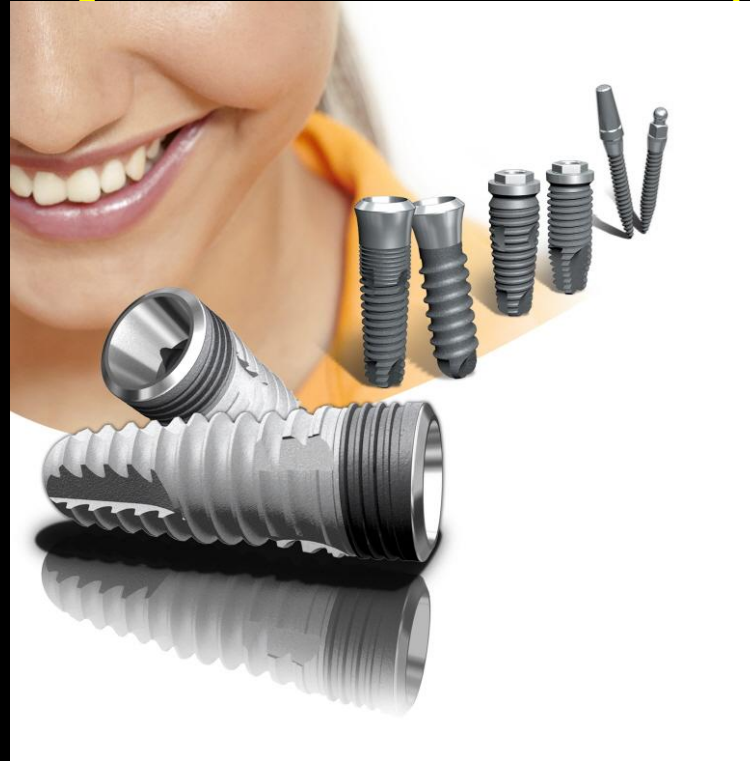


# Impression Techniques in Implant Dentistry



Khaldoon G. Abu Afifeh,  
B.D.S, M. Sc in Prosthodontics



Diagnosis ...Diagnosis...Diagnosis

**Implantology Is a  
Prosthetically Driven Entity.**

Information  
Before  
Treatment is  
Diagnosis...

Information  
after  
Treatment is  
an excuse

# “The Lost Syndrome”



# Diversity Of Implant Components

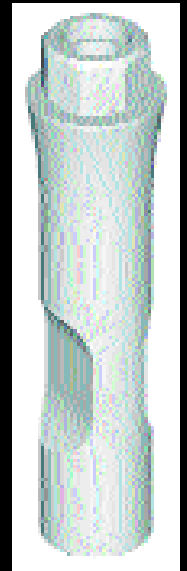
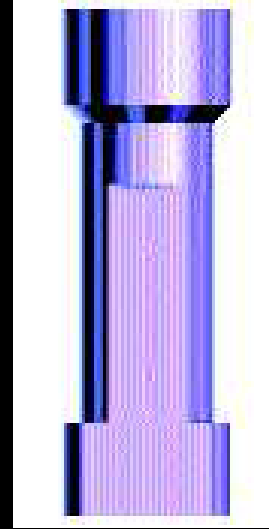
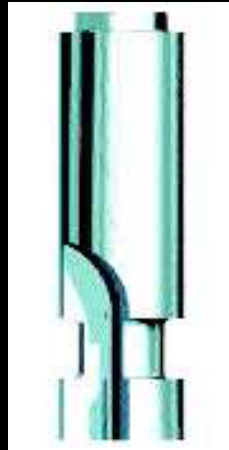
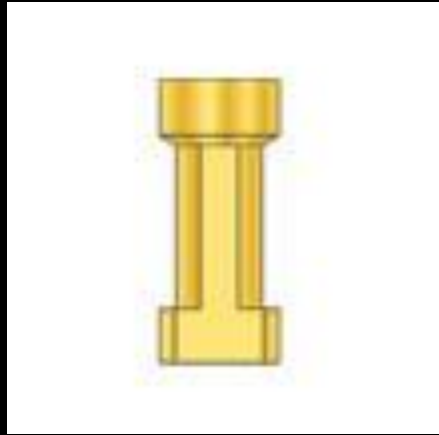


# Impression posts or coping



**Materials Used: Titanium, plastic, and anodized aluminum.**

# Implant Analogue or Replica

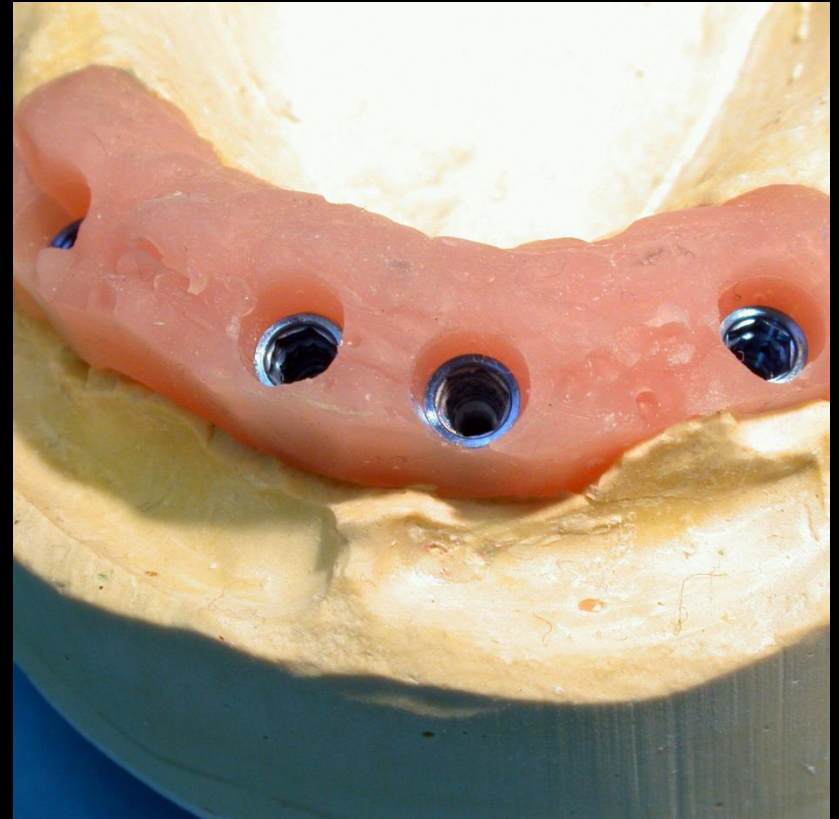


# Abutment Replica or Analogue





# Analogue or Implant Replica



**Materials Used: Stainless steel (sometimes brass)**







## IMPRESSION TAKING COMPONENTS



### RN TISSUE LEVEL IMPLANT

Restorative platform Ø 4.8 mm

Solid abutment impression taking		
040.740		RN Solid all-in-one set, 4.0 mm, for crown
040.741		RN Solid all-in-one set, 5.5 mm, for crown
040.742		RN Solid all-in-one set, 7.0 mm, for crown
040.840		RN Solid all-in-one set, 4.0 mm, for bridge
040.841		RN Solid all-in-one set, 5.5 mm, for bridge
040.842		RN Solid all-in-one set, 7.0 mm, for bridge
Each RN all-in-one set contains: abutment, analog, impression cap, positioning cylinder, temporary coping for crown or bridge, burnout coping for crown or bridge		

synOcta*, closed tray impression taking		
048.017V4		RN Impression cap
048.070V4		RN synOcta positioning cylinder, red
048.124		RN synOcta analog, grey with red stripe
synOcta, open tray impression taking		
048.010		RN synOcta Impression cap, with integral guide screw, red
048.090		RN synOcta Impression cap, with built-in handle, red
048.124		RN synOcta analog, grey with red stripe
Temporary option for provisionalization, open or closed tray		
048.668		RN synOcta temporary meso abutment (includes basal screw 048.356)



### WN TISSUE LEVEL IMPLANT

Restorative platform Ø 6.5 mm

Solid abutment impression taking		
040.745		WN Solid all-in-one set, 4.0 mm, for crown
040.746		WN Solid all-in-one set, 5.5 mm, for crown
040.845		WN Solid all-in-one set, 4.0 mm, for bridge
040.846		WN Solid all-in-one set, 5.5 mm, for bridge
Each WN all-in-one set contains: abutment, analog, impression cap, positioning cylinder, protective cap, burnout coping for crown or bridge		

synOcta, closed tray impression taking		
048.013		WN Impression cap
048.095		WN synOcta positioning cylinder, white
048.171		WN synOcta analog, grey
synOcta, open tray impression taking		
048.091		WN synOcta Impression cap, with integral guide screw
048.171		WN synOcta analog, grey

Additional components may be available.

For more information or to place an order, please contact our Customer Service Department at 800/448 8168.



### NC BONE LEVEL IMPLANT

Restorative platform Ø 3.3 mm

Implant-level impressions, closed tray technique		
025.2201		NC Impression post, with guide screw and cap
025.2101		NC Implant analog
Implant-level impressions, open tray technique		
025.2202		NC Impression post, with guide screw
025.2101		NC Implant analog
Temporary option for provisionalization, open or closed tray		
024.2370		NC Temporary meso abutment D 5.0 mm

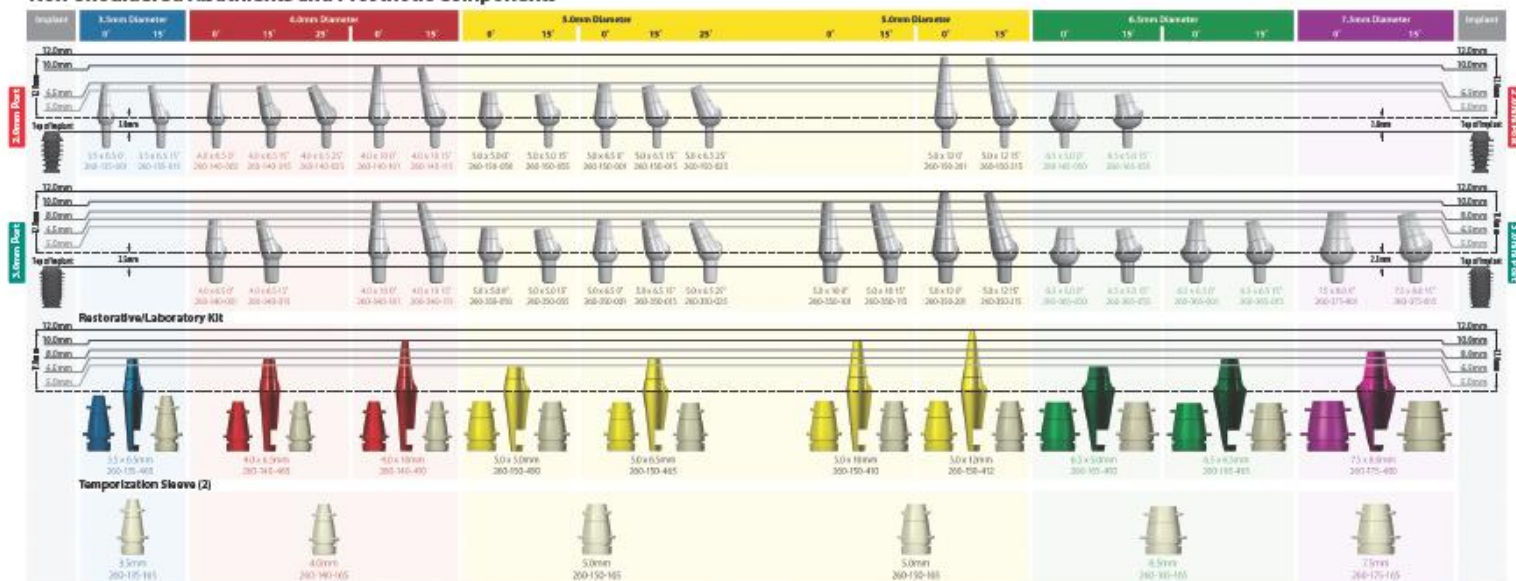


### RC BONE LEVEL IMPLANT

Restorative platform Ø 4.1 mm and Ø 4.8 mm

Implant-level impressions, closed tray technique		
025.4201		RC Impression post, with guide screw and cap
025.4101		RC Implant analog
Implant-level impressions, open tray technique		
025.4202		RC Impression post, with guide screw
025.4101		RC Implant analog
Temporary option for provisionalization, open or closed tray		
024.4370		RC Temporary meso abutment D 7.0 mm

## Non-Shouldered Abutments and Prosthetic Components



Notes: Snap-on sleeves are only specific for abutment diameter. Abutment height is not a criterion for proper selection of snap-on sleeves. Transfer dies correspond to exact diameter and height of abutment placed.

Because of machining tolerances, acrylic sleeves may not reach the height of contour for some angled abutments.

### Indirect Abutment Level Impression



1 Modified and unmodified color-coded impression sleeves are definitively seated on their corresponding abutments.



2 Impression material is injected around the impression sleeves for the making of an abutment level transfer impression.



3 Acrylic impression sleeves withdrawn in impression material prior to impression being sent to the laboratory.



4 Soft tissue material being injected around impression sleeves and abutment transfer dies.

### Direct Abutment Level Impression



1 Non-shouldered abutment being prepared with a #1257 carbide bur.



2 Two prepared non-shouldered abutments.



3 Impression material being injected around non-shouldered abutments.



4 Full arch impression.

# Outline Of Implant Treatments

SURGERY

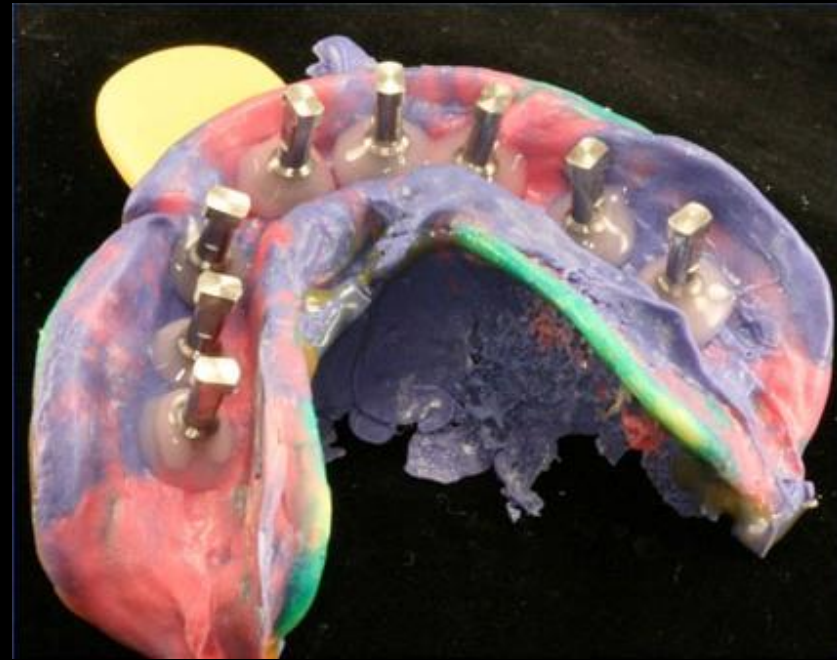
IMPRESSION

PROSTHETIC RESTORATION



# Impressions for Implants Versus Crown and Bridge

# Impressions Are Negative Reproductions Of Dental Structures





# Implant Impressions

Accurate recording of spatial implant position is required to obtain a proper support to definitive restoration with passive fitting.

Conrad et al., 2007

## Spatial Implant Position



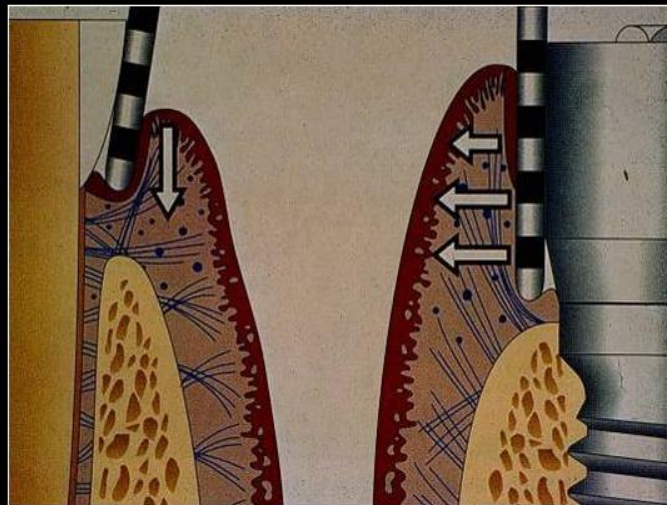
# What is the benefits of Impression in implant dentistry?

1. Position.
2. Depth.
3. Axis/Angulation.
4. Rotation–Hex position
5. Soft Tissue Contour  
(Emergence Profile)

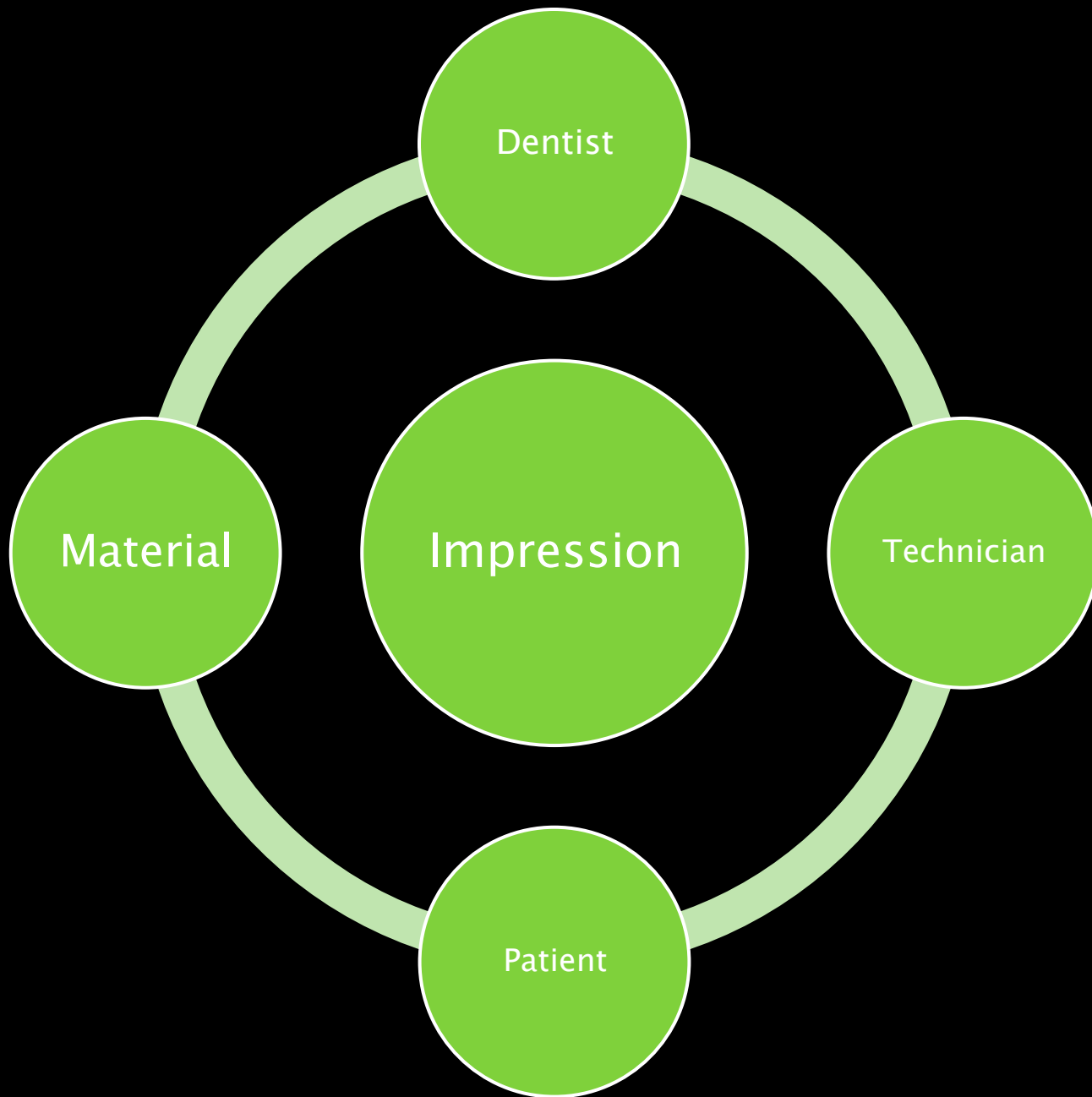


# Implants VS Cr. & Bridges

- 1–It is more critical to record 3– dimensional position of the implants as they occur intraorally.
- 2–Natural teeth have a PDL to compensate for minor inaccuracies while implants have not.



*Pesun JJ. . 1997*



# Check List Before The Impression Appointments

- ❑ Implant labels are ready.

Diameter Not Length!!!!

- ❑ What if implant labels are missing????

- ❑ Ensure all implant impression posts and analogues are ready.

- ❑ Short and long keys are ready.





# Impression Techniques for Implant Dentistry



# Impression Techniques

**Implant Level**



**Abutment Level**

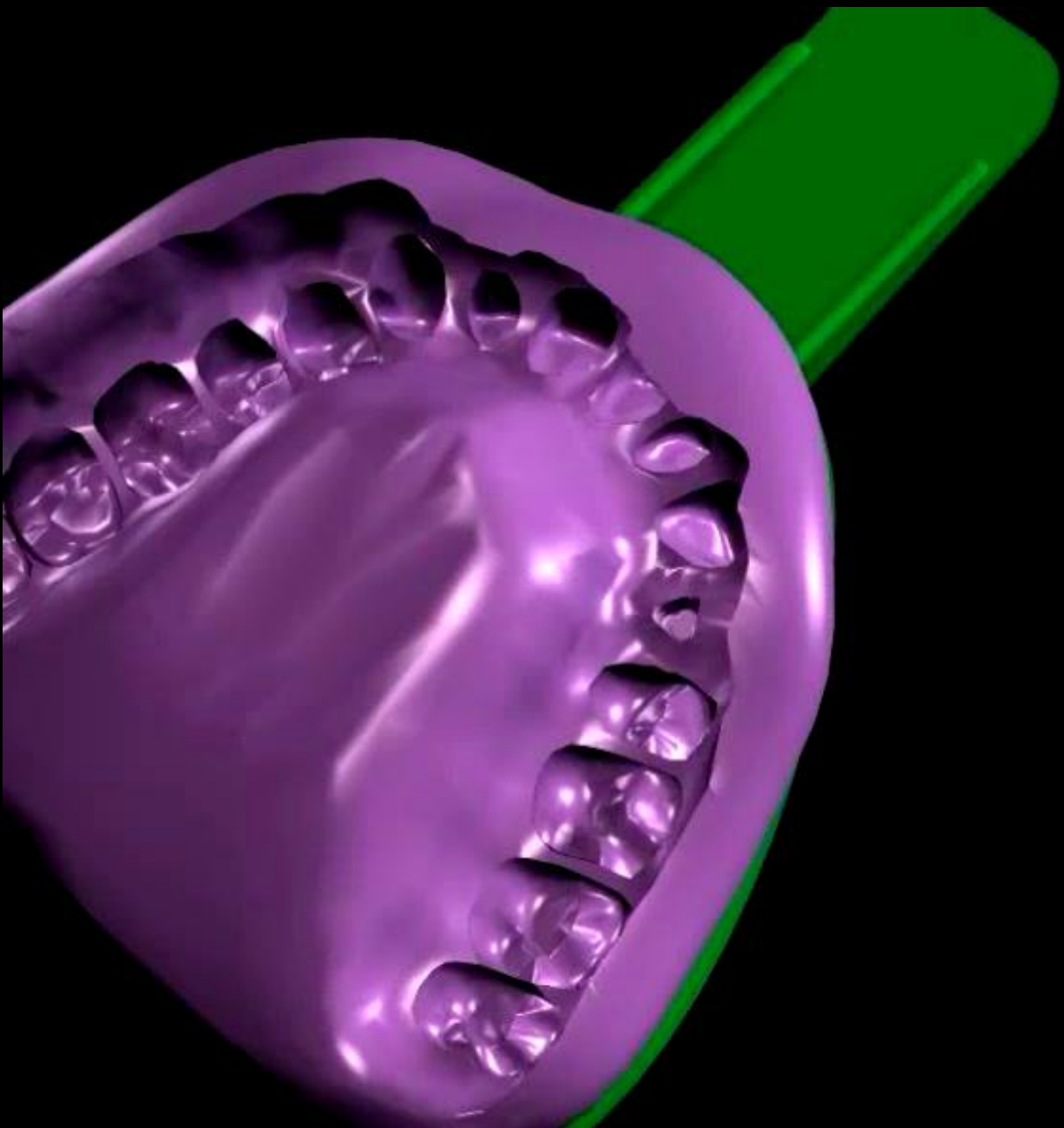




# Impression Techniques

- **Implant Level Impressions**
  - Pick Up (Open Tray).
  - Transfer Type( Close Tray).
- **Abutment Level Impressions**
  - Direct Technique
  - Indirect Technique.





# Implant Level Impression Techniques





# Closed Tray/Transfer

Healing Abutment



Removal of Healing Abutment























# Impression Techniques

- **Implant Level Impressions**

- **Pick Up (Open Tray).**

- Transfer Type( Close Tray).

- **Abutment Level Impressions**

- Direct Technique

- Indirect Technique.

# Pick Up/Open Tray





















# Open Tray





**DIAPERS & POLITICIANS  
SHOULD BE CHANGED  
OFTEN  
BOTH FOR THE SAME  
REASON**

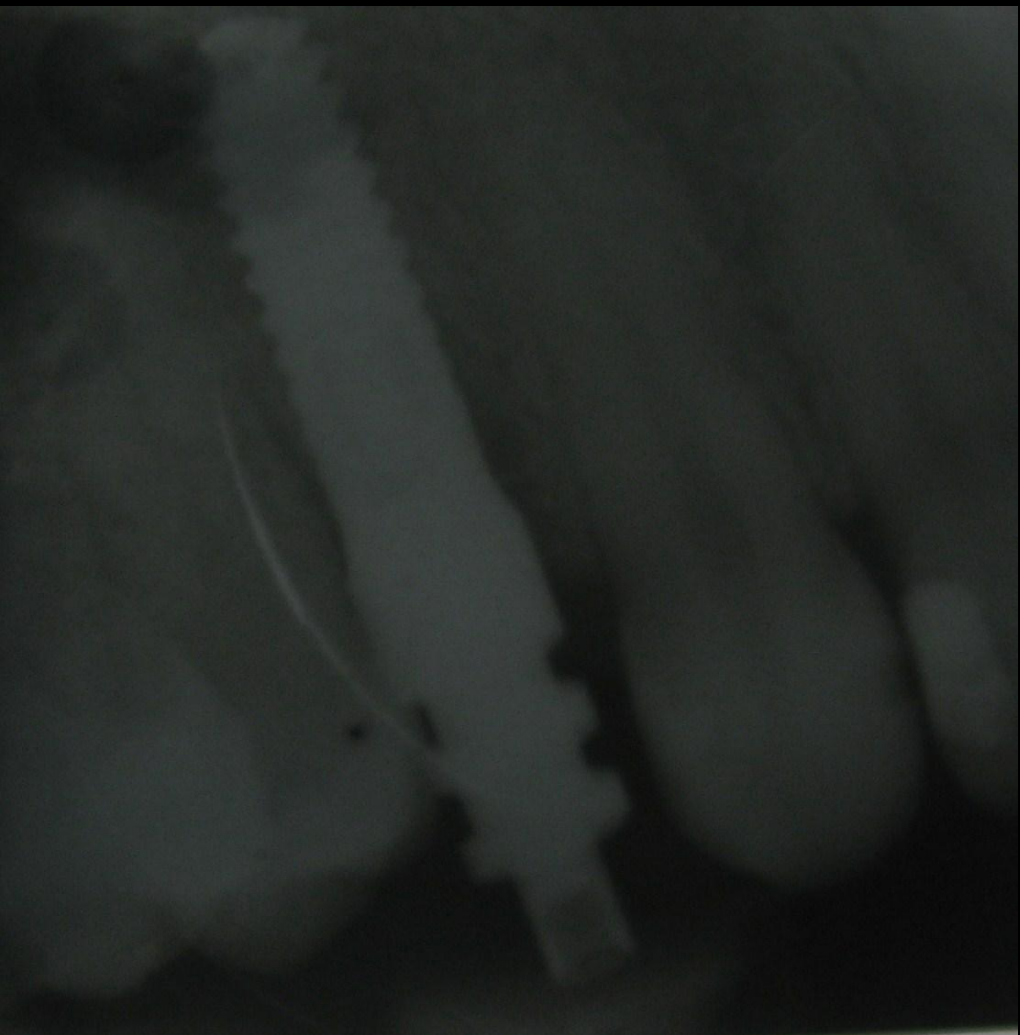


# Case



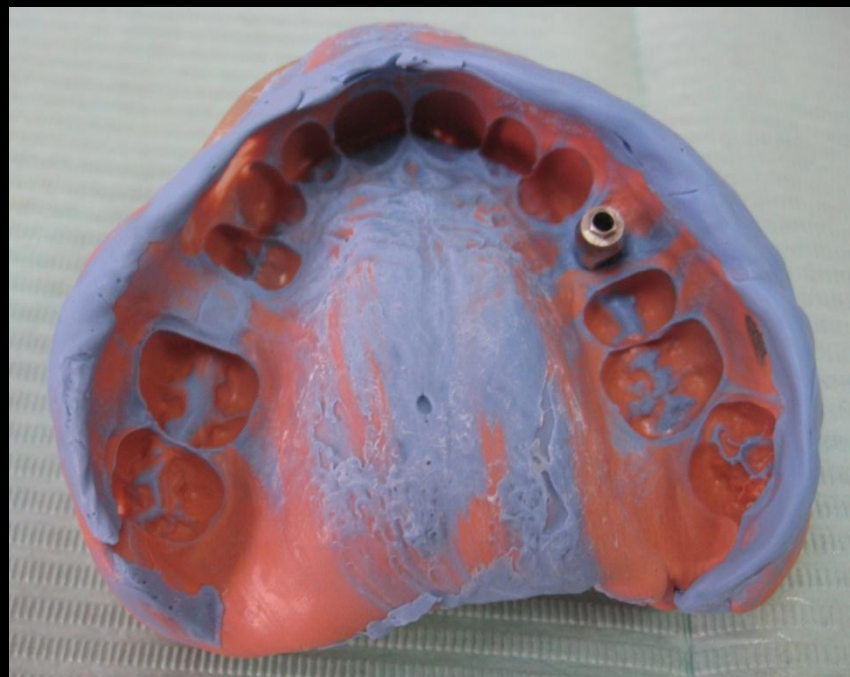












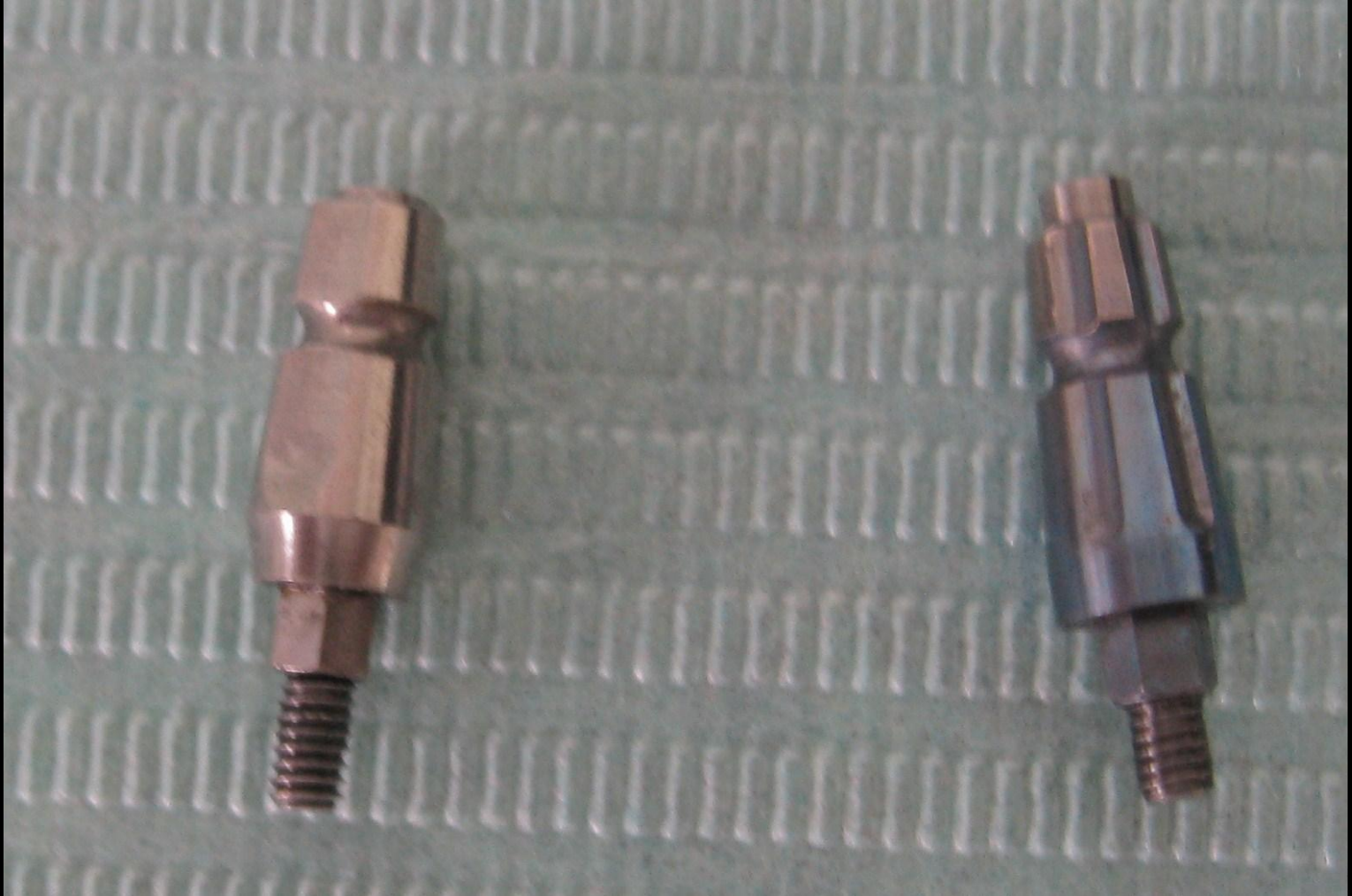


















# Terminology

- Pick Up Tray
- Custom Tray Impression
- Square Impression coping
- Direct Technique
- Transfer
- Stock Tray impression
- Tapered impression coping
- Indirect Technique

# Indication For Closed Tray

- Limited inter arch space.
- Tendency to gag.
- Difficult access in the posterior region of the mouth.

*Liou Ad 1993*





# Advantages of Closed Tray

- ❖ Easier
- ❖ Suitable for short inter arch distance.
- ❖ Visual fastening of the analog to the coping is more accurate



*Conrad H. 2007*



# Disadvantages of Closed Tray

- Inaccuracies with recovery and subsequent deformation of impression material may be encountered with **nonparallel implants**.
- Not Suitable for **deeply placed implants**.





# Advantages of Open Tray

- Reduces the effect of the implant angulation
- Reduces the deformation of the impression material.
- removes the concern for replacing the coping back into its respective space in the impression.

*Heather J*

# Disadvantage of Open Tray

- The **movement of impression copings** inside the impression material during clinical and laboratory phases may cause inaccuracy in transferring the spatial position of implants from the oral cavity to the master cast.

Vigolo et al. (2003)

# Disadvantages of Open Tray

- some **rotational movement** of the impression coping when securing the implant analog may occur.
- **Blind attachment** of the implant analog to the impression coping may result in a misfit of components.



*Heather J.*

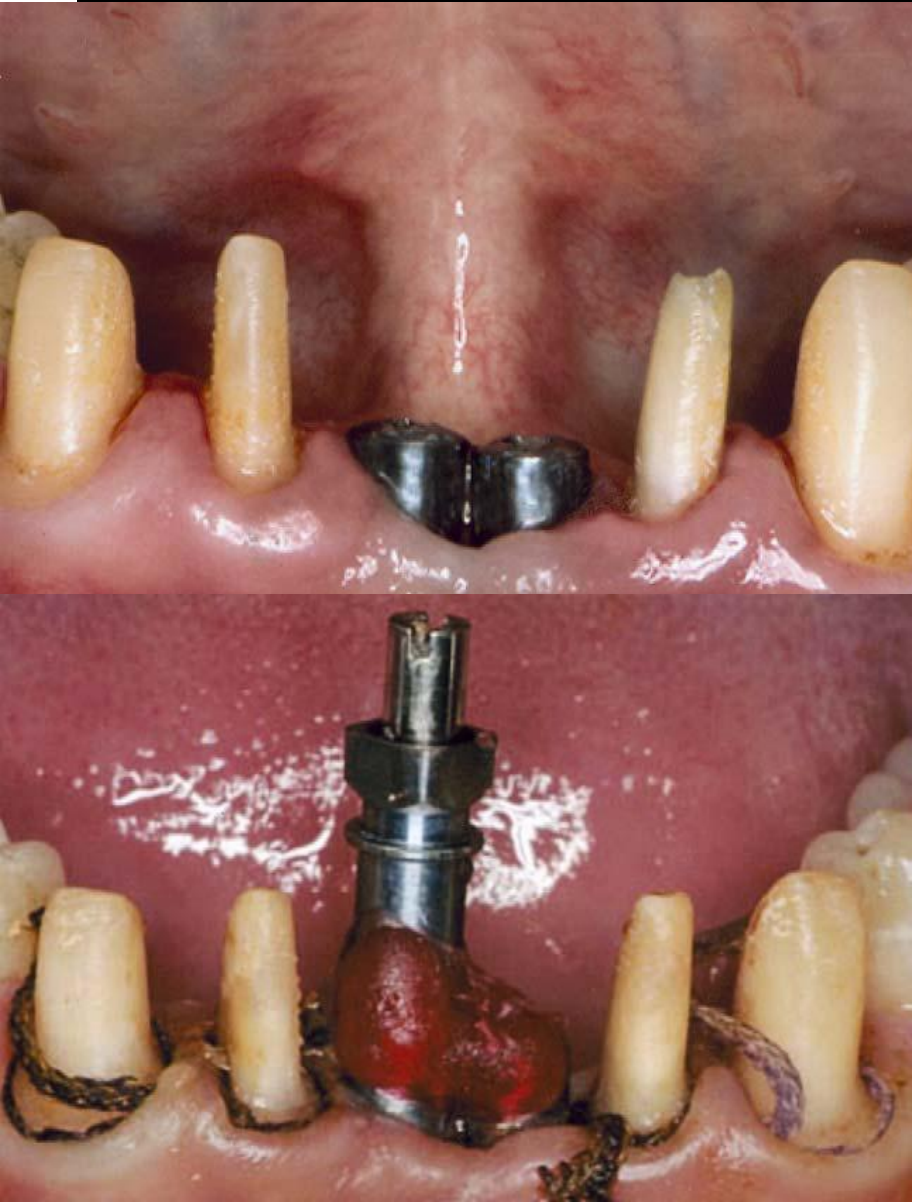


# Impression tips

You can play with impression posts , but you cant play with implant analogues.



# VERY NEAR IMPLANTS



Shortened impression coping secured with autopolymerizing PMMA resin to unmodified coping.



# Abutment Level Impression

# Impression Techniques

- **Implant Level Impressions**

- Pick Up (Open Tray).

- Transfer Type( Close Tray).

- **Abutment Level Impressions**

- Direct Technique

- **Indirect Technique.**



# Abutment Level Impression

**Healing Abutment**



**Removal Of Healing  
Abutment**





























# Impression Techniques

- **Implant Level Impressions**

- Pick Up (Open Tray).

- Transfer Type( Close Tray).

- **Abutment Level Impressions**

- **Direct Technique**

- Indirect Technique.



# Movie

# Direct Abutment Level Impression

**Remove Healing Abutment**



**Place Transfer Coping**



# Direct Abutment Level Impression

**Block out hex hole**



**Make full-arch impression**



# Direct Abutment Level Impression

Assemble coping and analog

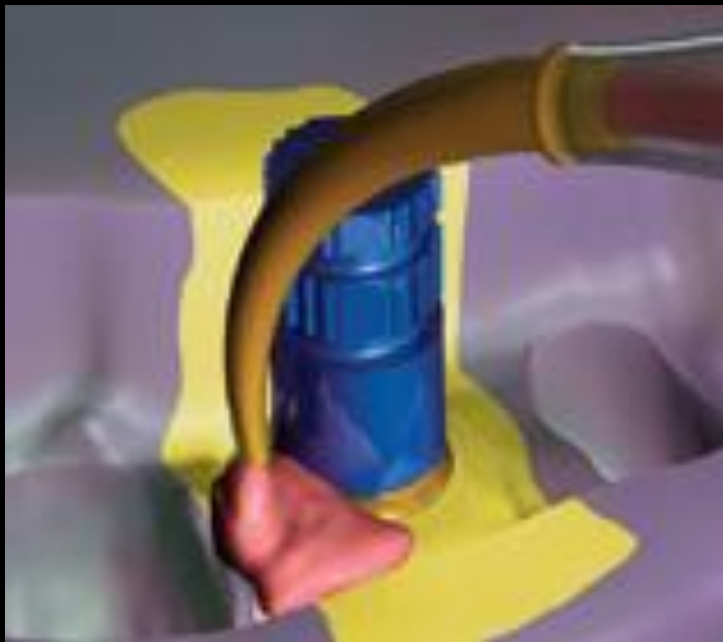


Index coping into impression

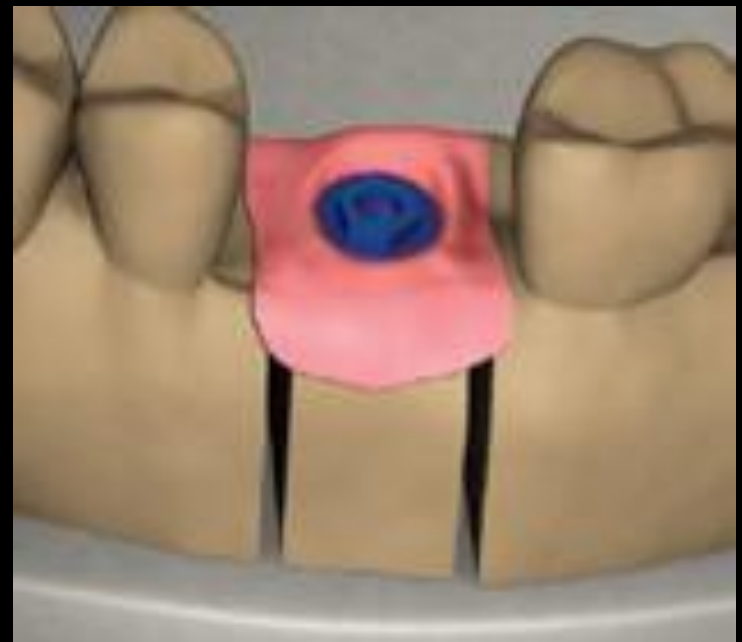


# Direct Abutment Level Impression

Create soft tissue model



Fabricate working cast





# Advantages of Implant level impressions

- Simple provisional restoration fabrication
- Selecting abutments in the laboratory
- For custom-made abutments



# Implant Level VS Abutment Level

- Prefabricated vs. Custom made abutments
- Implant Level (generally *screw-retained*)
- Abutment level (generally *cement-retained*)



# Splinting

The materials used to splint copings are composite resin, plaster, or acrylic resin.

*Cabral LM 2 2007*







# **Comparison between Impression Techniques for Implants**

# 14 Articles

- Pick up

5

- Transfer

2

- No difference

7



# 11 Articles

- Less than 3 implants

No  
Difference

- More than 4 implants

Pick Up  
Technique

# 17 Articles

- Splinting

7

- Not to splint

3

- No difference

7

# 11 Articles

- Polyether

1

- No difference  
Polyether  
and PVS

10



# Conclusion

- No patient-related data were found, hence the **clinical implications** of the dimensional discrepancies between impression-taking methods is **unknown**.
- While **laboratory studies** offer insight into the capabilities of a system, they **do not guarantee clinical outcomes**.

*Prosthodontic considerations designed to optimize outcomes for single-tooth implants. A review of the literature  
MB Lewis,\* I Klineberg*

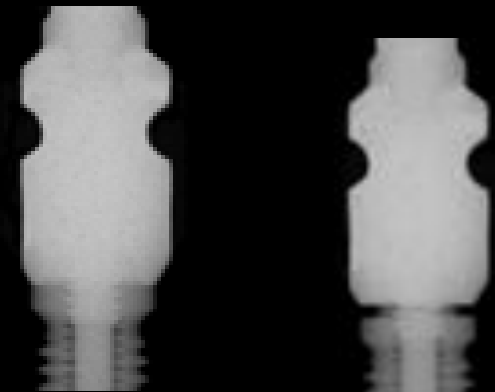
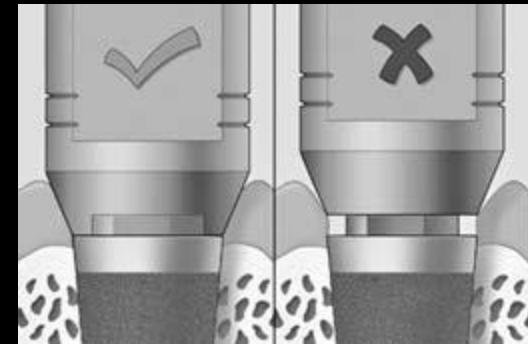
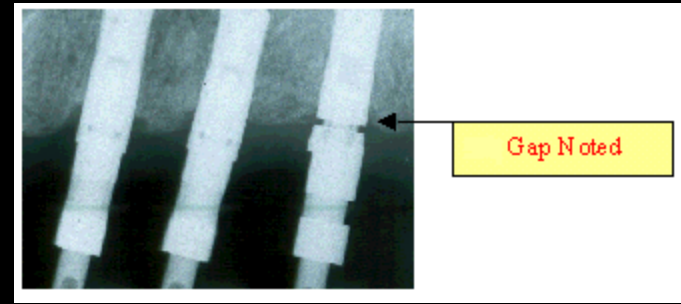


# Trouble Shooting for Dental Implants



# Errors

- It is important to take a periapical X-ray to verify the fit between the transfer coping and the implant.
- **Verify the seating of components**





# Errors

- Improper interface, note small gap between impression post and implant analogue.
- Ensure that impression pin and model analog are securely screwed together and fully seated in impression



# Errors

- Inhibition of the polymerization of vinyl polysiloxane (VPS) impression materials has been reported to occur with the use of latex protective barriers such as gloves



# Trays

- Metal not plastic
- Perforated or not
- Use tray adhesive
- Rim lock tray

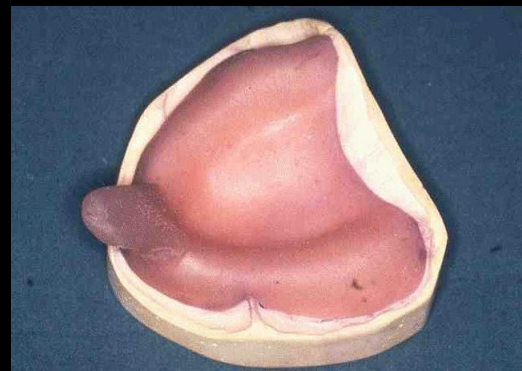
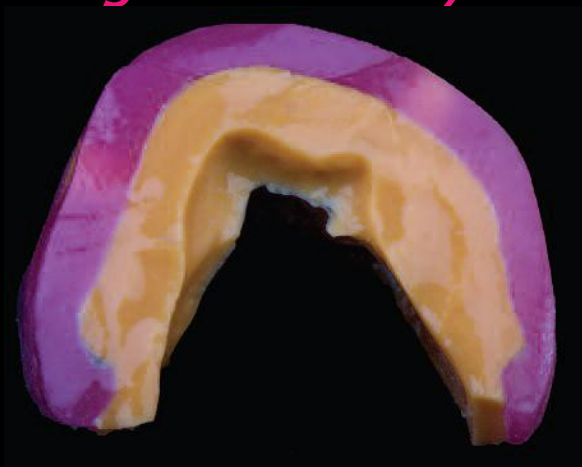




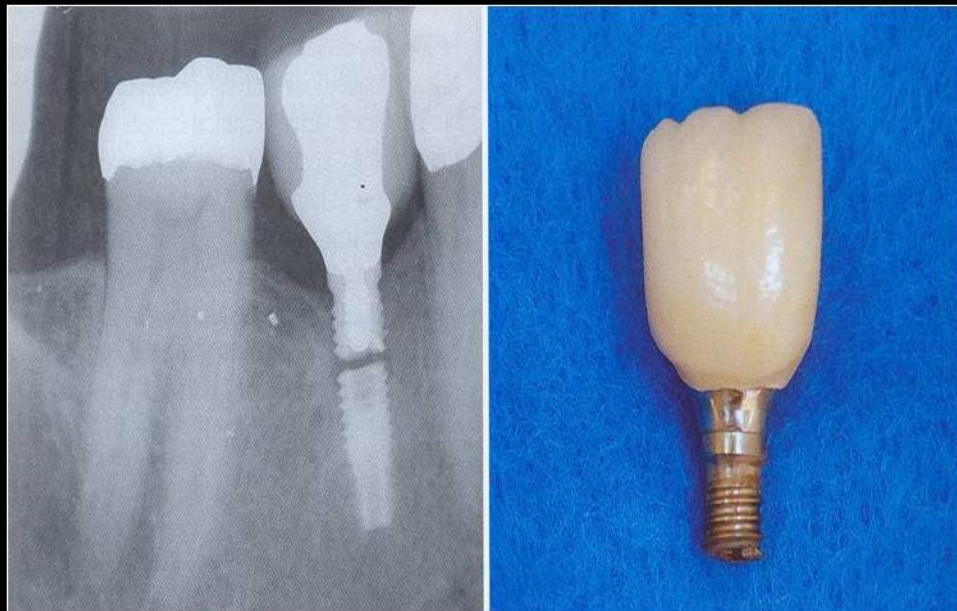
# Errors

models obtained from impressions with **special trays** present higher accuracy with respect to the impressions obtained with **stock trays**


*uniform thickness of material throughout the tray*



**“Precise impression methodology would decrease the failures experienced related to the supra structure fabrication”**



OZKANE 2006

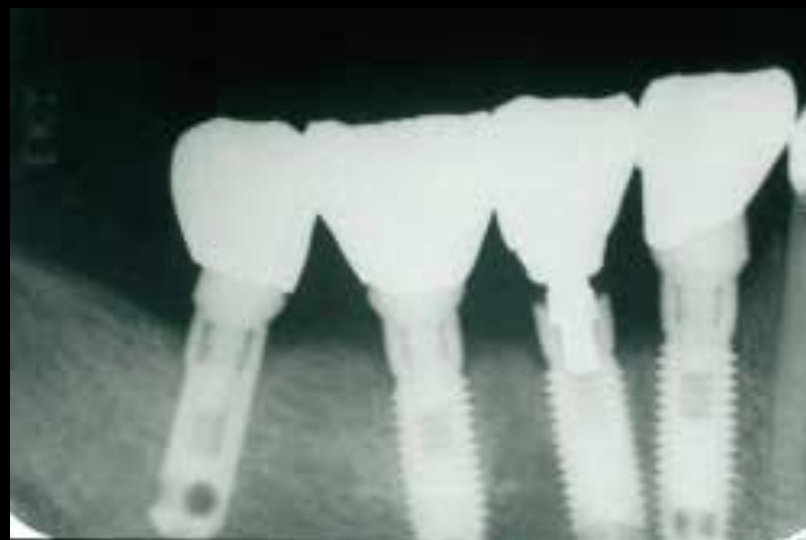


Imprecise superstructure fit results in  
**mechanical and biologic consequences**  
that disrupt the function of dental  
implants.

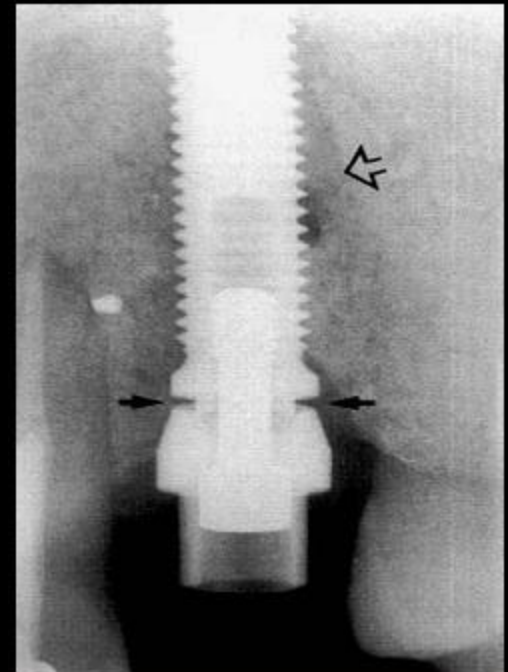


*Heather J. et al, 2007*





“passive fit of the supra structures onto the abutments and/or implants are of great importance”



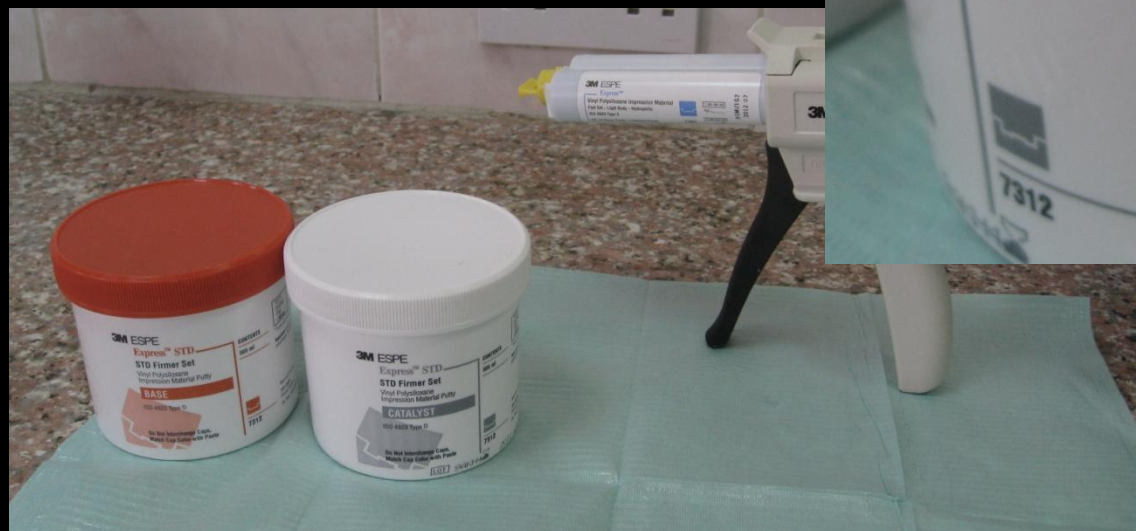
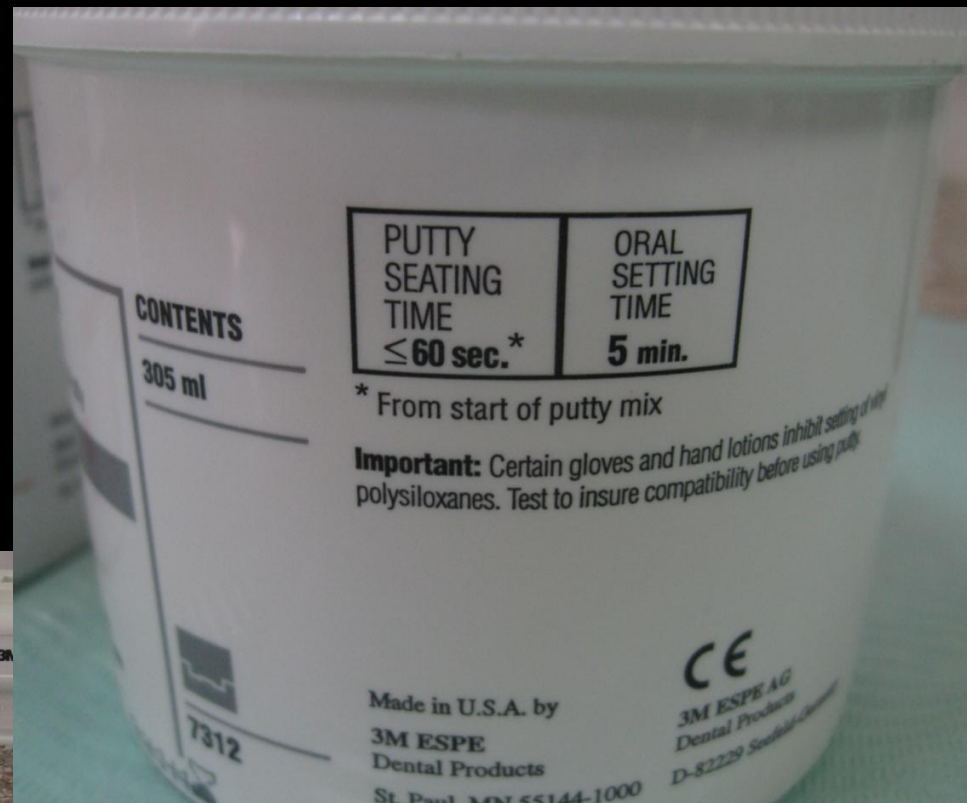




# Tips

- If Implant is placed so **deep** and u need to take transfer type: use small Diameter impression post.
- Always remove healing abutment and immediately place the impression post. Put them in order.



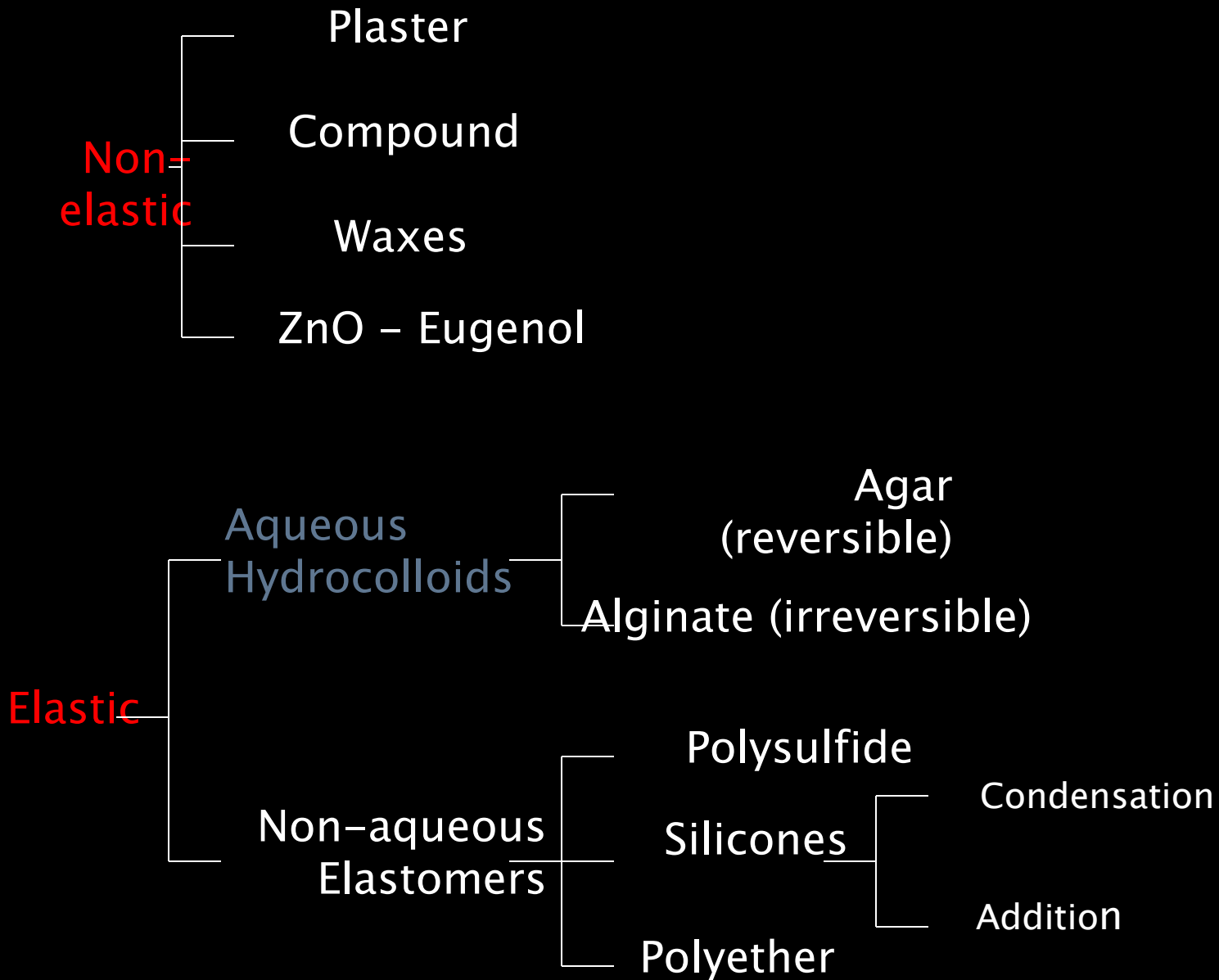
# Respect Impression Material





# Impression Materials

# Impression Materials







# Future Trends





# OPTICAL IMPRESSIONS





# *Say Goodbye To Impression Copings*

Prepare the scan – without  
scan spray



Prepare the scan – with  
scan spray





Thank You