Irreversible Hydrocolloid as a Test Food in Complete Denture Wearers

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Objective: This study aimed to investigate the use of irreversible hydrocolloid impression material (alginate) as a test food in measuring the chewing performance of complete denture wearers.

Methods: A method that was developed by Ohara et al (2003) on dentate subjects was used to investigate 20 edentulous subjects. The subjects chewed the alginate pellets of size 12mm diameter x 12mm height each, first at 10 and then 20 chewing strokes (each repeated 3 times). The chewed particles were collected and washed through a stack of four sieves at descending mesh size (mesh size 2.00mm, 1.70mm, 1.40mm and 1.00mm and less than 1.00mm). The masticatory performance was defined as the weight of the chewed particles collected on each sieve as a percentage of the total weight of particles recovered.

Results: At 10 chewing strokes six subjects could not chew the alginate pellets, whereas after 20 chewing strokes all the subjects could produce finer particles. When compared the distributions between 10 and 20 chewing strokes, it was found that at 20 chewing strokes, median of 95.4%, 1.4%, 1.0%, 0.9% and 1.2% by weight of the chewed particles was collected on the sieve, respectively. While at 10 chewing strokes, median of 98.6%, 0.5%, 0.3%, 0.3% and 0.4% of the particles were collected on the respective sieve.

Conclusion: 1. Alginate pellets can be used as a test food in edentulous subjects as it is cheap, easy to manipulate and soft compared to silicone, which is an advantage for complete denture wearers. 2. 20 chewing strokes were found to be appropriate to use.

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