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**THE IMPORTANCE OF THE DEPTH OF CURE OF  
LIGHT-CURED DENTAL RESIN COMPOSITES**

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**Introduction.** The optimal degree of curing throughout the bulk of a visible light-activated dental resin composite is acknowledged to be important to the clinical success of a resin composite restoration. Unfortunately, the dentist has no means of monitoring the cure of the resin surfaces not directly exposed to the curing light. The cure depth is a key parameter in photopolymerization, which is complicated and affected by several factors. While the relative degree of cure of the external surface of a restoration can usually be evaluated with simple techniques, the cure of the inner layers of resin is not similarly accessible to evaluation, and it was recognized early on that, unlike chemically activated resins, an adequate cure of the entire visible light activated restoration cannot be assumed, based on external surface properties. It has been shown that inadequate polymerization would result in a reduction in physical properties.

**Aim of the study:** to study the density of the luminous flux of dental curing light lamp used in the dental work, to study the cure depth of light-cured dental resin composites.

**Materials and methods.** The density of the luminous flux of dental curing light lamps have been investigated by photometer (Woodpecker). A photometer is an instrument that measures the strength of electromagnetic radiation in the range from ultraviolet to infrared and including the visible spectrum.

The measurement method used in cure depth is based on ISO 4049.

**Results and discussion.** This study indicates that the materials did not achieve a 2 mm depth of cure with 20 second light exposure when the depth of cure of the specimens was measured using the ISO standard.

**Conclusion.** The filling material with insufficient polymerization may cause such complications as violation of marginal fit, discoloration, fracture of restoration, may have toxic influence on pulp of vital tooth and organism in general, as result of release of residual monomer in oral cavity. The objective was to show what happens to the depth of cure when dental curing light lamp with different parameters of the density of the luminous flux are used and composite formulation and shade are varied over a wide range from the standpoint of resin composites intended for different clinical applications.