

# Mandibular implant supported complete dentures improved quality of life

## Abstracted from

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A comparison of implant-retained mandibular overdentures and conventional dentures on quality of life in edentulous patients: a randomized, prospective, within-subject controlled clinical trial. *Clin Oral Implants Res* 2013; **24**: 96–103.  
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## Question: Do implant supported mandibular overdentures improve patient satisfaction and quality of life more than conventional dentures?

**Design** Randomised controlled trial.

**Intervention** Patients from hospital waiting lists who had been edentulous for at least two years and required replacement of conventional dentures were recruited. Baseline quality of life and satisfaction measures were taken and all patients were provided with new conventional complete dentures (CCDs) that they wore for three months, at which point they were reassessed using the same measures. Patients were then randomly assigned either to continue with CCDs (control) or to have implant-retained overdentures (IODs) made (test group). The control group was assessed after a further three months (six months after receiving CCDs). The test group was assessed three months after receiving IODs.

**Outcome measure** The outcome measures used were the Oral Health Impact Profile-49 (OHIP-49) Denture Satisfaction Questionnaire (DSQ) and the Schedule for the Evaluation of Individual Quality of Life (SEIQoL).

**Results** Three months after receiving CCDs patients reported significant improvements in satisfaction and quality of life ( $P < 0.05$ ). However no further improvements were seen in the control group at six months for any measure. Following placement of IODs the test groups had significant additional improvements in the functional limitation, physical pain, psychological discomfort, physical disability, social disability, psychological disability and handicap scales of the OHIP and on 10 of the 11 scales of the Denture Satisfaction Questionnaire ( $P < 0.05$ , ANOVA).

**Conclusions** The findings show that, controlling for expectancy bias and variability in baseline levels, IODs significantly increase patient satisfaction, dental function and quality of life over and above those achieved with good quality CCDs.

## Commentary

Regardless of the global trend of prevention, teeth retention and the advances in oral health care, millions of people in the world have lost some or all of their teeth. Total edentulism is still present and complete dentures are still the most common prosthesis offered to edentulous people<sup>1</sup> as treatment to replace missing teeth and to re-establish aesthetics and function.

It is known that complete-denture wearers have diminished chewing ability. Ill-fitting dentures can cause impairment of dietary intake and speech, produce overall dissatisfaction and may negatively affect quality of life. Adequate retention and stability of a complete denture depends on several factors besides the provider's technical abilities. Physical forces influence denture retention such as adhesion, cohesion, capillary attraction, surface tension, fluid viscosity, atmospheric pressure and external forces originating from the orofacial musculature.<sup>2</sup>

A previous systematic review and meta-analysis from randomised clinical trials with follow-up periods ranging from two months to 10 years published in 2009<sup>3</sup> concluded that mandibular implant-supported dentures are more satisfying to patients than conventional dentures. Nevertheless, there was limited evidence to demonstrate an improvement in patients' oral and general health-related quality of life. The specific aim of the clinical trial was a patient centred outcome in patients wearing complete mandibular dentures to assess improvement in patient quality of life comparing implant over-dentures to conventional complete dentures.

A power calculation was done to determine the sample size needed in both groups to obtain statistically significant results with the objective of rejecting the 'null hypothesis' in which no differences would be found between the two treatments. Both groups were similar enough at baseline.

The tools used to measure patient satisfaction and oral health qualities of life are validated tools accepted for the measurement of that outcome. The randomisation after complete dentures insertion was acceptable. The final drop out rate was acceptable.

The results presented showed an important feature; that the insertion of dentures alone in the first three months were a reason to improve satisfaction and quality of life. However in the subsequent three months, the improvement in the implant-supported dentures was more remarkable.

Common sense makes us think that implant supported dentures are more beneficial in improving retention, patient satisfaction and quality of life for edentulous patients. The results of this limited,

short-term study are supported by the manufacturer, and reinforce this thought.

The costs of the procedures, the complications of the surgery and the long-term survival of the implants need to be considered in clinical decisions.

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2. Kanapka, JA. Bite force as measure of denture adhesive efficacy. *Compend Contin Educ Dent* 1984; **Suppl 4**:s 26–30.

### Practice point

- Patient's quality of life seems to be improved with the insertion of dentures
- The quality of life is extended with implant-supported over-dentures.
- Cost effectiveness and long term success needs to be considered.

3. Emami E, Heydecke G, Rompre PH, de Grandmont P, Feine JS. Impact of implant support for mandibular dentures on satisfaction, oral and general health-related quality of life: a meta-analysis of randomized-controlled trials. *Clin Oral Implants Res* 2009; **20**: 533–544.

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