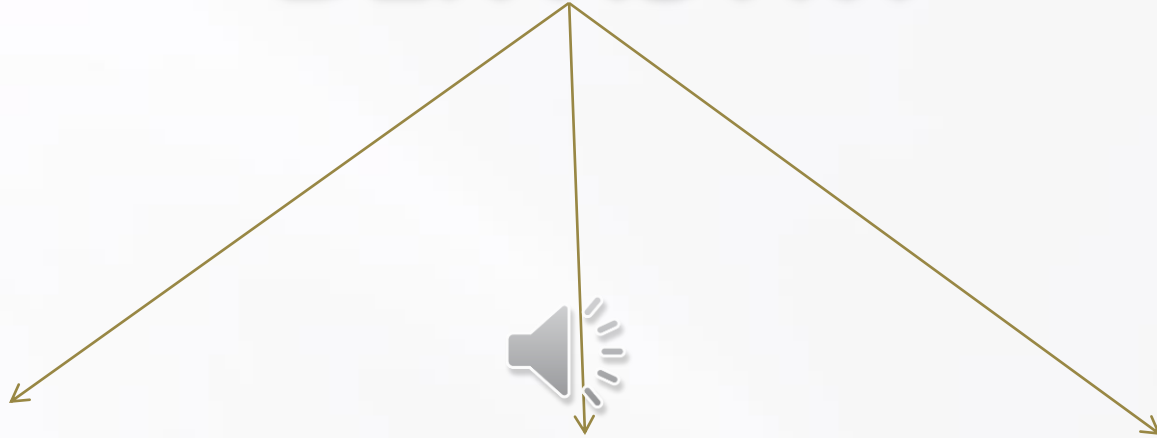


MEDICAL PHYSICS IN DENTISTRY



Machines

Instrument

Material

The application of physics

- The application of physics in dentistry is of great important for the dentist and may be essential factors for reaching an optimum treatment and treatment plan this may include the machines used in dentistry the instruments and the materials of dentistry itself.

1- machines:

- ❑ The operation of machines in dentistry depends on the application of physics principles .
- ❑ **A-amalgamator:** Which is **used** for **mixing amalgam**, the **role of the action** of amalgamator depend greatly on the **vibration in shape 8** during movement of the rotating holder of the device.



B-light cure device:

- ▣ The light cure device function is harden light cure material filling
- ▣ It is principle depend on the focusing light intensity to create photo reaction in light cure material to be harden



▣ C- sterilizer:

- ▣ which is for **sterilizing instruments**, the role of action of this device is **depend** the **high temperature generation** which is used to **kill mint microorganisms**, another method of sterilizing is by **autoclave** which is **depend** on **heat** and **pressure generation**.

▣ D- ultra wave scalar:

- ▣ Which is **used** for **removing calculus from the tooth** and the **role of action** of this device is by the **ultrasound wave**.

▣ E- chair of dentist:

- ▣ The role of its action is **depending** on **pressure, electric** and **force balance**.

▣ F- Sucker:

- ▣ Which is **used** during the surgical operation, and the basic of its **action depend** on the **negative pressure generated** by **special compressor**.

2- INSTRUMENTS

- ❑ Many instruments used in dentistry may depend on the physical roles.
- ❑ **vernea:** which it is **used** for **measuring very thin objects**.
- ❑ **metal gauge:** **used** in **measuring the thickness of crown metal**.
- ❑ **elevator:** which **used** in **tooth extraction**, in which the role of these instruments **depends** on the **lever action**.

3- Materials

- ▣ The materials that used in dentistry have many characters which is affected by the physical and the chemical factors:
- ▣ **Heat**: where heat may increase the **setting reaction** of many materials e.g.: alginate impression material, amalgam filling, and cement isolating material.
- ▣ The **ability** of **dissolving in water** (**hydrophilic**) e.g. :**local anesthesia**.
- ▣ **Photo reaction**: **light cure materials**.