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Obesity Prevention Source

Ethnic Differences in BMI and Disease Risk

The chance of developing diabetes, heart disease, and other weight-related health risks increases with increasing body mass index (BMI). But theres strong evidence that at any given BMI, these health risks are markedly higher in some ethnic groups than others.

The Nurses Health Study, for example, tracked patterns of weight gain and diabetes development in 78,000 U.S. women, to see if there were any differences by ethnic group. (1) All women were healthy at the start of the study. After 20 years, researchers found that at the same BMI, Asians had more than double the risk of developing type 2 diabetes than whites; Hispanics and blacks also had higher risks of diabetes than whites, but to a lesser degree. Increases in weight over time were more

harmful in Asians than in the other ethnic groups: For every 11 pounds Asians gained during adulthood, they had an 84 percent increase in their risk of type 2 diabetes; Hispanics, blacks, and whites who gained weight also had higher diabetes risks, but again, to a much lesser degree than Asians. Several other studies have found that at the same BMI, Asians have higher risks of hypertension and cardiovascular disease than their white European counterparts, and a higher risk of dying early from cardiovascular disease or any cause. (2–4)

Researchers are still teasing out why Asians have higher weight-related disease risks at lower BMIs. One possible explanation is body fat. When compared to white Europeans of the same BMI, Asians have 3 to 5 percent higher total body fat. (5) South Asians, in particular, have especially high levels of body fat and are more prone to developing abdominal obesity, which may account for their very high risk of type 2 diabetes and cardiovascular disease. (6,7) In contrast, some studies have found that blacks have lower body fat and higher lean muscle mass than whites at the same BMI, and therefore, at the same BMI, may be at lower risk of obesity-related diseases. (8,9) (Keep in mind, though, that in the U.S., the prevalence of obesity is higher in non-Hispanic blacks than in non-Hispanic whites, so the overall burden of obesity-related diseases is still higher in this group. Read more about obesity trends in the U.S. and other countries.)

While genetic differences may be at the root of these different body fat patterns in Asians and other ethnic groups, environmental factors seem to be a much stronger force. For example, research suggests that under-nutrition during fetal life, such as during the Chinese famine of 1954 to 1964, raises the risk of diabetes in adulthood, especially when individuals live in nutritionally rich environments later in life. (10) (Read more about prenatal and early life influences on obesity.)

Should BMI or Waist Circumference Cut Points Be Ethnicity Specific?

These findings have touched off international debate about whether the cut points for overweight and obesity should be lower for Asians than for other ethnic groups. (11) In 2004, the World Health Organization weighed the evidence on Asians higher risk of weight-related diseases at lower BMIs. It declined to set different cutoff points for Asians, citing a lack of agreement among researchers as to what those lowered cutoffs should be. (12) With the emergence of more research, however, several groups have begun to set lower cutoff points for BMI and abdominal obesity

metrics among Asians. (13,14) China and Japan define overweight as a BMI of 24 or higher and obesity a BMI of 28 or higher; in India, overweight is defined as a BMI of 23 or higher, and obesity, a BMI of 27 or higher. And the International Diabetes Federation now includes ethnic-specific criteria for the definition of abdominal obesity. (14)

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