

# Photodynamic Therapy Effects in the Treatment of Residual Periodontal Pockets

Kade Janes, Shankargouda Patil, Brooklyn Janes, Frank Licari

## Objective

This systematic review examined the adjunctive effect of photodynamic therapy to treat residual periodontal pockets.

## Methodology

Multiple databases were searched for specific inclusion and exclusion criteria. The primary outcome examined was pocket depth and secondary outcome was clinical attachment level. Studies in languages other than English were excluded. Study quality was assessed based on Cochrane Handbook for Systematic Reviews of Interventions Handbook guidelines and ROB2 tool.

## Results

A total of nine studies that examined 286 subjects were included in the review. Six of the nine found that photodynamic therapy resulted in improved pocket depth levels. Six out of eight reported favorable outcomes in terms of clinical attachment levels with photodynamic therapy. Nevertheless, these observed differences failed to achieve statistical significance. A limited number of studies showed statistically significant improvements in both clinical attachment levels and pocket depths. Overall risk of bias was high in four studies, three studies showed some concern and one had low risk of bias.

## Conclusion

Based on limited evidence available, photodynamic therapy in combination with scaling and root planing, may result in modest reduction in residual periodontal pockets and improvements in clinical attachment levels. Further high quality research is required to establish the true efficacy of this adjunctive therapy and enable clinicians to make informed decisions and improve patient outcomes.

## Clinical Relevance

The adjunctive use of photodynamic therapy in conjunction with scaling and root planing for periodontal maintenance provides an effective alternative to antibiotic therapy. This can help mitigate antibiotic resistance and its potential genotoxic and mutagenic effects. Additionally, the use of PDT in periodontal maintenance can reduce or eliminate the need for periodontal surgery.

Keywords: Pockets, Photodynamic Therapy, Scaling