

# Prospective Evaluation of Zirconia Posterior Fixed Partial Dentures : Four Year Clinical Results.

Dr. Roediger M

Dr. Gersdorff N

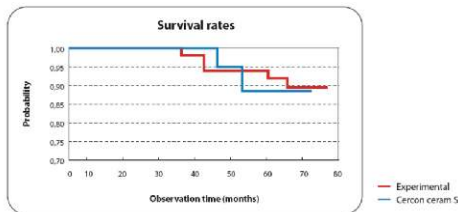
Dr. Huels A

Dr. Rinke S.

Department of Prosthodontics, Georg August University, Goettingen, Germany

## Purpose

In this prospective clinical study, the performance of three- and four-unit fixed partial dentures (FPDs) with frameworks fabricated of yttria partially stabilized Zirconia was determined after a mean observation period of 50 months. The study focused on the survival of the restoration (in situ criterion) and the success of the ceramic veneers (no defect).



Cercon Bridge Survival Rates, Illustration :  
Dr. M. Rodiger, University of Goettingen

## Materials and Methods

Seventy-five patients with a maximum of two missing teeth and an antagonistic dentition were treated at the Department of Prosthodontics, University of Goettingen, with 99 posterior FPDs. Fifty-one specimens (experimental group) were veneered with an experimental ceramic suitable for titanium and Zirconia frameworks (thermal expansion coefficient [TEC]: 8.5 microm/m\*K); 48 restorations (Cercon-S group) were veneered with a commercially available low-fusing ceramic optimized for Zirconia frameworks (TEC: 9.5 microm/m\*K). All restorations were luted with zinc-phosphate cement. Statistical analysis was performed according to the Kaplan-Meier method; time-dependent success rates of the different types of ceramic veneers were analyzed using the log-rank test.

## Result

Seven restorations were lost: 4 due to technical complications and 3 due to biologic complications. The overall

survival rate after 48 months was 94% (Kaplan-Meier analysis). Twenty-three events required clinical intervention for restoration maintenance: 13 ceramic veneer chippings (polishing), 6 losses of retention (recementation), 3 caries lesions (filling therapy), and 1 loss of vitality (endodontic treatment). Between the two groups of veneering materials, no significant difference in the probability for success was determined (log-rank test, P=.81).



Case Report : Preparation



Case Report: Occlusal view of bridge in situ

## Conclusions

Within a mean observation period of 4 years, sufficient survival rates for Zirconia-based posterior FPDs could be verified. The main complications included fracture of the ceramic veneering material and decementation, which occurred mainly in the mandible.



Case Report: Lateral view of bridge in situ

## Clinical Evaluation of Posterior All-Ceramic FPDS (Cercon) : A Prospective Clinical Pilot Study

### Purpose

This study prospectively evaluated the clinical performance of posterior zirconium-oxide based all-ceramic fixed partial dentures (FPDs).



3-Unit Cercon Bridges Illustration: Professor M. Tsumita, University of Yokohama, Japan

### Materials and Methods

Forty-two abutments of 21 Cercon FPDs were fitted in 20 patients at the Tsurumi University Dental Hospital from August 2005 to August 2006. The performance of these FPDs was evaluated using the California Dental Association (CDA) quality assessment system at baseline and at all follow-up examinations.

### Results

All FPDs were examined after a mean observation period of 28.1 (+/-3.4) months. During the observation period, no fracturing of FPDs was seen. All of the FPDs examined were rated as satisfactory with regard to all factors at the follow-up



4-Unit Cercon Base Bridge Framework

examinations based on the CDA quality assessment criteria.

**Conclusion**

Within the limitations of this short-term clinical study, no core framework fractures were seen. According to the CDA criteria, 100% of the FPDs were rated as satisfactory during this observation period.



Ceramic Veneers Made of e.g. Duceram Kiss, Proven and Safe

	Satisfactory		Not acceptable	
	Excellent	Acceptable	Correction	Replacement
<b>Marginal Integrity</b>				
Baseline	33.3	66.7	0	0
1 Year	42.9	57.1	0	0
2 years	33.3	66.7	0	0
<b>Color</b>				
Baseline	100	0	0	0
1 Year	95.2	4.8	0	0
<b>Surface</b>				
Baseline	100	0	0	0
1 Year	81.0	19.0	0	0
2 Year	100	0	0	0
<b>Anatomic Form</b>				
Baseline	95.2	4.8	0	0
1 Year	70.8	29.2	0	0
2 Years	66.7	33.3	0	0

Quality of al-ceramic FPDs at baseline and follow-up examinations based on the CDA (%)

# HT Heal Talk

## Dental Journal

Log on

<http://www.healtalkht.com>

Go

**W**riters can send their article in an easiest way. You can access your journal when you want to relax after your hectic schedule of OPD. You can get the latest about dentistry.

**Healtalk** is glad to inform you that it has got **Index Copernicus**, Poland, European state. It is an international indexing. Earlier **Healtalk** has got **International Standard Serial Number** also.

**Healtalk** invite you comment & suggestions. Please share this journal with your colleagues and encourage them to logon for an **easy subscription**.

Thank you for continuing support.

Download Current Issue