Measuring your basic metabolic rate

Dear Alice,

Can you tell me a way to figure out my basic metabolism?

Answer

Dear Reader,

To figure out your basic metabolic rate, it must be measured under very strict conditions such as after a night’s sleep, on a fast, and without any physical activity, etc. What is more common and often more useful is a person’s resting metabolic rate (RMR). RMR is the number of calories you burn to maintain vital functions such as breathing, pumping blood, and maintaining your muscle and nervous system at resting conditions. This is measured under less strict conditions and often does not require the person to fast or to sleep right before the measurement. An accurate RMR measurement requires the use of an apparatus called indirect calorimetry. This can be expensive, so estimating RMR using parameters such as body weight, height, and age can be used as well.

There are three common equations to estimate RMR: (1) the Harris-Benedict equation, (2) the Mifflin equation, and (3) the Cunningham equation. These equations are population specific, so it is important to be aware of their limitations.

Harris-Benedict Equation (widely used and relatively accurate for average body type):

Men: RMR (in calories per day) = 66.47 + 6.23 x Weight (lbs) + 12.67 x Height (in) - 6.76 x Age (yrs)

Women: RMR (cal/day) = 655.1 + 4.34 x Weight (lbs) + 4.69 x Height (in) - 4.68 x Age (yrs)

Mifflin Equation:

Men: RMR (cal/day) = 10 x Weight (kg) + 6.25 x Height (cm) - 5 x Age (yrs) + 5

Women: RMR (cal/day) = 10 x Weight (kg) + 6.25 x Height (cm) - 5 x Age (yrs) - 161

Cunningham Equation (uses fat-free mass, suggested for athletes):
For men and women: RMR (cal/day) = 500 + 22 x FFM (kg)

If you would still like to know more about measuring your metabolic rate, such as through an indirect calorimetry, it is recommended to see a health care provider.

Alice!
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