CLINICAL GUIDE · DIGITAL DENTAL PREP AND SCAN WORKFLOW

Digital Dental Prep and Scan Workflow

From crown preparation to a great digital impression

Prepared by **Eric True** and **Dr. Stephen True**

THE PRINCIPLE

Design and engineering win out over chemistry. A well-designed preparation will outlast a poorly designed one that depends on adhesion from cement.

PHASE 1 — Design the prep — Steps 1–4
PHASE 2 — Adjust contacts — Step 5
PHASE 3 — Retract and clean — Steps 6–8
PHASE 4 — Scan and bite — Steps 9–10
PHASE 5 — Check and send — Steps 11–12

PHASE 1 Design the preparation

Start with a well-designed prep

1 Shape the walls nearly parallel

The goal is nearly parallel walls. Be careful of undercuts!

- Taper the walls between 4° and 8°.



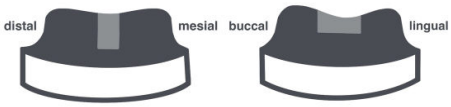
Left: the goal. Marked with an X: avoid (arrows show undercuts).

CHECK
✓ Walls tapered 4°–8°, with no undercuts

2 Add retention when needed

Well-placed grooves and box forms increase retention, especially on short preps.

- Aim for a coronal length of at least 4.0 mm.
- On a short prep, add grooves or box forms.



Short prep shown in mesial-distal and buccal-lingual views.

CHECK
✓ Short preps have grooves or box forms

3 Reduce uniformly

Proper reduction maintains adequate thickness; uniform thickness helps the integrity and strength of the restoration.

- Occlusal reduction: at least 1.5 mm in the contact area.
- Shoulder prep: at least 1.0 mm proximal reduction.
- Taper the occlusal surface. A flat surface requires a thin restoration in the primary grooves.



Left: the goal. Marked with an X: avoid.

CHECK
✓ Uniform reduction; occlusal tapered, not flat

4 Round every edge

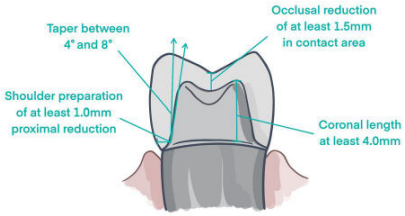
Round edges are necessary for a successful restoration. Sharp edges on the prep create design challenges and compromise material strength.



Left: rounded edges. Marked with an X: sharp edges to avoid.

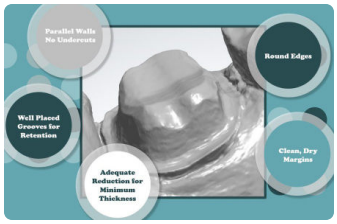
CHECK
✓ All edges rounded, none sharp

PREP CHECK · CONVENTIONAL CEMENTATION



- Taper between 4° and 8°
- Occlusal reduction of at least 1.5 mm in the contact area
- Shoulder prep of at least 1.0 mm proximal reduction
- Coronal length of at least 4.0 mm

PREP CHECK · EXAMPLE OF AN IDEAL PREP



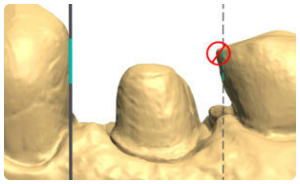
- Parallel walls, no undercuts
- Well-placed grooves for retention
- Adequate reduction for minimum thickness
- Round edges
- Clean, dry margins

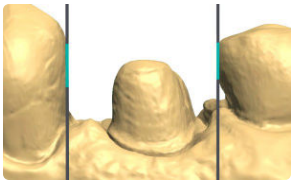
PHASE 2 Adjust the adjacent contacts

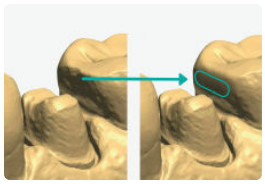
Before tissue management

5 Evaluate and adjust the adjacent contacts

- Make contacts parallel with the prep and with each other, for draw and breadth.
- Make contacts broad, for ideal restorations.


Contact not parallel with the prep


Parallel with the prep and each other


Adjusted to a broad contact

CHECK
✓ Contacts parallel with the prep and each other, and broad

PHASE 3 Retract, clean and dry

Get the margin ready for the scanner

THE KEY IDEA

Remember that tissue and tooth structure look the same to a scanner. A great scan starts before the scanner ever reaches the tooth.

6 Manage the tissue: double pack the cord

- Double pack the cord, then remove the top cord just before scanning.


Left: margin clear of tissue. Marked with an X: avoid.

CHECK
✓ Margin is clear of tissue all the way around

Eric True | **951-430-9888** | **truefitlab@gmail.com** | truefitdentalios.com

7 Make the prep CDC and clean the margins

- Clean the margins with a micro brush.

C	D	C
Clean	**Dry, dry, dry!**	**Clean**
no debris	no moisture	margins

8 Beware of double margins

Double-check the margin before scanning. A double margin confuses the margin line on the scan.

CHECK
✓ One clean, continuous margin; no double margins



Double margin: avoid.

PHASE 4 Scan the prep, bite and opposing arch

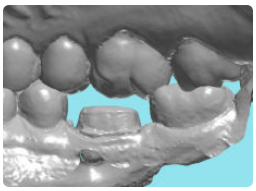
9 Scan with the recommended pattern

Use your scanner manufacturer's recommended scan pattern for the most accurate scan and best results. For practices with a scanner placed by True-Fit Dental IOS, Eric walks the team through the scan workflow during in-office training.

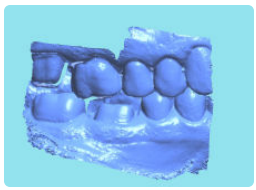
10 Capture the opposing arch and the bite

- Capture the contact and occlusal surfaces that will touch the restoration.
- Scan the opposing arch, then take a full bite scan, finishing the scan pattern rather than stopping early.
- If the patient's bite is unusual, take a photo for the lab.

CHECK
✓ Bite verified after the case renders



Opposing arch

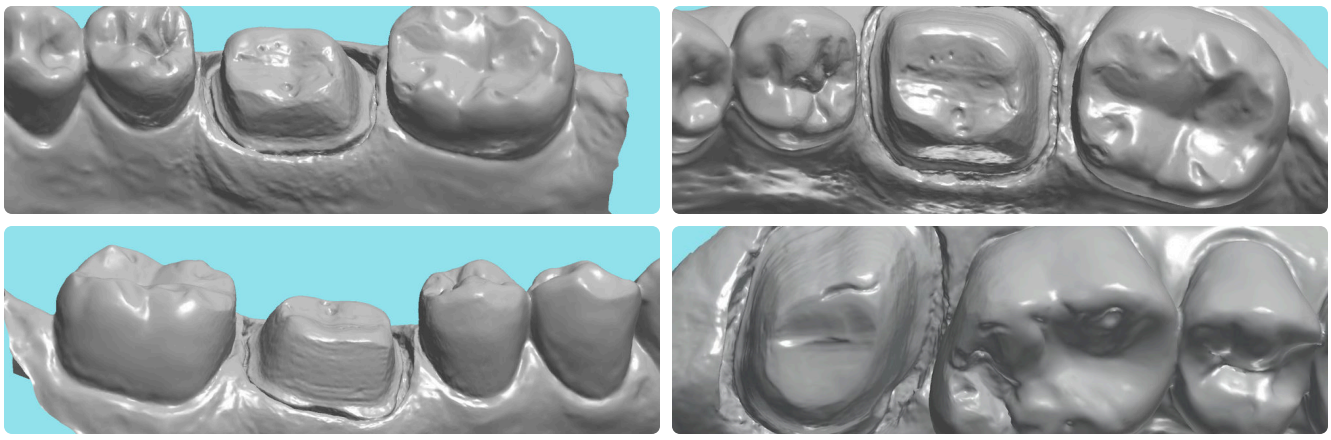


Full bite scan

PHASE 5 Check the scan and send it to the lab

11 Evaluate the scan for margin clarity

Before you send the case, look closely at the scan and confirm the margins are clearly captured, the contacts are complete, and the bite is correct.

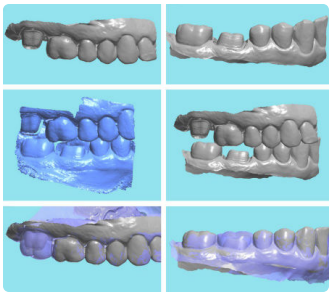


Example scans reviewed for margin clarity.

12 Send the case to the lab

- Send good upper, lower and bite scans, plus a preop or provisional scan if needed.
- Complete the Rx, with any notes on scheduling, design or due date.
- Not sure about a margin or the bite? Call Eric before you send.

CHECK
✓ Upper, lower and bite scans attached; Rx complete



Upper, lower and bite scans

Chairside checklist

Run it top to bottom before you send

PREP DESIGN

- [ ] Walls nearly parallel, tapered 4°–8°, no undercuts
- [ ] Grooves or box forms on short preps
- [ ] Uniform reduction; occlusal surface tapered, not flat
- [ ] All edges rounded, none sharp

CONTACTS AND TISSUE

- [ ] Contacts parallel and broad
- [ ] Cord double packed; top cord removed
- [ ] Prep is CDC: clean, dry, clean margins
- [ ] No double margins

SCAN AND SEND

- [ ] Recommended scan pattern used
- [ ] Opposing arch and full bite captured
- [ ] Scan reviewed for margin clarity
- [ ] Upper, lower and bite scans sent with the Rx

REMEMBER

Design and engineering win out over chemistry. A well-designed preparation will outlast a poorly designed one that depends on adhesion from cement.

Questions about a prep or a case?

Eric is glad to talk it through. Call **951-430-9888** or email **truefitlab@gmail.com**.

General guidance from Eric True's laboratory experience and Dr. Stephen True's clinical experience. It does not replace your clinical judgment or the instructions of your scanner and materials manufacturers. Illustrations from the authors' original materials.