

Technical Guide

Instructions for Use and General Information

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Intended Use: NuSmile® ZR Crowns are designed for full coverage restoration of damaged or decayed teeth.

Welcome to the advanced esthetics of NuSmile ZR Crowns. As with any new procedure, the challenge of mastering the new technique presents itself. This guide is intended to provide the technical information needed to successfully use NuSmile ZR Crowns. Your success is important to us, questions and comments are always welcome.

- **Selecting a Crown and Occlusal Evaluation**

The occlusal relationship should be evaluated before application of the rubber dam. Evaluate the relation of the opposing teeth to determine if there is sufficient clearance to avoid excessive contact in occlusion.

After anesthesia is administered and rubber dam placement, the crown size should be selected. Appropriate crown size can be determined using NuSmile **Try-In** Crowns and should always be chosen before initiating tooth reduction. Approximate the original mesial-distal dimension of the non-carious tooth and determine the space available between the adjacent teeth to choose the crown size that looks most natural in the child's mouth. This sizing step

is particularly important in cases with tight interproximal contacts, crowded dentition, or mesial-distal space loss. **Clinicians, patients and parents are always happier with a natural looking crown of the correct size than with an oversized crown that looks too large.**

- **Preparation of the Tooth**

The single most important aspect of mastering the use of NuSmile ZR Crowns is the proper preparation of the tooth. Adequate preparation of the tooth will significantly improve esthetics and crown fit, and will save operating time. The tooth must be prepared to fit the crown so that the crown fits the tooth passively **without applying any pressure during seating**. NuSmile ZR Crowns may require a slightly greater amount of circumferential tooth reduction (approximately 20% more) than for traditional SSC's. As in many cases with early childhood caries (ECC), appropriate pulpal therapy may be required after tooth preparation.

1. Incisal/occlusal, proximal and supragingival reduction

Reduce the incisal length by approximately 1.5-2mm or occlusal surface following the natural occlusal contours by approximately 1-1.5mm. Open the interproximal contacts. The proximal reduction must be adequate to allow the selected crown to fit passively.

The tooth should be reduced circumferentially by approximately 20-30%, or 0.5-1.25mm as necessary. Adequate reduction of the tooth is extremely important for the crown to seat passively. This reduction should be performed gradually and on all planes of the tooth. This results in a preparation which is parallel to slightly converging incisally/occlusally, follows the natural contours of the existing clinical crown and on anterior teeth meets in a thin, tapered incisal edge.

These steps may be performed using course tapered diamond or carbide burs; a coarse football diamond bur may be used to reduce the incisal and prominent lingual surface on anterior teeth, and on the occlusal surface of posterior teeth.

2. Subgingival reduction

The preparation margin should be carefully extended and refined to a feather-edge so that no undercuts or subgingival ledges remain approximately 1-2mm subgingivally on all surfaces. This subgingival extension ensures the crown margin will not be exposed, healthy gingival adaptation and maximizes retention. Visualize the internal dimensions of the selected crown at the gingival opening and avoid excessive tooth reduction in the cervical areas for adequate crown retention. A thin, tapered diamond bur should be used to avoid tissue maceration while performing these subgingival tooth reductions.

3. Completing the preparation

Line angles and point angles should be removed so that all surfaces of the prepared tooth are slightly rounded. Check again at this time for sufficient occlusal clearance with the opposing teeth and that there are no undercuts or ledges remaining subgingivally.

Continued on reverse side



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Restore with confidence

Email NuSmile Clinical Questions
Directly to an Experienced Clinician



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Continued from reverse side

• Try in the Crowns

Method 1: Use NuSmile *Try-In* Crowns to avoid contamination with saliva or blood of NuSmile **ZR** Crown's prepared internal surface.

Method 2: Use the NuSmile **ZR** Crowns selected for the patient. If contamination with saliva or blood occurs, clean internal crown surface with Ivoclean* or sandblast with aluminum oxide prior to cementation.

NuSmile **ZR** Crowns should fit subgingivally without distorting the gingival tissue. If the gingival contour is not natural, then a smaller crown size should be selected and additional tooth reduction performed as necessary. When multiple teeth are being restored, all crowns should be tried on together to ensure that they fit well and seat together passively. If the crowns do not fit passively, the preparation of the tooth must be refined to fit the crown.

*Mfgr: Ivoclar Vivadent; www.ivoclarvivadent.com

• Adjusting a NuSmile **ZR** Crown

When tooth preparation has been correctly accomplished, it should not be necessary to make any adjustments to the crown. NuSmile **ZR** Crowns should only be adjusted with burs specifically designed for adjusting zirconia restorations taking care to use a light touch and a copious water spray. The NuSmile **ZR** Adjustment Burs can be used to circumferentially reduce and feather the crown margins when shortening either an anterior or posterior NuSmile **ZR** Crown is necessary. NuSmile **ZR** central, lateral and cuspid crowns may be reduced by 0.5mm on the incisal edge or on the incisal 1/2 of the proximal surfaces as necessary in crowded cases. No other areas of the NuSmile **ZR** Crowns should be adjusted. When any adjustments are made, the NuSmile **ZR** polishers should be used to restore a smooth surface to the crown.

• Seating the Crowns

The prepared teeth should be cleaned of any saliva, blood or debris, and gingival bleeding reasonably controlled prior to cementation. Pressure, tissue infiltration or a hemostatic agent may be used for this purpose as necessary. NuSmile BioCem® Universal BioActive cement, resin cement or resin modified glass ionomer may be used to seat NuSmile **ZR** Crowns. If pulpal therapy has been performed with a eugenol based material in the pulp chamber, cover the eugenol material with glass ionomer before cementation. For proper positioning of anterior crowns, seat the central crowns first and then the lateral crowns. If using a self cure cement the crowns must be firmly held in position until the cement is set. After allowing enough time for the cement to set, or after light curing to set dual cure cement, clean up can be accomplished. Check occlusion; if a NuSmile **ZR** Crown is in high occlusion, the opposing teeth may be adjusted as necessary.

• Disinfection Methods

NuSmile crowns are provided in clean non-sterile packaging. Clinician may choose to sterilize before use. Cold sterilization, autoclave or steam sterilization may be used according to the standard instructions of the manufacturer of the steriliant or sterilizer.

• Suggested ADA Coding

Refer to "Other Restorative Services"

D2929 – Prefabricated porcelain/ceramic crown – primary tooth

"Parent / Guardian: Instructions for Safeguarding Your Child's New Crowns"

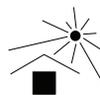
Available for download at: www.nusmilecrowns.com/pdf/nsc_ParentGuardianInstruction.pdf

You may use this sample text or create your own document. Contact our office or visit our web site for the digital text content.

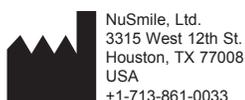
Additional Cautions, Storage and Maintenance

Wear personal protective equipment (gloves, mask and eyewear) while handling the crown. Do not use the product for any other purpose. Store crown at room temperature, away from direct sunlight or flame, in a clean and dry place.

Rx Only



Email NuSmile® Clinical Questions
Directly to an Experienced Clinician



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