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## Speech Articulation in Patients Wearing Removable Partial Dentures

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Foreign body in the oral cavity (dental prostheses) necessarily interfere with speech. Changes in anatomic and functional characteristics of the oral cavity may affect speech articulation. The purpose of this study was to show eventual differences in pronunciation of some sibilant and palatal sounds. We tested three groups: subjects with removable partial dentures, the same group without removable partial dentures and a control group - students with complete dental arch with no prosthodontic treatment or evidence of skeletal jaw discrepancy. Examination was performed on 30 subjects who had been wearing removable partial dentures in the upper and/or lower jaw and on 30 subjects in the control group. At the time of examination the prosthetic devices were 2 to 26 days old and with regard to aesthetics, retention, stability and function satisfactory, according to professional standards. Subjects read six single words containing sibilant and palatal sounds in the initial word position, apart from sound c which was in the medial word position. The voice was recorded on minidisk (Sony MD, MZ-1) and analyzed with Multispeech Program - LPC. Analysis software. This acoustic analysis gave us peaks in the first 4 formants for each investigated sound, their bandwidths and intensity. It is reasonable to assume that subjects with removable partial dentures will probably have more problems with producing sound because of short adaptation period for gaining complete speech adaptation. The same subjects without removable partial dentures will probably have much more accurate sounds production because of long term speech adaptation due to gradual tooth loss.

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## Relationship Between Masticatory Efficiency and Occlusal Parameters Established in T-Scan II System

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The aim of this investigation was to establish possible correlation between parameters of occlusion and masticatory efficiency.

**MATERIAL:** Data were obtained in 15 healthy persons, 23-31 years of age (mean 25 years) with correct own dentition and without any disturbances of the stomatognathic system.

**METHODS:** Masticatory efficiency was measured using Optosil test modified by Slagter et al. after 20 and 80 cycles of chewing. The time of chewing for 20 and 80 cycles of chewing was also established. Analysis of occlusion was made using T-scan II computerized system. Registration of occlusion was obtained before measuring masticatory efficiency after 20 and 80 cycles of chewing. Statistical analysis was made and  $p < 0.05$  was statistically significant.

**RESULTS:** The time of chewing for 20 cycles and for 80 cycles respectively, mean 16 s +/- 3.0, and 55.6s +/- 9.5) reduction of particle size was about 1.5 mm. Time to maximal force of pressure was shorter when chewing was longer. Maximal force of pressure for a unit of deflection indicator surface was higher after chewing. Share of sides of the teeth arch was about 59 per cent in all measurements.

Maximal force of pressure for a unit of deflection indicator surface was correlated with the time of chewing for 20 cycles of chewing ( $p < 0.05$ ). Correlation of time from the first contact of teeth to maximal force of pressure and maximal force of pressure for a unit of deflection indicator surface was statistically significant for 80 cycles. There was no evident correlation between values of X50 and occlusal parameters established in computerized analysis.

**CONCLUSION:** Chewing ability is correlated with occlusion although this relationship is not significant.