

INTERVIEW



An interview with

Richard Bengt Thomas Price

INTRODUCTION

Dr. Professor Richard Bengt Thomas Price is one of the greatest experts in the field of light sources used for light-curing of resin-based materials. He studied in different schools and countries, completing his DDS degree in Canada. He obtained a Master's degree in the USA and a PhD's degree in Sweden. His interest in the light sources research field is explained due to lack of importance this procedure given by manufacturers' guidelines of restorative dental products. In many cases, the guidelines just describe: "then, light-cure." Not agreeing with such over simplification and being aware of the significant clinical consequences that inappropriate technical light-curing could produce, Professor Price decided to specialize in this field, as it had not been much explored by researches. In the past few years, he has pub-

lished a several scientific articles in order to provide information to other researchers and clinicians, so they can choose good curing unit and conduct light-curing by using the best technique and determining the best spot for the light-curing device. Moreover, he founded a "light-curing study group (Northern Lights Meeting on Light Sources in Dentistry), which aims to discuss this subject with researchers that investigate in this field, in addition to manufacturers, and practitioners. Annual meetings have been held at Professor Price's university (Dallhousie University), in Halifax, Canada. At the end of each meeting, the attends write a document (also known as "Consensus"), stating the subject discussed and decided in each annual meeting. The responsibility of members from several countries that attend annual meetings is to disclose the Consensus in their homeland and native language, so the document can be spread and used by dentists. As regards Brazil, Professor Marcelo Giannini has attended many Northern Lights meetings, being responsible for publishing the annual Consensus in Brazil.

Marcelo Giannini — Interview coordinator

What are the most important procedures related to the use of light curing devices clinicians should follow in order to assure optimal polymerization of resin composites? (Cesar A. G. Arrais)

This is an excellent question. In my opinion, the first thing to do is to fully read and understand the instructions for use for the curing light and for the resin you are trying to cure. Use the light properly. It can be very disheartening to finish a busy day placing restorations and then finding that the curing light was set on low power.

Next, I would check that the light is working properly make sure that the light tip is not covered in resin. Make sure that the light output from the curing light is what it should be.

Finally, keep the light over the resin that you are trying to cure. I recommend that you use the the appropriate eye protection so that you can watch what you are doing when light curing.

What temperature rise would be tolerable by human pulp? (André F. Reis)

We do not really know as no ethics committee would allow for such a controlled clinical trial to be conducted on humans and the outcome then be monitored for several months. Based on one animal study, is speculated that a rise of up to 5.5° C can be tolerated by a healthy pulp, but It is also thought that this can be affected by state of the pulp, the age of the patient and for how long the pulp is exposed to the elevated temperature.

Can heat produced by high-intensity light-curing units cause post-operative sensitivity? (André F. Reis)

Again we do not know as no ethics committee would allow for a controlled clinical trial to be conducted. It is speculated that post-operative sensitivity may be associated with the use of high-intensity light-curing units, but a high output light used for a short time can produce less of a temperature rise than a lower power light used for a longer time.

The old light-curing units (halogen lamp with fiber optic cable – such as Heliomat) were much worse than the current ones; however, many old composite restorations light-activated with these units still are in good conditions. What would be the reasons? (Marcelo Giannini)

This is an excellent question that also applies to bonding agents. Actually, I think the older style halogen lights were fine. I would not say that they performed any worse than the newer LED curing lights. The problem that I see with the older halogen lights is that they are:

1. Less powerful than most LED curing lights,
2. They are larger,
3. They were usually not battery operated,
4. They are inefficient, and the light bulb requires an often noisy fan to cool
5. The lamp inside is usually only good for 50 to 80 hours of use.

Do you think we need light-curing units that emit more than one wavelengths or just blue light? Is not that complicated for dentists? (Marcelo Giannini)

In my opinion, no we do not need broad spectrum LED curing lights that deliver multiple wavelength bands. All of today's resins are activated by the blue wavelengths of light and do not require violet light.

Adding an extra violet LED emitter just complicates the *design* of the curing light and produces a greater temperature rise. However, if you use a broad spectrum LED light, you know it will cure all resins.

The problem is that the shorter wavelengths of violet light do not penetrate as deeply into the resin when compared to the longer wavelengths of blue light. This is a concern if you wish to cure a bulk fill resin composite, or wish to cure a luting resin through an indirect ceramic or composite restoration.

RICHARD BENGT THOMAS PRICE

- Richard Bengt Thomas Price DDS degree by Dalhousie University, Canada.
- MS degree by University of Michigan, USA.
PhD by University of Malmö, Sweden.
- Professor with tenure in Dalhousie University, Faculty of Dentistry, Department of Dental Clinical Sciences in Canada.
- More than 150 published articles
- Coordinator of "Northern Lights" Meeting on Light Sources in Dentistry.

Interviewers:

MARCELO GIANNINI

- DDS degree, Certificate in Operative Dentistry, Master and PhD in Clinical Dentistry - Universidade de Campinas, Faculdade de Odontologia de Piracicaba (Brazil).
- Associate Professor — Universidade de Campinas, Faculdade de Odontologia de Piracicaba, Departamento de Odontologia Restauradora (Brazil).

CESAR AUGUSTO GALVÃO ARRAIS

- DDS degree — Universidade Estadual Paulista, Faculdade de Odontologia de Araraquara (Brazil).
- Master and PhD in Clinical Dentistry - Universidade de Campinas, Faculdade de Odontologia de Piracicaba (Brazil).
- Assistant Professor — Universidade Estadual de Ponta Grossa, Faculdade de Odontologia, Departamento de Odontologia (Brazil).

ANDRÉ FIGUEIREDO REIS

- DDS degree, Master and PhD in Clinical Dentistry - Universidade de Campinas, Faculdade de Odontologia de Piracicaba (Brazil).
- Assistant Professor - University of Florida, College of Dentistry, Department of Restorative Dental Sciences (USA).

How to cite: Price RBT, Giannini M, Arrais CAG, Reis AF. Interview with Richard Bengt Thomas Price. J Clin Dent Res. 2018 Sept-Dec;15(3):6-9.

DOI: <https://doi.org/10.14436/2447-911x.15.3.006-009.int>
