

Is Your GPS Watch Accurate on Race Day?

Our beginner's expert explains how race courses are measured and certified.

By [Susan Paul](#) Thursday, August 14, 2014, 3:12 pm

Dear Susan-

I have run two 5K's and one 10K to date. All of these [races](#) were a bit long according to my GPS. I ran almost 0.20 longer in one of these races. Is this typical? Aren't races supposed to be standardized distances? I'm training for a half marathon now, how much longer might this race be?

Phil

Dear Phil-

This is a very common discussion among runners. Races are often criticized for being long by some runners. Your discrepancy in numbers is most likely related in part to your [GPS](#) and to the race course itself.

GPS's are not designed to be 100 percent accurate, so keep that in mind when studying your numbers. You will see even small variations in distance and/or pace on GPS's among runners who ran side by side.

When signing up for a race, look to see if the race is USATF certified. This is the mark to look for if you want a "standardized distance." USATF certified means that the course has been measured to exact standards and is *at least* the stated distance. For example, if a half marathon is USATF certified it must be at least 13.1 miles. All certified courses use the same procedures for measurement and can be accurately compared, giving us the ability to compare our performances from race to race. Courses must be certified in order to be eligible for any type of record. Course certification is typically done once and is good for up to 10 years.

The preferred method of [race course measurement](#) is with a bicycle and a Jones Oerth counter. Measuring the course takes precision and time. The Jones Oerth counter is attached to the front wheel of a bicycle and the counter is then calibrated over a surveyed 1000-foot calibration course to ensure accuracy.

When a course is measured for certification, it is measured along the shortest possible route or distance that a runner can take. This means the route is measured along the sight line of the runner. The shortest possible route involves cutting all tangents and crossing corner to corner. And, if a course is going to have any restrictions during the race, like staying to the right of a road, there must be monitors or cones present during the race to ensure that all runners do this. Every effort is made to ensure that the runners run the course the way it was measured.

Next, when calculating the measurement, a "Fudge Factor" is included in the certification process. A 'Short Course Prevention Factor' of 1/10 of 1 percent is included in the calibration constant, which means that every course is slightly long. However, this number is small, translating to about 5 meters or about 16 feet for a 5K race.

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So when we run a race, depending on how we cut the corners, or how we are able to take the tangents in a race, we can add on quite a bit of distance. When we are in large race, with crowds of runners and lots of turns, we are not likely to run the shortest distance that was measured and we wind up with a longer distance.

Thank you for your question and good luck with your half marathon!

All the best to you!

Susan Paul, MS

Susan Paul has coached more than 2,000 runners and is an exercise physiologist and program director for the Orlando Track Shack Foundation. For more information, visit www.trackshack.com.