Coffee Break Training - Responder Health and Safety

Determining Your Waist-to-height Ratio and Associated Health Risks

No. HS-2013-3 September 11, 2013

Learning Objective: *Students will be able to describe how to calculate their waist-to-height ratio (WHtR) and what their WHtR indicates about their health and life expectancy.*

In a previous Coffee Break installment, we looked at waist circumference, specifically the maximum recommended waist circumference for both men and women. In this installment, we'll look at the WHtR, which is yet another indicator of abdominal fat accumulation. The WHtR has been shown to be one of the most effective predictors of health risks like stroke, heart disease and diabetes. It has also been used to estimate life expectancy.

A healthy WHtR is 0.5 or less, meaning that your waist circumference should be no more than half of your height. Recent research studies performed at Oxford Brooks University show that health risks begin to increase as individuals' WHtRs exceed 0.5. They also found that life expectancy begins to decrease as WHtRs increase. The most significant finding was that individuals with a WHtR exceeding 0.8 shortened their life expectancy by an average of 17 years.

To calculate your personalized maximum recommended waist circumference, divide your height by 2. Remember from the previous Coffee Break that waist circumference is measured at approximately 1 inch above the navel. To calculate your WHtR, divide your waist circumference by your height. For example, a man who is 5'10" (70 inches) should have a maximum calculated waist circumference of 35 inches or less, as 70/2 = 35. His WHtR, based on his measured waist circumference of 33 inches, is 0.47, as 33/70 = 0.47 WHtR. This is within the healthy range.

Now, let's look at an example of a woman who is 5'6" (66 inches) and has a measured waist circumference of 36 inches. Her maximum waist circumference should not exceed 33 inches, as 66/2 = 33. When we calculate her WHtR, the result is 0.55 WHtR, as 36/66 = 0.55. This exceeds the 0.5 maximum recommended WHtR and indicates an extra accumulation of abdominal fat.

The Penn State Hershey PRO Wellness Center provides the following guidelines to help you determine your health risks based on your WHtR at http://prowellness.vmhost.psu.edu/prevention/understanding_risk/whtr.

	Waist-to-height Ratio	Risk
Men	<0.43	Underweight
	0.43-0.52	Healthy weight
	0.53-0.62	Overweight
	0.63	Obese
Women	<0.42	Underweight
	0.42-0.48	Healthy weight
	0.49-0.57	Overweight
	0.58	Obese

In the next Coffee Break, we will look at how to determine your body frame size.