



# The No-Nonsense Guide to Simple and Complex Class II Restorations

FEATURING CASE REVIEWS

Contributing author and key opinion leader,  
Edward Lowe, B.Sc., D.M.D.

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Through the years, Class II restorations have become a part of the fabric of the vast majority of dental practices around the globe. But what does it take to not only have these everyday procedures play a major role in your daily routine, but also be an efficient, clinically effective and economic part of your practice's offerings? We asked Edward Lowe, B.Sc., D.M.D., a long-time educator on the subject and respected key opinion leader on restorative dentistry, for his thoughts.

### The basics

**Let's start the conversation about Class II restorations with the definition of exactly what they are. Dr. Lowe describes them as a procedure that is completed "on a posterior tooth (a premolar or a molar), involving more than just the occlusal surface. It involves the occlusal surface, as well as one or more proximal surfaces."**

Dr. Lowe believes that the Class II restoration has become such a large part of the dentist's armamentaria due to many patients not following the instructions of dental professionals.

"This is one of the most common lesions in the mouth because it's a lesion that forms in the posterior between the teeth as a primary result of patients not flossing. These types of lesions are easy to explain," says Dr. Lowe. "A Class I can often evolve from patients who

eat and pack food down on the tooth, then don't brush well. However, when

those same patients don't brush well and then also don't floss and leave food between their teeth, those lesions often develop into areas that require Class II restorations. Having the food sit there starts the caries that ultimately can lead to a Class II restoration."

### Keys to success

While patients enduring these caries often experience discomfort, there are certainly pain points for the dental team, as well, when it comes to the Class II procedure, both from a clinical and efficiency standpoint.

For Dr. Lowe, he believes the ultimate success of any Class II restoration starts with obtaining the proper proximal contacts.

"Everyone knows how to prep a tooth, but the hardest aspect of a Class II composite restoration is the proximal contacts," Dr. Lowe explains. "Getting a good proximal contact

that is as cleansable as possible is very important. Things such as a good

occlusal embrasure, buccal embrasure and lingual embrasure are important steps in the process."

While these can contribute to the start of a successful Class II restoration, Dr. Lowe also believes that there are other key factors to keep in mind. "While getting great contacts is number one, properly adjusting the occlusion and getting the occlusal anatomy just right are also important steps," he says. "Let's face it, to be able to assess those things and then do a Class II restoration is challenging."

With that in mind, Dr. Lowe stresses the importance of using high-quality materials and keeping abreast of the most recent advances in dentistry today.

"Using a quality material is always important, but using the materials properly and following the instructions for use are critical to their success," Dr. Lowe says. "When it comes to the composite, I'm often asked by dentists if they should layer it or put flowable underneath. The science of materials is always advancing, so that's an ever-changing answer. I believe dentists should be keeping up with the latest advances to see what is coming along and how those advances can help them in the clinical setting."

### Why the Class II restoration is here to stay

Despite the advances in technology and all that we are continuing to learn about how oral health plays such a large role in a person's overall health, Dr. Lowe believes that the Class II restoration will be a part of the dental practice's arsenal for many years to come, thanks in part to the needs of the patient and his or her abilities to afford the solutions for them.

"We haven't eliminated tooth decay and it doesn't seem like that will

**Everyone knows how to prep a tooth, but the hardest aspect of a Class II composite restoration is the proximal contacts."**

**Dr. Lowe**

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## Simple Class II: Step-by-Step Guide



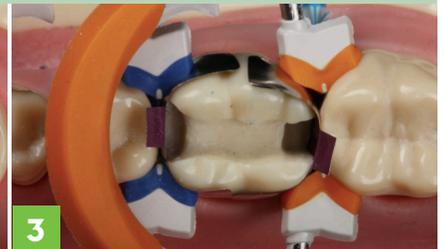
1

Tooth is shown with mesio-occlusal-distal (MOD) preparation completed.



2

Appropriate wedges and bands are in place.



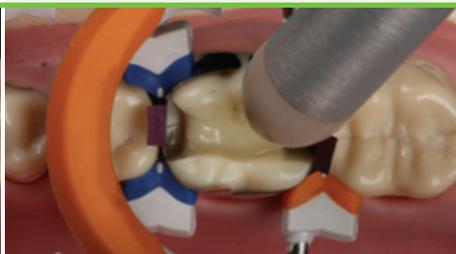
3

Short and tall rings are in place.



4

Use total, selective or self-etch technique, apply preferred bonding agent and cure according to manufacturer's instructions.



5

Add composite to the level of the pulpal floor in the proximal boxes.



6

Use your preferred instrument to spread the composite evenly, "paint" the band and cure.



7

Define the marginal ridges with the interproximal carver (IPC) instrument.



### When should dentists use bulk fill materials?

Dr. Lowe says that he has "always" used bulk fill materials for Class II restorations because it is a posterior procedure.

"In the posterior, I don't use a flowable with my bulk fill. There used to be literature out there that discussed the importance of using a flowable first and then a bulk fill, and that's what a lot of dentists still do. However, with today's filler materials, there's very little volumetric shrinkage and less shrinkage stress around the margins.

"That being said, I like to bulk fill because I introduce less air entrapment when I use just one piece of the puzzle, and not both flowable and bulk fill. Also, a lot of the bulk fill materials now are very polishable and you can put them in and either carve or shape it all in one piece. Then you can cure it and you won't get any significant shrinkage stress, which breaks the bond and opens up gaps at the surface margin. I see very little of that."

## Simple Class II: Step-by-Step Guide



8

*Begin to create the anatomy using the tooth as a scaffold.*



9

*Cure with your preferred curing light according to manufacturer's instructions.*



10

*Remove the rings and pull the bands out halfway.*



11

*Fold the sectional matrices back to expose the marginal ridges.*



12

*Use a disc to create embrasures on the tooth and cure a final time.*



13

*Final result. Note the occlusal, buccal and lingual "dovetail" embrasure development.*

happen any time in the near future. We haven't eradicated caries, so we haven't eradicated the need for the Class II restoration," Dr. Lowe says. "Additionally, the Class II restoration is here to stay because it's a more affordable restoration than other alternatives. Gold is great. Ceramic inlays and onlays are great. However,

not everyone has the ability to afford those options."

What lies ahead for Class II restorations in the everyday dental practice? Dr. Lowe says there may come a day when scientists will discover how to regenerate enamel or eradicate caries. He believes there could also come a day

when biocompatible materials will become a larger part of the Class II restoration toolbox. However, until that time comes, Dr. Lowe believes it's critical for dental practices to have their entire team on board with making Class II restorations the best they can possibly be.

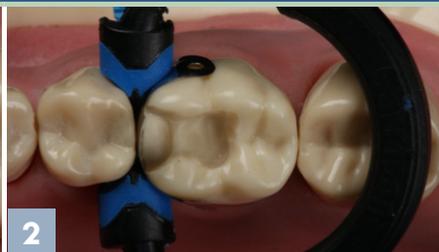
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## Complex Class II: Step-by-Step Guide



1

Tooth is shown with mesio-occlusal (MO) preparation completed.



2

Place the wedge, band and ring. Use an instrument to form band against proximal surfaces to create the ideal form.



3

Use total, selective or self-etch technique and cure bonding agent according to manufacturer's instructions.



### When should dentists use flowable materials?

Flowable materials can still be an option with Class II restorations under the right circumstances, Dr. Lowe says. However, he also offers some caution.

"If you feel that you can't push a bulk fill material [in the restoration area or undercuts] and you want to use some flowable in a proximal box, or you want to fill a proximal box halfway with flowable, that could be a solution," Dr. Lowe says. "However, I find that flowable materials often don't make a great contact because you can't manipulate it and burnish it. Also, the trouble with flowable materials, in my opinion, is the wear. That's why I don't use flowable materials in a contact area or an occlusal area."



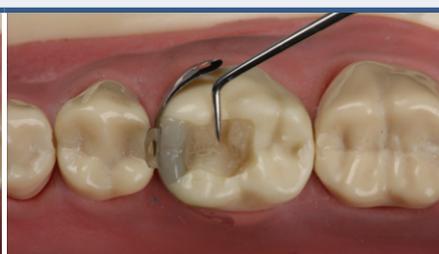
4

Roll transparent composite into the shape of a grain of rice and adapt to create the marginal ridge, then cure.



5

Remove ring, add a dentin shade of composite to highlight the triangular ridges and begin to create some fissures and anatomy.



6

Paint the fissures with your preferred characterizing material, using your preferred instrument. Note: When it comes to this step, remember that less is more.

"I think it's very important for every practice to have a team meeting that focuses on the restorative side of the practice, including Class II restorations," Dr. Lowe says. "Dentists should want their

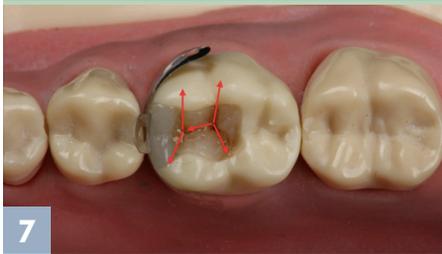
entire team, including those on the administrative side, to understand how to talk about these procedures when patients have questions."

Dr. Lowe also believes that incorporating the entire team can have

a big impact not only clinically, but also on the bottom line of the practice.

"When everyone is on the same page, that's when the dental practice can reach new levels from a clinical and business perspective," he concluded.

## Complex Class II: Step-by-Step Guide



7

Use an endo file to gently drag characterizing material from the pits to the edges of fissures and grooves.



8

Cure to lock in the characteristics of the shading.



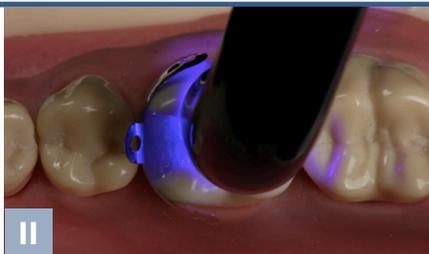
9

Use a transparent enamel shade of composite to “veneer” the triangular ridges and shape with the PI carver.



10

Refine the anatomy and “reach” for the color with the IPC carver.



11

Final cure for five to 10 seconds according to manufacturer’s instructions.



12

Use a disc to create embrasures on the tooth.



13

Final product. Note the occlusal, buccal and lingual “dovetail” embrasure development.



### EDWARD LOWE, B.Sc., D.M.D.

Dr. Edward Lowe is a 1986 graduate of the University of British Columbia’s Faculty of Dentistry. He maintains a full-time private practice devoted to comprehensive functional esthetic and reconstructive dentistry in downtown Vancouver, British Columbia.

Dr. Lowe is an accredited member and accreditation examiner in the American Academy of Cosmetic Dentistry (AACD) and holds fellowships in the International Academy of Dental Facial Esthetics, American College of Dentists and the International Congress of Oral Implantologists.

He sits on the editorial advisory board of the Journal of Implant and Advanced Clinical Dentistry and Inside Dentistry, and is the editor-in-chief of the AACD’s Journal of Cosmetic Dentistry. In addition, he is an opinion leader for the Dental Advisor.

Dr. Lowe mentors the TEST Vancouver Study Club in Vancouver and is part-time faculty at the University of British Columbia. He has published over 70 articles and has given over 250 lectures internationally on esthetic, restorative and implant dentistry.



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