

Heraeus Dental Science

## Scientific Information

### PALA Teeth – Premium & Mondial

Denture Teeth need to keep their original shade during clinical use for a higher patient satisfaction and to avoid revision after a short period of time. Plaque resistance and colour stability are key factors influencing shade accuracy during clinical use.

The following two in vitro studies prove the excellent plaque resistance and colour stability of Nanopearls® material, which is used for Premium and Mondial.

#### **Adhesion of streptococcus mutans NCTC 10449 to artificial teeth: An in vitro study**

S. Hahnel, M. Rosentritt, R. Bürgers, G. Handel, Regensburg University Medical Center, Germany

#### **Effect of polymerization methods and thermal cycling on colour stability of acrylic resin denture teeth**

W. Accunção, V. Barão, M. Pita, M. Goiato, Araçatuba Dental School, São Paulo, Brazil



# Adhesion of streptococcus mutans NCTC 10449 to artificial teeth: An in vitro study

S. Hahnel, M. Rosentritt, R. Bürgers, G. Handel, Regensburg University Medical Center, Germany

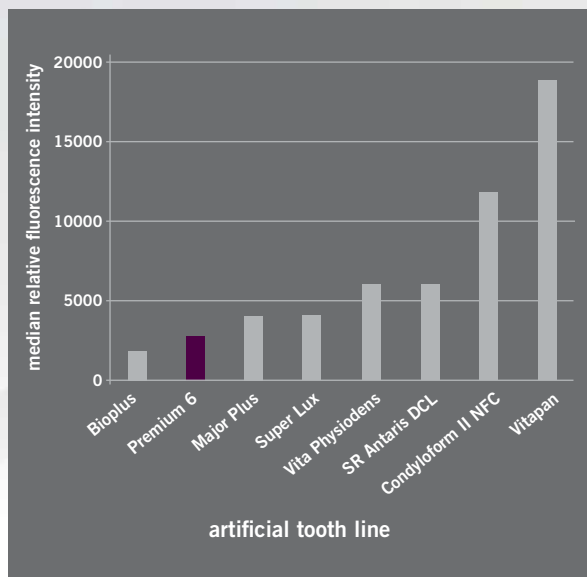
## Objective

The aim of this study was to evaluate the susceptibility of artificial teeth to adhesion of the oral bacterium Streptococcus mutans. Bacterial colonization is one aspect in the clinical performance of dental materials.

## Materials & Methods

The specimens were incubated with Streptococcus mutans NCTC 10449 suspension for 2.5 hours at 37 degrees C. Adherent bacteria were quantified through fluorometric assay. The relative fluorescence intensity correlates linearly with the amount of adherent bacteria. Medians and 25% / 75% percentiles were calculated.

## Results



## Conclusions

Premium 6 and Bioplus showed the lowest values of adhesion to streptococcus mutans without significant difference between them. There are significant differences between Premium 6 and some of the other teeth tested. Authors recommend dental material with low susceptibility to microorganism adhesion in order to avoid plaque and denture stomatitis.

The study was summarized by Heraeus.

## Source

J Prosthet Dent. 2008 Oct; 100(4):309-15

# Effect of polymerization methods and thermal cycling on colour stability of acrylic resin denture teeth

W. Accunção, V. Barão, M. Pita, M. Goiato, Araçatuba Dental School, São Paulo, Brazil

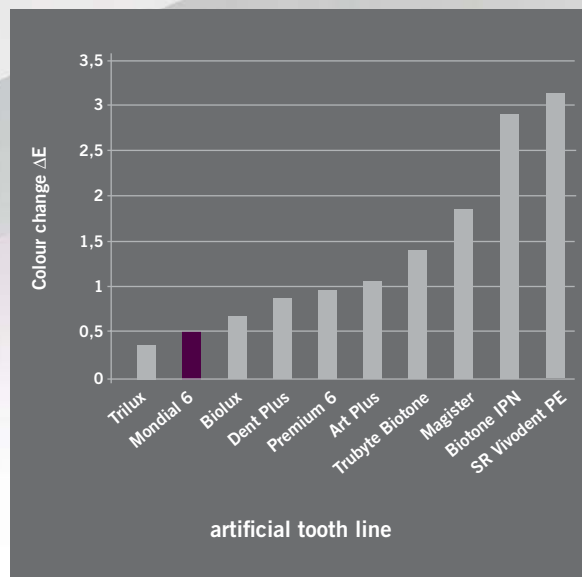
## Objective

Discolouration of denture teeth can be a problem during clinical use. The aim of the study was to determine the effect of denture base polymerization methods and thermal cycling on the colour change of artificial teeth.

## Materials & Methods

The colour of ten different tooth lines was measured before polymerization, after polymerization (74°C / 9 hours) and after thermal cycling with a spectrometer. Thermal cycling was done 5000 times between 5°C and 55°C in intervals of 30 seconds. The mean colour difference (delta E) was calculated between the thermal cycling and before polymerization.

## Results



## Conclusions

Mondial 6 and Trilux showed the lowest colour difference without significant difference between them. There are significant higher colour differences on some of the other teeth tested when compared to Mondial 6. The authors do not see clinically discernable colour differences. However, delta E > 2 can usually be recognized as shade differences.

The study was summarized by Heraeus.

## Source:

J Prosthet Dent. 2009 Dec; 102(6):385-92