

# Rheumatoid Arthritis and the effects on Oral Health: Are oral health complications preventable?

## Introduction

Rheumatoid Arthritis (RA) is a chronic, destructive, inflammatory autoimmune disease affecting a persons' joints. It typically involves the small joints of the hands which can lead to loss of function and it can also have a systemic effect on bodily organs. RA affects approximately 2-3 times more woman than men and affects roughly 1% of the population in the UK (more than 400,000).<sup>2</sup>

There are several orofacial conditions that can be associated with RA, these include: periodontal disease, Temporomandibular Joint (TMJ) dysfunction, dysfunction of the salivary glands (caused by Sjögrens Syndrome) and oral infections.<sup>1</sup>

Rheumatoid Arthritis can be treated with a host of different medications such as: analgesics, NSAIDs, corticosteroids, DMARDs, biologic and advanced therapies.<sup>2</sup>

## Aims & Objectives

To understand the effects of Rheumatoid Arthritis and treatment which impacts on oral health and how we can assist the patient in the management of this condition.

## Method

Research was gathered using Google Scholar. Key words were used such as 'Rheumatoid Arthritis' and 'Oral Health'

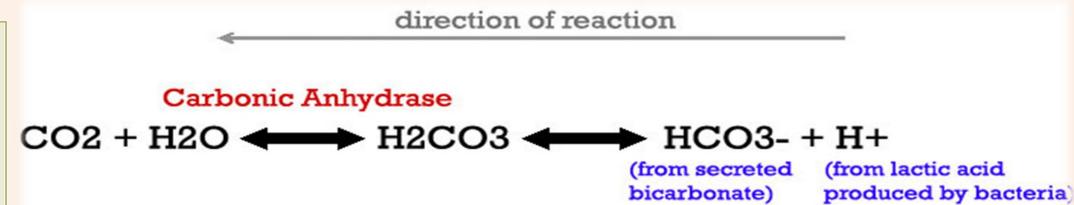


Figure 1 showing the contrast between a normal mouth and dry mouth, a complication caused by secondary SS.

## Discussion

- Immunosuppressive medications are commonly used for the treatment of RA; for example, methotrexate (DMARDs). These medications can cause delayed healing, prolonged bleeding and an increase in the risk of opportunistic infections. The action of these drugs can also cause severe mouth ulcerations.
- As evidenced in the study by Mercado et al. people with RA are more likely to suffer with severe periodontitis<sup>5</sup>. Affected hand joints leads to impaired manual dexterity and poor grip. This makes personal oral hygiene difficult. A combination of poor OH and inflammatory reactions caused by the disease results in high risk of periodontal infections and caries.<sup>7</sup>
- TMJ dysfunction can be a symptom of RA. Pain and inflammation causes restricted movement of the jaw, leading to chewing and swallowing problems.
- Pokraciac-Ziroievic et al found that patients with RA are less likely to seek dental treatment. This is due to poor mobility from stiff and painful joints as well as the psychological impact on the patient, which often causes depression, resulting in them becoming housebound. This creates barriers for the patient to access good quality care.<sup>4</sup>
- Arneberg et al found that over 50% of RA sufferers experience xerostomia<sup>6</sup>. Saliva is crucially important as it contains vital substances (bicarbonate, calcium and phosphate) that buffer harmful acids, this reduces the risk of tooth decay and gum disease.

Figure 2 shows the equilibrium that exists in saliva, demonstrating how the buffering action works



## Evidence based research

- It is known that 15% of people with RA acquire secondary Sjögrens Syndrome (SS). SS causes complications that affect the tear and salivary glands causing dry eyes and dry mouth (xerostomia)<sup>3</sup>
- It was found in a study conducted by Marcado et al at the University of Queensland that 62.5% of people that had RA also had advanced periodontal disease. They concluded that people who suffered from RA were also more likely to suffer from moderate-severe periodontal disease.<sup>5</sup>
- An Australian study conducted by Pokraciac-Ziroievic et al found that only half of the people (55%) diagnosed with RA visited a dental professional in the past 2 years. This compared to 72% of people without RA. They concluded that people with RA were less likely to receive dental care, in particular preventative care.<sup>4</sup>
- A study was conducted in South Eastern Norway by Arneberg et al to assess the effects of RA on oral health. Data was obtained from a group of 125 people aged between 44-56yrs, all with RA. It was reported that over 50% of these people experienced xerostomia.<sup>6</sup>

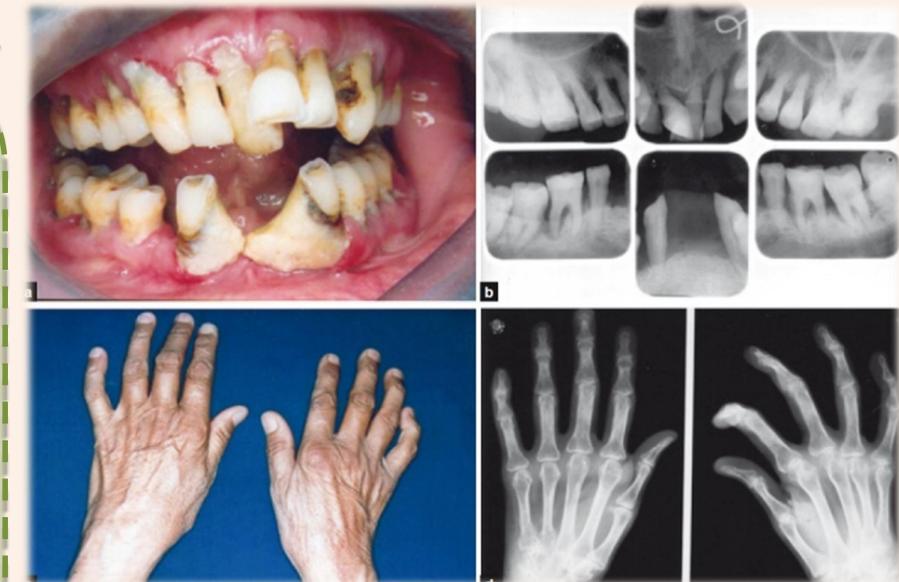


Figure 3 shows the images and radiographs of a patient with RA. This shows how the patients manual dexterity is impaired and as a result of this has severe periodontitis due to poor OH.

## Conclusion

The evidence shows that there is greater risk of periodontal disease in those who suffer with RA, but, are oral health complications preventable? RA and secondary diseases such as SS cannot be prevented but the methods we use to help maintain good OH and reduce the risk of complications can be enhanced and implemented. For example:

- Adapted cleaning aids to accommodate impaired manual dexterity.
- Community dentists that can visit immobile/housebound patients.
- Ensuring a multidisciplinary team approach is used so patients are successfully managed and early intervention prevents further oral health complications arising using a balance of treatment and medication.

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Figure 1: <https://medium.com/@bolajialli/two-major-triggers-for-dry-mouth-causes-ca14e7a0cb8e>

Figure 2: <http://cariology.wikifoundry.com/page/Buffer+System+in+the+Saliva>

Figure 3: [https://www.researchgate.net/figure/a-Periodontal-condition-of-rheumatoid-Arthritis-patient-group-1-RA-group-b-Intra\\_fig1\\_225044860](https://www.researchgate.net/figure/a-Periodontal-condition-of-rheumatoid-Arthritis-patient-group-1-RA-group-b-Intra_fig1_225044860)