

Neck circumference: an easier measure to identify excess weight and cardiovascular risk?

Keywords: neck circumference, BMI; CVD, chronic disease, metabolic syndrome

Abbreviations: BMI, body mass index; CVD, cardiovascular disease; MS, metabolic syndrome; WC, waist circumference; NC, neck circumference

Commentary

Obesity is a complex and chronic disease, associated with several comorbidities and has achieved epidemic proportions worldwide. It's diagnose is easily achieved by the calculation of the body mass index (BMI) using a formula that divides body weight in kilograms by squared height in meters. However, the BMI does not differentiate excessive adipose tissue from lean body mass, nor subcutaneous from visceral fat. Meanwhile, numerous techniques to assess weight related parameters are available,¹ from anthropometrics to sophisticated computer tomography and dual-energy X-ray absorptiometry, but none are at the same time precise, cheap and feasible for use in clinical practice.

The metabolic syndrome (MS) has long been considered a risk factor for cardiovascular disease (CVD). Several organizations have established different criteria to diagnose this condition, all of them using the waist circumference (WC) as a reflection of central obesity, associated with the development of both MS and CVD in the long term. However, the measurement of WC is not easy, particularly in some individuals with excess weight in the abdominal area and cut-off values for WC are object of debate. Other indices, such as waist-to-hip and waist-to-height ratio have been proposed, but are not currently adopted worldwide.

Neck circumference (NC) measurement arises as an interesting tool to address the concerns mentioned before. NC is an anthropometric measure of obesity which reflects fat deposition in the upper body. Association of NC with MS and its components, insulin resistance, fatty liver disease, sleep apnea and biomarkers of inflammation have been previously reported.²⁻¹¹ Interestingly, new studies have demonstrated an association between NC and indicators of atherosclerosis, as carotid intimal-media thickness, but not coronary artery calcium.¹² A recent study suggested that increased NC might even predict fatal and non-fatal cardiovascular events.¹³

It seems clear that NC should be considered a novel marker for CVD. However, there is no universal cut-off for NC up to now. Large studies are needed to provide adequate cut-off values for different populations and ethnicities. Even though, it is my opinion that neck circumference assessment is both time- and cost-saving strategy to screen for individuals at excess weight from a public health perspective. So, yes, neck circumference is an easily obtained measurement of excess weight, cheap and feasible, which also identifies patients at higher cardiovascular risk.

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Conflicts of interest

The author declares there is no conflict of interest.

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