



# Root Canal Treatment May Be Preferable to Dental Implants in Patients with Arthritis

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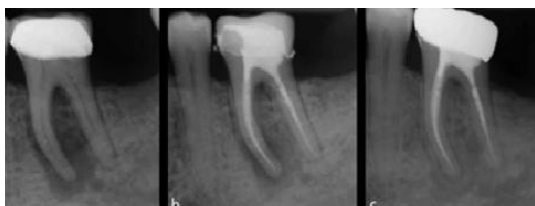
## Abstract

**Objective:** To evaluate the relative merits of root canal treatment (endodontic therapy) versus dental implant therapy for the management of compromised teeth in patients with arthritis, with specific consideration of rheumatoid arthritis (RA) and other systemic inflammatory conditions.



**Methods:** A review of the literature was conducted comparing clinical success, peri-operative risks, systemic interactions, and long-term outcomes of root canal procedures and dental implants, with attention to implications for arthritis patients.

**Results:** Both root canal treatment (RCT) and dental implants demonstrate high survival rates in the general population and in arthritis patients. Implants also can succeed in RA cases with careful planning. However, RCT preserves natural dentition, avoids surgical trauma, and is less dependent on bone remodeling and osseointegration, factors potentially compromised in arthritis or by arthritis medications. Immunologic and bone healing considerations in RA and pharmacologic influences suggest caution with implant placement in certain patients.



**Conclusion:** While both treatments can be successful, RCT should be prioritized when the tooth is restorable, particularly in patients with arthritis, due to lower surgical burden, preservation of natural tooth structure, and reduced dependency on bone healing and immune modulation.

## I. Introduction

Arthritis—including autoimmune forms such as rheumatoid arthritis (RA)—is a chronic inflammatory disease frequently associated with systemic immune dysregulation, bone metabolism changes, and use of immunomodulatory medications. These factors have implications for oral health, periodontal disease risk, bone integrity, and healing responses following dental procedures. Root canal treatment (RCT) and dental implants are standard options for managing diseased or non-vital teeth. While implants have high survival rates in many populations, the systemic context of arthritis patients warrants careful consideration of treatment selection.

### Clinical Evidence and Comparative Outcomes Survival and Success Rates

In general dental populations, both RCT and implants show **high overall survival**, with some studies reporting similar long-term outcomes when properly planned and executed. For example, retrospective analyses indicate that both RCT and single-tooth implant therapy have survival rates around 95% at mid- to long-term follow-up, with differences in complication profiles rather than outright failures dominating outcomes.

**Systematic reviews** in broader populations also note that RCT and implants achieve comparable clinical outcomes, supporting the primary goal of maintaining masticatory function and oral health.



### Implant Outcomes in Arthritis Patients

Dental implants can achieve **high survival rates** ( $\approx 96-98\%$ ) in arthritis patients, but evidence is mixed and must be interpreted with caution. Some retrospective studies indicate comparable implant survival between RA and non-RA groups, but with increased incidence of **peri-implant mucositis and plaque indices** in RA individuals, suggesting potential local inflammatory susceptibility. Other reports note acceptable implant survival even in autoimmune conditions, though systematic data are sparse and many analyses underscore the need for individualized assessment.



Factors such as **medication effects** (e.g., corticosteroids, disease-modifying antirheumatic drugs), altered immune status, and bone healing capacity may influence outcomes more subtly than survival alone.

### Advantages of Root Canal Treatment in Arthritis Patients

#### 1. Preservation of Natural Tooth Structure

RCT preserves the patient's natural dentition. Maintaining natural teeth is a central principle in evidence-based dentistry because it avoids loss of alveolar bone and preserves proprioceptive feedback and periodontal ligament function.

#### 2. Reduced Surgical Burden and Complications

Unlike implants, RCT does not involve surgical bone drilling, bone augmentation, or extended healing periods required for osseointegration. This can be particularly beneficial for patients with reduced bone regenerative potential due to systemic inflammation or medications.

#### 3. Lower Dependency on Bone Healing and Immune Response

Osseointegration depends on optimal bone remodeling. In arthritis patients, especially those on biologic or immunosuppressive therapies, this

process might be less predictable, potentially increasing risk of peri-implant complications.

#### 4. Lower Overall Treatment Morbidity

RCT generally requires fewer appointments and fewer invasive procedures than implant placement, which often entails multiple surgeries, bone grafting, and extended follow-up. Studies have shown that implants may require more adjunctive treatments, appointments, and higher cost compared to root canal therapy.

### Systemic Considerations in Arthritis

Arthritis at a systemic level frequently correlates with oral health changes, such as increased caries and periodontal disease, and reduced salivary flow and oral hygiene capability due to pain and limited dexterity. These factors can predispose to complications in both RCT and implant therapy but have particular relevance in healing post-surgery. Preservation of endogenous tooth structures via RCT can mitigate risks related to more extensive surgical healing.



## II. Discussion

While dental implants can succeed in patients with arthritis, particularly with careful planning and multidisciplinary coordination, RCT remains a **conservative or first-line option** whenever the tooth is restorable. Advantages of RCT in the context of arthritis include preservation of the periodontal ligament and proprioception, avoidance of surgical trauma and extensive bone dependence, and reduced need for complex surgical planning or grafting.

The **systemic inflammatory milieu** in RA and medication effects complicate bone turnover and immune healing.



Though implants can still osseointegrate successfully, these considerations and the need for careful personalization support the prioritization of RCT where feasible.

### III. Conclusion

Root canal treatment is generally preferable to dental implants for restorable teeth in patients with arthritis due to its **conservative nature, lower surgical burden, preservation of natural dentition, and reduced reliance on potentially compromised bone healing pathways**. While implants remain a viable option—especially where teeth cannot be saved—clinicians should assess systemic factors, healing capacity, medication effects, and patient preferences when formulating treatment plans.

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