



Resin Infiltration for Long-Standing Incipient Lesions

by Dr. Carla Cohn

Resin infiltration is a conservative, minimally invasive restorative technique used to arrest incipient carious lesions and treat white spot lesions aesthetically without the need for local anesthesia or mechanical removal of tooth structure.

Icon (DMG America) is the only resin infiltration system available in North America. This truly unique micro-invasive treatment creates a diffusion barrier not just on the surface of the tooth but within the hard tissue that stabilizes and blocks further carious activity in the tooth.



Use of the Icon resin infiltration system for interproximal cases is very straight-forward. As long as manufacturer directions are followed, Icon can offer successful treatment of interproximal lesions up to a depth of D1. However, it's important to recognize that not all lesions are created the same...

Sometimes it's harder to know whether we are going to have the same success with long-standing lesions because we never really know the exact depth or intensity. In these cases, we may need to modify the way we're using the resin infiltration system in order to achieve optimal depth penetration and masking of the lesion. It is still very important to note that the manufacturer's instructions should be followed to ensure the best possible outcome for your cases.

Whether we're doing facial or interproximal cases, resin infiltration requires three simple steps:

Etch – using Icon Etch, comprised of 15% hydrochloric acid to erode lesion surfaces and create porosity in the tooth.

Dry – using Icon Dry 99% ethanol alcohol.

Infiltrate – using Icon Infiltrant low viscosity light cured resin material.

Step-by-Step Technique

Place the etchant on for the indicated amount of time. Be careful at this point to have a dry and protected working field, as this is critical to treatment success. A rubber dam or an isolation system are both sufficient as long as the patient is fully protected.



Rinse thoroughly for a full 30 seconds and allow to dry.

Apply the drying agent and allow it to sit for 30 seconds. At this time we are able to visualize our end result. As the ethanol is soaking into the tooth and pulling moisture out, we can see the lesion starting to fade or “mask out,” providing a preview of whether our application is going to be successful or not. If at this time the desired result is not achieved with a long standing or very deep lesion we can go back at this point to re-etch two more times, then use the drying agent again until we achieve desired results. Once we’re satisfied and the area is dry, we can then go on to infiltrate the tooth with resin.

Apply the resin material, keeping in mind that it is a light cure material. Be careful that any overhead light is turned off because once it starts curing, it stops penetrating. Once again, if it’s a long-standing lesion we may want to allow the resin material to set longer than the recommended minutes to allow deeper penetration. Once complete, we can then light cure it.

Apply a second round of the unfilled resin, and then light cure a second time. This is an important step because this second application is going to increase the stability of the resin, decrease any staining post operatively, and increase tooth structure strength.

Besides some shining, minimal polishing is needed. Total procedure time from start to finish is a mere 12-14 minutes.

Conclusion

Always start out using the system as stated in the directions but keep in mind that steps may need to be modified to achieve optimum results depending on each individual case.

Based on the desire to practice conservatively, there’s just no comparison with using Icon. Saving tooth structure when treating incipient lesions with minimally invasive dentistry truly provides great satisfaction for both me and my patients.