

90% of porcelain veneer restorations survive 3 years

Kreulen C M, Creugers N H J, Meijering A C. Meta-analysis of anterior veneer restorations in clinical studies. J Dent 1998; 26: 345-353

Objective To compile an inventory of data from clinical studies on anterior veneer restorations, with special reference to clinical trials to produce a mean survival result using a meta-analysis.

Data sources Medline search 1983 to November 1996 using key words 'dental' and 'veneer'.

Study selection A two-stage selection was employed. Initially all non-clinical studies case reports and descriptive papers were excluded. Subsequently all papers which did not meet the following criteria were excluded: English language, 2-year or more follow-up, type, number and location of restoration noted, number of patients stated together with type of restoration, study outcome shown as failure or survival. A quality scoring system was applied to the selected papers and used in combination with the sample size for combining the studies.

Results Initially 1056 studies were identified after the initial selection 25 clinical studies remained; this was reduced to 15 at

the subsequent selection. Two further studies were excluded, as their data did not allow calculation of survival curves. The cumulative proportion of survival for porcelain and pre-formed acrylic veneer restoration after 3 years is shown in the table below.

	Number of studies	Number of veneers	Cumulative survival at three years %	95% Confidence Interval
Porcelain veneers	10	1671	92	90-93
Pre-formed acrylic veneers	3	323	74	68-79

Conclusion Porcelain veneers show acceptable longevity after 3 years, which appears better than the preformed acrylic type. The evaluative and statistical analysis of clinical veneer restoration studies may be improved.

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Commentary

Veneers are a widely used and effective method for the management of aesthetic problems on anterior teeth. This article compares the survival of porcelain with that for pre-formed acrylic restorations on anterior teeth.

By the nature of clinical studies there will have been developments in both the adhesive luting resins and porcelains which cannot be addressed in a study of this type. Consequently, it would be reasonable to assume that the results produced by the authors would be a conservative estimate of restoration survival in current practice. The comparison used is between porcelain and pre-formed acrylic veneers. Whilst this information is historically useful it is unfortunate that more information was not available on the performance of both directly and indirectly placed

composite resin veneers, as these latter techniques would be the most likely choice in a clinical setting today as an alternative to porcelain.

This is no reflection on the authors of the meta-analysis, rather a manifestation of the paucity of good quality clinical studies in this field. The nature of the study and the data available to its authors would not permit analysis of some of the other questions that remain in relation to clinical technique for veneer restorations. These questions include the effect on the survival of veneers if there is a substantial area of dentine exposed on the preparation, or a large underlying composite resin restoration. In addition the influence of the various types of incisal edge tooth preparation and the effect of operator experience on survival could not be clarified. Despite these caveats, the analysis

demonstrates a cumulative survival of 92% at 3-years for porcelain restorations from a variety of study designs including prospective clinical trials and retrospective analysis based on clinical records and examinations with a wide range of operators. These data can be used with some confidence to allow the practising dentist to inform their patients of the prognosis for veneer restorations. They will also permit health economists to begin to address the economics of provision of veneers compared with full-coronal restorations. These data suggest that porcelain veneer restorations are a successful method for restoring anterior teeth, justifying their widespread clinical use.

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