



# Relationship between Severe Periodontitis and Metabolic Syndrome



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## Abstract

The relationship between Periodontitis and Metabolic Syndrome (MS) has been investigated in recent years demonstrating an association between both conditions and in the presence of two or more components of the metabolic syndrome. Currently it is postulated that there may also be an association between conditions of severe periodontitis and the components of the metabolic syndrome and is a field of investigation to deepen through future research.

## Introduction

The relationship between periodontitis and metabolic syndrome has been studied in recent years showing that there is an association between both conditions [1-3] and it is even postulated that MS increases the risk of periodontitis [4] independent of other factors [2].

Research indicates that in addition to increasing the risk of periodontitis, people should be encouraged to undergo a periodontal examination [5]. At this point the conditions of severe periodontitis can have a relevant association with two or three components of the metabolic syndrome [6] and it is still a research aspect to be deepened.

Additional studies are required to clarify the relationship between MS and periodontitis and to determine if oral health care in individuals with MS has the potential to reduce the incidence of various systemic diseases [5].

## Discussion

There are three interesting aspects that can be discussed about periodontitis and metabolic syndrome first the association demonstrated in the different investigations [1,3-5] mainly linked to an inflammatory component that has systemic repercussions, a second aspect is the relationship between the components that make up MS and periodontal diseases. The evidence indicates that there is a tendency for the association between periodontitis and two or more components of MS [7] of the components that make up the SM there are three that have a strong association with periodontitis, the waist circumference, the low level of HDL cholesterol and the high level of blood glucose with a

probability coefficient (Odds ratios), 1.8 (95% CI: 1.2-2.8), 2.2 (95% Confidence Interval: 1.4-3.6) and 2.2 (95% CI: 1.3-3.9) respectively. The participants with low HDL cholesterol had a higher odds ratio (odds ratio, 2.8, 95% CI: 1.4-5.6) in cases of smoker patient and loss of clinical attachment [5]. In a four-year cohort study investigating the association between periodontal disease and the components of MS, found that the presence of periodontitis is strongly associated with the components of MS (OR: 1.6, 95% CI: 1.1 to 2.2) achieving strong association between the components of hypertension and hypercholesterolemia and others an association between abdominal obesity with periodontitis for both men and women [5,8].

A third aspect is the relationship that may exist between severity in periodontitis and MS (RR 1.50 (95% CI: 0.96-2.36)), [3], which has also been investigated concluding that patients with MS have more severe periodontal disease and extensive compared to subjects without MS [9].

At the moment everything seems to indicate that it can be a line of investigation quite promising and still unfinished and it should be deepened. It has been possible to study severe periodontitis association and SM and the potential association between severe periodontitis and the number of components of MS, in the first point a study conducted in the United States evaluated the association and found positive results between severe periodontitis and SM 2.31 times (95% CI: 1.13- 4.73) compared to people who do not have MS [6], for the second association, a study that analyzes the data of 2478 adults between 20 and 60 years old achieves an important association 1.8 (96% CI: 1.4-2.3) in people with severe

periodontitis and two or more components of the MS [10] and takes us to indicate that there is a possibility that a patient with MS may present more serious conditions of disease, therefore it is necessary to intervene early under a prevention scheme and in early stages of life [11].

Despite this, further studies are needed to test whether improvements in oral health lead to reductions in cardiometabolic traits and the risk of metabolic syndrome [6].

### Conclusion

The evidence indicates that there is an association between severe periodontitis and MS but it is still a line of research in which it should be deepened.

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