m. and $11.2 \pm 0.9\%$ faster than women at 42 k. The mean gender difference in this study using the top seven finishers was almost indistinguishable from the 1st place finishers. The mean was $11.65 \pm .92\%$ and the range was 10.43 – 13.10%.

CONCLUSIONS: The data from the current study appear to confirm the conclusion of Sparling (1988) that the gender gap is not narrowing. Further, the gap variability appears relatively small over all running events, centered on 11.5%. It is remarkable that the gender differences are so consistent over all distances. The results suggest that improved biomechanics and physiological training for women have not contributed to decreasing the gender differences in performance.

REFERENCES:

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