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"DENTURE FABRICS": A Mnemonic to Remember the Steps of Complete Denture Fabrication

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ABSTRACT:

Background:

Dental students must memorize large portions of the course, particularly in intricate work such as denture making. Mnemonics employ figures and categorization to help store information in long-term memory. Complete denture construction is described in a sequence of critical fit, comfort, and performance steps.

Method:

This study proposes the "DENTURE FABRICS" mnemonic to help the targeted undergraduate dental students. The mnemonic covers key steps: Design Impressions, Engineer Trays, Neaten Borders, Take Final Impressions, Uplift Casts, Record Base & Wax Rim Construction, Evaluate Try-In, Final Jaw Relation Record, Arrange Teeth, Brief Wax Try-In, Real Processing, Improve Finish, Complete Delivery Schedule Follow-Up Appointments.

Result:

Students could systematically approach denture fabrication using the mnemonic "DENTURE FABRICS." They also grasped and remembered the order and significance of each phase, eliminating any crucial steps that could be easily overlooked. This approach resulted in the production of quality dentures and better patient experiences.

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Conclusion:
This paper shows that the mnemonic “DENTURE FABRICS” is a helpful and easy way to remember all the steps involved in complete denture fabrication. It improves learning effectiveness and knowledge of intricate practices for effective implementation when students join the workforce. Supplemented by conventional training methods, this mnemonic enhances the efficiency and effectiveness of training many times.

Keywords: Complete denture, Dental training, Dental mnemonics, Student learning

Clinical Relevance:
Therefore, the mnemonic “DENTURE FABRICS” is useful to dental students in remembering the steps involved in complete denture fabrication.It hasthe advantage of being structured so that no key steps are missed, improving clinical outcomes. Incorporating this mnemonic into clinical education narrows the gap between didactic information and clinical practice, and increases self-efficacy in future dentists. This structured learning method has the potential to raise the bar in the delivery of prosthodontic care.

INTRODUCTION:
Dentures are essential to prosthodontics since they help the patient with partial or complete edentulism restore their functionality and smile [1].Denture construction is complex and requires considerable attention to detail throughout the various stages to produce a well-fitting and functional prosthesis [2]. Malocclusion dentures cause multiple problems such as pain, chewing disability, and detrimental effects on speaking and aesthetics. The fabrication process is divided into several steps, from impression making to try-in and fitting and subsequent recall visits [3]. Every step is essentialto achieve the goal; therefore, the process should be well-planned and systematic. As a guide to help the dental students through this process, the mnemonic, “DENTURE FABRICS,” has been created. This mnemonic involves the major processes involved in the fabrication of dentures and helps in learning all the processes in a more structured manner. Each step in the “DENTURE FABRICS” process will be described and explained further in this article, along with citations to the sources used. Thus, following this structured approach, the dental students will be in a position to improve on the quality and time taken to fabricate dentures, which will benefit the patients [4,5].

METHODOLOGY:
Manufacturing traditional complete dentures is a multistep process that involves several clinical and laboratory steps. The students are exposed to the complex process of creating complete dentures as they move from the preclinical simulation environment to patient care. These steps are initially complex and confusing to memorize in undergraduate studies. The main challenge is to remember and perform each clinical and laboratory step in the correct order. The Denture Fabrics mnemonic was developed after numerous discussions with undergraduate, post-graduate students and faculty to provide a concise mnemonic that covered all steps.

RESULT:
Mnemonics make it easier to learn, consolidate, and retrieve knowledge, greatly increasing training success rates. Mnemonics are not a replacement for standard teaching techniques, but they can be a useful tool when combined with other methods. The "DENTURE FABRIC" allow students to memorize and recall all the clinical and laboratory steps in the production of traditional complete dentures [4].

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DENTURE FABRIC:

Table 1: Denture Fabrics Mnemonic

Each letter in "DENTURE FABRIC" represents a step in the denture fabrication process		
D	**D**esign Impressions(Preliminary Impressions)	Initial step to capture the general shape and size of oral tissues
E	**E**ngineer Trays(Custom Tray Fabrication)	Create custom trays for accurate secondary impressions
N	**N**eaten Borders(Border Moulding)	Mould borders to capture functional movements
T	**T**ake Final Impressions(Final Impressions)	Using custom trays for detailed impressions
U	**U**plift Casts(Master Cast Fabrication)	Create master casts from final impressions
R	**R**ecord Base & Wax Rim Construction	Establish vertical dimension and occlusal plane
E	**E**valuate Try-In	Assess fit, aesthetics, and occlusion
F	**F**inal Jaw Relation Record	Record maxilla to mandible relationship
A	**A**rrange Teeth (Tooth Selection and Arrangement)	Select and arrange denture teeth
B	**B**rief Wax Try-In	Evaluate appearance and fit
R	**R**eal Processing (Curing)	Cure the acrylic base material
I	**I**mprove Finish (Finishing and Polishing)	Polish to ensure smooth surfaces
C	**C**omplete Delivery (Delivery)	Deliver dentures and provide care instructions
S	**S**chedule Follow-Up Appointments	Address concerns and ensure comfort

DESIGN IMPRESSIONS (PRELIMINARY IMPRESSIONS)

The denture fabrication process begins with taking preliminary impressions of the patient's oral tissues. These impressions capture the general shape and size of the oral tissues, providing an initial template for subsequent stages. Preliminary impressions are taken using impression compound, alginate or other suitable materials, ensuring that the overall dimensions and contours of the oral cavity are accurately recorded [5].

E - ENGINEER TRAYS (CUSTOM TRAY FABRICATION)

Custom trays are engineered based on the preliminary impressions. These trays are custom-made to fit the patient's oral anatomy precisely. The primary function of custom trays is to facilitate accurate secondary impressions. By using custom trays, dental professionals can ensure that the secondary impressions capture fine details such as tissue contours and borders [6].

N - NEATEN BORDERS (BORDER MOULDING)

Border moulding is a very important stage of denture construction. At this stage, the custom tray edges are shaped with a suitable material, such as modelling plastic or compound. Border moulding is useful in recording the functional dimensions and form of the tissues of the mouth so that the final dentures bear a correct relation to them [7].

T - TAKE FINAL IMPRESSIONS

Using the custom trays, final impressions are taken to record the precise details of the oral tissues. Final impressions are typically made using more rigid materials such as polyvinyl siloxane (PVS) or polyether. These materials provide accurate impressions of the soft tissues, teeth, and edentulous areas, which are crucial for fabricating well-fitting dentures [8].

U - UPLIFT CASTS (MASTER CAST FABRICATION)

Master casts are fabricated from the final impressions. These casts replicate the oral anatomy and serve as the foundation for the denture fabrication process. Master casts are usually made from dental stone or resin and are used to create the framework for the denture bases and artificial teeth [9].

R - RECORD BASE & WAX RIM CONSTRUCTION

The record base and wax rims are constructed on the master casts. The record base establishes the maxillomandibular relationship and serves as a base for the wax rims. Wax rims are made of pink wax and are used to determine the proper occlusal plane, tooth position, and esthetics of the dentures [10].

E - EVALUATE TRY-IN (TRY-IN APPOINTMENT)

During the try-in appointment, the wax rims with artificial teeth are placed in the patient's mouth. This allows dental professionals to assess the fit, aesthetics, and occlusion of the dentures. Any necessary adjustments to the wax rims are made at this stage to ensure optimal fit and comfort for the patient [11].

F - FINAL JAW RELATION RECORD

A final record of the maxillomandibular relationship is recorded to ensure proper alignment and function of the dentures. This step is crucial for establishing the correct occlusion and ensuring that the dentures provide optimal chewing function and comfort [12].

A - ARRANGE TEETH (TOOTH SELECTION AND ARRANGEMENT)

Once the maxillomandibular relationship is established, denture teeth are selected and arranged on the wax rims. The selection of teeth is based on the patient's facial characteristics, smile line, and occlusal scheme. Arranging teeth involves positioning each tooth to achieve natural esthetics and proper function [13].

B - BRIEF WAX TRY-IN

A brief wax try-in is conducted to evaluate the appearance and fit of the denture teeth arrangement. During this stage, the patient can preview the esthetics and fit of the dentures before final processing. Any necessary adjustments are made to ensure patient satisfaction and comfort [14].

R - REAL PROCESSING (CURING)

After the wax try-in is approved, the wax rims are processed to form the final denture base. The processing involves curing the acrylic or other suitable materials to create the denture base that will support the artificial teeth and fit snugly over the oral tissues [15].

I - IMPROVE FINISH (FINISHING AND POLISHING)

The final dentures are finished and polished to ensure smooth surfaces and optimal comfort for the patient. Finishing and polishing remove any rough spots and ensure that the dentures are comfortable to wear and aesthetically pleasing [16].

C - COMPLETE DELIVERY (DELIVERY)

The completed dentures and instructions for care and maintenance are delivered to the patient. During the delivery appointment, dental professionals educate the patient on how to care for their dentures and ensure they understand proper hygiene practices [17].

S - SCHEDULE FOLLOW-UP APPOINTMENTS

Follow-up appointments are scheduled to address any concerns and ensure the comfort and functionality of the dentures for the patient. These appointments allow dental professionals to make any necessary adjustments and ensure that the dentures fit properly and meet the patient's expectations [18].

DISCUSSION:

Using the "DENTURE FABRICS"**[Table 1]** mnemonic helps dental students systematically approach the denture fabrication process. By breaking down the procedure into manageable steps, students can better understand and retain the sequence and importance of each phase. This mnemonic also serves as a checklist to ensure that no critical steps are overlooked, ultimately producing high-quality dentures and improved patient outcomes [19-24].

CONCLUSION:

The "DENTURE FABRIC" mnemonic provides dental students with a structured and memorable framework for understanding the comprehensive process of complete denture fabrication.Overall, the "DENTURE FABRIC" mnemonic is an effective educational tool that enhances learning efficiency, aids in the retention of complex processes, and prepares students for practical application in their professional careers.

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