

## Research Question

Is there a relationship between oral health and erectile dysfunction (ED) in men?

## Abstract

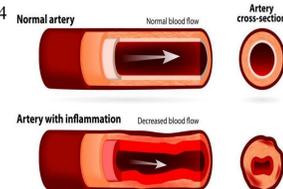
An estimated thirty million men in the United States suffer from erectile dysfunction (ED).<sup>1</sup> Recent research suggests a link between periodontal disease (PD) and other systemic conditions.<sup>4</sup> The purpose of this research is to answer the following research question: Is there a relationship between PD and ED in men?

A 2019 study found that patients with PD were 95% more likely to be diagnosed with ED.<sup>5</sup> Studies indicate that both diseases share common risk factors, and a positive correlation between radiographic alveolar bone loss and severity of ED.<sup>4</sup> Additional studies showed improved IIEF (International Index of Erectile Function) scores of ED severity after three months of periodontal treatment.<sup>3</sup>

In summary, periodontal disease treatment can ease the exacerbation of the severity of ED.<sup>5</sup> Routine dental visits, oral health screenings, and SRP’s are recommended for patients with ED to maintain overall systemic health.<sup>5</sup> Patient education on the interrelation of systemic and oral health is crucial in addressing ED and PD treatment.

## Introduction

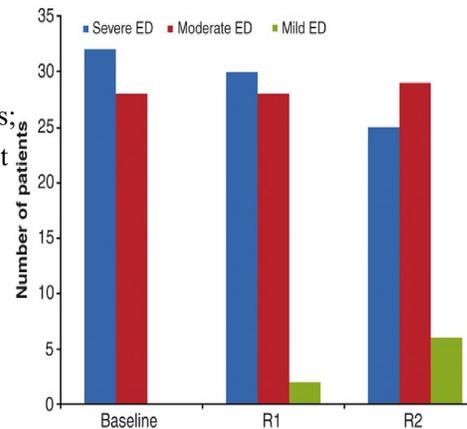
- ED: persistent inability to have sufficient erection for satisfactory sexual performance.
- Periodontitis: chronic inflammatory multifactorial disease of the supporting tissues of the teeth<sup>4</sup>
- The link between ED and chronic periodontitis (CP) is endothelial dysfunction: alteration in anticoagulant and anti-inflammatory features of the endothelium, impaired vascular growth modulation<sup>4</sup>
- Increased risk of endothelial dysfunction with high levels of inflammatory mediators (interleukin (IL)-6, IL-8, tumor necrosis factor-alpha (TNF- $\alpha$ ), and IL-1)<sup>4</sup>; these cytokines are elevated in chronic periodontitis by host responses<sup>4</sup>
- Periodontal treatment reduces levels of TNF-  $\alpha$ , therefore reducing inflammation in endothelial cells improving both CP and ED.<sup>4</sup>



Vascular. *Biochem Biophys Res Commun*. 2017;481(1):1-6. Published April 18, 2017. Accessed October 14, 2019.

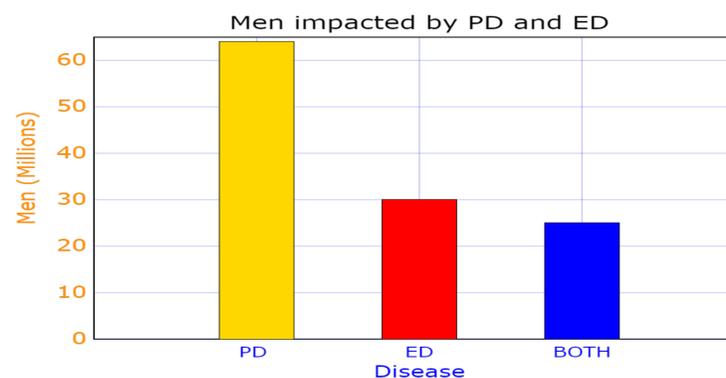
## Review of Literature

- Studies indicate that both diseases share common risk factors, and evidence proves that there is an improvement in erectile dysfunction with periodontal treatment.<sup>3</sup>
- A study divided 53 men into 3 groups based on the severity of their ED. Researchers found a positive correlation between radiographic alveolar bone loss and severity of ED, as well as probe depths and severity of ED.<sup>4</sup>
- Another study has turned the focus on exploring the link between CP and ED by contributing to endothelial dysfunction.
- A further study found that in 5 case controlled studies, patients with PD were 95% more likely to be diagnosed with ED. Also, men of Asian ethnicity were reported to be 3.07 times more likely to be at a greater risk for ED.<sup>5</sup>



**Figure 1:** After 1 and 3 months; the IIEF scores of the treatment group were higher than that of the control group ( $p < 0.05$ )<sup>1</sup>

## Comparison



**Figure 2.** Comparison of how many men have Periodontal disease and Erectile dysfunction.<sup>5</sup>

## Discussion

- Research shows a positive link between CP and ED<sup>4</sup>
- Research suggests CP be indicated as a risk factor for ED<sup>4</sup>
- Researchers concluded that periodontal treatment shows promise as an effective part of ED treatment<sup>4</sup>
- Limitations include: multiple confounders, such as age and type of ED; survey bias; and periodontitis’ episodic disease nature<sup>5, 1</sup>
- Large scale studies, confounder analysis, and long-term re-evaluations should be conducted to explore the association further, draw stronger evidence, and determine mechanisms of interaction.<sup>2, 3, 4</sup>

## FUNCTION DOMAIN

## MAX SCORE

<b>A. Erectile Function (Q1,2,3,4,5,15)</b>	<b>30</b>
<b>B. Orgasmic Function (Q9,10)</b>	<b>10</b>
<b>C. Sexual Desire (Q11,12)</b>	<b>10</b>
<b>D. Intercourse Satisfaction (Q6,7,8)</b>	<b>15</b>
<b>E. Overall Satisfaction (Q13,14)</b>	<b>10</b>

**Figure 3:** (IIEF) International index of erectile function<sup>4</sup>

## Conclusion

Approximately 40% of men suffer from ED that are 40 years old, and that number increases to nearly 70% at age 70. The purpose of the reviewed literature was to find a correlation between ED and oral health.<sup>6</sup> It can be concluded from studies that periodontal treatment can improve the severity of ED<sup>4</sup>. These studies support that periodontal disease is positively correlated with ED.

## References

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