



## TITLE: OBESITY AND CARDIOVASCULAR RISK

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### ABSTRACT

**Statement of the problem:** Obesity increase the risk of cardiovascular diseases. Endothelial dysfunction in obesity explain atherosclerosis and higher risk of incident coronary artery disease.

**Methodology and theoretical orientation:** The pubmed, medline and science direct databases were reviewed, of all the literature published on cardiovascular risk in patients suffering from obesity.

#### Finding:

Abdominal obesity is linked to increase cardiovascular diseases. A lot of evidence support have shown and recommended the waist circumference (WC) measurements with body mass index (BMI) offers successful prediction of CVR and mortality focusing on visceral adiposity. (1).

Atherosclerosis in the obese patient begins with fatty streaks resulting in thickening of the intima arterial layer by several mechanism: like insulin resistance through adipocytokines, endothelial dysfunction, hypercoagulability and inflammation. (2). Several prospective epidemiological studies demonstrate that obesity and higher risk of incident coronary artery disease (CAD) are strongly linked.

Duration of obesity and abdominal adiposity, expressed as excess BMI-years and WC-years are stronger predictors of Coronary Artery Disease (CAD) highlighting these measurements must be evaluate together. (3)



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Obesity has been clasified as a chronic inflammatory disease and have implications in macrophages and adipocytes that generate an increase in cytokines and reduce the Nitric Oxide, this has been linked to abnormalities in the coronary microvasculature with endothelial dysfunction and possibly to small vessel remodeling (4)

The endothelial dysfunction causes prothrombotic and proatherogenic effects, alterations in elastin, collagen, and endothelial dysfunction. Vascular calcification increases the chances of cardiovascular mortality and morbidity, especially in individuals with obesity, type 2 diabetes mellitus (T2DM), and chronic kidney disease.(5)

Finally, gut microbiota plays a contributing role in atherosclerosis through modulating inflammation and the secretion of microbial metabolites. Recent studies shown the influence of gut disbiosis and progression of atherosclerosis and cardiovascular disease. (6)

### BIOGRAPHY

Pedro Felipe Parra Internist from the Universidad Libre (Cali-Colombia), expert in obesity, metabolic complications and cardiovascular risk from the University of Barcelona and SIISDET. Trained in digital transformation of Health Columbia University. Member and International Reference SIISDET- Member of Intenational Organization for the Capacitation and Investigation in Medicine Obesity and Cardiovascular Risk chapter writer. Reserch in obesity,diabetes and cardiovascular risk.