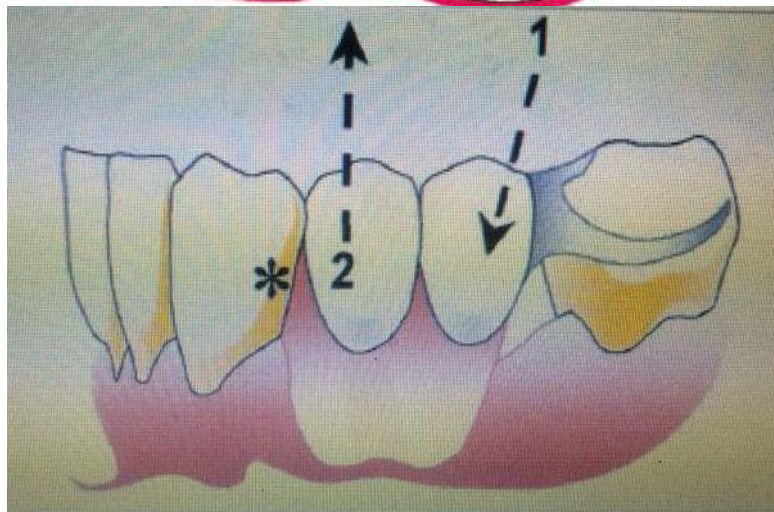
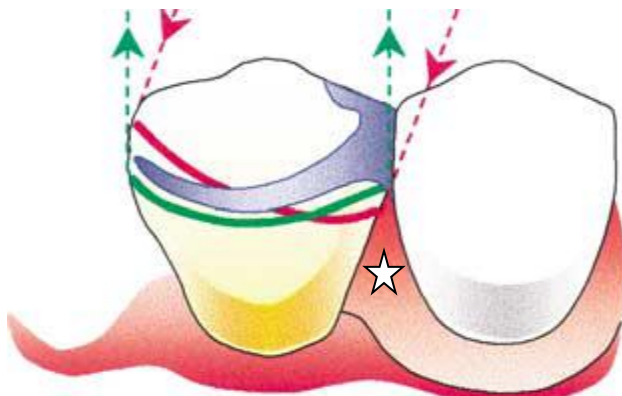


- In Kennedy classification we start from the most posterior area;that's why class **IV** has no modification.
- Usually **I&II** are alike,almost same design ,same impression technique and the need for a future reline so we deal with them as one category.
- **III** and **short span IV** as bounded saddles so different technique.
- **To design any case you should follow these steps:**
 1. Classification
 2. Saddle area
 3. Primary abutments: next to the edentulous area
 4. Secondary abutments: no relation with the edentulous space but they hold components whether in case of cross arch stabilization (unilateral cases) or indirect retention (Anterior or posterior to the fulcrum)
 5. The components
- **Components of RPD:**
 1. **Supporting elements:**
 - ✓ Support:Resistance of movement toward the tissues
 - ✓ Rest or the base itself (especially in the palate)
 - ✓ Should be rigid supported by a hard structure (tooth) to prevent impingement of soft tissues
 2. **Retaining elements:**
 - ✓ Undercuts
 - ✓ Well extended intimate contact with the denture base
 - ✓ Clasps, indirect retainers
 3. **Connecting elements:**
 - ✓ Major connector: connects components on one side with the other side
 - ✓ Minor connector: holding all the components
 4. **Anti rotational components:**
 - ✓ Indirect retainers work on the other side of the prosthesis
 5. **Denture base material and flange.**
- Nature of support will give you the type of your RPD,according to number and distribution of teeth plus their condition.
 - ✓ **Acrylic RPD:**purely tissue support
 - ✓ **CO-CR RPD:**teeth/teeth-tissue support

- **The last step is to re-evaluate your design:**

For example you can omit a clasp and get an advantage from the available undercut in that area, simplicity is required, in class IV we can use the labial undercut to omit a clasp on a canine or a premolar for aesthetic reasons, this will be stronger than any clasp that could deteriorate and become loose with time.



- **Types of occlusion in RPD:**

Confirmative	Re-organised
Enough number of teeth and the occlusion is obvious we only have few missing teeth	No posterior occlusal stability or in case of a complete denture opposing your RPD
With and without the denture the patient will have the same bite	Register the bite at the most retruded position (like the complete denture)

- Every cast has a zero tilt but not every cast has an alternative tilt the could be the same.

- **Two stages of surveying:**

- ✓ **Zero tilt:** to determine the path of displacement (Representing the functional part inside the patient's mouth-vertical forces by sticky food)



- ✓ **Alternative tilt:**
to determine the path of insertion and removal according to specific criteria and requirements like:

- 1) Interferences
- 2) Aesthetic
- 3) Retention
- 4) Parallelism of guiding planes



Best example: getting an advantage from the labial undercut in class IV
1st picture is at zero tilt, where the proximal/mesial areas are undercuts according to the path of insertion.

2nd picture is at posterior tilt which is more esthetic because we hide the black triangular; we open up the undercuts area so the denture can engage it.

Appearance:



- Undercuts on the mesial aspects of the abutment teeth.
- Unsightly gap between the denture saddle and the abutment teeth gingival to the contact point.

64



posterior tilt so that the analysing rod is parallel with the mesiolabial surfaces of abutment teeth.

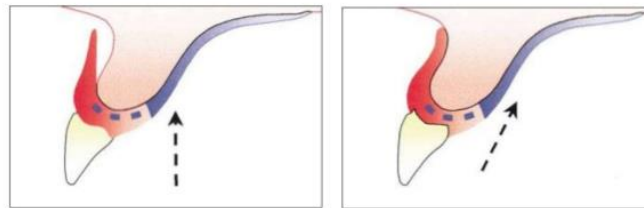


contact of abutment tooth over the whole of the mesiolabial surface and a much better appearance results.

65

Another example just to show you how we open up the undercuts so denture can be engaged on proximal surfaces of anterior teeth. We only care about this when proximal surfaces on the mesial of anterior tooth (mesial undercut). So if 1st PM is missing, proximal surface is distal to the canine so it won't show too much, depending on the case of course.

Interferences:

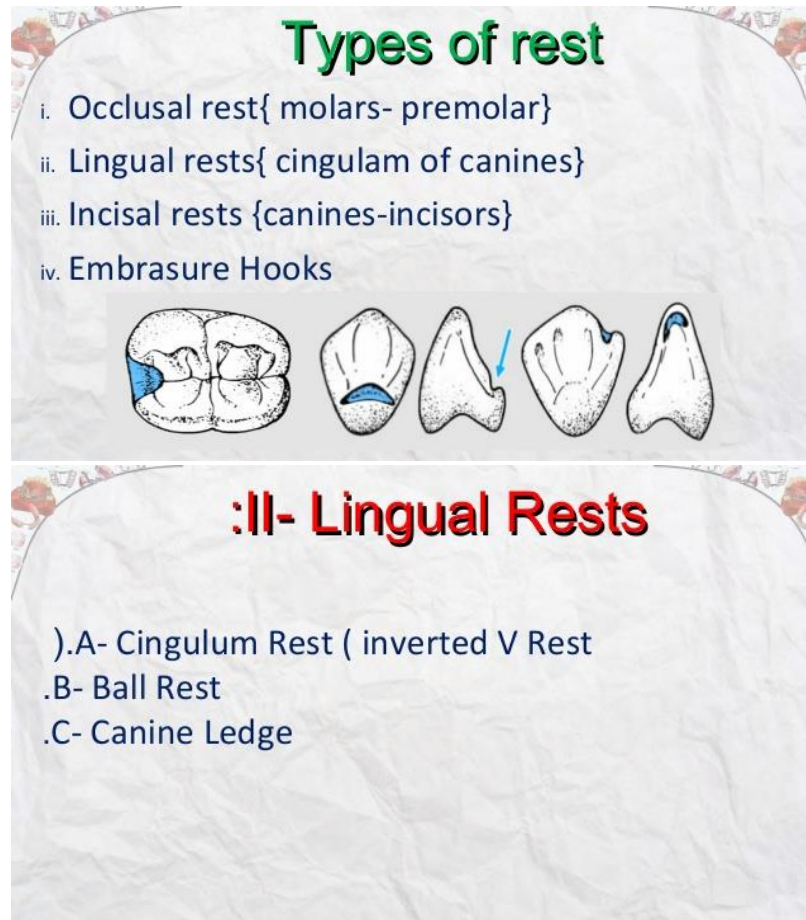


66

Clinically we tilt the cast but actually this represents the way of insertion of the denture.

- We decide the tilt according to the highest number of parallel surfaces (guiding planes) that leads to the least preparations
- **Rest seats importance:**
 - I. To direct the forces down the long axis of the tooth
 - II. No tongue irritation
 - III. Less noticeable
 - IV. More hygienic

- Rest seats:

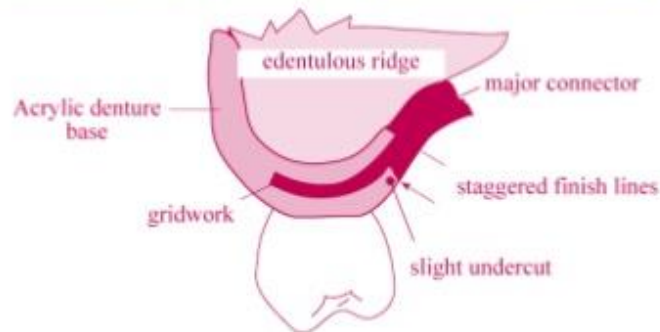


- **Retention distance:** the distance that's needed to keep the reciprocal arm in an intimate contact to be touching all the way through that's why the preparation for the guiding planes is not just proximal, for example :bulgy tooth that's needs more preparation buccally or lingually to attach the reciprocal arm.
- Reciprocal arm is a rigid component that doesn't flex and it aids in efficiency of retention as it prevents tipping of the tooth by balancing forces and prevention of clasp deformation.
- The major connector might work as a reciprocal component, for example ;the usage of a lingual plate will give you the reciprocation but the lingual bar a reciprocal element should be added.
- **Ladder like minor connector:** More acrylic, when we expect relining of the denture (More resorption is expected-class I &II)

- **Mesh pattern minor connector:** Less acrylic ,resorption is not expected-Bounded saddles (short spans)
- [Go back to the major connector lecture/3rd year for the exam.](#)
- Generally, in the lower arch your first choice should be the lingual bar if you have enough sulcus depth, if not go to the lingual plate (No enough sulcus depth, or if you have slight mobility in teeth so the plate works as a splint)
- The ring design: more edges so more noticeable for the patient, in case of torus.
- Horseshoe: least rigid, least favorable, in case of **extending** torus
- Less coverage produces better sensation and better hygiene.
- **Selection of connector type is based on :**
 - a) Mouth comfort
 - b) Rigidity
 - c) Location of the denture base
 - d) Indirect retention (For ex plate in the lower)
 - e) Anatomy (depth of sulcus)
- **Internal and external finish lines:** (You should read about them by your own but this will help you) :

Acrylic resin finish lines

- The purpose of finish lines is to create a distinct resin-metal interface and to prevent the acrylic resin from becoming too thin
- Because acrylic resin gains its strength with increasing bulk, it should not be finished to a thin edge.
- If this is attempted, the material may chip or fracture.
- This can create unhygienic and potentially irritating conditions.



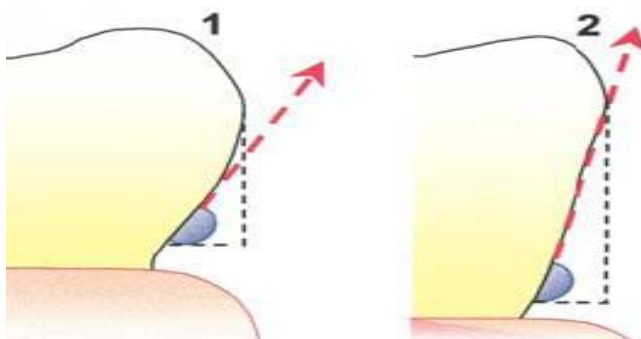
Internal finish lines :

- They are formed as a result of relief wax placed on the edentulous ridge prior to duplication. The relief wax creates an elevated area on the resultant refractory cast. The margins of the relief wax establish internal finish lines in the completed metal frame work. Margins should be sharp and well defined.

External finish lines:

- This also must be sharp and should be slightly undercut to help lock the acrylic resin to the major connector. the internal angle formed at the junction of major and minor connector should be less than 90 degrees.
- An external finish line is formed by the placement and carving of the wax during framework fabrication. the contours of external finish line should be consistent with the contours of major connector. www.indiandentalacademy.com

- **Generally (not a rule)**, Maxillary undercuts are buccally and mandibular ones are lingually.

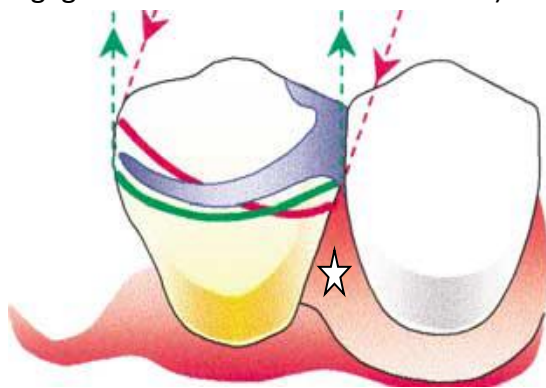


1 & 2 have the same depth but

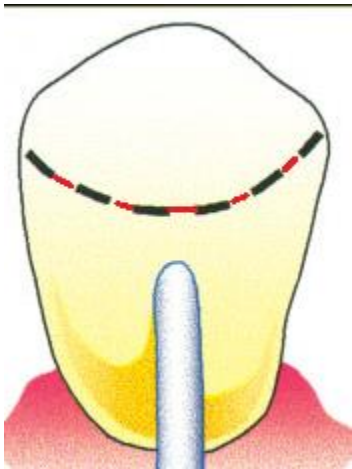
retention is more in 1 because we'll have more deflection so greater resistance to replacing forces not a gradual loss in retention like #2. (so same depth of undercuts doesn't give you the same amount of retention)

- **Type of the calsp (shape and material) is determined according to:**
 - a) Depth of the undercut (Infra-supra bulge)
 - b) Position: Next to the edentulous area, Ring or reversed.
Away from the edentulous area, Convintional C clasp .
- ✓ **Ring clasp** has two rests so more stability and in cases of isolated tipped molars,if C clasp is used the tipping will increase and it'll be pushed more toward the tipped site so the ring will not affect the tipping.

- In the following case we have 2 survey lines;**red** which represents the path of insertion and removal and **green** for the displacement path.
We have retention from the acrylic engaging the undercut so we don't have a problem in the path of displacement so we let the clasp arm be engaging the undercut according to the path of insertion and removal (below the red line, the green one isnot important here due to the previous mentioned reason) and an advantage of this, being more hygienic, as we are away from the gum.
(If it engages both lines/undercuts it's okay, you'll get the same previous result but with a risk of gum irritation, to avoid this put it in the cross over point –not so deep- or engage the needed undercut not both)



- Another scenario,when you have **the same paths**,in bounded saddle for example we usually don't need another tilt (teeth are almost parallel and no undercuts to get retention from,the retention is mainly from the clasp)usually the two survey lines are overlapped and we engage the cross over point (below the two lines since they're overlapped so there's no specific one cross over point) "The doctor mentioned that the case in slide #40 doesn't represent this scenario so the following is an illustration for the case for more understanding" :
(The two ,lines are overlapped –Red and black-)



- **Slide # 41:**

1. Class 3 without modification.
2. Outline +guiding planes.
3. Rests.
4. Fulcrum at the rests (slide44) and expect the movements around the axis so simply toward tissue prevented by rests and away from tissue prevented by retainers.

Note: in class III unilateral and class II we must do cross arch stabilization ,you'll never find a unilateral RPD.

5. Cross arch stabilization (slide 46) on other side there should be an area thats equivalent to the edentulous area to get the effectiveness. double aker in that area so now movements toward the tissue around that axis are prevented by both double aker clasps on the other side (indirect support) and by rests on the same side.
6. Reassess your design (Slide 47) do we need the clasp (? Mark)? No because it's not preferable to put a clasp on a lateral and because there is a retainer on the same side and the other side and here there is some coverage (palatal) so we can omit it.
7. Major connector, to connect everything.

(Note that the palate could aid in the indirect retention also –when its covered-)

- The guiding planes should be short not the full length of the surface to aid in the stress breaking effect by disengagement during loading.