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[\[Image PDF \(322K\)\]](#) [\[References\]](#)**Effects of Light Curing Modes and Resin Composites on Temperature Rise under Human Dentin: An *in vitro* Study**[Ihsan HUBBEZOGLU^{1\)}](#), [Arife DOGAN^{2\)}](#), [Orhan Murat DOGAN^{3\)}](#), [Giray BOLAYIR^{3\)}](#)
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Abstract:

The influence of three curing modes of a high-powered LED curing unit on temperature rise under 2-mm-thick dentin was investigated during the polymerization of resin composite samples of Admira, Filtek P60, Premise, Tetric Flow, Tetric Ceram, and Filtek Z250. Ninety standard specimens were prepared. The bonding agents and resin composites were cured with standard, pulse, or soft-start mode (n=5 for each curing mode). Temperature rise was measured using a type L thermocouple. Data were analyzed by two-way ANOVA and Tukey's test. Soft-start curing led to statistically higher temperature rises compared than the other two modes. The highest temperature rise was observed for Admira and Tetric Flow cured with soft-start mode. The lowest temperature rise was observed for Premise cured with pulse mode. However, temperature rise did not reach the critical value that can cause pulpal damage by virtue of a prominent safety feature of the high-powered LED LCU, which ensures that no excessive heat is produced by all the three curing modes.

Key words:[Temperature rise](#), [Composites](#), [Polymerization](#)



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