

# Comparison between body mass index and abdominal obesity for the screening for diabetes in healthy individuals

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### ABSTRACT

**Aim:** To study about the usefulness of Waist-Height Ratio as a clinical marker in patients with Metabolic Syndrome. **Materials and Methods:** A clinic-based study of patients attending a secondary level Diabetic Clinic and correlation of their Anthropometry data like waist circumference, height to other parameters namely body mass index (BMI), Waist-Hip Ratio, Blood pressure, Glycemic Control, Lipid Profile, and Duration of Diabetes. **Inclusion Criteria:** Randomly selected 10 000 patients attending a secondary level diabetic clinic. **Exclusion Criteria:** Type 1 DM, Gestational Diabetes. **Result:** Waist-Height Ratio is a better parameter than Waist-Hip Ratio and it is significant in applying for people with different Stature with Normal BMI. **Conclusion:** Waist-Height Ratio is a better and easier tool when compared with BMI or Waist-Hip Ratio and can be used for assessment of Cardio-metabolic parameter for public health.

**Key words:** WHtR, metabolic syndrome, cardiometabolic parameters

## INTRODUCTION

“India is the world capital of diabetes?? and we rank no 1 in diabetes and CAD. In India, every 8sec one patient dies due to diabetes and two new cases are detected during the same time.”

One of the primary causes is the increasing burden of obesity in our country due to urbanization and processed food products. People have made their life challenging with increasing stress levels to such an extent that they give very little importance to health-related issues. Hence, we should have a tool which is easily understood and easy to apply in daily life.

Dr. Margaret Ashwell, a visiting researcher at Oxford Brookes University, said WHtR should be considered by

doctors as a one-size-fits-all screening tool. “Keeping your waist circumference to less than half your height can help increase life expectancy for every person in the world.”<sup>[1]</sup> Given the general increases in body frame size with height, it may not come as a surprise that waist circumference also increases with height.

This is a much easier thought to hold in mind than body mass index (BMI), where not only do you have to work out the ratio of your weight in kilos to the square of your height in meters, but also remember what the healthy range is.

To measure the waist circumference accurately, you should measure it mid-way between the lower rib and the iliac crest (the top of the pelvic bone at the hip), this is the method recommended by the World Health Organization. For people under 40 years, a WHtR of more than 0.5 is critical; for people in the age group between 40 and 50 years, the critical value is between 0.5 and 0.6, and for people over 50 years, the critical values start at 0.6.

BMI (Body Mass Index) is a widely used measure of obesity. It is a ratio of a person’s weight in kilos to the square of their height in meters. However, it does not take into account the distribution of fat around the body. Abdominal

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fat affects organs like the heart, liver, and kidneys more adversely than fat around the hips and bottom, in terms of cardio metabolic risk.

Obesity is an increasing problem worldwide. It is a major risk factor for the development of chronic diseases and mortality.<sup>[2]</sup> However, large-scale studies have shown that BMI was not associated with increased mortality. In fact, overweight subjects (BMI, 25–29.9 kg/m<sup>2</sup>) survive longer than normal-weight subjects, and only persons with severe obesity, defined as BMI of at least 35 kg/m<sup>2</sup>, are at increased risk of early death. Several studies pointed to a superior role of measures of abdominal obesity over BMI in predicting cardiovascular risk.

BMI does not distinguish between overweight due to muscle or fat accumulation. Moreover, visceral rather than sc fat accumulation is associated with increased secretion of free fatty acids, hyperinsulinemia, insulin resistance, hypertension, and dyslipidemia.

Hence, WHtR is more sensitive than BMI as an early warning of health risks.

WHtR is cheaper and easier to measure and calculate than BMI.

A boundary value of WHtR = 0.5 indicates increased risk for men and women.

Thereby, we should aim to make “India is the world care capital of diabetes”.

## REFERENCES

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