Immediate Implant Placement and Provisionalization:

**Advantages:**
- Preservation of tissue.
- Reduction of sequences (simplification of treatment).
- Enhanced patient and aesthetics and comfort.

**Disadvantages:**
- Technique sensitive - surgery and provisionalization.
- Failures may provide significant challenges both surgically and restoratively to correct.

**Immediate Implant Surgical Placement Criteria:**
- Primary implant stability is required for success of treatment: resistance to micromotion of \( \leq 30 \) microns.
- For early loading, require minimum insertion torques of 35 Ncm through to 50 Ncm.
- Require minimal hard and soft-tissue trauma to maximize primary stability and optimize gingival preservation.
- Require knowledge of site anatomy without laying a flap: flapless surgery with a periotome. Recommend guided surgery.
- Implant platform placement 3 mm apical to the midfacial of the gingival veil (midfacial free gingival margin).
- Maximize engagement of apical bone.
- 1 wall boney defect acceptable.
- 2-3 wall osseous defect: graft only. Immediate implant placement contraindicated.
- Cortical stabilization when feasible, e.g., floor of the nose.
- Maxilla: allow 2 mm distance from outer facial boney profile to facial aspect of the root form implant. Fill any gaps with with boney graft material (xenograft) to maintain boney dimensions and future soft-tissue support and profiles following osseointegration.
- Mandible: allow 1.5 mm to 2 mm distance from outer facial boney profile to facial aspect of the root form implant.

**Immediate Provisional Options:**
1. Removable acrylic partial denture.
2. Provisional fixed partial denture utilizing natural teeth.
3. Provisional Implant Supported Crown: direct or indirect.
4. Custom healing abutment (emergence profile section only of an immediate provisional) plus removable partial denture (no intaglio pressure).

Removable acrylic partial denture:

- Ovate pontic designs unnecessary and undesirable: requires 24/7 wear and increases the potential to transfer adverse forces to the implant platform during integration.
- Adjust the intaglio of the denture pontic to prevent pressure to the underlying tissue and integrating implant.
- Adjust occlusion: no pressure on the pontic.
- Patient to wear the prosthetic only when in public and eating. Not to be worn during sleep.
- Remove for sleeping: clean and place in a container of tap water (cold) with no denture cleaning tablets (these products remove the plastisizer in tissue conditioning materials, rapidly ageing these transitional relines).
- Remove after meal for cleaning.

Custom Healing Abutments:
Custom healing abutments can be constructed from provisional implant components/abutments. These abutments would help to develop/maintain the subgingival emergence profile following tooth extraction and implant immediate placement. A transitional partial denture is still required for social aesthetics. The intaglio of the pontic is adjusted to eliminate force transfer to the healing abutment/implant. Same patient instructions as discussed above.

Provisional fixed partial denture (FPD) utilizing natural teeth:

- Adjust the intaglio of the provisional FPD pontic/s to minimize pressure to the underlying tissue and integrating implant/s.
- **Advantage:** avoids the potential for adverse force transfer to underlying integrating dental implants.

Provisional Implant Supported Crown: direct or indirect.
**Objectives:**

- Support the soft tissues.
- Develop/maintain the subgingival emergence profile.
- Contain graft.

**Provisional Implant Crown:**

- Undersize gingival contours to maximize biologic width potential and minimized excessive lateral pressures on immature soft-tissue.
- Zero and/or minimized emergence profile for first 1-1.5 mm then emerge out to desired restorative dimensions at tissue crest.
• **Venting:** vent the lingual close to the margin and/or double cementing venting technique with a replica/duplicate abutment to minimize the potential for excess cement ingress beyond the margins of the crown, thereby minimizing the potential for bacterial related implant complications and/or failure.

• **Single units:** take out of occlusion, and no lateral guidance or interfering/non-working contacts.

• **Partially edentulous:** splinted provisional restorations.

• **Completely edentulous:** splinted cross-arch stabilization, cement or screw-retained.

• **Time frame:** deliver up to 1 week from time of surgery. Then leave undisturbed for an additional 6-8 weeks prior to significant modifications.

*Indirect Technique:* fabrication indirectly on a diagnostic cast. The abutment and crown is then retrofitting intra-orally following implant placement. However, significant adjustments are required, and this may not prove to be an efficient utilization of chair-time. *Consequently, this approach is not recommended*

*Direct Technique:*

• Transitional/temporary or definitive titanium abutment and fabrication of the provisional crown directly in the patients mouth and completed extra-orally on a laboratory analogue.

• Technique sensitive and significant chair-time required.

*Laboratory Fabricated:*

• Master cast generated form an implant level impression (use rubber damn to protect surgical site from impression material).

• *Recommended approach.*

*Team Approach Protocol/Recommendations:*

• Have an immediate acrylic removable partial denture constructed in advance. This partial denture is to be utilized if implant primary stability is not sufficient for immediate provisionalization, and/or as an interim while the laboratory fabricated provisional is constructed. This way, the patient always leaves the surgical office with transitional tooth replacement.

• Book the patient a few days after the surgery or the following day in the restorative teams office for implant level impressions.

• Take an implant level impression with a rubber damn barrier (utilizing polyvinyl siloxane impression material), opposing, shade and maximum intercuspation record.

• Send to the laboratory for either screw or cement retained provisional fabrication.

• Have up to one week from surgery to delivery the crown (the sooner the more favorable).

• Deliver provisional and have it completely out of occlusion for the partial edentulous and cross-arch stabilization (group function) for the completely edentulous.
• Do not attempt removal during the 2-8 week period.
• At 12 weeks, significant modifications can then be made.
• Following adequate osseointegration, implant level definitive impressions can be taken. Utilize the modified custom impression post technique to transfer the subgingival emergence profile contours/information to the master cast.
• Construct the definitive implant crown/s.

Contraindications:
• Parafunction (Sleep Bruxism).
• Diabetes (uncontrolled).
• Heavy Smokers.
• Immuno-compromised.

Challengers:
• Implant position.
• Implant micromovement.
• Soft-tissue marginal heights/position may not be stable: may experience significant changes during the osseointegration phase.
• Immediate function/loading: if avoidable, still the preference.