

About An Accurate Empirical Test For Runners To Predict The Effect Of Weight Loss

Many runners, slight to very overweight, wonder what speed improvement they can expect by losing weight. Googling, etc, shows mainly conjecture and rules-of-thumb; I found none based on any empirical studies. So, I devised a running-science-based test that can be accurately done by the runner him/her self. Note, this test measures the particular runner; thus, any variances that may be caused by normal individual differences are immaterial.

Basically, you will perform two runs, one unweighted and the second with a 10lb weight. You will need to devise a comfortable way to carry a 10lb weight, e.g., a weight belt or vest. The procedure assumes you've gained 10lbs; but, it's immaterial since the weight verses speed curve is essentially linear for small values.

The test:

- Make certain you are well rested from the day before.
- Select a relatively flat course, hopefully with one or more small hills.
- Jog slowly for 5 minutes, no more.
- Do 2×100m repeats moderately fast, not all out.
- Rest 5 minutes.
- Pick a specific starting point.
- Run out-bound for exactly 20:00 minutes at your $85\% \times vVO_{2max}$ or your 10mile race pace.
- Turn around without stopping and run back to exactly your starting point. Note, you can expect the return time time may be a little different than 20:00 out-bound time.
- Carefully record the total out-and-back time.

Rest for 4+ hours or until the next day. Then repeat the exact same test at the same place; but, with your 10lbs weighted vest. Practice running with the weight a few times before running the test.

I highly recommended you repeat the two tests to insure consistency. Just make certain there are at least 2 recovery days.

Now calculate the time difference as a factor or percentage. e.g. unweighted: 40:30, weighted: 41:45. That's $41.75/40.50 = 1.03$ or 3% You've tested a 10lb change. Obviously, you can just scale a different weigh, e.g., 20lbs. Your change will be $3\% \times 20/10$. Thus, using this 2d example, you can expect a 6% improvement.

Suppose your 10K time is 48:00. You new time will be about $0.97 \times 48:00 = 47:00$.

Comments, questions and my errors are welcome.

Disseminate freely.

Please send me your results. i.e., Total times: unweighted and weighted, and your weight and age. I'd like to create an empirical data base. Your name will be anomalous.

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Revision 1

