**Module 1 General Dentistry As A Specialty**

<table>
<thead>
<tr>
<th>Disclaimer</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Michigan Academy of General Dentistry and Dr. Christine Saad</td>
</tr>
<tr>
<td>• Golden Dental Solutions</td>
</tr>
<tr>
<td>• Dentsply Sirona Caulk and Prosthetics</td>
</tr>
<tr>
<td>• Care Credit</td>
</tr>
<tr>
<td>• Brassler</td>
</tr>
<tr>
<td>• Expertec</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Treatment Planning for Success.</td>
</tr>
<tr>
<td>• Allowing patients to remain engaged in their dentistry over their lifetimes.</td>
</tr>
<tr>
<td>• Advanced Planning for: Dentures, Mini-Implant Overdentures, Hybrids, Overdentures, Implant Bridges.</td>
</tr>
<tr>
<td>• Fixed prosthetics; based on patient budgets and expectations.</td>
</tr>
<tr>
<td>• Sequencing care for optimal outcomes.</td>
</tr>
<tr>
<td>• CBCT Planning for implant success.</td>
</tr>
<tr>
<td>• Surgical guides: Tissue borne and bone braced.</td>
</tr>
<tr>
<td>• Review of your challenging cases!</td>
</tr>
<tr>
<td>• Critical thinking and financial planning how to make a case work!</td>
</tr>
<tr>
<td>• How to &quot;compromise&quot; without &quot;compromising&quot; on their care.</td>
</tr>
<tr>
<td>• Dentistry in this economic climate-the key is to stay within their budget!</td>
</tr>
<tr>
<td>• Dialogues for successful treatment planning.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Dentistry as a Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>• General Dentistry: evaluation, diagnosis, prevention treatment of diseases, disorders, conditions of the oral cavity</td>
</tr>
<tr>
<td>• Provided by a dentist within the scope of his/her education, training and experience</td>
</tr>
<tr>
<td>• 1997 House of Delegates ADA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment Planning Axiom: Involve the Patient!</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Upgradeable Dentistry” is a concept that allows people the dignity to choose options that will improve their oral health in a sequential fashion; based on their emotional, financial, and personal readiness. Richard Winter D.D.S.</td>
</tr>
</tbody>
</table>
Upgradeable Dentistry

ORIGINAL DIAGNOSIS
Severe Gum Disease, Periodontal Disease, tooth loss, poor fitting dentures or partials

Conventional Dentures → Dentures and partials lead to bone loss. → Turbyfill Deluxe Dentures

UPGRADEABLE PATH BEGINS WITH PROPER FOUNDATION

Available Bone Quality and Quantity:
1. Deficient width: block graft from chin, ramus, hip.
2. Biologics like Infuse or Bone Morphogenic Proteins.
3. Ridge spreading and interpositional grafting—spreading bone to allow for implant placement

ADEQUATE BONE

Implants

DEFICIENT BONE/POOR FOUNDATION

Grow the bone via bone grafting

TREATMENT DECISIONS

Least Expensive:
Dentures (remade or relined every 3-5 years). Bone loss continues.

Moderate Price:
Removable mini-implants to support dentures

Removable: snap-on dentures or partials. Implant retained, but still sits on bone

Fixed Hybrids:
Screw or cement. Lower cost, but not removable retained dentures.

BEST OPTION: Fixed Teeth
Porcelain bridges, Zirconia bridges. Preserves bone, chewing forces similar to natural teeth, no need to remove at night

*Upgradeable Dentistry is a continuum that allows people to move from A to B to C or all the way to E as they desire and can afford. This decision is based upon a person’s desires, finances, health and cosmetic concerns. “Treatment Planning is a Dynamic Process, not a static event.” By Dr. Richard Winter
• An NIDR survey showed that 12 million people in the U.S. are edentulous in one arch. (7% of population)
• In 2002 total edentulism occurred in 7.7% of the adult population or 20 million people.
• While edentulism is decreasing, aging adults are increasing in number so people needing dentures will increase from 33.6 million adults in 1991 to 37.9 million in 2020.
• Edentulous arches projected to be 59.3 million this year! and 61 million in 2020.
• Adding partially edentulous ridges to the equation means 30% of the U.S. adult population are candidates for partials or dentures.
• 74 million people are potential candidates for implant dentistry.

Is this patient simply a new denture?
• The first option for most patients; removable dentures will result in bone loss, poor nutrition, stomach and digestive problems and should be thought of as a temporary restoration.

Dynamic Treatment Planning
• Today’s concepts:
  • “Begin with the end in mind”- Stephen Covey. Dentistry is a dynamic process not a static event.
  • How do you treatment plan a new patient?

Treatment Planning Edentulism
  I. Dentures: Standard or Turbyfill.
  II. Dentures: Mini-Implant Retained: Soft tissue supported denture.
  V. Dentures: RP-4 Fully Implant Supported: Fixed or Cementable Hybrids.

Consequences of Edentulism
• Decreased width and height of supporting bone.
• Prominent mylohyoid and internal obliques leading to increased denture sores.
• Decrease in keratinized mucosa.
• Prominent genial tubercles.
• Elevation of prostheses with contraction of mylohyoid and buccinator muscles
• Tongue hypertrophy from increased use with dentures
• Exposure of neurovascular bundles leading to pain, burning and sores with increased denture movement.
• Mandibular dentures have been reported to move up to ½ an inch during normal chewing patterns.
Evaluate Before Operate

- Before making a denture-listen and look.
- How many dentures have they had? Did they like any of them?
- Do they have a list of criterion and ask for an iron clad guarantee?
- Do they seem nice and realistic in their goals?
- Based on what you see-can you justify their concerns?

Past Performance Indicates Future Success

- Opposing tooth? Or insufficient clearance
- Mesh wire repairs are due to spreading. Force of non-existent posterior teeth.
- Loss of cusps led to acrylic failure spreading, midline fracture, superglue multiple repairs and eventual dental visit
- This patient learned the hard way repairs don’t last. Spreading forces from lack of bilateral occlusion will not only cost more but you will be without teeth when they break

What do you know about these patients?

- Frugal-will pay for repairs
- They weren’t educated about 3-5 year rule!
- This is an opportunity to STOP and educate them about their health...now and ...future.
- Band Aids are expensive= bone loss
- Vanity: Mrs. Jones, “Do you know when these will break again?”

Dialogues

- “I need a new set of dentures.”
- Gauge Satisfaction with previous sets.
- Discuss end point of treatment and 3-5 year rule.
- Give options to Upgrade now or in future.
- What are dentures?

Dentures as a Diagnostic Tool

- Ridge Type?
- Previous Satisfaction?
- Soft Liners?
- Success/Ivocap?
- Impression?
- Retention?
- Options?

Principles of Denture Design

- Functionally generated impressions
- Mucostatic impression technique
- Facebow transfer
- Stable baseplate and rims
- Tooth selection
- Vertical dimension and bite registration
- Dress rehearsal or set up of anterior maxillary 6 and mandibular incisors
- Full try in of all teeth after necessary resets
- Process dentures and delivery
- Occlusion and fine tuning of bite
- Post-operative instructions
- Get paid before final delivery-the paid for denture always fits better.

### Standard Denture
- Preliminary impressions
- Bite Registration
- Facebow
- Tooth selection
- Try-ins
- Delivery
- Standard Processing

### Turbyfill Denture
- Preliminary Impressions
- Functionally generated impressions
- Bite Registration/central bearing point
- Tooth selection
- Set teeth chairside
- Process and deliver learning dentures with tissue conditioner
- Posterior bite block
- Modified Branching technique
- Receive dentures back with hydrocast jigs
- Finalize with tissue conditioner for functionally generated impressions
- Box and pour and return to lab
- Final processing with Lucisoft soft liner, characterization
- Final delivery and fine tuning of occlusion with lab remount if needed.

### Functionally Generated Impressions

Impressions of overly compressed, traumatized ridges will result in ill fitting dentures that perpetuate soft tissue problems.

### Turbyfill Deluxe Dentures

- Turbyfills in brief: setting teeth with patient present
- Esthetics, phonetics, and function
- Silicone liners, denture base tinting

**Dentures Are the Prototypic Restoration**
- Standard dentures or Turbyfill Deluxe dentures
- Educate patients about limitations and bone loss from the beginning
- Own the problem
- Educate about the solution – Advanced Treatment Discussions

**Steps to Turbyfill Dentures**
- Take a good impression
- Accugel-mucostatic
- Massad trays with Aquasil-heavy for stops, medium for entire arch
- Facebow transfer
- Wax-out undercuts and make baseplates and rims with shellac or triad
- Set teeth chairside
- Mount at appropriate vertical
- Misch Vertical
- Try-in
- VDO,VDR
- Eye-Lip
- Eye-Eye
- Nose-Chin
- Finalization
- Delivery and lab remount
- Occlusal indicator wax

**Wax Rim-Maxillary**
- Sticky wax on baseplate-triad, shellac
- Roll softened pink wax on to sticky wax baseplate and form into shape of ridge, (square, ovoid, etc.)
- Buccal-lingual width is approximated to size of denture teeth that will be placed.
- Occlusal plane made using heated Swissdent rim former, placed on hamular notches, and pressed until 20mm of height exists from height of rim to vestibule.
- Heated spatula smooths wax on labial and lingual.

**Mandibular Wax Rim**
- Sticky wax is placed on the lower baseplate and then triangular “speaking wax” is luted to the baseplate at its midline.
- Length is 18mm from depth of vestibule and width is size of 2 lower centrals.
- No rim is placed posteriorly for now.
- Make sure rims are comfortable and short of vestibule and wax rims are used to build lip contours and establish “neutral zone” formation.
• Have patient count from 1-10 and 50-60 for approximate rim correctness. Establish “F” and “V” positions just inside mandibular Vermillion border.
• Move lower speaking wax buccally or lingually to achieve “s” position or “closest speaking space”.

### Vertical Dimension of Occlusion
- **Verticalometer**
- **Misch techniques**
- **Vertical dimension of rest**
- **Interocclusal space**
- **Tongue movement and size**
- Using phonetics and vertical dimension measurements are all used in conjunction with each other to achieve ideal esthetics, phonetics and function.

### Verticalometer
- Measure from Nasion to Philtrum of nose=A
- Measure Nasion to point of intersection of lips=B
- Measure Nasion to tip of chin=C
- C should equal B+A  This represents facial thirds

### Misch Technique
- There is a correlation between measurements:
  - Outer canthus of eye to corner of lip
  - Length of ear

### Central Bearing Points
- Cobel Balancers allow the mandible to pivot and seat condyles into bone braced position within the Glenoid Fossa.
- Alternatively a functional technique with Delar bite registration wax can seat mandible.

### Seating Condyle Key to Final Denture Occlusion
- Bite registrations can be chilled and checked for accuracy repeatedly.
- Delar wax
- Record “acquired centric occlusion”

### Facebow Mounting
- After maxillary teeth are set, speaking space is established, vertical dimension is approximated, and bite registration is recorded.
- A semi-adjustable articulator is preferred with an adjustable incisal guide table and guide pin.
- Set condyles at 20 degrees and posts at 15 degrees.
Tooth Selection
- Facial type
- Photos
- 1:16 gauge
- Mould guides
- Artistic license
- Play around
- Kay See or Trubyte face form analyzer
- Measure width 1” from corner of eye
- Measure length from hairline to bottom of chin-if my type of hairline-use top visible wrinkle.
- Mold shape= facial shape
- “Heart and Imagination.” Square tapering most common mold.

- Mould selection will become second nature
- Placing teeth on rope wax
- Place 1 central at a time. 1-10,50-60, vermillion border contact at normal speaking speed.
  - The poem “If” can be used throughout the process.
  - Place second central-insure they are flat on the paddle, parallel to interpupillary line and perpendicular to sagittal plane.
  - Most haven’t done this since dental school-and most never will but can really save time—especially for economy dentures.

Lang Duplicates
- Functional impressions can be taken in a person’s existing denture or a lang duplicate.
- Duplicates can be used to work out occlusion and deliver incisal edge position, esthetics, and phonetics information to the lab on complex restorative cases

These dental labs can help:
- Nucraft Dental Lab: Athens GA. 1-800-241-8614 contact John Zarb
- Lab One Norfolk, VA 1-800-448-7889 contact Tommy Schmitt
- Pittman Dental Lab: Gainsville, GA 1-800-235-4720 contact Bill Metheny
- Rapa Dental Ceramics: 1-727-781-7785
These labs can help with the initial learning curve.

“A man convinced against his will is of the same opinion still”
Let your patients emote and give their opinion—but make sure they don’t stare or start performing lip gymnastics. This is true for the try in and for final delivery.

Dentures: What’s Next?
• “Mrs. Jones” I would love to be able to offer you options that will improve your chewing, comfort and preserve your bone going forward, would you like to hear about your options to complete dentures?
• Certain options will allow you to preserve bone. Tooth removal leads to your sinus’s expanding, and bone loss.
• Ideally we would like to put something back in the bone to preserve it. Some of your options are...............
• CARE CREDIT

Why are dentures important?
• Prototype restoration
• Blue Print
• Gauge patient satisfaction
• Fiduciary Markers for CBCT
• Advanced Implant planning

Summary
• Turbyfill Dentures-fees can be from double to four times what you charge for a conventional denture. Lab bill can be $1000 so set fees according to your needs. I charge $5500 per Turbyfill denture. I feel this money should be spent on implants so I do a lot fewer than I used to but they do have a place in your practices!
• Offer embarrassment dentures to everyone, either you make them or have the lab provide when the denture is made. $450 is a fair fee (lab fee $100) Fiduciary markers for implants!
• Let patients know that the best denture is a “provisional prosthesis” as continued wear will result in bone loss, need for reline and remake every 3-5 years and you will help them Upgrade as they are ready.
• Order your own denture teeth to get lab discounts and make your own baseplates, custom trays, wax-rims and start setting your own anterior teeth to really learn denture dentistry.
• Duplicate dentures so you can condition tissue, improve vertical--build up posteriors with triad--and finalize to send to lab so they can have a functional impression, incisal edge position, emergence angle and profile, neutral zone impression and a high likely hood of success.
• Save roots and you will save bone! Save them by doing root canals, locator attachments and overdentures. You can charge for the root canal, the locator, the housing and pick up of the coping into the denture. A new denture is needed if you didn’t make it if it is ill-fitting as you don’t want eccentric forces on an attachment. You want them for retention, not support.
## Module 2
### ADVANCED TREATMENT PLANNING: CONCEPTS

<table>
<thead>
<tr>
<th>Treatment Planning: Edentulism</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Dentures: Standard or Turbyfill.</td>
</tr>
<tr>
<td>• Dentures: Mini-Implant Retained: Soft tissue supported denture.</td>
</tr>
<tr>
<td>• Dentures: RP-4 Fully Implant Supported: Fixed or Cementable Hybrids.</td>
</tr>
<tr>
<td>• Dentures: RP-4 Fully Implant Supported: Bar-Overdentures.</td>
</tr>
</tbody>
</table>

### Prosthodontic Classifications

<table>
<thead>
<tr>
<th>Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP-1</td>
<td>Fixed prosthesis replaces clinical crowns</td>
</tr>
<tr>
<td>FP-2</td>
<td>Fixed prosthesis replaces crowns and some root-“long in the tooth”</td>
</tr>
<tr>
<td>FP-3</td>
<td>Fixed prosthesis replaces tooth and pink porcelain for lost gums.</td>
</tr>
<tr>
<td>RP-4</td>
<td>Removable Prosthesis supported only by implants.</td>
</tr>
<tr>
<td>RP-5</td>
<td>Removable Prosthesis gum and implant supported.</td>
</tr>
</tbody>
</table>

### What To Treatment Plan?

- Upper and Lower Denture?
- Mini-Implant Supported Dentures?
- Ridge Spreading?
- Block Grafting?
- Sinus Lifts bilaterally?
- Bone Requirements for Overdenture: >= to 15mm.
- Budget

### Group Exercise

- She has $10,000
- She has $15,000
- She has $50,000
- She has $90,000

### Bone

- Division A bone —adequate quality, quantity of bone for endosseous implants.
- Division B bone—adequate height, deficient width and or angle.
- Division C bone—inadequate height and or width.
- Division D bone—basal bone, inadequate height and width of bone.

If we listen to our patients, our treatment acceptance can approach 100%
### Be the Quarterback
- If you develop your knowledge base, you will work with a team so you can develop mastery of 1 system instead of buying 10 tool kits.
- Knowledge will increase comfort with regard to dialogue with your patients and referring implant surgeons.
- The more you understand options the better equipped you will become to be your patient’s advocate for “Upgradeable” options.

### Treatment Planning
- Patients can be creative in not coming to the dentist.
- We need to be creative to ease their fears of being without teeth.
- We need to listen and really get a feel for what they want, their expectations and their finances.

### Help Patients Own Their Problems
- What is their periodontal situation?
- Define their orthodontic problems?
- Evaluate wear patterns and force factors.
- Educate patients about their expectations—are they realistic, achievable and within their budgets?
- Define obstacles to success and try and identify every unforeseen question before they arise.

### Try Not to Talk Yourself into and out of a Case
- Patients want teeth.
  - They want a confident dentist.
  - They want honesty.
  - They want to be able to say yes to your treatment.
  - They want to afford your care so they can meet their goals
- Dentists want interesting cases.
  - They want to close the deal.
  - They don’t want headaches from patients that don’t pay, fail appointments or present unforeseen complications.
  - They want to be profitable.

### This patient had class IV Perio, Occlusal problems
- Ortho to LAR her arch
- Fix COS and Wilson
- Idealize dental arches
- Conformative dentistry would have severely limited her treatment options
Key Implant Principles

- Cantilevers Are Force Magnifiers.
- No 3 adjacent pontics-metal flexure is related to the cube of the distance.
- Canine molar rule: These are key implant sites when adjacent teeth are missing.
- Arch types: A-P spread varies based on arch form. Tapered arch has greatest A/P spread.
- Bone Density influences implant number.

No 3 Pontic Rule

- Metal flexes with cube of distance.
- 1 pontic metal flexes: “x”
- 2 pontics: “2X” metal flexes 2x2x2=8 times more.
- 3 pontics: (3X”) metal flexes 3x3x3=27 times more than single pontic.
- The greater flexure causes porcelain fracture, un cemented prostheses and abutment screw loosening.

Dialogues

- Mrs. Jones, we can solve your problems in many different ways.
- Before we list your options I would like to know what your greatest concerns are.
- Do you prefer “fixed” teeth or are you o.k. with the idea of teeth that may be removed to be cleaned, as long as you will have a more solid bite?

- Implants can be done in a variety of ways, from small diameter implants to stabilize dentures to implant bridges where you have your teeth in your mouth all of the time.
- The range can be from $750 for a mini-implant to $2,000 to place a traditional implant and the more implants we have, the more support we can enjoy.
- Before we finalize your treatment options, I would like to discuss your financial comfort level and your yearly budget. That way I can help you “get the most bang for your buck” within your current budget.
- We offer interest free financing through Care-Credit and after you have given me a range you are comfortable with we can finalize your treatment plan.

Indecisive:

- I am going to do my “homework” to come up with some wonderful options within your budget.
- I need you to do some homework for me!
- I would like you to evaluate your finances and let me know what you would be comfortable investing this year and over the next 3 years to help me solve your problems.
- Then we can establish the parameters of treatment.
Cadillac versus Yugo?
- Boutique versus standard lab
- Allocate to advocate
- Wal-mart vs. Nordstroms?
- Patients’ expectations dictate labs
- We are all purists at heart but what we must ask ourselves is whether we would rather get experience, fulfill treatment goals and get more word of mouth referrals at the expense of scaring away our patients?

Dialogues continued:
- Mrs. Jones comes in and is prepared to invest $10,000.
- We can certainly help you to begin your treatment and since we have limited finances, let’s evaluate the arch that is giving you the greatest difficulty.
- We can begin with some grafting and x number of implants (perhaps 2 or 3) and when we have more funds we can either make you an overdenture or add more implants and create a hybrid or “fixed denture” for you.
- Present what you can do, if you had another $3-5,000: We could perhaps add some mini-implants and create an overdenture or convert your existing denture to give you a much more stable situation for the next 1-2 years while you are saving up for the next phase of your care.
- Is there any possible way you could add to your treatment by investing some more to get us to this first plateau?
- If the answer is no-then they will accept the first phase of treatment, they will be aware that they will still have dentures after investing this first $10,000 and they will be the ones to encourage pursuit of the next phase of their treatment.

Non-verbal cues:
- Always give them hope.
- Try not to say no.
- Be their advocate when they give you their limitations.
- Once they give you their dollar amount, find a way to help them within their budget.
- What we say is often not as important as how we say it.
- Have a positive outlook, look them in the eye and ask them for help in finding the appropriate solution to their problem.
- We learn treatment but not always compassion.
- Technical expertise will only pay off if we can convert patients to say “yes” to our treatment recommendations.
- Remove their obstacles to saying “yes” by listening and working within their budgets.
- If you can’t then be honest and part “friends.”
- They will return when they don’t find a person willing to listen or they don’t get what they were expecting.
Give Them Information
- Brochures
- Articles
- Web-site information
- Links
- Show them photos, models, flip charts
- Give detail based on the detail of the questions.

<table>
<thead>
<tr>
<th>Misch Bidez Class IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Like Kennedy Classification</td>
</tr>
<tr>
<td>- Partially Dentate,</td>
</tr>
<tr>
<td>- A bone</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How Many Implants Do You Need?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- An arch is divided in 5 segments</td>
</tr>
<tr>
<td>- 2 centrals and 2 laterals are 1 side</td>
</tr>
<tr>
<td>- Canines are 1 segment</td>
</tr>
<tr>
<td>- Premolars and molars are 1 segment</td>
</tr>
<tr>
<td>- Must have a terminal abutment and a key implant position in each segment where there are missing teeth.</td>
</tr>
</tbody>
</table>

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A-P spread is related to arch form. “V” shaped arch form has better A-P spread than “square” arch form</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Four implants for a 12 unit bridge?</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Short term expense: What if there is 1 failure? Is it worth the cost of retreatment? It’s not “all on 3!” for a reason.
Treatment planning is about what you need as well as what the patient needs.
• When bone is not present in sufficient quality or quantity grafting needs to be discussed.
• Block grafting is a modality that can add buccal lingual width. Vertical height is less predictable.
• Ridge spreading as taught by Tatum and Dr. Len Machi can be used if they are candidates and or refuse grafting.

4-mm implant molar had 14% body fracture by comparison; splinted implants had 1% body fracture.

Single molars had a 48% screw loosening over 3 yrs. With 2-splinted implants this was reduced to 8% over same time period.

The bone loss first year after tooth loss is 10 X greater than in following years. This can mean a 4-mm vertical bone loss in 6 months.

• Posterior bone loss occurs four times faster than anterior bone loss.
• This can result in parasthesia and eventual fracture in the body of the mandible.
• Prostheses that are implant supported completely can result in increased posterior bone volume-even without placing more implants.

Comprehensive Courses:
• Midwest Implant Institute
• California Implant Institute
• Misch International Implant Institute
• Pikos Institute
• Miami Implants Live
• Loma Linda-Jaime Lozada Program
• Maxi-Course by AAID
• I.C.O.I. courses
• AGD Mastertrack
• Dawson

Notes:
Module 3
ADVANCED TREATMENT PLANNING: ROOTS, MINIS, LOCATORS, BARS, AND HYBRIDS

Mini-implants for denture or partial denture fixation – are these a good idea?
• When patients can’t afford traditional implants
• Insufficient height or width of bone
• A history of sores or poor retention
• When the 7-7-7 rule of Misch can’t be followed
• Full denture fixation
• 4 on the floor – anterior to mental nerves → optional additional implants in posterior for sufficient bone height and stability
• Partial denture stabilization
• Anterior incisor replacement
• FIRST technique developed by Shatkin

Treatment Planning Edentulism
I. Dentures: Standard or Turbyfill.
II. Dentures: Mini-Implant Retained: Soft tissue supported denture.
V. Dentures: RP-4 Fully Implant Supported: Fixed or Cementable Hybrids.

Dentures $2200 each- MY FEE
Metal Frame –no extra charge
Lab only charges $45 to cold cure in each cap.
$750 mini implant fee X 4 = $3,000 I did 5th for free ($750 discount to patient.
Time: 2 hours to place, Impressions, try-in, delivery- 3 hours Total 5 hours

Cost: $400 partials (lab) plus implants ($400): So $800 cost
I charged $7400 less $800 equals $6600
Divided by 5 hours = $1320 per hour and patient received a free implant.
Note: His lower treatment partial was already made and billed out so this is also productive.

Metal Frames
• For palate-less dentures, metal frames will insure strength
• Decrease excursive forces
• Allow a positive seat to decrease rocking on implants
• If designed properly will allow for relines at a later date
• Allows for the indirect placement of keeper caps if desired
ROI-She had $15,000 total
• Two dentures-metal reinforced ($7000)
• Duplicate Dentures $600
• Learning dentures-not used this case
• 12 mini’s @ $750 each=$9,000
• Total $16,600 discounted to $15,000 cash
• Time: Mini’s 6 hours, records 1 hour, soft liners 1 hour, impressions, try in, delivery 2 hours= 10 hours. Final $15,000/10 hrs. =$1500/hour

2 Implant Overdentures
• Is this truly standard of care? How about in your practice?
• Case: Todd F. He has $11,145 total to spend.
• Answer: UCD/LIOD/4 mini’s, 2 implants, 2 locators, 2 ext’s, 2 socket graftings.

Financials
• 2 learning dentures: $4,000
• Surgical Extraction of root tips: $700
• Socket Grafting x 2: $900
• Final Lower Metal Denture: $3500
• 2 Implants: $4,000
• 4 Mini-Implants $1000
  ○ Total Charged: $14,100

He had $11,145+$1,000 Insurance → $12,145 Total
I discounted fee to this $12,145 → I discounted $1955.
Expenses: $850 for 3 dentures, $400 mini-implants, $600 implants and components $400 grafting supplies for costs: $2250. $12,145 less $2250= $9895 NET PROFIT

Time: 7 hours Total: $1413/hour

RP-5 Tissue and Implant Support
• Implant prostheses are planned based upon bone availability and cost.
• The more implants we can use, the better the stability, support and retention of the prosthesis.
• Misch advocates using the ABCDE zones between mental foramina but if we have more money we can treatment plan full arch prostheses, remembering they must be broken at a mental foramen to allow for mandibular flexion and torsion.

Treatment Planning Exercise
• Pt. 62 y.o. wht. Male.
• CC: Painful teeth, mobile dentures
• Couldn’t eat peanuts-no kidding
• Had $15,000 price limit
• History of dental infections and abscessed teeth.
Priority: Lower stable teeth, upper denture.

Groups of 3 or 4: Exercise
- What treatment would you render if your budget were $15,000.
- What Sequence of treatment.
- What limitations do you have?
- 5 minutes---ready set go!

Snap-on-dentures: 6 implant overdenture
- Entry level implant treatment may necessitate this option.
- People have excellent retention with various attachment designs. Locator attachments are the attachments I use most frequently.
- Check lab bills if done indirectly otherwise the attachments can be activated in the same fashion as root overdentures.

Summary
- Two implants placed with enucleation of cysts Left and 1 implant placed right with cyst removal and grafting. Surgery 1.
- Anterior implants placed Surgery 2.
- Removal of #27 with grafting Immediate Implant placement.
- 6 locators
- UCD/L implant O.D.

Cost/Benefit Ratio
- Tooth removal $325
- Grafting 4 sites 4x $450 = $1800
- 6 BioHorizons Implants $2,000x6=$12,000
- UCD/LCD provisional $1800x2=$3600
- Lower implant Overdenture=$4500 including attachments. Total $22,500
- Cash in full $15,000
Time 10 hours-costs (implants $1800, graft and membrane $600, lab $800) net about $1200/hour

Steps
1. Open Tray or Closed Tray Impression
2. Base plate screwed in at proper VDO
3. Verification Jig to confirm accuracy of cast.
4. Sheffield One Screw Test. Plus X-rays
5. Try in Bar or Hybrid with One screw test.
6. Deliver Bar or hybrid or temporary bridge
7. Final Delivery.
### Fixed Implant Bridges on Implants-RP-4 Implant Borne

- It is rare that patients will upgrade from a hybrid RP-4 prosthesis or a bar overdenture as they are significantly better than what they had.
- The ability to offer fixed prostheses will convert someone from an RP-4 or RP-5 to an FP-1, 2 or 3 prosthesis.
- A concern to our patients will be how to upgrade while remaining in a comfortable and perhaps fixed provisional.

### Advantages to an RP-5 Overdenture

- Prevents anterior bone loss
- Improved esthetics
- Improved occlusion and stability
- Increased chewing efficiency
- Improved retention, support and speech
- Decrease in denture sores
- Smaller prosthesis than conventional dentures

### Implant overdentures offer the advantage of improved hygiene.

- This restoration is rigid and involves a “screwed in partial” or an implant bar overdenture
- The implants are usually placed more lingual and apical to decrease the cantilever as compared to a fixed implant bridge.

These may be a transitional appliance where cost is a factor.

- Maximum bite force can improve as much as 300% with implant retained prosthesis.
- The maximum bite force nearly doubled after treatment for each of the 3 attachments.

### Fixed Prosthesis or FP 3

- This should be one of our goals for long term patient care
- Bone loss is virtually stopped.

### Notes:
Occlusion?
- Simon likens searching for the truth in occlusion to Alice looking for the right path in Wonderland. There are so many diverse opinions regarding this subject that it is not uncommon to witness discord among colleagues at professional meetings. So, what is the truth?

Dentists develop their own philosophy of how to best manage the occlusion of every patient they are treating. How they obtain their personal philosophy of occlusion is often from a combination of information from school, journals, lectures and experience. Dr. Gordon Christiansen said in the February 2004 issue of Dentistry Today: “Dentists are afraid of occlusion . . . there is extreme controversy about what concept of occlusion is correct, and I do not see any relief to that controversy.” Occlusion is a discipline that you learn over time and should never stop learning during your entire career.

Occlusal Philosophies
- Bioesthetics-Bob Lee, Hottstetler
- Gnathology-Ballard, Steward, McCullom
- Centric Relation-Peter Dawson
- Functional-John Kois 10 yrs old
- Neuromuscular-Jankelson, Dickerson, LVI

“After many years as a practicing prosthodontist, teacher, and researcher, and after experimentation with almost all concepts of occlusion, I can candidly state that it is not the concept of occlusion that allows success, it is the knowledge and experience and the clinical skills and honesty of the clinician that are important factors to success with occlusion. Therefore, no matter what your philosophy of treatment is, the study of occlusion is a never-ending process with one goal in mind, providing the best treatment for all patients.”

What do I think?
- You need a philosophy that is patient centered.
- You need to decrease force factors.
- You need to educate the patient.
- Protect your case.
- Test your prosthesis!!!
- Provisionals teach you occlusion.
- Shallow Guidance keeps you safe.
**Dialogues:**
Mrs. Jones, now that we have successfully given you a smile you are proud of. We would like to discuss ways of taking this prototype and really kicking it up a notch. Would you like to hear about this?

**Notes:**
<table>
<thead>
<tr>
<th>ADVANCED TREATMENT PLANNING 1 FLURRY: FULLY OR PARTIALLY DENTATE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Negative Aspects of Removable Prostheses</strong></td>
</tr>
<tr>
<td>- Bite Force form 200 PSI to 50 PSI</td>
</tr>
<tr>
<td>- 15 Years denture wearers at 6 PSI.</td>
</tr>
<tr>
<td>- Decreased chewing efficiency</td>
</tr>
<tr>
<td>- Increased GI disorders and medication.</td>
</tr>
<tr>
<td>- Decreased life span has been reported.</td>
</tr>
<tr>
<td>- Limited food selection.</td>
</tr>
<tr>
<td>- Decreased nutritional intake.</td>
</tr>
<tr>
<td><strong>Problems with Partials</strong></td>
</tr>
<tr>
<td>- Low survival rate-60% at 5 years.</td>
</tr>
<tr>
<td>- 35% survival at 10 years.</td>
</tr>
<tr>
<td>- Abutment tooth breakdown: 60% at 5 years and 80% at 10 years.</td>
</tr>
<tr>
<td>- Increased mobility, BOP, caries.</td>
</tr>
<tr>
<td>- 44% abutment tooth loss at 10 years.</td>
</tr>
<tr>
<td>- Accelerated bone loss under saddles.</td>
</tr>
<tr>
<td><strong>Psychological Effects Edentulism</strong></td>
</tr>
<tr>
<td>- Minimal to neurotic.</td>
</tr>
<tr>
<td>- Romantic situations awkward.</td>
</tr>
<tr>
<td>- Oral invalids-intolerance.</td>
</tr>
<tr>
<td>- 88% speech problems (25% severe).</td>
</tr>
<tr>
<td>- $200 million spent on denture adhesives to avoid embarrassment.</td>
</tr>
<tr>
<td>- Dissatisfied with appearance or self-esteem</td>
</tr>
<tr>
<td>- Avoid Social Situations.</td>
</tr>
<tr>
<td><strong>Implants? Crowns? Fillings?</strong></td>
</tr>
<tr>
<td>- Patient budget $15,000</td>
</tr>
<tr>
<td>- Limited VDO</td>
</tr>
<tr>
<td>- 10 crowns=$15,000</td>
</tr>
<tr>
<td>- Biotemps=$300</td>
</tr>
<tr>
<td>- Ext.2 root tips-$700</td>
</tr>
<tr>
<td>- UPD=$2,250</td>
</tr>
<tr>
<td>- Patient received 10 crowns and UPD for $15,000</td>
</tr>
<tr>
<td>- Time: 9 hours total=$1667/hr.</td>
</tr>
</tbody>
</table>
Could This Work?
- Implants? Extractions?
- 9x$300=$2700 extractions
- Bilateral Sinus’=$6,000
- Socket Preservation: $1500
- 6-7 implants=$12,000 UICD $2,000: $24,000 plus prosthetics
- Hybrid=$14,000 ($38,000)
- Snap on $7500 ($31,500)
- Could these work?

- Extractions-Discount to $1500
- Add socket grafting ($1500)= $3,000 for 90 minutes. (2,000/hr)
- 6 implants for $1500=$9000 (3 hours placement= $3000/hour) (sx guide?)
- Snap-on $3500
- UICD $1850
- Grand Total- $18,850
- Cash? Patient option?
- Total $16,500 or ??

Full Mouth Rehabilitation
Maintaining Vertical Dimension
Technique: Segmental

Costs/ROI:
- 26 Crowns= 1500x26 or $39,000
- Biotemps $ 1400
- 2 Implants-$4,000
- 2 Abutments-$1700
- 2 Implant Crowns @$1650= $3300
- 2 extractions/socket Grafting $700$950 graft
- Total= $51,050 Discounts?
- Time: Prep Mx 8 hours, Prep Mn 8 hours
- Tissue check: 1 hour, Cementation 6 hours
- Implant placement 2 hours
- Abutment impressions 2 hours plus 1 hour uncoverly
- Time: 28 hours
- Lab Bill: $6300
- Implant stuff $800
- Net Production: $1570/hr.

Notes:
## ADVANCED TREATMENT PLANNING: SINUS BLOCKS

Block Grafting is a Necessary Modality for Comprehensive Implant Dentistry

“The use of autogenous bone is the gold standard for grafting deficient implant recipient sites.” -Craig Misch DDS

<table>
<thead>
<tr>
<th>Division A bone: Abundant Bone</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Width &gt;6mm.</td>
</tr>
<tr>
<td>• Height &gt;12mm.</td>
</tr>
<tr>
<td>• Mesiodistal length &gt;7mm</td>
</tr>
<tr>
<td>• Angulation of load &lt;25 degrees</td>
</tr>
<tr>
<td>• CHS-crown height space &lt; 15mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division B (barely enough)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 2.5-6mm wide ridge</td>
</tr>
<tr>
<td>• B+ ridge 4-6mm wide</td>
</tr>
<tr>
<td>• B-W 2.5-4mm ridge width</td>
</tr>
<tr>
<td>• Height &gt;12mm</td>
</tr>
<tr>
<td>• Angulation &lt;20 degrees</td>
</tr>
<tr>
<td>• Crown Height Space &lt;15mm</td>
</tr>
<tr>
<td>• Solution: Augment or Plasty</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division C</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Width C-W 0 mm-2.5mm</td>
</tr>
<tr>
<td>• Height C-H &lt; 12mm</td>
</tr>
<tr>
<td>• Angulation &gt;30 degrees</td>
</tr>
<tr>
<td>• Crown height space &gt; 15mm</td>
</tr>
<tr>
<td>• Options: Osteoplasty, subperiosteals, augmentation, ramus frame, transosteal.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division D Bone</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Severe Atrophy</td>
</tr>
<tr>
<td>• Loss of basal bone</td>
</tr>
<tr>
<td>• Flat maxilla</td>
</tr>
<tr>
<td>• Pencil thin mandible</td>
</tr>
<tr>
<td>• &gt; 20mm crown height space</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dialogue:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 4 Dentists-Offered Denture and Partial-They did not listen.</td>
</tr>
<tr>
<td>• Severe Depression over pain.</td>
</tr>
<tr>
<td>• Can not eat.</td>
</tr>
<tr>
<td>• Desperate to smile again.</td>
</tr>
<tr>
<td>• WHAT WOULD YOU OFFER?</td>
</tr>
</tbody>
</table>
Deficient Bone in Width: C-H bone
Denture Trauma has led to a flabby ridge.

>25mm space = Hybrid

Options:
- Bar Overdenture
- Hybrid Prosthesis: cemented or screw retained
- Locator denture
- Sub-periosteal implant
- Fixed Bridge – FP3

Foundation, Foundation, Foundation!
- Block Grafting vs. ridge spreading
- PRP
- Modalities to improve success-bioactive modifiers: BMP, PRGF, rhPDGF
- Soft tissue modification
- Symphyseal grafts
- Ramus grafts
- Subantral sinus augmentation

Notes:
## Comprehensive Courses on Treatment Planning

- Midwest Implant Institute
- California Implant Institute
- Misch International Implant Institute
- Pikos Institute
- Miami Implants Live
- Loma Linda-Jaime Lozada Program
- Maxi-Course by AAID
- I.C.O.I. courses
- Mentorship

## Notes:
## ADVANCED TREATMENT PLANNING WESTPHAL

### Are You Ready for TX Plan?
- What do you need to know?
- What do you want to know?
- How to figure out the case?
- How to present the case?
- Document the case?
- Maintenance.

### Listen to what they want and need.
- I never want my daughter to see me without my teeth.
- Tears
- He has saved up to fix his mouth
- He doesn’t want dentures.
- What I am hearing: Powerfully motivated.
- He wants options and hope.
- What are his financial limits?
- What type of implant restoration can we discuss? FIXED?

### Exercise
- 5-10 minutes: Plan a treatment as you would in your practice.
- Financial limit? How do you ask?
- Scenario 1: $15,000 per arch or $30,000
- Scenario 2: $70,000.

### Smile Pix and Biotemps=HOPE
- This patient was given the option of dentures. PERIOD
- Several teeth were non-mobile-6,7,11,12,20,21,27,28 and 29.
- He could have been a candidate for a root retained overdenture, mini-implant dentures, implant overdentures with locators, bars, a hybrid or a porcelain fused to gold full arch prostheses.
- He didn’t bat an eye at the $55,000-$70,000 plus possible costs.

### The Surgical Path
- Maxillary edentulation
- Sinus grafting
- Prepare teeth for provisionals
- Implant placement
- Retrofit provisional

### Block Grafting vs. Bone Spreading?
Partial bone loss is just as important to address as complete (denture) bone loss.
The case of the Prolonged Partial
- This patient has been in our practice for 30 years
- She wasn’t ready for a partial until—she was ready.
- She broke two teeth, lost a few more and the remaining teeth had unfavorable C:R ratios.
- She wished she had done this sooner—and so will your patients.

Treatment Planning
- How much would you charge with surgical fees?
- Block graft from ramus? To site 19,30,31
- Block graft from chin? To site #11.
- 4 Implants, abutments, and crowns?
- Additional crown?

Ridge Spreading
- Cost Effective
- No secondary surgical site
- Technique Sensitive
- An alternative
- A segment of the population

Exercise: $15,000
- Dx: “D” ridge.
- Ill-fitting Mx/Mn denture
- CC: “I don’t want any more pain when I chew!”
- Health Hx: non-contributory.
- Travels with circus-hard to come frequently.
- Limited finances.
- Maxillary flabby ridge.

Exercise
- What would you propose?
- What would that cost?
- Her CC: She has a loose fitting UCD/LCD.
- Could you find a solution for $15,000?
- Plan your case-5 minutes.

My Solution
- Implants: $7,000 for 4
- UCD $2250
- LIOD: $4500
- Records $300
- Costs about $14,050.
- Less than what she had allotted.
CHRIS D. HIP GRAFT

<table>
<thead>
<tr>
<th>General Dentistry as a Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Hip Graft, bilateral Sinus lifts, titanium cages, connective tissue grafting.</td>
</tr>
<tr>
<td>• COURSE CORRECTION!</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bar Overdentures RP-5: Implant and Tissue Borne</th>
</tr>
</thead>
<tbody>
<tr>
<td>• For patients that can afford a bar overdenture as an upgrade to individual implants, we gain splinting.</td>
</tr>
<tr>
<td>• This will decrease implant load to the individual implants, provide added support, stability and the ability to correct angulation issues if present.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division D Bone</th>
</tr>
</thead>
<tbody>
<tr>
<td>• SA-4 sinuses, D-bone Mx,Mn</td>
</tr>
<tr>
<td>• 32 year old male, non-smoker</td>
</tr>
<tr>
<td>• PDH: Partial Denture wear</td>
</tr>
<tr>
<td>• PMH: WNL</td>
</tr>
<tr>
<td>• Cc: “Pain”, embarrassment</td>
</tr>
</tbody>
</table>

Notes:
**ADVANCED TREATMENT PLANNING: PARTIALLY DENTATE R.M.**

Influence of the implant abutment types and the dynamic loading on initial screw loosening

**Eun-Sook Kim, DDS, MS, Soo-Yeon Shin*, DDS, MS, PhD**
Department of Prosthodontics, College of Dentistry, Dankook University, Cheonan, Republic of Korea

**CONCLUSION.** The abutment types did not have a significant influence on short term screw loosening. On the other hand, after 105 cycles dynamic loading, CAD/CAM custom abutment affected the initial screw loosening, but stock abutment and gold cast abutment did not. [J Adv Prosthodont 2013;5:21-8]

---

**Computer-Aided Design and Computer-Assisted Manufacturing in Prosthetic Implant Dentistry- Kapos/Ashy**
JOMI 2009;24 110-117

Conclusion: Based on systematic review concerning CAD/CAM used for fabrication of frameworks and abutments, preliminary proof of concept was established. Clinical studies were too preliminary to provide meaningful conclusions regarding the performance of these abutments/frameworks.

---

**Consensus Statements and Recommended Clinical Procedures Regarding Computer-Assisted Implant Dentistry**
Christoph H. F. Hamerle, DMD, Dr. Med Dent/Paul Stone BDS FDS
JOMI Volume 24, Supplement, 2009 P126

Clinical Recc: With the information available to the group from the systematic review by Kopas et al, it was felt that for clinical situations requiring highly individualized components, CAD/CAM can be considered the method of choice. Similarly, where the material of choice is zirconia or titanium, CAD/CAM could again be the preferred option.

---

**What have we learned?**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Atlantis Abutments, 3 Crowns: Boutique lab</td>
<td>$2022</td>
</tr>
<tr>
<td>3 Atlantis Abutments, 3 Crowns: Glidewell</td>
<td>$1322</td>
</tr>
<tr>
<td>3 Standard Abutments Prepped: 3 Crowns</td>
<td>$810</td>
</tr>
</tbody>
</table>

Required profit? Dollars per hour? Patient’s budget? Esthetic Expectations?
KNOW YOUR COSTS BEFORE YOU START THE CASE.
### Force Factors
- Ultimate esthetics, support and biomechanical stresses may suggest custom abutments be considered.
- It is not accepted that custom abutments are required for success.
- Cost considerations may influence design.

### Notes: