

THE UNIVERSITY OF CONNECTICUT
SCHOOL OF DENTAL MEDICINE

DEPARTMENT OF RECONSTRUCTIVE SCIENCES

COMPLETE DENTURE PROSTHODONTICS
STUDENT'S GUIDE TO COMPLETE DENTURES
Digital denture fabrication workflow

Introduction:

Since its advent, CAD/CAM technologies (computer aided design and computer aided manufacturing) have been utilized for fixed prosthodontic restorations; however, advances in software and equipment have also allowed removable appliances to be fabricated using digital technologies. Various workflows for fabricating digital dentures have been proposed. All the principles that apply to conventional denture fabrication apply to digital denture fabrication, apart from the processing of the trial and final denture that have been discussed already in lectures and the manual.

The guide below will describe the clinical and laboratory steps utilized at UCONN School of Dental Medicine Predoctoral Clinic.

First Visit: Exam, Treatment Plan, Final Alginate Impressions

Student provides: Bowl, spatula

Clinic provides: 01 cassette, alginate, green stock trays (adhesive), metal edentulous trays (no adhesive), Dr. Thompson marking sticks

Procedures to be completed:

- Review patient's medical history
- Review patient's dental history and perform intraoral and extraoral exam. When complete, review with Prosthodontic faculty and finalize treatment plan.
- Bring patient to financial office (self-pay patients should pay half down at this time).
- Make alginate impressions
- **Axium**: Enter denture codes, complete final impression codes and enter tx note.

First Laboratory Procedure: Fabrication of master casts by student, scanning of master casts by lab technician and fabrication of record bases and wax rims by student

Procedures to be completed:

- Pour casts in vacuum mixed yellow stone. **MAKE SURE MANDIBULAR CAST IS NOT HORSESHOE SHAPED!!!!**

- Trim casts and mark border extensions, reference lines (retromolar pad, incisive papilla, canine lines etc) and post dam (PPS) in red pencil
- PRECEPTOR CHECK
- Carve post dam
- PRECEPTOR CHECK
- **Create axiUm prescription for lab:**

Form Question	Answer	Date
School of Dental Medicine		
Dental Laboratory		
REMOVABLE PROSTHODONTICS		
Date:	12/16/2019	12/16/2019
Provider Name and Provider #:	S. Student DS01	12/16/2019
Patient Gender	Female	12/16/2019
Instructor's Name:	Dr. Doctor	12/16/2019
Date Wanted:	01/06/2020	12/16/2019
AM/PM		12/16/2019
	Planned restoration: Maxillary and Mandibular Complete Dentures Please scan maxillary and mandibular master casts and return for fabrication of record bases and wax rims. Thank you!	
Instructions for Lab Technician		
Click here to add instructions:		
Click here to provide additional drawn information:		

- PRECEPTOR'S AXIUM APPROVAL, PRINT AND SUBMIT TO LAB with master casts
- Pick up once lab technician lets you know that scanning is complete.
- Fabricate record bases in Triad and wax rims
- HAVE PRECEPTOR CHECK RIMS AND CASTS AT LEAST ONE DAY BEFORE THE PATIENT IS TO BE SEEN

Second Visit: Jaw Relationship Records

Student provides: Record bases with rims, slow speed straight handpiece

Clinic provides: 01 cassette, RDK (removable denture kit), PIP, Dr. Thompson marking stick, acrylic burs, baseplate wax, aluwax, Hanau and Lenk torches, Mould and Shade guides, water baths

Procedures to be completed:

- Adjust maxillary record base to patient's comfort (use PIP or disclosing wax if needed). EVALUATE IF CHANGES IN THE EXTENSION OF RECORD BASE ARE RECCOMENDED WITH YOUR PRECEPTOR AND MAKE SPECIFIC NOTE OF NECESSARY CHANGES.
- **PRECEPTOR CHECK**
- Adjust lip support, incisal edge position, occlusal plane orientation and buccal corridor of upper rim
- **PRECEPTOR CHECK**
- Mark midline, canine lines and high smile line.
- Select shade and mould of teeth (an alginate of existing dentures is helpful)
- **PRECEPTOR CHECK**
- Adjust mandibular record base, following same process as with the maxillary.
- **PRECEPTOR CHECK**
- Determine vertical dimension
- **PRECEPTOR CHECK**
- Centric relation record with Aluwax
- **PRECEPTOR CHECK**
- **Create lab prescription to request printed monochromatic trial denture from the lab (with the tooth mould you determined appropriate for the patient):**

Form Question	Answer	Date
Instructions for Lab Technician		
Click here to add instructions:	Please scan master casts with wax rims and JRR and design maxillary and mandibular dentures utilizing tooth mould below. Please proceed with printing monochromatic trial dentures for try in. Thank you!	02/13/2021
Click here to provide additional drawn information:		
Select the Applicable Brand		
Brand:	Ivoclar - BlueLine	02/13/2021
Anteriors:		
Shade:	A2	02/13/2021
Mould:	P12	02/13/2021
Posteriors:		
Shade:	A2	02/13/2021
Mould:	LU5	02/13/2021

- **PRECEPTOR CHECK AND APPROVAL, PRINT AND TURN IN TO LAB WITH MASTER CASTS+JRR.**

Second Laboratory Procedure: Scanning of JRR on master casts, design and fabrication of printed white colored trial dentures

Procedures to be completed: Lab technician will complete the scanning of JRR on master casts, design of prostheses and printing of trial monochromatic dentures.

Third Visit: Esthetic Try-in

Student provides: Monochromatic trial dentures, slow speed straight handpiece

Clinic provides: 01 cassette, RDK (removable denture kit), PIP, acrylic burs, aluwax, Hanau and Lenk torches, water baths

Procedures to be completed:

- Adjust trial dentures until patient reports no discomfort.
- **PRECEPTOR CHECK**
- Evaluate esthetics of dentures
- **PRECEPTOR CHECK**
- Verify vertical dimension
- **PRECEPTOR CHECK**
- Verify centric relation record
- **PRECEPTOR CHECK**
- **Patient to sign Axium Trial Denture consent form**

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HEALTH**

**APPROVAL OF TRIAL DENTURE
AND
CONSENT TO PROCEED WITH FABRICATION OF FINAL DENTURE**

- I have been given the opportunity to view and wear my trial denture(s) while at my appointment.
- I have been given the opportunity to inform the doctor about the changes I desire.
- I approve the shape and position of the denture teeth.
- I approve the way the denture looks and feels in my mouth.
- I approve the way my lips and face appear with the trial denture in my mouth.
- I understand that it may take time for my speech to adapt to the new denture(s).
- I understand that once the final denture is manufactured in the laboratory, the positions of the prosthetic teeth and overall appearance cannot be changed without additional appointments and laboratory time.
- I understand that if I am not satisfied with the appearance of the denture after it has been processed, I will be responsible for any fees associated with necessary adjustments.
- I understand that the final denture will include acrylic/plastic pink artificial gums to replace the lost tissues and for dental and facial esthetics. The color of the prosthetic gums may not exactly match the color of my underlying gums.

<i>Treatment Date</i>	<i>Treatment</i>
01/21/2021	Complete denture - max.

By signing this consent form, I am hereby approving the trial denture and freely giving my consent to proceed with processing of my final denture.

- **Create axiUm Tx form (DENTRY) AND lab prescription to request final milled denture from the lab**

- **DENTRY form:** Fill in form as seen in the example in the image. If anything deemed unacceptable and lab tech needs to adjust (e.g., extend the base more etc.), please INDICATE CATEGORY and INCLUDE COMMENTS and IMAGES-images can be sent to Donna via email. If you request another try in, please specify clearly in the associated field.

Treatment EPR Forms (Esthetic Denture Try In) - Test, Aaaa (1758616) ×

DENTRY | 1092219 | 02/13/2021 | Last Appr: Touloumi DMD, Foteini | Approve + ✓ X ⌚

Denture Try In

Form Question	Answer	Date
Denture Try In		
Please ensure you have taken images if any changes are requested and email them to dmorin@uchc.edu		
NEXT APPOINTMENT:	Proceed to final processing	02/13/2021
Midline	No change	02/13/2021
Comments:		
Maxillary incisal length	No change	02/13/2021
Comments:		
Mandibular incisal length	No change	02/13/2021
Comments:		
Lip support (maxillary incisor labial position)	No change	02/13/2021
Comments:		
Occlusal plane	Posterior acceptable	02/13/2021
Comments:		
Vertical dimension of Occlusion (VDO)	No change	02/13/2021
Comments:		
Centric relation record	Acceptable	02/13/2021
Comments:		

- **Lab authorization form:** Fill in form as seen in images. If anything deemed unacceptable and lab tech needs to adjust (e.g., incisal edge position etc., please INCLUDE COMMENTS and ask lab tech to view specifically DENTRY form for details. If you request another try in with new trial denture, please adjust instructions accordingly.

Lab Order EPR Forms (Removable Prosthodontics) - Test, Aaaa (1758616) ×

RMPROS | 1092221 | 02/13/2021 | Last Appr: Touloumi DMD, Foteini | Approve + ✓ ⌚ 🖨️ 🏃 🏠

Removable Prosth | Modification | Pass/Fail | Scan Invoice

Form Question	Answer	Date
Date:	02/13/2021	02/13/2021
Provider Name and Provider #:	Papadopoulos	02/13/2021
Patient Gender	Male	02/13/2021
Instructor's Name:	Dr. Touloumi	02/13/2021
Date Wanted:	02/20/2021	02/13/2021
AM/PM	AM	02/13/2021
Instructions for Lab Technician		
Click here to add instructions:	Please proceed with fabrication of milled definitive complete maxillary and mandibular dentures. Thank you!	02/13/2021
Click here to provide additional drawn information:		

- **PRECEPTOR CHECK AND APPROVAL PRINT AND TURN IN TO LAB WITH TRIAL DENTURES.**

Third Laboratory Procedure: Fabrication of final milled complete dentures

Procedures to be completed by lab technician: design- after requested modifications, if any- to be sent to milling machine, milling completed and finishing of the denture OR if new try in is indicated, update design based on feedback on “esthetic try in denture form”, update design as needed and print new trial dentures.

Fourth visit: Delivery of Milled Final Denture

Student provides: Final milled dentures, slow speed straight handpiece

Clinic provides: 01 cassette, RDK (removable denture kit), PIP, acrylic burs, aluwax, Hanau and Lenk torches, water baths, articulating paper

Procedures to be completed:

- Adjust the fit of maxillary and mandibular denture bases with PIP
- **PRECEPTOR CHECK**
- Evaluate esthetics and phonetics
- Verify centric relation (with aluwax, if preceptor requests that)
- **PRECEPTOR CHECK**
- ALWAYS BE PREPARED TO DO A CLINICAL REMOUNT AND UNDERSTAND HOW OCCLUSAL ADJUSTMENTS ARE MADE for lingualized occlusion.
- Instruct patient on care and maintenance of dentures
- Schedule recall within 24 hours

Subsequent Recall Visits: 24 hours, 1 week, 1 month, 6 months, then yearly

Student provides: handpiece

Clinic provides: 01 cassette, PIP, acrylic burs

Procedures to be completed:

- Evaluate fit and comfort of denture
- Discuss with patient any difficulties encountered
- Make adjustments
- **PRECEPTOR CHECK before adjusting and after completed**