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## **Enlarged tonsils and the effect of tonsillectomy. Characteristics of the dentition and facial skeleton. Posture of the head, hyoid bone and tongue. Mode of breathing.**

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Associations between craniofacial morphology, its development and growth on the one hand and functional factors on the other hand have been eagerly debated in the literature during the last 20 years. The aim of the present thesis, based on five publications, was to evaluate the effect of enlarged tonsils and tonsillectomy on the dento-facial morphology, the posture of the head, the position of the hyoid bone and tongue, and on the mode of breathing. The material comprised 146 Swedish children (66 boys and 80 girls), 5.3-17.3 years old, with a mean age of 10.1 years. Of these children 73 were judged by one otolaryngologist to have enlarged tonsils and were, on this criterion, selected for the investigation. The remaining 73 children comprised the control group and matched the tonsil group for sex and age. The controls were nosebreathers and had no history or symptoms of Ear-Nose-and-Throat-problems. During the investigation 18 of the tonsil children underwent tonsillectomy and 29 remained unoperated. Comparisons between the groups were based on anamnestic and clinical records, measurements on plaster study models and lateral skull radiographs. The results indicate that the children with enlarged tonsils, when compared with the control children, had retroclined lower incisors, protruded upper incisors, shorter lower dental arch, smaller overbite, larger overjet and a greater incidence of lateral crossbites. Furthermore they had retrognathic, posteriorly inclined mandibles, larger anterior lower facial height and skeletal open bite. They also displayed extended headpostures, low posture of the hyoid bone, antero-inferior posture of the tongue and large oro-pharyngeal depth. 62.5% of the children in the tonsil group were mouthbreathers during the day and 84.7% during the night. The effect of tonsillectomy was mainly associated with a dorsal reposturing of the base of the tongue, change in hyoid bone posture cranially and change to nosebreathing during the night. Furthermore, a decrease in lower inter-molar width and in the tendency to lateral crossbite, as well as a slight increase in the posterior lower facial height had occurred postoperatively. Associations between postural and functional changes mutually, as well as between these changes and morphological changes were found. Enlarged tonsils thus seem to be associated with a characteristic postural and functional pattern, which in its turn seems to have had some influence on the dentition and craniofacial morphology.

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