

## **Pediatric Rheumatology Literature Review: An Article No One Should Miss**

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**Temporomandibular Involvement in Juvenile Idiopathic Arthritis.** Twilt M, Shell MLM, Arends L, ten Cate R, van Suifekom-Smit LWA: *J Rheum* 2004; **31 (7)**: 1418-22

### **SIGNIFICANCE:**

Temporomandibular (TMJ) involvement in Juvenile Idiopathic Arthritis (JIA) is a well established morbidity. However, the frequency of TMJ involvement overall as well as in the subtypes of JIA is relatively unknown. Furthermore, TMJ involvement is difficult to determine as the onset is often asymptomatic. The consequences of unrecognized TMJ arthritis are micrognathia, asymmetric and submaximal jaw opening, and pain. These authors review their experience in detecting TMJ arthritis in 97 consecutive patients with JIA who visited the pediatric rheumatology clinic of the Sophia Children's Hospital over a period of 6 months. Their results suggest that the overall prevalence of TMJ involvement is 45%. Furthermore, they suggest that symptoms reported by the patient, with the exception of pain with jaw excursion, were not statistically significant predictors of disease. Conversely, abnormalities noted on exam by the orthodontist were significantly useful in predicting disease. They do suggest a trained pediatric rheumatologist can detect these predictors on exam. It is extremely important, therefore, that each child with JIA be examined for TMJ involvement at every follow-up visit, and that pediatric rheumatologists have a low threshold for imaging if TMJ involvement is suspected.

### **FINDINGS:**

Over a period of 6 months, 97 children (60 girls, 37 boys) with JIA according to the ILAR criteria were examined by both a pediatric rheumatologist and an orthodontist. The mean age of the children was 10 years, 8 months, the mean age at onset was 5 years, 10 months, and the mean disease duration at the time of examination was 4 years, 9 months. Orthopantomograms (OPG), dental X-rays, were done on each child and scored 0-5 according to the Rohlin system by blinded examiners. Their results suggest that overall TMJ involvement (grades 1-5) was 45%. Of the 44 patients with TMJ disease, half had bilateral involvement. Furthermore, children with earlier onset and longer duration of disease were more likely to have involvement. Interestingly, children with rheumatoid factor (RF) negative polyarthritis and systemic onset JIA had the highest frequencies of TMJ involvement at 59 and 67%, respectively.

The authors also suggest that the symptomatic complaints of patients, with the exception of pain with jaw excursion, were not statistically significant predictors of disease ( $p \geq 0.05$ ). However, the orthodontic exam was very useful in identifying significant predictors of disease. These predictors include the following: absence or impaired translation during maximal jaw opening, asymmetric opening, crepitation with movement, and protrusion ( $p < 0.05$ ). Of these predictors, absence of translation with

opening ( $p < 0.009$ ) and asymmetry with jaw movement ( $p < 0.021$ ) were the most significant. Translation is the second part of jaw opening during which the jaw moves forward for maximal opening.

These findings highlight the importance of a thorough physical exam, including the TMJ region at every visit of patients with JIA. The authors suggest that if TMJ involvement is suspected then patients should be immediately referred to an orthodontist. The authors also propose periodic screening of all JIA patients for TMJ involvement with OPG, even in the absence of clinical suspicion. Current screening practices of the authors include yearly orthodontic exams. However, the ideal interval between exams has yet to be determined.