

# Body Mass Loss Calculator

During exercise, not all athletes drink the proper amount of fluid to remain hydrated. At times, the amount of fluid (sweat) lost and amount of fluid taken in should remain approximately equal when exercising. It is important to understand how much body mass is lost during exercise, and to calculate how much fluid is needed during exercise to remain hydrated. This calculator aids in determining how much fluid is needed for each individual athlete during exercise (in regards to how much weight they lose during exercise). Proper hydration is important for normal body function and optimal athletic performance. Also, recommendations are included about hydration pre and post exercise and the addition of a carbohydrate/electrolyte beverage.

## Prehydrate:

Athletes should always begin exercise well hydrated and without deficit from previous bouts of exercise. Following are some recommendations on pre exercise hydration strategies:

- 0.5 L of fluid 2-3 hours before exercise
- 0.25L of fluid 10-20 minutes before exercise

## During Exercise:

For every 1 kg (2.2 lb) loss, additional 1 L of fluid needed:

<b>Fluid Replacement During Exercise</b>	
<u>BM loss</u>	<u>Fluid Needed</u>
0.5 kg (1.1 lbs)	0.5 L
1 kg (2.2 lbs)	1 L
1.5 kg (3.3 lbs)	1.5 L
2 kg (4.4 lbs)	2 L
2.5 kg (5.5 lbs)	2.5 L
3 kg (6.6lbs)	3 L

To calculate fluid needed during exercise:

Pre exercise weight (kg) – post exercise weight (kg) = L fluid needed during exercise to remain hydrated

*Example: 68 kg pre exercise – 65 kg post exercise = 3 kg lost (3 L fluid needed during exercise)*

The amount of fluid needed during exercise should be consumed in small amounts throughout the period of exercise. Taking in small amount of fluid over time will help with stomach emptying, willingness to continue hydrating, and comfort during exercise.

### **Rehydrate:**

Rehydration should occur within 2 hours post exercise to assure optimal rehydration. Post exercise rehydration should be 150% of body mass lost during exercise. Use this calculation to adequately replace fluid post exercise, following the guidelines stated previously (see table.)

To calculate 150% of weight lost during exercise:

$$\text{Pre exercise weight (kg)} - \text{post exercise weight (kg)} \times 1.5 = 150\% \text{ of body mass lost during exercise (kg)}$$

*Example: 68kg pre exercise- 65kg post exercise x 1.5= 4.5 kg is 150% body mass lost during exercise*

### References:

Casa DJ, Armstrong LE, Hillman SK, Montain SJ, Reiff RV, Rich BSE, Robers WO, Stone JA. National Athletic Trainers' Association position statement: fluid replacement for athletes. *J Athl Train.* 2000;35(2):212-224.

Shirreffs SM, Armstrong LE, Chevront SN. Fluid and electrolyte needs for preparation and recovery from training and competition. *J Sports Sci.* 2004;22:57-63.