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# What is the real importance of **light-curing** in **Dentistry**

This column was thought with the aim to answer frequent questions about light curing. This way, in each issue of the journal, one relevant question to the subject will be discussed, aiming to update the reader regarding its most recent advances.

## light curing adhesives, resin-based composites,

sealants and resin modified glass ionomers, also in procedures that involve indirect restorations, such as cementation of restorations and intraradicular retainers with resin-based cements and even the bonding of orthodontic brackets. To summarize, the Esthetic Dentistry is highly dependent of the light curing. This, associated with the knowledge that color stability<sup>1</sup>, biocompatibility<sup>2</sup> e mechanical resistance<sup>3</sup> are directly related with the degree of conversion of these materials, and this is associated to the proper light curing of the materials,<sup>4</sup> lead us to realize that this step is extremely important to the success and longevity of many procedures that are made in the daily practice.

However, even when the light curing is not made adequately, the polymerization is enough to lead to a false perception of success. The top of restorations will be hard and indirect restorations that

were cemented will not debond immediately, but the result of the light curing failure will show in a short period of time, and many times the materials are blamed for technical failures.

There is no use in choosing the best light curing units associated to the best materials if we do not pay attention to this step and use an inadequate technique. This lead us to another question: are the light curing units all the same? But this is a question to be discussed in the next issue.



[1]



[2]

[ 3 ]



**Figure 1:** In a class II restoration, metallic matrices are used to obtain the right contour, anatomy and interproximal contacts. However, these matrices do not allow the light transmission, and this must be considered during the light curing of restorations.

**Figure 2:** The design of some light curing units does not allow a correct positioning over posterior teeth<sup>5</sup> and this may lead to regions with shadows, where the light does not reach, and the restoration will be poorly polymerized.

**Figure 3:** After light curing, if we access the restoration's proximal boxes, where there was no proper exposition to the light emitted by the light curing unit, we would be able to scrape and easily remove the non-polymerized resin-based composite.

**Figure 4:** After remove the softened resin-based composite, it is clear that the restoration is not adequately polymerized, even if its top is hard. It is important to show that, even if the resin-based composite is hard, it does not mean that it is well polymerized, and if it is not properly polymerized, the restorations will fail prematurely.



[ 4 ]