# OBESITY AS A CARDIOVASCULAR RISK FACTOR

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**ABSTRACT**

The prevalence of overweight and obesity continues to increase rapidly in India, with more than third of all adults currently overweight or obese. In general, people become obese because of a combination of inherited genes and a lifestyle consisting of low levels of physical activity and consumption of excess calories. Obesity, especially the central or visceral type, is a predisposing factor for the development of type 2 diabetes mellitus, hypertension, and cardiovascular disease (CVD). Obesity and type 2 diabetes are associated with insulin resistance. The relation among obesity, insulin resistance, and CVD appears to develop at a relatively young age. Central obesity is linked with hyperinsulinemia, insulin resistance, dyslipidemia, and proinflammatory and prothrombotic clinical states. Adipose tissue synthesizes and secretes biologically active molecules that may affect CVD risk factors. These chemical messengers include adiponectin, resistin, leptin, plasminogen activator inhibitor–1, tumor necrosis factor–$\alpha$, and interleukin-6. In overweight and obese individuals, weight loss may improve insulin sensitivity, leading to reduction in risk factors for CVD and consequently, the potential for cardiovascular events. Agents that improve insulin sensitivity, such as the thiazolidinediones, have been shown to reduce visceral obesity. Decreases in visceral adipose tissue contribute to improvements in insulin sensitivity and blood pressure and weight loss reduces serum levels of triglycerides and low-density lipoprotein cholesterol while increasing serum levels of high-density lipoprotein cholesterol. Reduction of risk factors suggests that the development of cardiovascular disease will be reduced by the improvement of insulin sensitivity and weight loss.

## Obesity

Obesity is a term applied to excess body weight with an abnormally high proportion of body fat.[1,2] In the most recent guidelines from the National Institutes of Health,[3,4] overweight and obesity are defined on the basis of body mass index, (BMI)body weight in kilograms divided by height in square meters because this measurement correlates strongly with total body fat content in adults. Accordingly, overweight is defined as a BMI of 25 to 29.9 and obesity as a BMI of $\geq$30.[5,6]

## Obesity and cardiovascular disease

The relation between obesity, especially visceral obesity, and CVD appears to develop at a relatively young age.[5,6,7] Obesity in young men, aged 15 to 34 years, is associated with accelerated coronary atherosclerosis.[7,8] The increasing prevalence of obesity in the India is closely linked to insulin resistance as well as to increases in the incidence of the metabolic syndrome and type 2 diabetes.[8,9]

## Reducing the risk of cardiovascular disease

The increasing prevalence of obesity in India is alarming because of the relation between obesity and CVD. If the trend continues, the public health consequences during the next few decades will be staggering. For this reason, efforts should focus on the prevention of overweight and obesity and on the treatment of overweight individuals. In overweight and obese individuals, weight loss may improve insulin sensitivity and reduce risk factors for CVD[1]. Initial weight loss is generally.[6,7,8,9]

## Summary

The prevalence of overweight and obese individuals is increasing rapidly in the developing country. Obesity, especially visceral obesity with insulin resistance is a predisposing factor for the development of type 2 diabetes, hypertension and CVD.[6,7,8,9] Adipose tissue is biologically active and produce chemical messengers (e.g., adiponectin, resistin, angiotensin-2) and cytokines such as TNF-$\alpha$ and IL-6 that may affect CVD risk

factors. Weight loss and decreases in visceral obesity lower elevated blood.[8,9]

**CONCLUSION**

Obesity, especially visceral obesity associated with insulin resistance, is a predisposing factor for the development of type 2 diabetes, hypertension, and CVD. Fat is a biologically active tissue that produces chemical messengers (eg, adiponectin, resistin, angiotensin-2, tumor necrosis factor-α, and interleukins) that may affect CVD risk factors.Agents that improve insulin sensitivity have been shown to reduce visceral fat stores. Weight loss and decreases in visceral obesity are accompanied.

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