

<b>Title</b>	The Importance of Knowing your Sweat Rate
<b>Author</b>	Antony Young
<b>Date</b>	8/11/11
<b>Audience</b>	Coaches, Athletes, Parents, Teachers, Sports Development Officials
<b>Background</b>	This document is based upon the author's personal opinion and is not a scientific study. Hopefully it stimulates some debate and internal reflection amongst readers.

### **What is Sweat Rate?**

Your sweat rate is a calculation that shows how much fluid you lose through sweating per hour of exercise.

### **Why do you need to know it?**

Once you know your sweat rate you can calculate how much fluids you need to drink to replace those lost during your exercise session and avoid becoming dehydrated.

### **How to calculate your sweat rate**

1. Weigh yourself in Kilograms (KG) in the nude before getting dressed for your training run.
2. Note down the time that you start the session and when you finish it. Ideally try to aim for an hour of relatively high intensity training so that the results are as close as possible to competition conditions and the time period gives a meaningful result.
3. Ideally, don't drink anything during this training session. However, if you do, then note down how much you drink in ml and factor it in when moving on to step 4 and the final calculation.
4. Now weigh yourself in the nude again and calculate the weight lost in KG.

Every KG lost = 1 Litre of fluid lost

If you trained for an hour then the result is your LITRE sweat rate PER HOUR.

Example 1....

Paul weighs in at 97KG and then trains hard for an hour. Upon his return he weighs in at 95KG so he has lost 2KG = 2L of fluids. His sweat rate is 2L per Hour.

Example 2....

Ruth weighs 60KG and trains hard for 90 minutes. During that time, she also drank 500ml (0.5L) of water.

When she weighed in afterwards she had lost 2KG.

However, the 0.5L of water that she drank replaced 0.5KG so she actually lost 2.5KG in the 90 minutes.

Her sweat rate is 2.5L divided by 1.5 (hours) = 1.66L per hour

## **What to do with this knowledge**

The easy answer of course is to drink what you lose during a competition. If you know that you lose 1L per hour and are running a half marathon at 2hour pace then you need to replace 2L of fluid before the finish. However, it isn't that easy.

Water should be fine for the first hour of exercise (take note Young Athletes). However, post 1 hour, your body will be starting to burn carbs from your body's reserve so you may want to consider sports drinks as a way of rehydrating and taking on carbs. Beware though! Sports drinks can have other side effects and aren't always the answer. Sports Gels may be more effective as they replenish the carb store without adding as much weight and volume of water.

When you start to calculate your consumption requirements for half marathons upwards, you'll find that the target is impossibly high. There is no way that you could comfortably drink 5L of fluids AND run 26.2 miles at a decent pace. At the point where the recommendation becomes impossible to achieve then you need to accept that you WILL become dehydrated during this race and plan to counter the effects as soon as possible after finishing by replacing fluids steadily and effectively in the post race hours. When you follow this strategy you should still take on small amounts of water regularly to avoid becoming dangerously dehydrated.

Here are some "rules of thumb" that you will often hear quoted...

- You are dehydrated when your urine goes darker in colour.
- You are already dehydrated when you start to feel thirsty.
- If you have stopped sweating during an event then you are dehydrated.

## **Further Reading / References**

Thanks to Richard Oathen, for introducing me to this topic: <http://www.imarathontraining.com/>

England Hockey Guidelines:

<http://englandhockey.co.uk/page.asp?section=262&sectionTitle=Fluid+Guidelines>

The Optimal Sports Drink - [http://www.sfsn.ethz.ch/PDF/07\\_Susan\\_M\\_Shirreffs.pdf](http://www.sfsn.ethz.ch/PDF/07_Susan_M_Shirreffs.pdf)