

INTRODUCTION TO DENTAL MATERIALS

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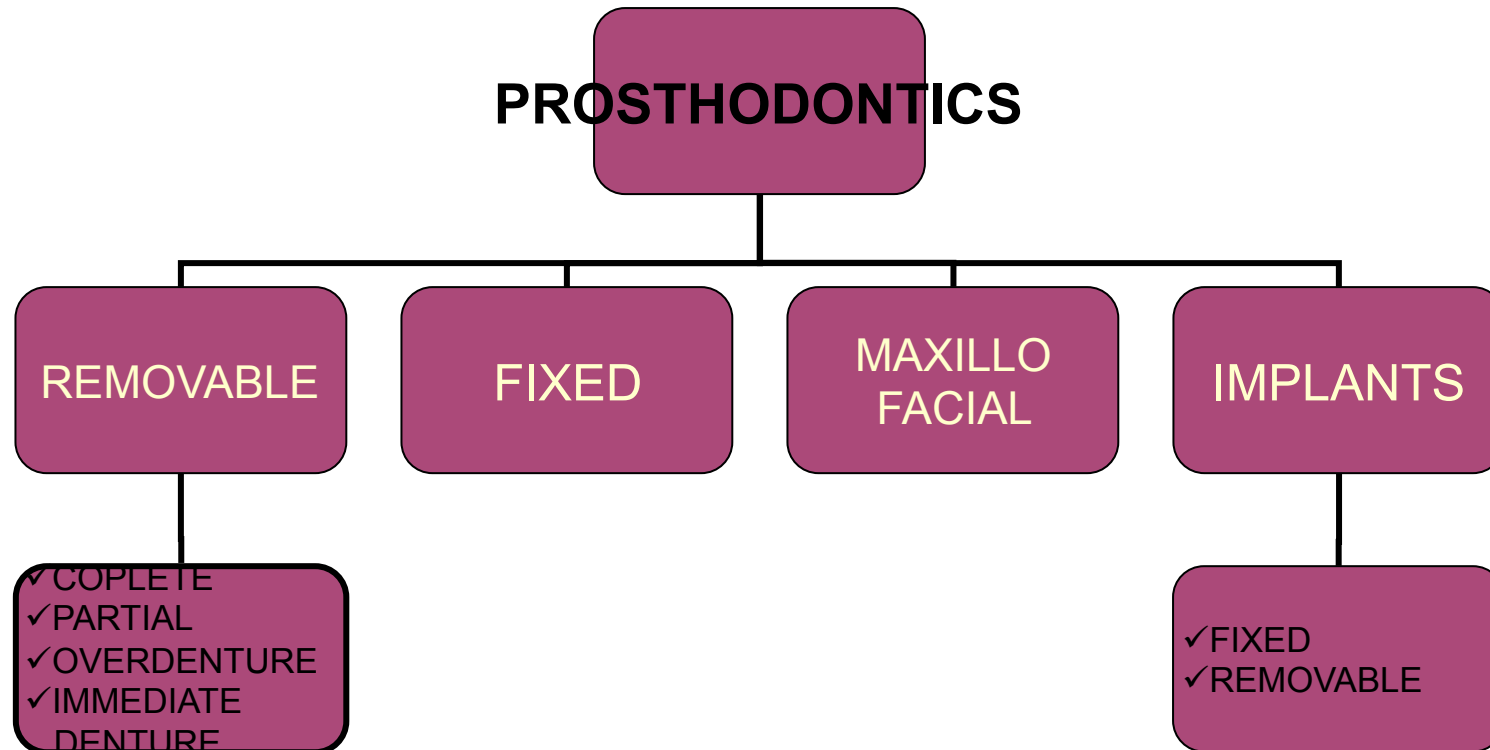
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❖ Lets go through to the basics first.....

BRANCHES OF DENTISTRY

- **ORAL DIAGNOSIS AND RADIOLOGY**
- **OPERATIVE AND CONSERVATIVE DENTISTRY**
- **PEDODONTICS**
- **PERIODONTICS**
- **ORAL PATHOLOGY**
- **ORAL SURGERY**
- **PROSTHODONTICS OR PROSTHETIC DENTISTRY**

- Prosthetic dentistry is further divided into following branches:



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Prosthetic dentistry:

It is a branch of dentistry that deals with the restoration and maintenance of the oral comfort, function, health and appearance of the patient by restoration of natural teeth or by replacement of the missing teeth and associated structures with artificial substitutes.

COMPLETE DENTURE:

It is a dental prosthesis which replaces the entire dentition and the associated structures.

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❖ There are five basic clinical steps for the construction of complete dentures:

- 1) Making of upper and lower preliminary impression
- 2) Upper and lower final impressions
- 3) Jaw relations
- 4) Final trial and patient approval
- 5) Denture delivery

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❖ Apart from these five clinical steps there are numerous laboratory steps that are performed as under:

1)Preparation of preliminary cast with plaster of Paris

2)Preparation of special tray with shellac base plate

3)Preparation of master cast with dental stone

4)Preparation of occlusal rims with modeling wax

5)Arrangement of teeth

6)Final processing of the trial denture with acrylic resin

7)Finishing and polishing.

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There are several materials that are needed for the construction of a prosthesis which are named as under:

- *Impression compound*
- *Plaster of Paris and dental stone*
- *Shellac base plate and self cure acrylic resin for construction of special tray.*
- *Zinc oxide eugenol paste for making final impression*
- *Modeling wax for the construction of occlusal rims*
- *Teeth set*
- *Heat cure acrylic resins*

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- ❖ All these materials have certain physical and mechanical properties that make them suitable for their use in dentistry.
- ❖ So each and every property of the particular material has to be thoroughly understood by the students before using them.

❖ HISTORICAL BACKGROUND OF THE DENTAL MATERIALS:

- ✓ Main goal of dentistry is to improve function and appearance of the patient.
- ✓ At the time of **Romans** various material like wood, egg shells, stones, metal pieces, ivory etc.. Were used for replacement of missing teeth.
- ✓ Then the materials evolved slowly and was replaced by gold, acrylic resins and the porcelain.
- ✓ Modern dentistry began in 1728 when the father of dentistry” **Dr. Pierre Fauchard**” invented many types of dental restorative materials including procedure of complete denture construction with ivory teeth.
- ✓ Later in 1895 Sir G.V.Black did some further inventions for dental materials.
- ✓ By the end of year 1928 ”AMERICAL DENTAL ASSOCIATION” introduced dental research fellowship for the study of dental materials.

❖ REGULATIONS AND STANDARDS FOR DENTAL MATERIALS:

- ✓ The **AMERICAN DENTAL ASSOCIATION** has given number of standards for the mechanical and physical properties of dental materials.
- ✓ ADA has laid down certain specifications for each and every material. If the material fulfills all the criteria laid down by ADA then and then only it has been classified as acceptable for dental use or can be called as “ADA SPECIFIED”.
- ✓ The AMERICAN STANDARDS ASSOCIATION(ASC) decides standards for the dental devices and equipments with the exception of drugs and x-ray films.

❖ OTHER REGULATIONS AND STANDARDS FOR DENTAL MATERIALS:

❖ There are some other standards which are used less frequently for the dental materials which are as under

- FOOD AND DRUG ADMINISTRATION STANDARDS
- FEDERATION DENTAIRE INTERNATIONALE
- INTERNATIONAL STANDARD ORGANIZATION
- COMMON BUREAU OF DENTAL STANDARDS.

THESE WAS ALL ABOUT THE BASICS
OF DENTAL MATERIAL SUBJECT AND
FROM NOW ONWARDS EACH AND
EVERY MATERIAL WILL BE TOUGHT
IN DETAIL .

THANKYOU