HOW TO ACHIEVE
OPTIMAL OUTCOMES

Successful results depend on a number of important factors:

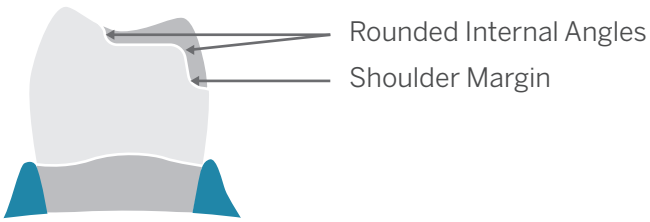
- Your confidence and expertise in using your scanner and all its features.
- The quality of your preparation.
- Effective tissue retraction and isolation
- Communication of all requirements of your case with your laboratory

Successful preparations

Intraoral scanners will accurately record all details of your preparations, warts and all! Many clinicians find that a scanner highlights both the good and the bad aspects of their preparations in colour on a larger screen. It can be challenging at first but there's plenty of evidence to suggest a scanner results in you achieving smoother, better preparations as you start to notice any problem areas and correct them before submitting your scan to your lab.

A successful preparation preserves the biological health of the dentition, respects the properties and characteristics of the dental material, ensures aesthetic results and facilitates optimal function. To achieve these objectives, you need to ensure:

ROUNDED INTERNAL ANGLES



Any sharp preparation areas will be distorted when scanned. The preparation should be smoothed and then rescanned.

Do not set margins deeper than necessary as you must avoid impinging on the biologic width of the tooth. Deep margins are also more difficult to successfully scan.

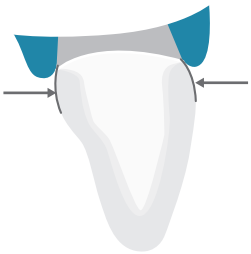
Do not create very fine feather edge margins as these are difficult to scan and interpret. Milled materials such as zirconia can be fabricated in fine sections but can chip during fabrication and/or insertion.

We recommend a heavy chamfer or rounded shoulder for your preparations.

Check occlusal clearance and err on the side of more rather than less reduction to ensure adequate bulk of material.

Where polished metallic surfaces exist in the scan area e.g. polished gold or amalgam, these may create reflections that hinder effective scanning. Consider keeping a pressurised can of scan powder to coat these areas prior to scanning.

EMERGENCE PROFILE



A digital scan should capture the entire restorative margin as well as about 0.5mm of the tooth/root surface apical to the margin for fabrication of the correct emergence profile. This profile needs to be smooth to create a restoration/tooth junction that is biologically sound and not prone to plaque accumulation. Effective retraction will facilitate this (see below).

Retraction & Isolation

DUAL CORD TECHNIQUE

The use of two cords, with one left in situ in the sulcus throughout scanning, is recommended. After preparation, a thin cord is placed, ensuring that the cord is of sufficient size to be visible in the sulcus around the full periphery of the tooth. An intial scan is performed and any rough, J-shaped or irregular areas are then refined with finishing or end-cutting burs. A second cord is then placed and left in situ for a few minutes before being removed. A new scan just of the prepared tooth/teeth is then performed. If the full margin is not visible to the eye upon removal of this cord, your scanner will not be able to capture the margin. Consider using a thicker cord or small amounts of a third cord to augment retraction. Digital impressioning can only capture visible data.

Alternatively, use Expasyl or a similar syringeable retraction agent and thoroughly rinse it away before performing your scan.

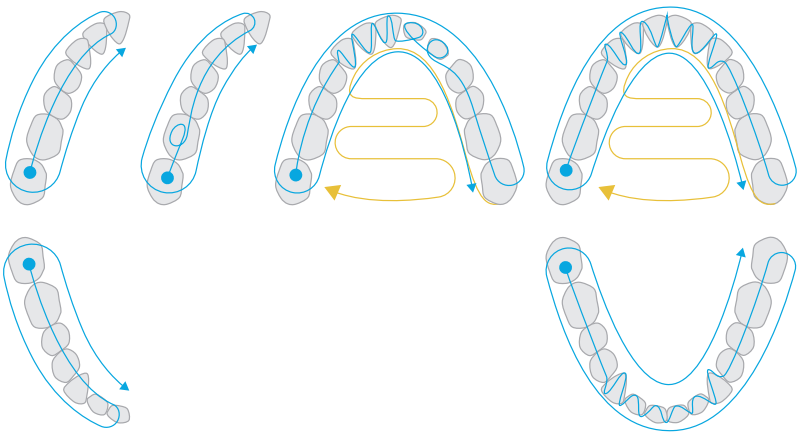
VISIBLE, DRY TEETH AND MARGINS

Keeping margins equigingival or supragingival where practicable ensures easier scanning and may even negate the need for retraction.

For any scan including those for removable appliances, teeth need to be dry and kept that way throughout the scan. Blood and saliva will be detected in scans and obscure desired detail. Use retractors, cotton rolls, Dry Tips® and suction to provide excellent access and dryness throughout the scan.

Recommended Scanning Strategies

Most scanners recommend you commence your scan on the occlusal aspect of a molar (or the most posterior tooth in the area of your scan) then work the scanner anteriorly.



Tips & Tricks

RETRACTION OF SOFT TISSUES

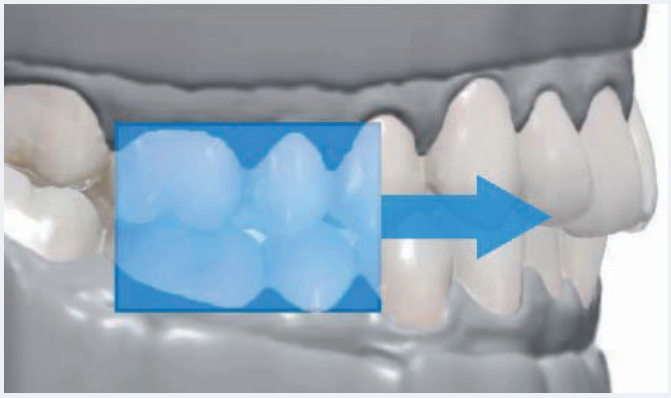
This allows easy access. Dental mirrors, retractors and suction are used for retracting the lips, tongue and cheek. In combination with other auxiliary items such as sublingual cotton rolls, isolation of the treatment field is optimised which results in more efficient and simplified scanning. You want to avoid unnecessary soft tissue details in your scan as these will otherwise need to be digitally trimmed upon scan completion.

TURN OFF OPERATORY LIGHT

Do not use the central lamp or your headlamp during scanning as these may affect the scanning results. All scanners generate their own light source.

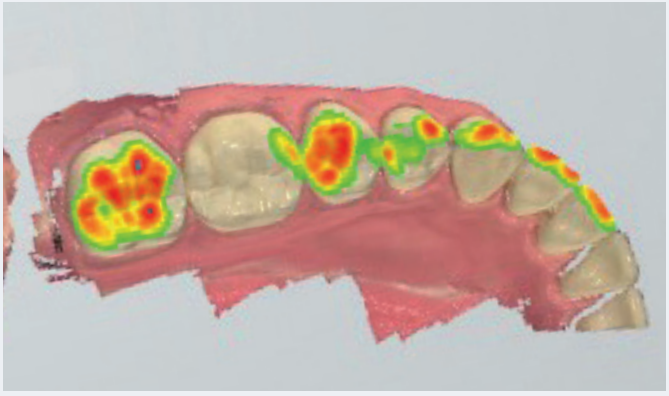
REGULAR PRACTICE

Practise your scanning technique, ensuring you move the scanner at a steady pace and a consistent distance from the teeth. Develop a scanning strategy that will optimise your scanning results.



OCCLUSAL CLEARANCE TOOLS

During the scanning process there is the ability to check the occlusal clearance to ensure that adequate room is provided to the laboratory for the final prothesis.



Tips & Tricks (continued)

INTRAORAL PHOTOGRAPHY

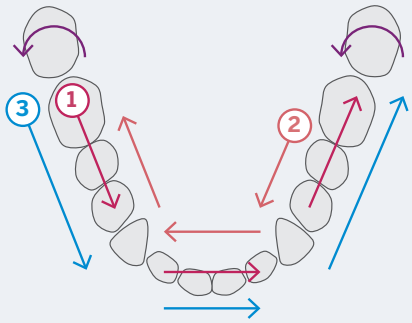
It is still very important to attach images outlining specific aesthetic requirements to your intraoral scanning files when you submit your case. Details such as crown contours, desired contact areas and embrasures, diastemas, and mock ups need to all be submitted to guide the technician in achieving the desired outcome.

For the laboratory to achieve the correct shade, images of the unprepared and prepared tooth are a must, as well as that of the nearby teeth. It is advisable to include two or more shade tabs within each image, ensuring details of the tabs are clearly visible. Keep tabs level with incisal edges/buccal cusp tips so that they are in the same plane as the adjacent teeth.

SCANNING AREA

When scanning the patient's respective preparation site, the following is advised:

Posterior: 1 to 3 units	Full quadrant scan, central to last molar (Full arch scan preferred)
Posterior: 4+ units	Full arch scan
Anterior: 1 to 3 units	Ensure minimum 6 teeth are in scans (Full arch scan preferred)
Anterior: 4+ units	Full arch scan



NOTE – Ensure correct occlusal registration has been achieved with all scans before sending

LAB FORMS/ADDITIONAL NOTES

Please ensure that all digital lab forms have all fields correctly completed. Tooth numbers, type of material, type of restoration and margin requirements must all be included. Some software lacks a full list of available materials so please specify your requirements such as "Ultra Translucent" when requesting zirconia (if that is what you require).

CALIBRATE REGULARLY

The accuracy of your scanner and its shade detection software (if fitted) depend upon careful and regular calibration. Follow your scanner's manual and ensure you calibrate your device frequently to ensure optimal results.