

## The Effect of root canal irrigation solution on flexural strength of dentin

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20428813&lokasi=lokal>

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### Abstrak

**Objectives:** This study was to investigate the effect of a variety of root canal irrigation solutions on flexural strength of dentin. **Materials and Methods:** Fifty intact, extracted human mandibular third molars were used in this study. Each tooth was sectioned using diamond cutting disc to create dentin bar (1x1 mm, with 7 mm in length). All dentin bars were randomly assigned into 5 groups of 10 each. Group 1, dentin bars were immersed in 5% NaOCL; group 2, in 2.5% NaOCL; group 3, in 15% EDTA; group 4, in 0.2% chlorhexidine gluconate (CHX); and group 5, in saline (as control) respectively. Each group was immersed for 2 hours. Each dentin bar was subjected to a three-point bend using MTS Universal Testing Machine to test the flexural strength. Data were analyzed using one way Anova, followed by Turkey's test performed at the 0.05 level of significance. **Results:** All irrigation solution have an effect on the flexural strength ( $P < 0.05$ ). EDTA caused the greatest effect on dentin mechanical properties, which revealed the lowest flexural strength ( $100.64 \pm 7.23$ ). In contrast, 0.2% CHX generated the least influence on dentin mechanical properties, which demonstrated the greatest flexural strength ( $189.85 \pm 6.44$ ). **Conclusion:** Root canal irrigation solution can induce effect on flexural strength of dentin. Chlorhexidine gluconate demonstrates the best irrigation solution since it has a slight effect on dentin mechanical properties, particularly flexural strength.