



Third Molars: Defusing an Oral Time-Bomb AAOMS 3rd Molar Clinical Trials

Key Findings

1. The American Association of Oral and Maxillofacial Surgeons and the Oral and Maxillofacial Surgery Foundation are completing the seventh year of their landmark “Third Molar Clinical Trials”. Lead researcher **Raymond P. White, Jr., DDS, PhD, Dalton L. McMichael Professor, Department of Oral and Maxillofacial Surgery, School of Dentistry, University of North Carolina, Chapel Hill, NC**, and his colleagues have discovered that for young adults ages 20 to 35 enrolled in a longitudinal clinical trial, retained third molars, even those that exhibit no outward signs or symptoms of disease, may pose serious health risks that include chronic oral inflammation from periodontal disease which also increases the risk for increased inflammation throughout the body. ⁽¹⁻⁵⁾
2. Many studies have previously linked periodontal disease with systemic effects, usually in older populations. AAOMS/OMSF data is unique in that it affects “young adults” ages 20 to 35.
3. Periodontal disease is rare in patients under 30 years of age; those who have periodontal pockets of 3mm or more generally exhibit them only in the third molar region. If untreated, the periodontal bacteria will encompass second molars and other teeth.
4. In another study, the investigators discovered that in pregnant women in the same 20 to 35 year age range, third molar periodontal disease increased the risk of delivering a low birth-weight infant.⁽⁶⁾ Third molar periodontal pathology considered alone in this prospective study of expectant mothers, doubled the risk of pre term birth and elevated serum levels of markers of systemic inflammation C-reactive protein (CRP) and Isoprostanes (d8iso). For these patients, the effects of periodontal disease in the third molar area poses a danger akin to smoking during pregnancy. Further, antibodies to the periodontal bacteria have been found in fetal umbilical cords.
5. A growing body of evidence suggests that untreated periodontal disease provides a portal into the bloodstream for pathogenic bacteria in affected patients. While oral bacteria associated with periodontal disease have been linked to more serious health problems, including coronary artery disease, stroke, renal vascular disease, diabetes, and obstetric complications,^(7,8) the data from “Third Molar Clinical Trials” adds a new perspective to the possible risks from oral inflammatory disease. Young adults also appear to be at risk, particularly from periodontal pathology affecting third molars.
6. The AAOMS Third Molar Clinical Trial suggests that most third molars, even those that are asymptomatic and display no current sign of disease, are at risk for chronic oral infectious disease, periodontal pathology and tooth decay, and should be considered for removal in young adulthood.
7. Periodontal pathology in the third molar region is difficult to treat successfully. Eliminating the pathogenic bacteria, once established in periodontal pockets may not be possible, even with repetitive treatments. Because third molars may be difficult to access, restorations, including fillings and crowns, are often difficult to place and maintain. In these instances, it is often necessary to replace the restorations several times during the patient’s lifetime. Removing the third molars may be the most prudent option in such cases. If a decision is made to retain the third molars, patients should be aware that the periodontal status of their third molars should be evaluated on a regular basis.
8. Costs related to maintaining and replacing such restorations as fillings and crowns in the third molar area, as well as to periodontal treatments are high. Add to these the patient’s physical discomfort and distress, and it may be more cost effective to remove the third molars before the patient’s 25th birthday.
9. Retained third molars pose other health risks for affected patients, and may even lead to the development of cysts or tumors in the jaws. After their removal, reconstructive surgery of the area may be required to repair, reconstruct and restore jaw function and facial form.

Third Molar Clinical Trials Research Team

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- **Robert D. Marciani, DMD**, Chief, Division of Oral and Maxillofacial Surgery, College of Medicine University of Cincinnati.

Procedural Overview

Through a series of institutional review board approved longitudinal clinical trials, which enrolled young adult subjects with four retained third molars, researchers found a much higher prevalence at baseline of asymptomatic periodontal pathology and caries with third molars than had been reported previously. Until these reports, third molar periodontal pathology or incidence of cavities were not studied in population studies of young adults. In these subjects these oral infectious diseases worsened over time, less than 3 years.

The team used standard clinical methods to evaluate the tissues surrounding and supporting the teeth, including periodontal probing depth analysis. They also took dental biofilm samples and determined the presence and levels of pathogenic bacteria in the third molar region.

Training and Education

- Oral and maxillofacial surgeons are trained to manage all aspects of treatment of the hard and soft tissues of the face, head and neck (maxillofacial region).
- Oral and maxillofacial surgeons complete an intensive four-year degree program in dentistry followed by a four- to seven-year hospital surgical residency program in oral and maxillofacial surgery.
- Oral and maxillofacial surgeons train alongside residents in general surgery, trauma surgery, anesthesia and other specialties.

Organization

- The American Association of Oral and Maxillofacial Surgeons (AAOMS), is a not-for-profit professional association serving the professional and public needs of the specialty of oral and maxillofacial surgery. The AAOMS has more than 7,000 fellows, members and residents in the United States as well as 250 affiliate members from nations around the world.

References:

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