



SWAMI VIVEKANAND
SUBHARTI
UNIVERSITY
Meerut
UGC Approved
Where Education is a Passion ...



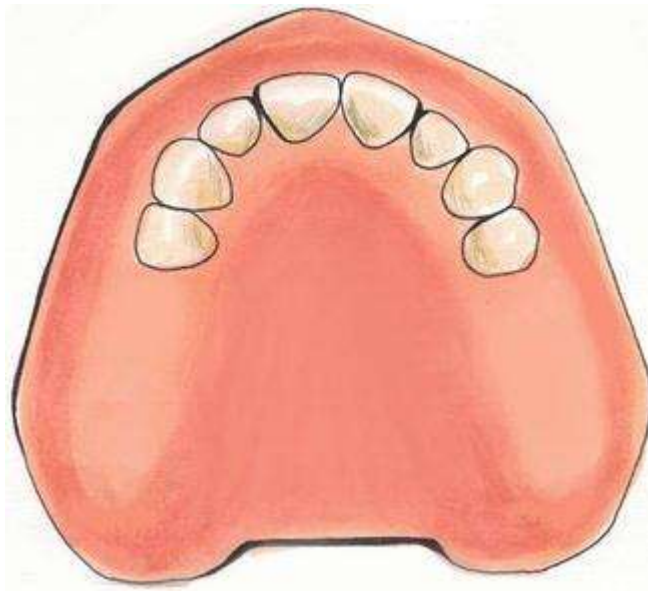
Biomechanics of RPD Design

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MEERUT



WHY WHEN HOW







TEMPORARY

TISSUE SUPPORTED

Gum stripper





TEMPORARY

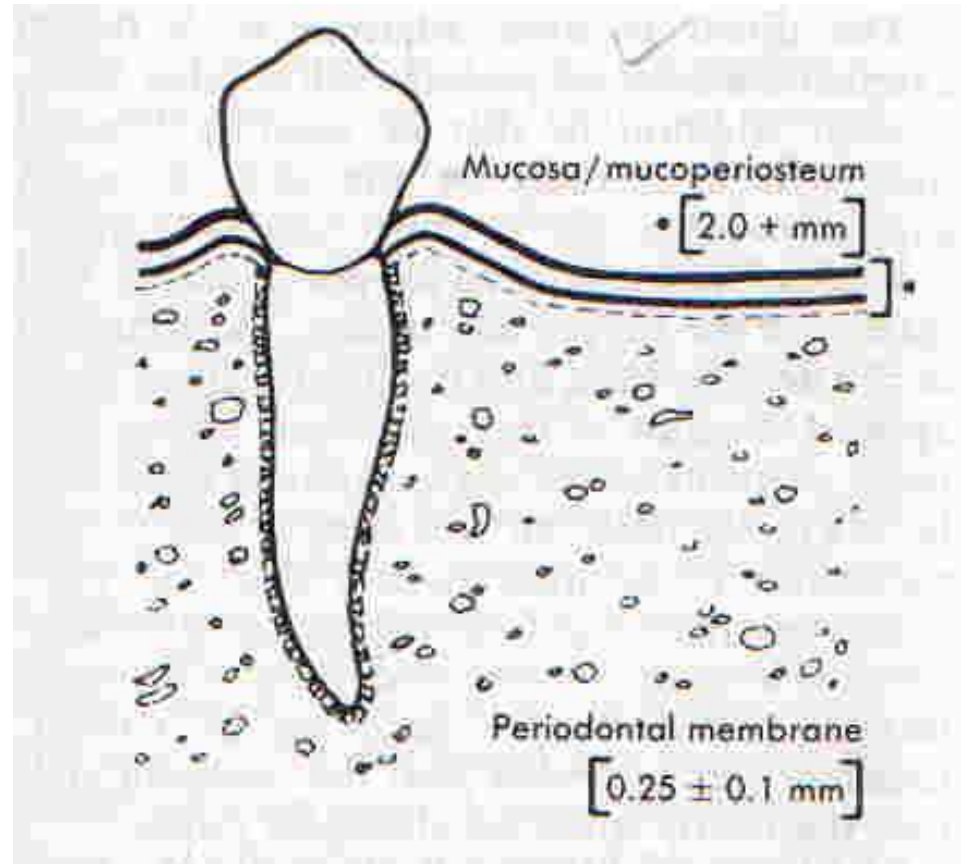
TISSUE SUPPORTED

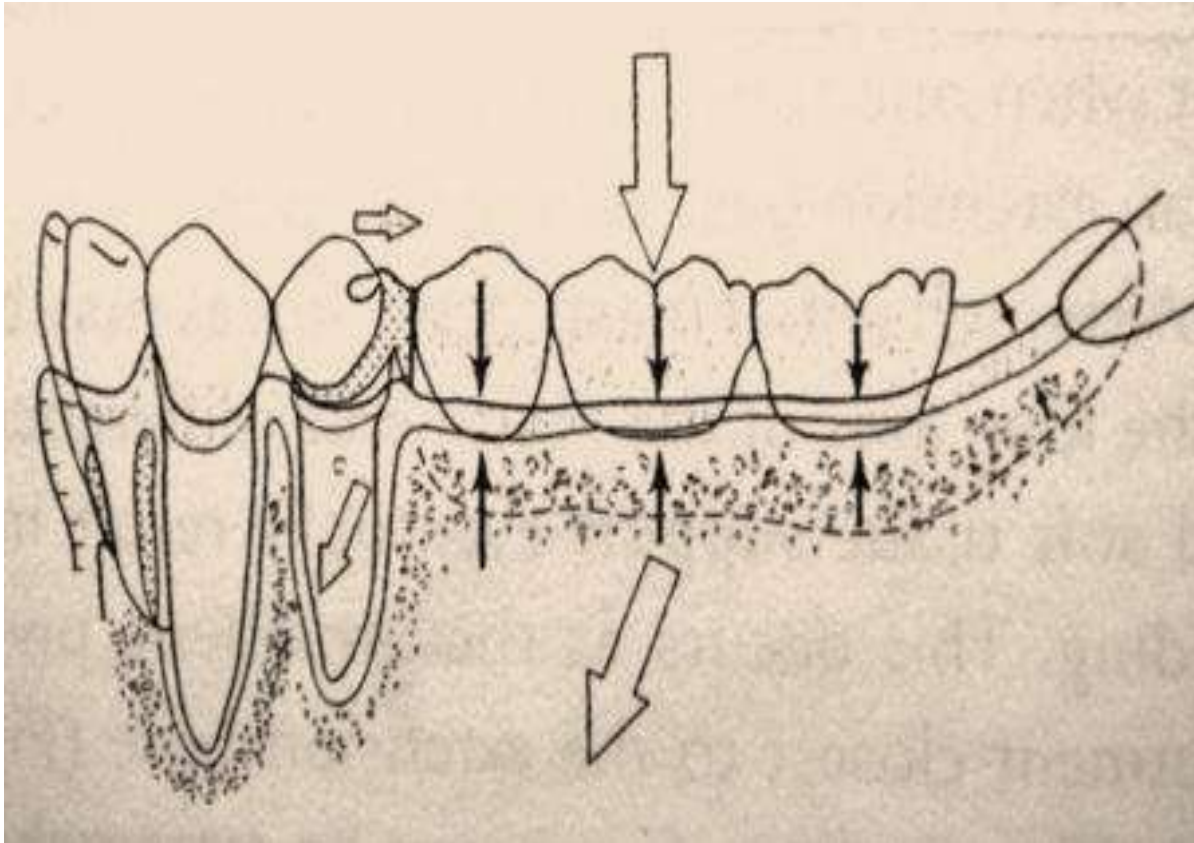
Gum stripper







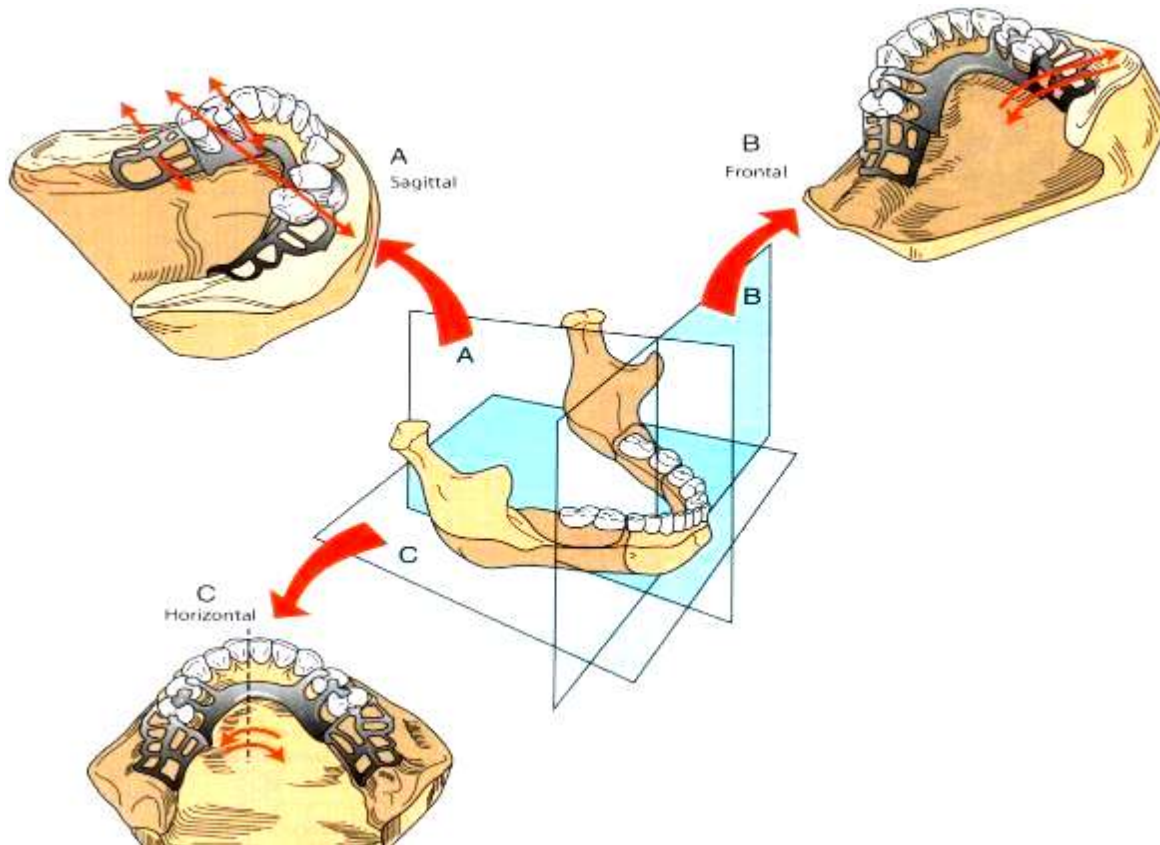




MOVEMENT OR ROTATION OF RPD AND GENERATION OF UNDUCE FORCE

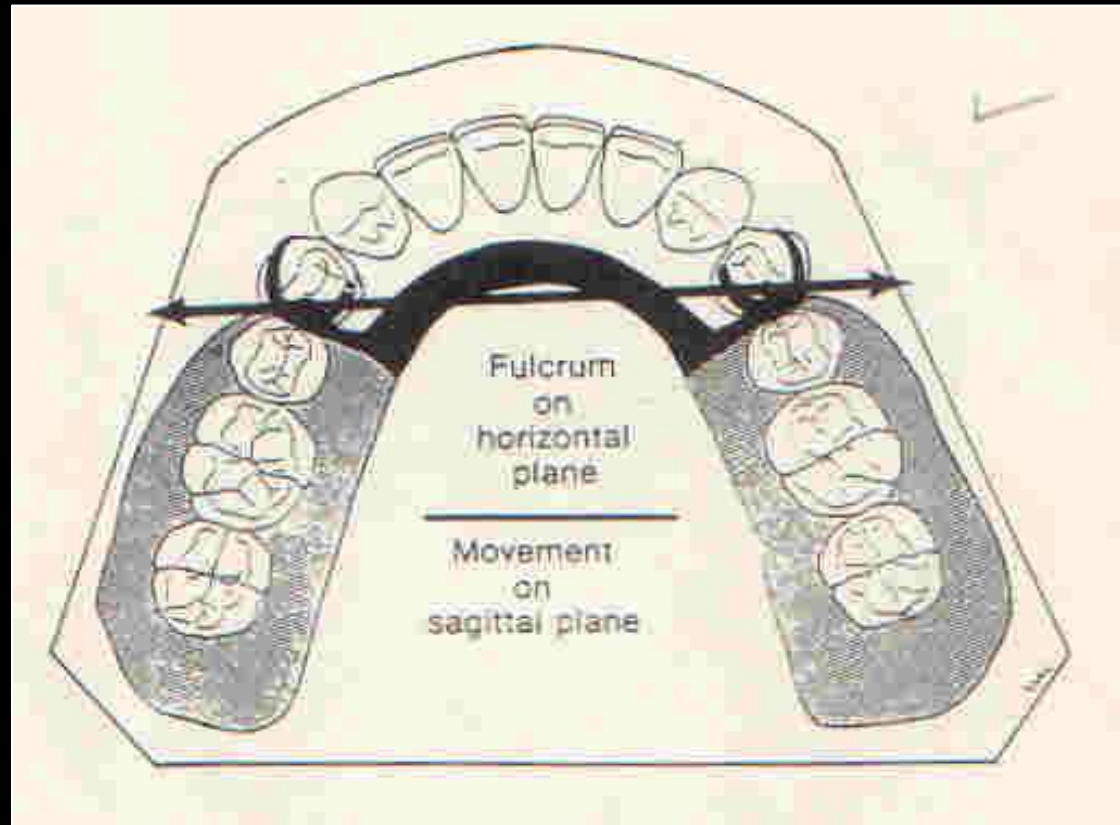


MOVEMENTS OF PARTIAL DENTURES





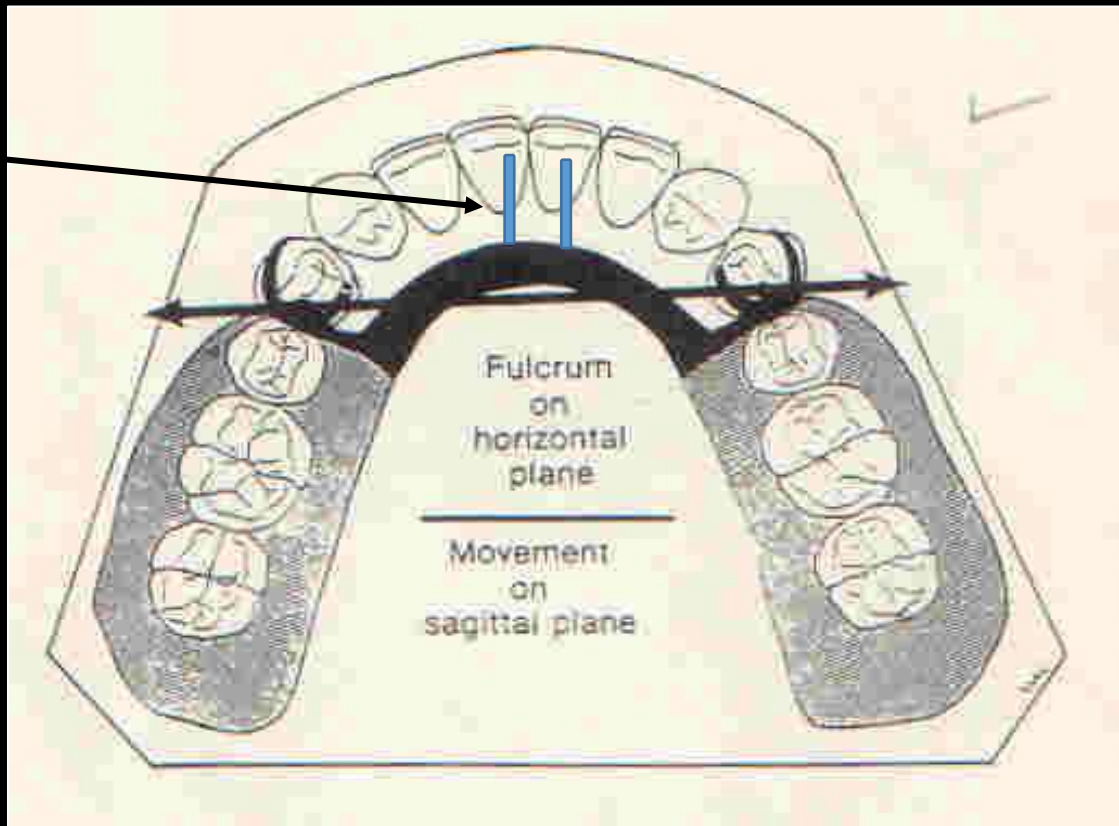
SAGITTAL PLANE





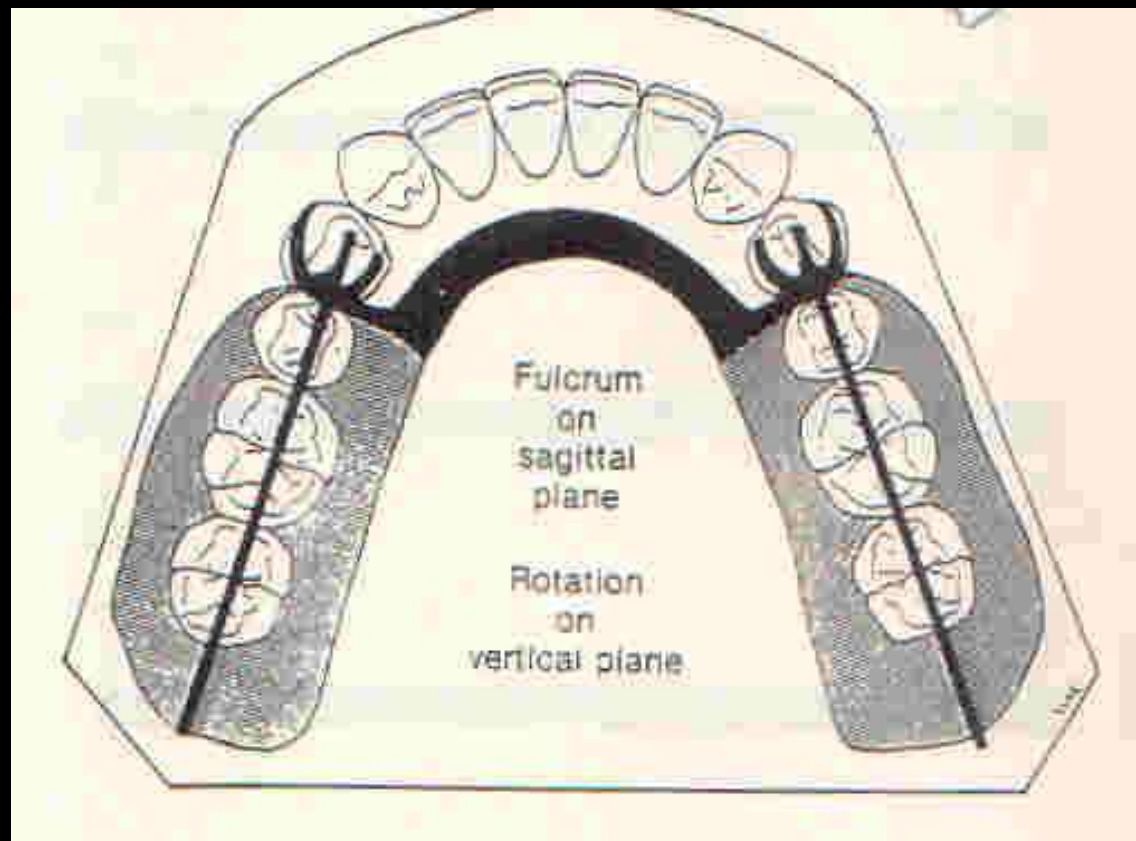
SAGITTAL PLANE

Indirect retainer will prevent the ant. part of RPD from going down, hence post. part of rpd will not get lifted up



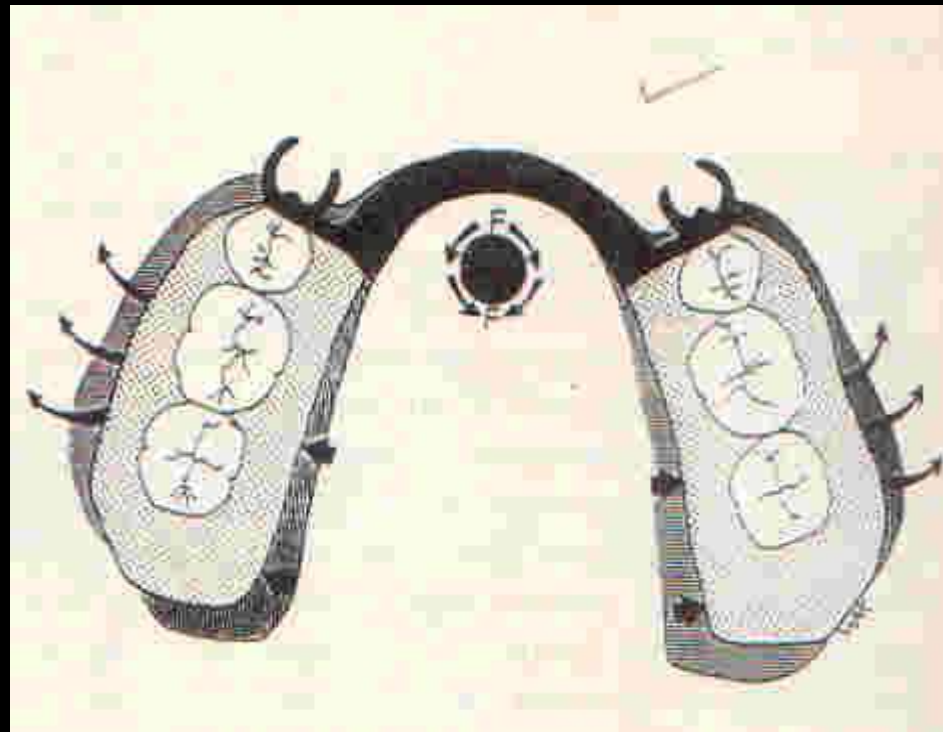


◦ FRONTAL PANE





HORIZONTAL PLANE

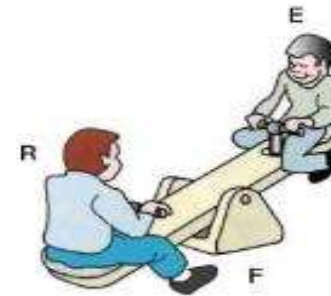
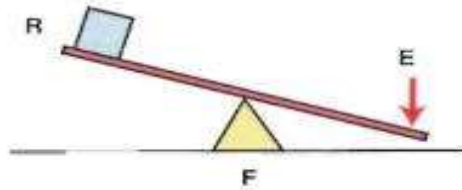




LEVER SYSTEMS

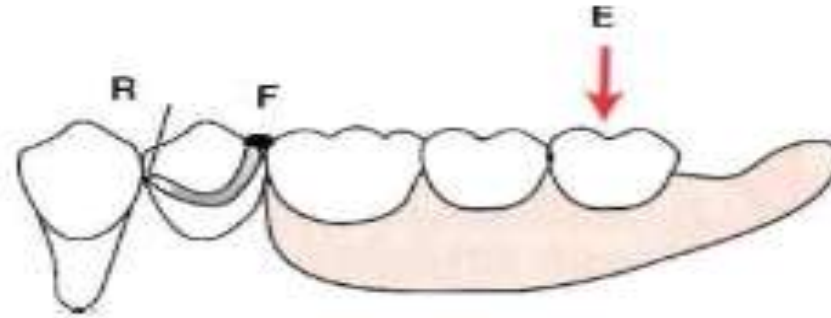


First class

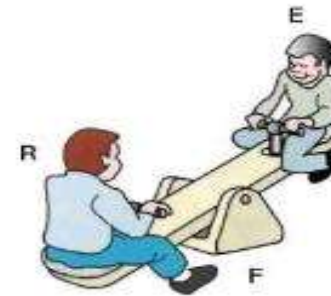
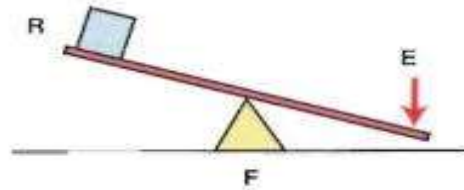




LEVER SYSTEMS

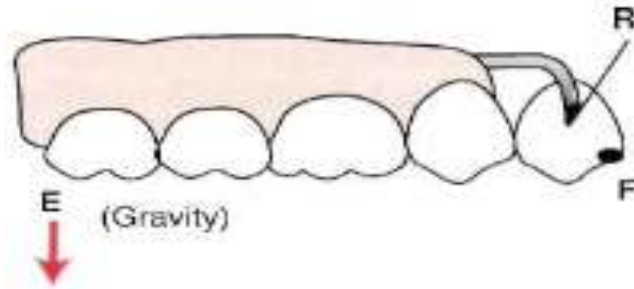
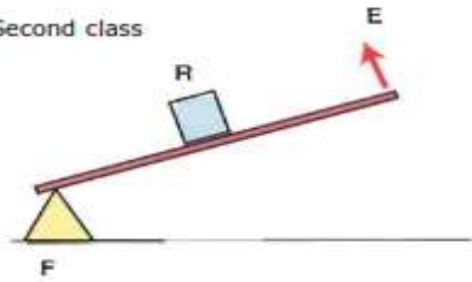


First class



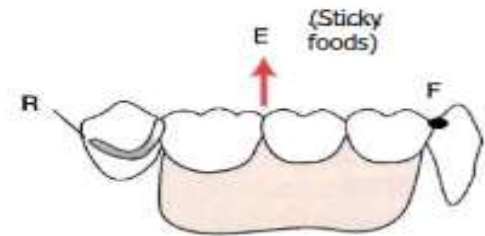
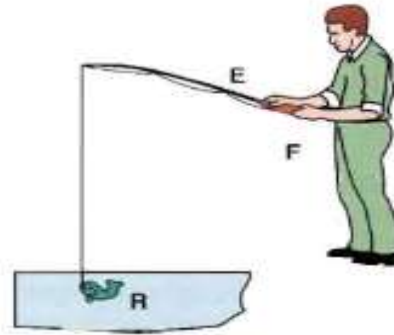


Second class





Third class



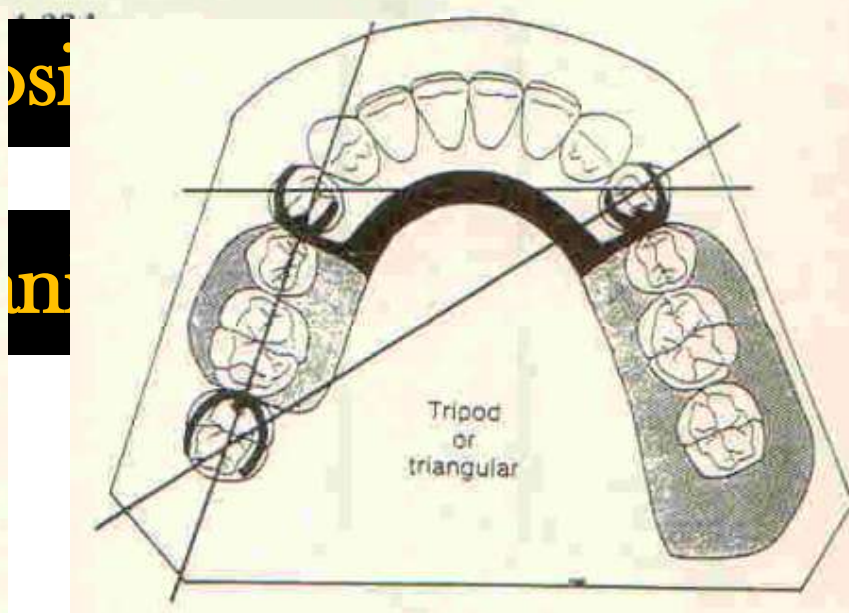
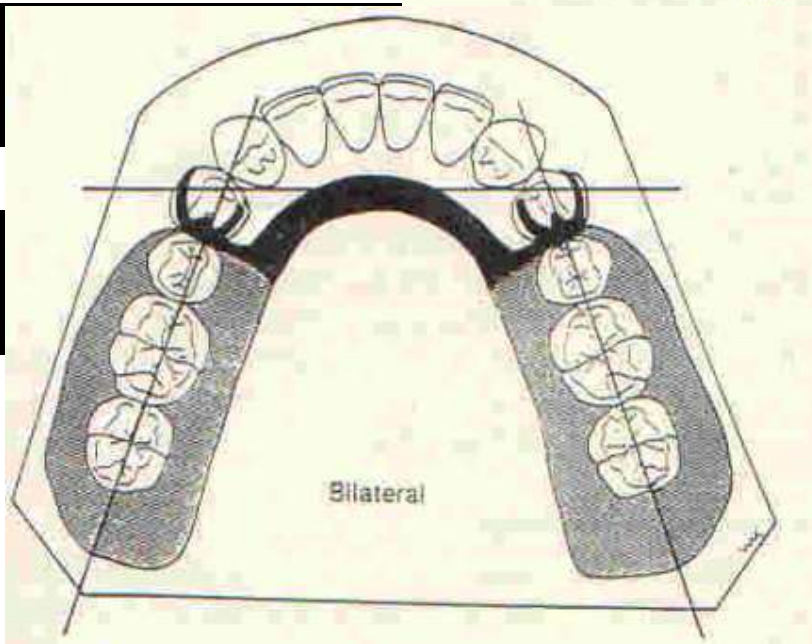
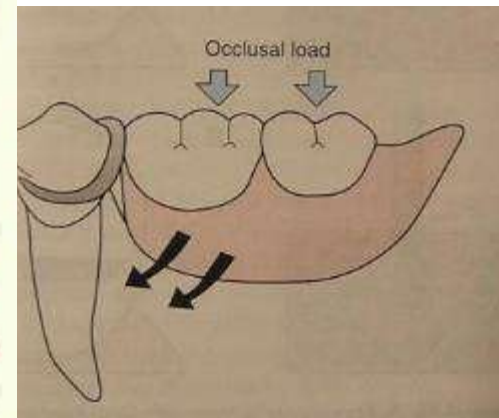
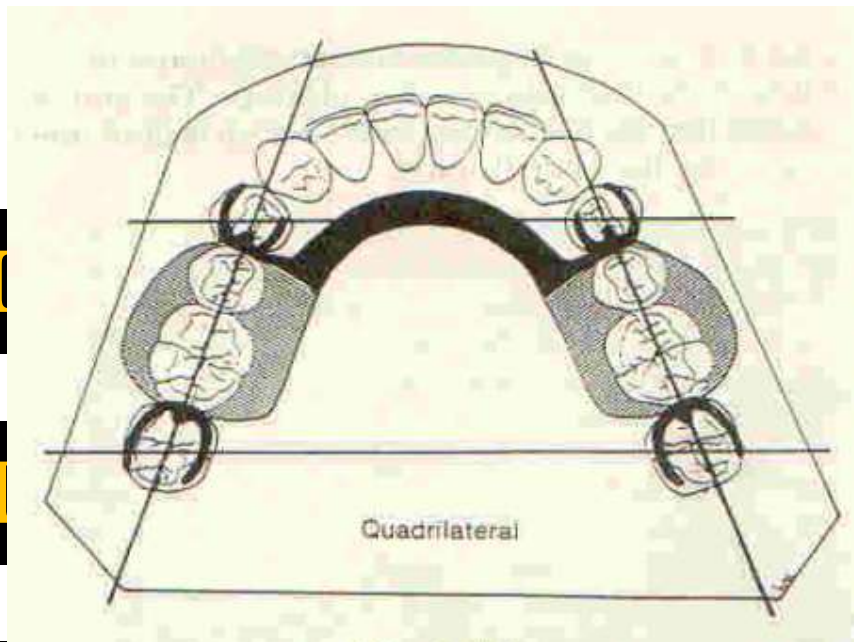


STRESSES PROVIDERS/MAGNIFIERS



QUANTITY

QUALITY



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Ultimate goal of
design is to
MINIMIZE lever
effort



Principles of RPD design



A. H. Schmidt 1953

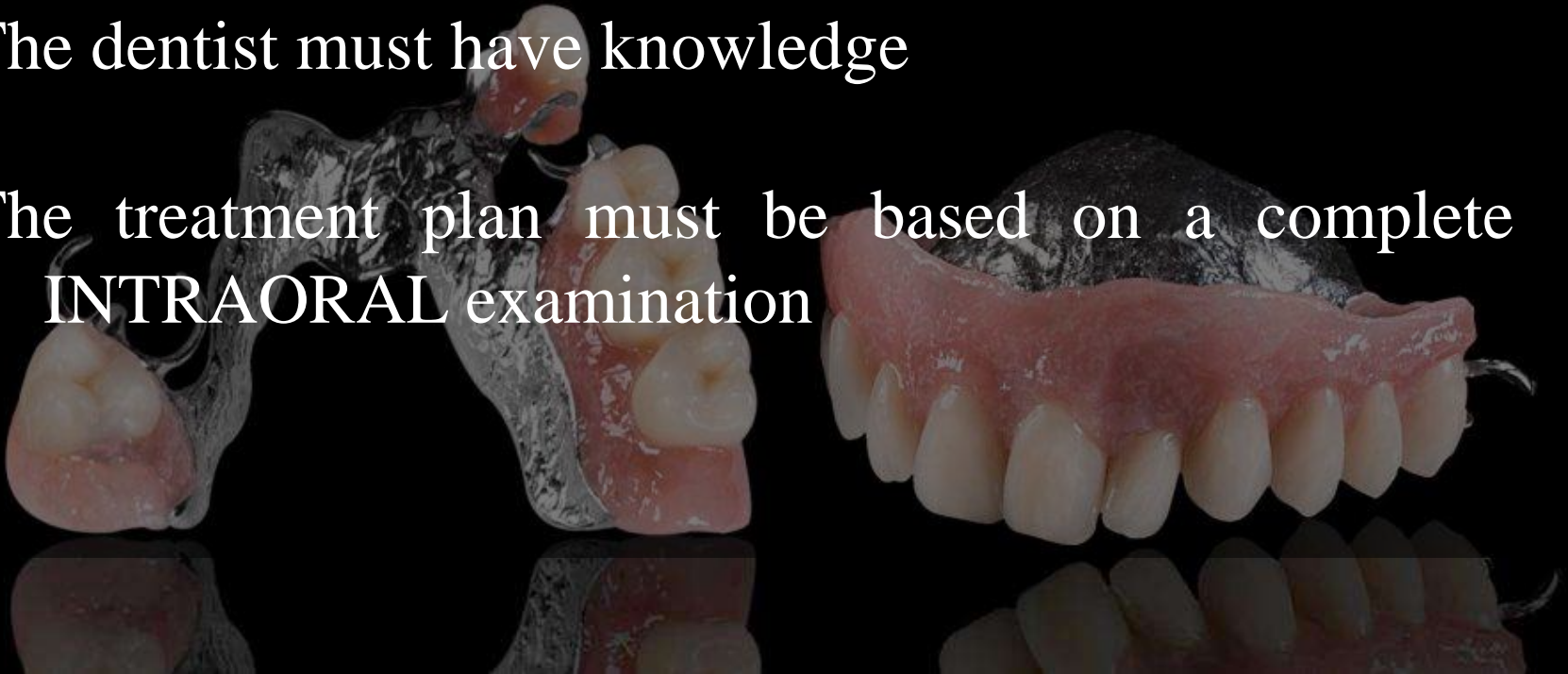


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The dentist must have knowledge

The treatment plan must be based on a complete
INTRAORAL examination





A removable partial denture should restore form and function without injury to the remaining oral structure.

A removable partial denture is a form of treatment and not a cure.



Philosophies of RPD design



Stress Equalization

Physiologic Basing

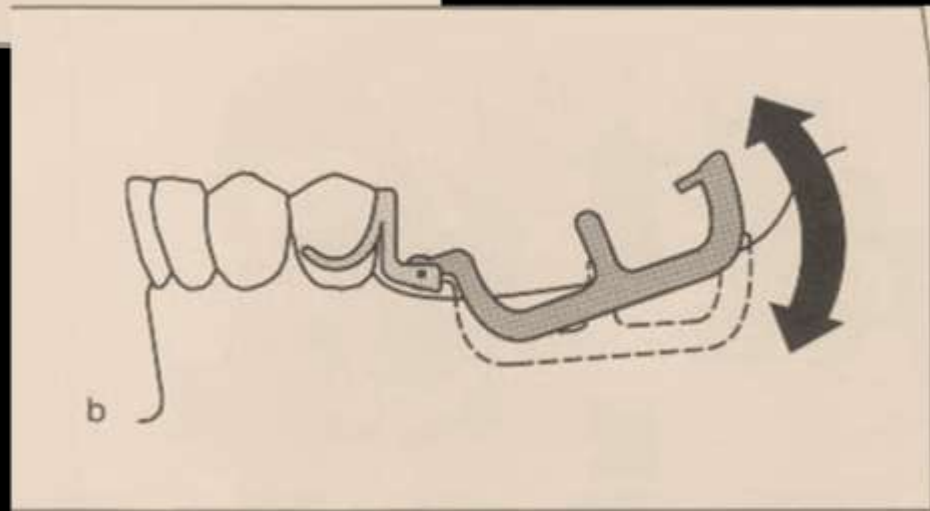
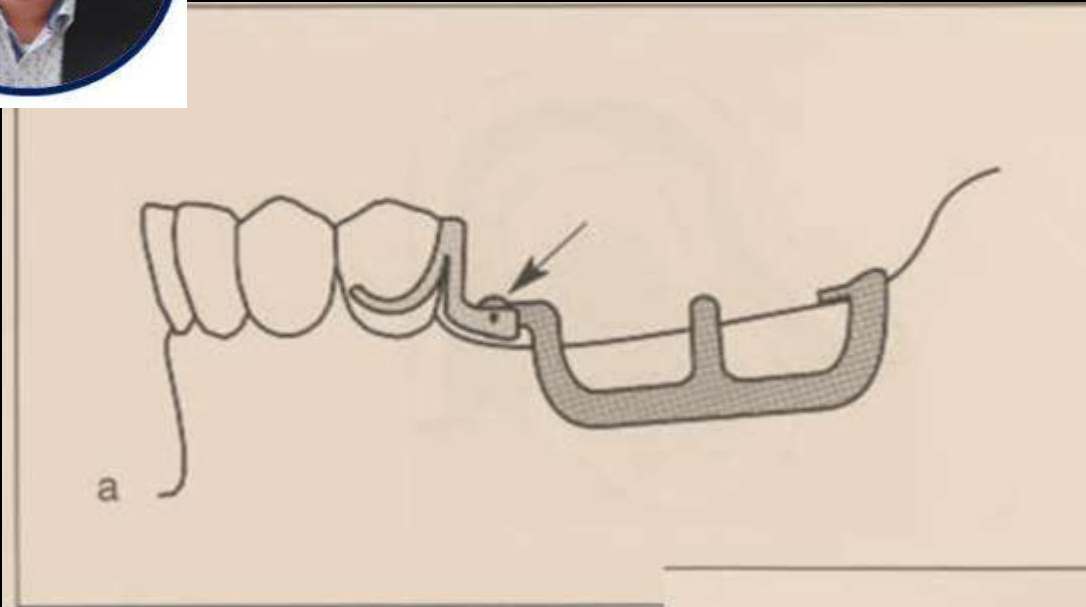
Broad Stress Distribution

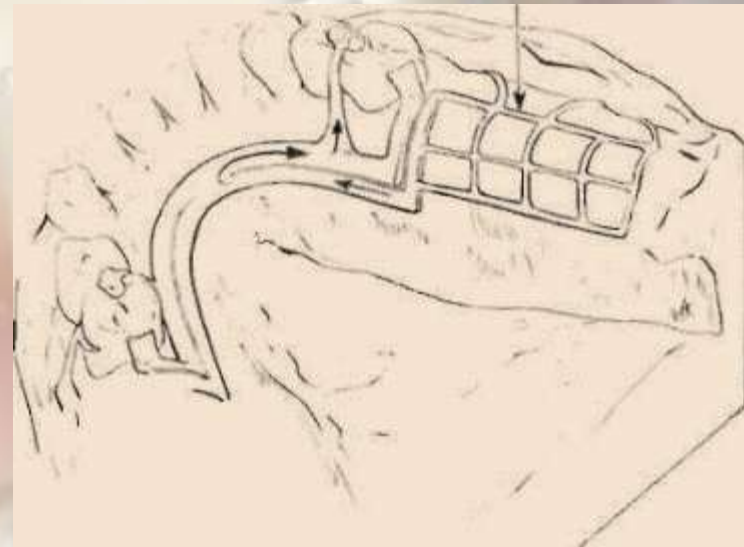
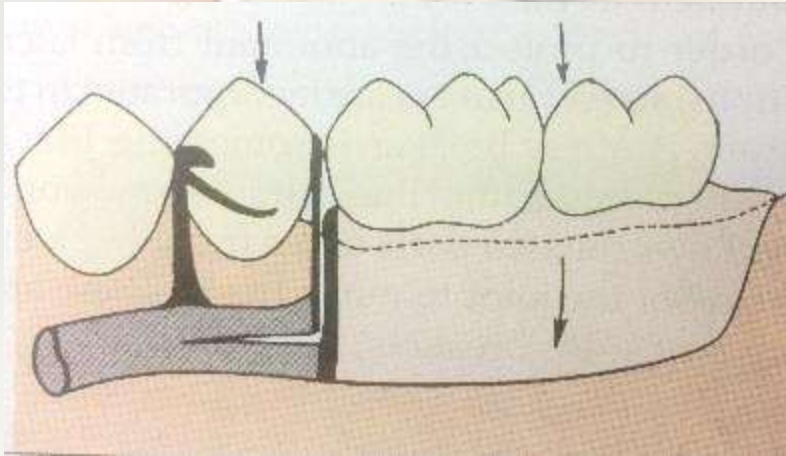


Stress equalization

STRESS EQUALIZER - A device or system that relieves specific dental structures of part or all of the occlusal forces and redirects those forces to other load bearing structures or regions.

GPT-9







ADVANTAGES

Has the massaging or stimulating effect



DISADVANTAGES

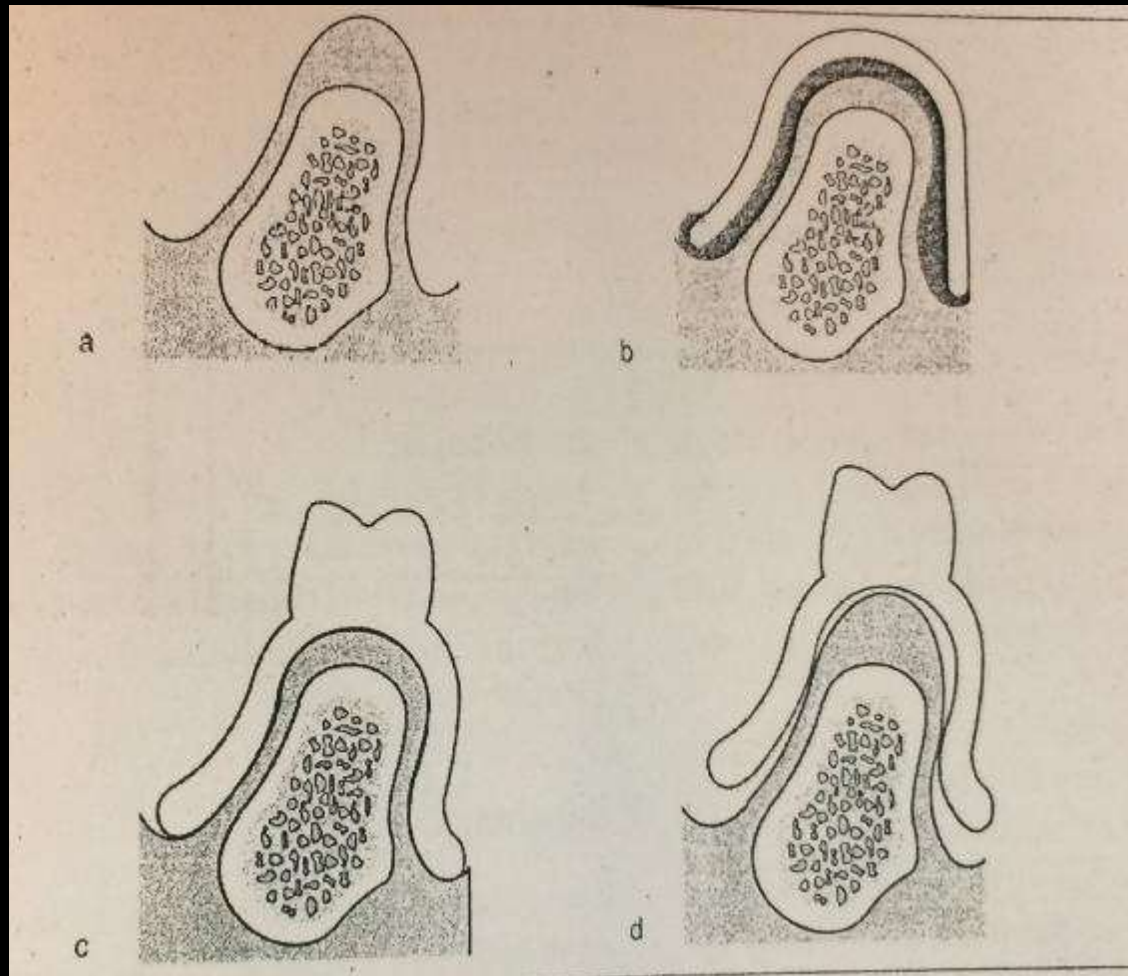
1. Construction of stress director is complex and costly.
2. Constant maintenance required.
3. Difficult or impossible to repair.

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Physiological Basing

- Record edentulous ridge in its functional form
- Denture bases formed over compressed tissue will show an increased ability to withstand vertical forces





ADVANTAGES

- Simplicity in design and construction

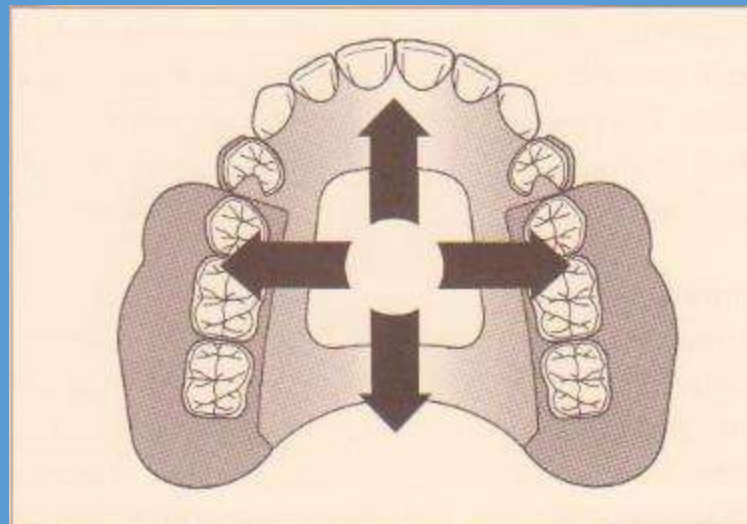


DISADVANTAGES

- There will be always premature contact when mouth is closed .
- May be uncomfortable sensation to the patient



Broad Stress Distribution





ADVANTAGES

- Broad stress distribution
- Excellent horizontal stabilization

DISADVANTAGES

- Less comfortable.
- Requires good maintenance of oral hygiene



How to design

Examine

Check hard tissue /soft tissue

Find out existing lever

Select various components of RPD

which minimizes rotation

Bingo!! That's the design



Scratch your brain

1. Which lever is hazardous for oral structure ?
2. Why a technician in laboratory can not design specific RPD
3. Split cast major connector is based on which philosophy of RPD Design

SUGGESTIVE READING