

# DIGITAL DENTURE WORKFLOWS

Bite Rim - Immediate - Copy - Reference

KEY DENTAL  
  
AESTHETICS

# DIGITAL DENTURE - BITE RIM

## NEW DENTURE FOR EDENTULOUS PATIENT WITH NO EXISTING DENTURE(S)

A mix of analog and digital workflows that reduces the number of appointments to four.

Final impression and bite records are taken at the same appointment and can be scanned with IO scanner.

### 1<sup>ST</sup> APPOINTMENT

- ❖ Evaluate patient.
- ❖ Capture preliminary impression using preferred impression material.  
Alginate is okay, but office should pour up impressions.
- ❖ Alternative to traditional impression: scan the edentulous arches intraorally.  
Goal is to capture at least 70-80% of the tissue, palatal, peripheral, and muscle connection data.
- ❖ Send impressions, models, or scans to Key Dental Aesthetics.  
Request digital baseplate with bite rims.

### 2<sup>ND</sup> APPOINTMENT – FINAL BITE & IMPRESSION REGISTRATION

- ❖ Seat and confirm fit of baseplates, noting tissue stops and ensuring no interferences.
- ❖ Make any necessary adjustments.
- ❖ Take final impression.

### BITE REGISTRATION

- ❖ Adjust rim to patient's plane of occlusion, Camper's Plane, and incisal edge.
- ❖ Mark rim with midline, relaxed lip line, high smile line, and cuspid positions.
- ❖ Determine patient's VDO and adjust rims accordingly.
- ❖ Capture occlusion with bite registration material (Regisil).

### FINAL IMPRESSION

- ❖ Apply impression adhesive along borders of baseplate.
- ❖ Place a bead of heavy body PVS (Aquasil Heavy Fast Set) along borders and posterior seal.
- ❖ Insert and hold with light pressure while having patient go through border molding movements (Ooo, Eee, Ahh, tongue out-left-right, swallow 2x).
- ❖ Remove when set.
- ❖ Apply impression adhesive on intaglio surfaces and on heavy body border impression.
- ❖ Place light body PVS (Aquasil Light Fast Set) along borders and across intaglio surfaces.
- ❖ Insert and repeat border molding movements.
- ❖ Remove when set and evaluate impression, ensuring clear capture of soft tissue anatomy, borders, and muscle connections. It's okay if there are small show-throughs of underlying baseplate – this ensures impression material is not too thick.

### DIGITAL PHOTOS (OPTIONAL)

- ❖ Using cell phone or clinical camera, take 2 photographs of patient's smile.  
Ratio of photo should be forehead to chin, ear to ear.  
First photo: high smile line (biggest smile).  
Second photo: relaxed lips/smile.  
Take these photos with finalized baseplates in place.

### CONTINUE STEPS ON NEXT PAGE

# BITE RIM DENTURE CONTINUED

## NEW DENTURE FOR EDENTULOUS PATIENT WITH NO EXISTING DENTURE(S)

### SCANNING

- ❖ Set up scanner for denture or full arch scan/STL export.
- ❖ Capture borders, intaglio, and buccal surfaces only.
- ❖ No need to scan the occlusal or palatal surfaces!
- ❖ Repeat with opposing impression if applicable, otherwise scan opposing dentition.
- ❖ Capture occlusal registration by scanning full arch of buccal surfaces of baseplates while holding, or re-insert and scan bite with patient holding in occlusal registration.
- ❖ No intraoral scanner? Send to Key Dental Aesthetics for scanning.

### 3<sup>RD</sup> APPOINTMENT – PRINTED PROTOTYPE - IN-OFFICE, SAME DAY ADJUSTMENTS OPTION

- ❖ Seat and confirm fit. Make any necessary intaglio adjustments.
- ❖ Record intaglio adjustments with new impression wash.
- ❖ Reseat dentures. Identify and perform any necessary occlusal adjustments.
- ❖ Confirm tooth positioning – midline, incisal edge, buccal corridor, etc.
- ❖ Record occlusal adjustments with new bite registration.
- ❖ Changes can be made by adjusting with acrylic burs, marking with Sharpie, etc.
- ❖ Re-scan modified prototype using same techniques as original reference denture scan.
- ❖ Connect to scanner portal and send scans to Key Dental Aesthetics with any prescription notes (specific instructions for all changes) for re-design and final digital appliance fabrication.

### 4<sup>TH</sup> APPOINTMENT – FINAL DELIVERY

### OPTIONAL – PRINTED PROTOTYPE – TAKE HOME-TEST DRIVE

- ❖ Explain to patient that this is their “take home, test-drive” denture that will give us better information for the final restoration.
- ❖ Seat and confirm fit. Make any necessary intaglio adjustments.
- ❖ Identify and perform any necessary occlusal adjustments.
- ❖ Since denture was designed based on patient’s existing appliance with impression wash, the tooth position, occlusal plane, and fit should be very close and should be a brief delivery.
- ❖ Ask patient to wear printed try-in for 1-3 days, eating and speaking as normal and schedule for follow up.

# DIGITAL DENTURE - IMMEDIATE

## NEW DENTURE FOR PATIENT THAT HAS REMAINING TEETH

With intraoral scanning technology, taking traditional impression records can be a thing of the past.

With simple scans of upper, lower, and bite, Key Dental Aesthetics, virtually extracts teeth for a more accurate immediate denture tooth arrangement.

### 1<sup>ST</sup> APPOINTMENT

- ❖ Evaluate patient.
- ❖ Capture preliminary impression and bite registration using intraoral scanner.
- ❖ If patient has limited teeth, use small blocks of wax or putty to position and hold in centric occlusion.
- ❖ Send upper, lower, and bite scans to Key Dental Aesthetics.
- Request digital immediate denture.

### DIGITAL PHOTOS (OPTIONAL)

- ❖ Using cell phone or clinical camera, take 2 photographs of patient's smile.  
Ratio of photo should be forehead to chin, ear to ear.  
First photo: high smile line (biggest smile).  
Second photo: relaxed lips/smile.  
Take these photos in existing centric occlusion.

### SEND TO KEY DENTAL AESTHETICS

- ❖ Connect to scanner portal and send upper, lower, and bite scans to Key Dental Aesthetics  
with any prescription notes (shade, specific instructions for tooth shape, position, etc) for design and digital immediate denture fabrication.

### 2<sup>ND</sup> APPOINTMENT – PRINTED IMMEDIATE DENTURE DELIVERY

- ❖ Extract teeth and manage tissue.
- ❖ Seat and confirm fit of immediate dentures. Make any necessary intaglio adjustments.
- ❖ Line denture with soft liner or tissue conditioner.  
(GC Extra-Extra Soft or Tokuyama Extra Soft)
- ❖ Reseat dentures. Identify and perform any necessary occlusal adjustments.
- ❖ Schedule for appropriate follow up.

### IMMEDIATE DENTURE EVALUATION AFTER HEALING (~ 8-10 WEEKS)

- ❖ Re-evaluate fit, tooth position, and occlusion.
- ❖ Needed changes can be made by adjusting with acrylic burs, marking with Sharpie, etc.
- ❖ Any occlusal modifications should be captured with a new bite registration.
- ❖ Healed tissue data should be captured with Reference denture wash techniques.
- ❖ Rescan modified immediate using same techniques as Reference denture scan.
- ❖ Connect to scanner portal and send scans to Key Dental Aesthetics with any prescription notes (specific instructions for all changes) for re-design and final digital appliance fabrication.

### 3<sup>RD</sup> APPOINTMENT – FINAL DELIVERY

# DIGITAL DENTURE - COPY

## PATIENT REQUESTS BACKUP DENTURE OR EXACT REPLICATION OF EXISTING

When the patient says that they want their new denture to be exactly like their current appliance, the Copy Denture workflow is the ticket.

Utilizing a 360 scan of the existing denture (including a wash impression if fit isn't ideal), the Key Dental Aesthetics software virtually separates the teeth from denture base and creates STL files for printing or milling.

### 1<sup>ST</sup> APPOINTMENT

- ❖ Evaluate patient tissue and denture fit.
- ❖ If copy denture with updated intaglio is desired, perform wash impression.
- ❖ Capture denture surfaces and impression wash using intraoral scanner.
- ❖ Send scan to Key Dental Aesthetics, no opposing or bite scan needed.

Request digital copy denture.

### IMPRESSIONS

- ❖ Apply impression adhesive along borders.
- ❖ Place a bead of heavy body PVS (Aquasil Heavy Fast Set) along borders and posterior seal
- ❖ Insert and hold with light pressure while having patient go through border molding movements (Ooo, Eee, Ahh, tongue out-left-right, swallow 2x).
- ❖ Remove when set.
- ❖ Apply impression adhesive on intaglio surfaces and on set heavy body border impression.
- ❖ Place light body PVS (Aquasil Light Fast Set) along borders and across intaglio.
- ❖ Insert and repeat border molding movements.
- ❖ Remove when set and evaluate impression ensuring clear capture of soft tissue anatomy, borders, and muscle connections.  
It's okay if there are small show-throughs of underlying acrylic – this insures impression is not too thick.
- ❖ Trim excess impression material from buccal surfaces.

### SCANNING

- ❖ Set up scanner for denture or full arch scan/STL export.
- ❖ Capture borders, intaglio, buccal, occlusal, and palatal surfaces. (360 scan)
- ❖ Use scan spray or a few small drops of wax to aid scanner in capturing smooth areas.
- ❖ Trim any excess material from buccal surfaces to insure accurate capture.
- ❖ Remove impression material and clean dentures with 99% IPA to remove adhesive.  
Patients are dismissed with their existing dentures intact.
- ❖ No intraoral scanner? Send to Key Dental Aesthetics for scanning.

### DIGITAL PHOTOS (OPTIONAL)

- ❖ Using cell phone or clinical camera, take 2 photographs of patient's smile.  
Ratio of photo should be forehead to chin, ear to ear.  
First photo: high smile line (biggest smile).  
Second photo: relaxed lips/smile.  
Take these photos with existing denture in centric occlusion.

### SEND TO KEY DENTAL AESTHETICS

- ❖ Connect to scanner portal and send upper, lower, and bite scans to Key Dental Aesthetics with any prescription notes (shade, specific instructions for tooth shape, position, etc) for design and digital copy denture fabrication.

### 2<sup>ND</sup> APPOINTMENT – FINAL DELIVERY

# DIGITAL DENTURE - REFERENCE

## NEW DENTURE FOR PATIENT THAT HAS EXISTING DENTURE(S)

This is the simplest for the clinical team and the most comfortable for the patient. The existing dentures are utilized to obtain the initial impressions and bite registration, giving the dentist a more visible guideline for accurate records. It also provides the best data for Key Dental Aesthetics to achieve a setup that closely matches the patient's existing occlusal plane, therefore greatly improving the try in process.

### 1<sup>ST</sup> APPOINTMENT

- ❖ Evaluate existing dentures – restore any missing areas with compound.
- ❖ Place a dot on patient's chin and nose and measure distance with mm rule or caliper.
- ❖ Determine if the bite should be opened to create vertical space.
- ❖ Discuss tooth color, shape, and position with the patient.

Do they like the size, shape, and color of teeth? Record responses on Rx.

### IMPRESSIONS

- ❖ Apply impression adhesive along borders.
- ❖ Place a bead of heavy body PVS (Aquasil Heavy Fast Set) along borders and posterior seal.
- ❖ Insert and hold with light pressure while having patient go through border molding movements (Ooo, Eee, Ahh, tongue out-left-right, swallow 2x).
- ❖ Remove when set.
- ❖ Apply impression adhesive on intaglio surfaces and on set heavy body border impression.
- ❖ Place light body PVS (Aquasil Light Fast Set) along borders and across intaglio.
- ❖ Insert and repeat border molding movements.
- ❖ Have patient occlude into opposing and confirm vertical by checking the measurement between the dots on chin and nose to insure occlusion is not being opened by excessive impression material.
- ❖ Remove when set and evaluate impression ensuring clear capture of soft tissue anatomy, borders, and muscle connections. It's okay if there are small show-throughs of underlying acrylic – this insures impression is not too thick.
- ❖ Trim excess impression material from buccal surfaces.
- ❖ Repeat on opposing, or capture opposing with traditional impressions or scanning.

### BITE REGISTRATION

- ❖ Determine patient's VDO using preferred clinical method and patient feedback.
- ❖ Capture occlusion with bite registration material (Regisil).
- ❖ If it is determined to open vertical no more than 3-4mm, take bite in centric and inform Key Dental Aesthetics to open bite the desired amount during their digital design.

### DIGITAL PHOTOS (OPTIONAL)

- ❖ Using cell phone or clinical camera, take 2 photographs of patient's smile. Ratio of photo should be forehead to chin, ear to ear.  
First photo: High smile line (biggest smile).  
Second photo: Relaxed lips/smile.  
Take these photos with existing dentures in place.

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# REFERENCE DENTURE CONTINUED

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### SCANNING

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- ❖ No need to scan the occlusal or palatal surfaces!
- ❖ Repeat with opposing denture impression if applicable, otherwise scan opposing dentition.
- ❖ Trim any excess bite registration material from buccal surfaces to insure accurate capture and alignment.
- ❖ Capture occlusal registration by scanning full arch of buccal surfaces of denture while holding, or re-insert and scan bite with patient holding in occlusal registration.
- ❖ Remove impression material and clean dentures with 99% IPA to remove adhesive.  
Patients are dismissed with their existing dentures intact.
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### SEND TO KEY DENTAL AESTHETICS

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### 2<sup>ND</sup> APPOINTMENT – PRINTED PROTOTYPE - IN-OFFICE, SAME DAY ADJUSTMENTS OPTION

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## AESTHETICS