

Crown/Onlay Basic Principles

Restoration	Definition	Preparation Principles	Indication
Inlay	An indirect intra-coronal restoration that does not provide cuspal coverage. Proximal and occlusal surfaces are replaced.	<ul style="list-style-type: none"> Isthmus 1.5-2mm. Flat pulpal floor. 4-6 degree tapered walls. No undercuts. If ceramic: Butt-joint (90°) cavosurface margins. If metal: 20-30° bevel on cavosurface margins. Contact points clear (proximal only). Rounded internal line angles. 	<ul style="list-style-type: none"> Occlusal and/or proximal cavities. Failed direct restoration replacement.
Onlay	An indirect intra and extra-coronal restoration that incorporates cusps and provides cuspal coverage.	<ul style="list-style-type: none"> Isthmus – follow the restoration pattern. Flat pulpal floor. 4-6 degree tapered walls. No undercuts. Butt-joint (90°) cavosurface margins. Contact points clear (proximal only). Rounded internal line angles. Axial shoulder or chamfer 1mm reduction. Ceramic: <ul style="list-style-type: none"> Functional cusp: 2mm reduction. Non-functional cusp: 1.5mm reduction. Gold type III: <ul style="list-style-type: none"> Functional cusp: 1mm reduction. Non-functional cusp: 0.5mm reduction. 	<ul style="list-style-type: none"> Cusp fracture. Toothwear. Caries weakening the tooth structure. Pre-existing failed restoration with a large isthmus. Restoration of Root canal treated teeth.
Crown	An indirect restoration that fully covers the coronal aspect of a tooth.	<ul style="list-style-type: none"> Flat pulpal floor. 4-6 degree tapered walls. No undercuts. Rounded line angles. Ceramic: <ul style="list-style-type: none"> Functional cusp: 2mm reduction. Non-functional cusp: 1.5mm reduction. Gold type III: <ul style="list-style-type: none"> Functional cusp: 1mm reduction. Non-functional cusp: 0.5mm reduction. Axial reduction: <ul style="list-style-type: none"> PFM: <ul style="list-style-type: none"> Buccal: 1.5mm shoulder. Metal palatal/lingual: 1mm chamfer. Porcelain palatal/lingual: 1.5mm shoulder. All ceramic: 1mm rounded chamfer. Metal: 0.5-1mm chamfer. 	<ul style="list-style-type: none"> Cusp fracture. Toothwear. Caries weakening the tooth structure. Pre-existing failed restoration with a large isthmus. Restoration of root canal treated teeth. High aesthetic demand Onlay not possible

Please note, onlays are now more routinely carried out due to their more conservative nature. Crowns are indicated when replacing old crowns, there is a high aesthetic demand or when onlays are not possible.