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[\[PDF \(420K\)\]](#) [\[References\]](#)**Investigations in the correlation between Martens hardness and flexural strength of composite resin restorative materials**[Jens FISCHER^{1\)}](#), [Svenja ROESKE^{1\)}](#), [Bogna STAWARCZYK^{1\)}](#) and [Christoph H. F. HÄMMERLE^{1\)}](#)

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Abstract:

The purpose of this study is to verify the hypothesis that the hardness and flexural strength of composite resin restorative materials are correlated and similarly affected by accelerated aging. With four different composite resins (Tetric Evo Ceram, Synergy, Filtek Supreme, Quixfil), the effects of aging in distilled water at 37°C or by thermal cycling (5°C/55°C) on Martens hardness and flexural strength were assessed. Flexural strength ($n=12$) was measured according to ISO 4049 immediately after light-curing and after 75 days of aging. Martens hardness ($n=6$) was measured in intervals up to 75 days. The results were statistically analyzed with one-way ANOVA, followed by a *post hoc* Bonferroni test. In all cases, the effect of aging on hardness could not be measured. The effect of aging on flexural strength was also not consistent, although it was found that thermal cycling affected flexural strength more than water storage. Martens hardness and flexural strength of composite resins are not correlated.

Key words:[Resin based composites](#), [Flexural strength](#), [Martens hardness](#)[\[PDF \(420K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)

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