



Bundesverband der  
implantologisch  
tätigen Zahnärzte  
in Europa

European  
Association of  
Dental  
Implantologists

## Consensus Paper

### Second European Consensus Conference (EuCC) Cologne 2007: Ceramics in Dental Implantology

17 February 2007

Ceramic materials have increasingly been employed in dental implantology in recent years. Uses of current dental ceramics in implantology range from metal replacements and abutments all the way to tooth-coloured high-performance ceramics in crown and bridge prosthodontics. These materials are either alumina or zirconia ceramics.

#### Implants

Thanks to their favourable material properties, ceramic implants are offered as one-part transgingivally plants with integrated abutments.

Compared to titanium, the possibilities for giving ceramic implants specific surface textures are limited.

Both the implant design and the surface structures presuppose clinical procedures adapted to these properties.

The claim that ceramic implants are superior to titanium implants is currently not supported clinically or biologically (EBM Level 5).

#### Abutments

Soft-tissue apposition to ceramic abutments is characterized by its positive effect on plaque accumulation and by natural translucency.

The transition zone between the implant on the abutments may be metal or ceramics.

Due to the differences in design parameters, manufacturers' recommendations should be strictly followed during prosthodontic and technical procedures.

#### Superstructures (Crowns and Bridges)

A metal-free superstructure produced in a CAD/CAM milling process can also be implemented using the familiar techniques of conventional prosthodontics. Direct chairside fabrication is particularly suitable for immediate restorations.

Five-year survival studies have not shown any differences in mechanical strength between ceramo-metal and all-ceramic restorations (EBM Level 4).

Current veneering ceramics allow the fabrication of highly aesthetic superstructures.

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No extant clinical study to date has proven the claim that combined surgical and prosthodontic implantological treatment using a closed implantation procedure guided by a surgical stent and subsequent immediate insertion of a preoperatively fabricated bridge will achieve the same restorative quality as a restoration fabricated postoperatively.

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Christian Berger  
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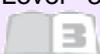
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## Appendix: Levels of Evidence

Level	Definition	Examples
Level 1 	Positive (statistically significant) randomized controlled studies or meta-analyses with statistically significant results	Meta-analyses of many randomized controlled studies with homogenous and statistically significant therapeutic effects, or with heterogeneous results but still statistically significant as a whole
Level 2 	Neutral (statistically non-significant) randomized controlled studies or meta-analyses; statistically non-significant meta-analyses of inconsistent, randomized, controlled studies	Meta-analyses of many randomized controlled studies with consistent therapeutic effects, but statistically non-significant; meta-analyses of many randomized controlled studies with heterogeneous and statistically non-significant therapy effects
Level 3 	Prospective controlled but non-randomized cohort studies	Prospective studies in a cohort of patients not randomized for the intervention; investigators usually try to establish a simultaneously treated control group or comparative group
Level 4 	Retrospective non-randomized cohort or case control studies	Retrospective non-randomized cohort studies; retrospective studies or observation studies; investigators try to offer a control or comparative group
Level 5 	Progress studies on patients	Studies where patients are prospectively or retrospectively included in succession and where the effects of an intervention are observed; no control group
Level 6 	Animal or mechanistic studies	Studies using animals or mechanical models
Level 7 	Reasonable extrapolation of existing data; quasi-experimental design	Reasonable extrapolation in a quasi-experimental design or using existing data collected for other purposes
Level 8 	Rational conjecture (common sense); historical acceptance as standard practice	Actual practice corresponds to common sense or appears to have validity; passed on as standard practice before the requirements of scientifically verified recommendations (evidence-based medicine) were postulated; no new scientific findings to support changes; no evidence of negative effects

Levels of Evidence according to the American Heart Association – AHA – modified by W. F. Dick: Evidence-Based Emergency Medicine; *Anaesthetist* 47 (1998):957 and *Circulation* 102 (2000):1-4