



# **THE EFFECT OF TWO DIFFERENT TYPES OF REMOVABLE PARTIAL DENTURES ON CHEWING ACTIVITY AND MUSCLE EFFICIENCY**

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## ABSTRACT

**Background and Objective:** Chromium cobalt removable partial denture has been in use for years and despite of the advantages that chrome cobalt provides, it has many disadvantages. In the recent years flexible partial dentures has been introduced to dentistry with many advantages over chrome cobalt partial dentures. The purpose of this study was to evaluate the efficiency of chromium cobalt and flexible removable partial dentures in chewing and muscle activity.

**Methods:** Ten patients were selected according to the criteria which is (Upper arch completely edentulous denture with lower arch Kennedy class I ). For each patient, an upper complete denture and two lower removable partial dentures (chromium cobalt and flexible) were constructed. After finishing of the prosthesis, muscle efficiency with the use of Electromyography (EMG) and chewing activity with the use of sieving method was performed. And for each patient, the test was done in four different time intervals (two days, one week, two weeks and one month after denture insertion).

**Results:** As for the chewing activity test, revealed statistically significant difference ( $P < 0.05$ ) between first and fourth visit concerning the flexible partial denture and improvement of chewing, while the chrome cobalt although there was improvement of chewing but it was not significant. Regarding muscle efficiency test, this test revealed that there was no difference between flexible and chrome cobalt dentures and they are almost the same, but we can notice improvements of muscular efficiency specially in masseter muscle.

**Conclusions:** Within the limitations of this study, the following conclusions could be listed: Muscle efficiency is improved within one month of insertion of partial denture, weather it is flexible or chromium, Flexible denture increases chewing activity slightly better than chrome cobalt. Chrome cobalt is marginally better at chewing of hard food comparing to flexible denture.

**Keywords:** Surface Electromyography, Chrome cobalt, Chewing, Flexible dentures.