

IMPLANTABLE PROSTHESIS



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IMD



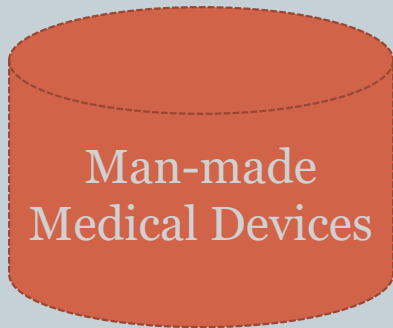
- **Implants and Prosthetics.** Medical **implants** are devices or tissues that are placed inside or on the surface of the body.

Many **implants** are **prosthetics**, intended to replace missing body parts. ... Some **implants** are made from skin, bone or other body tissues

IMD



- **Implant:**

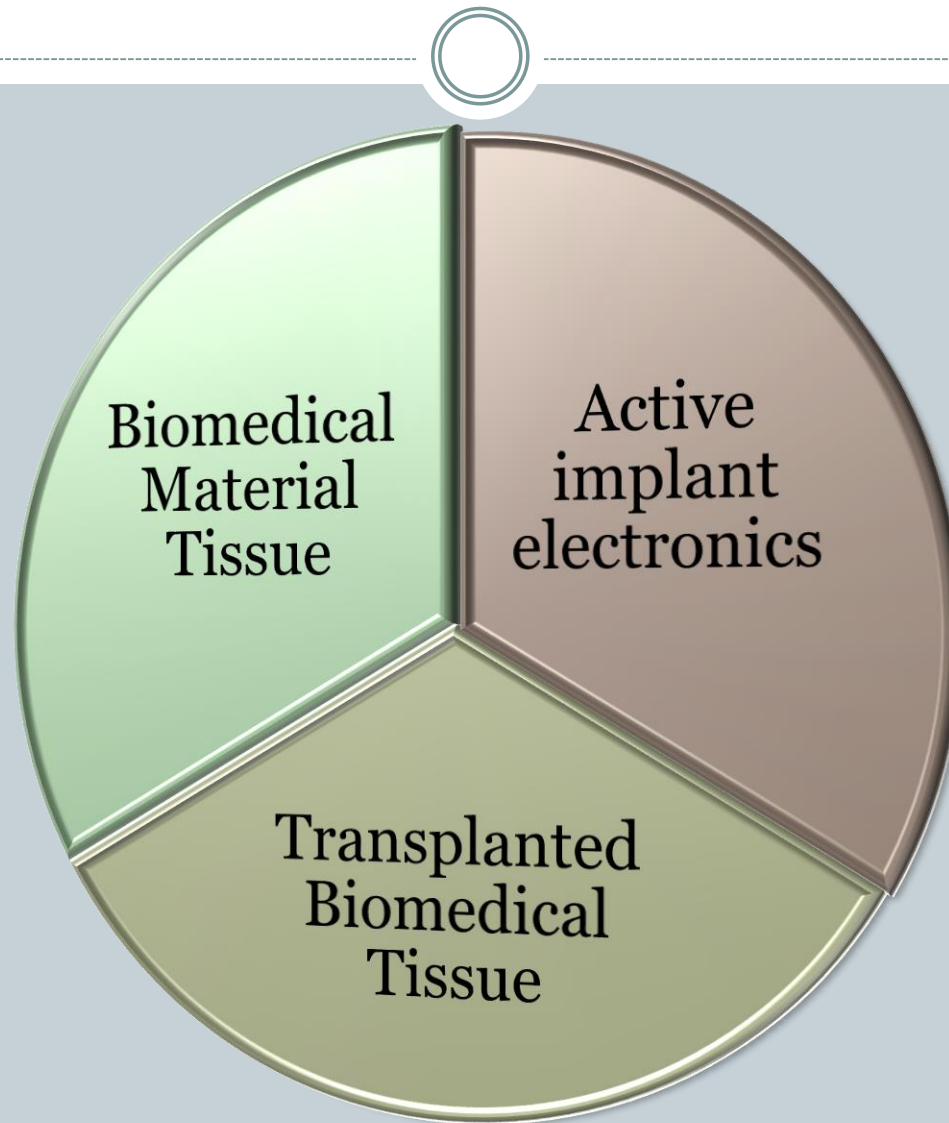


Replace a missing biological structure

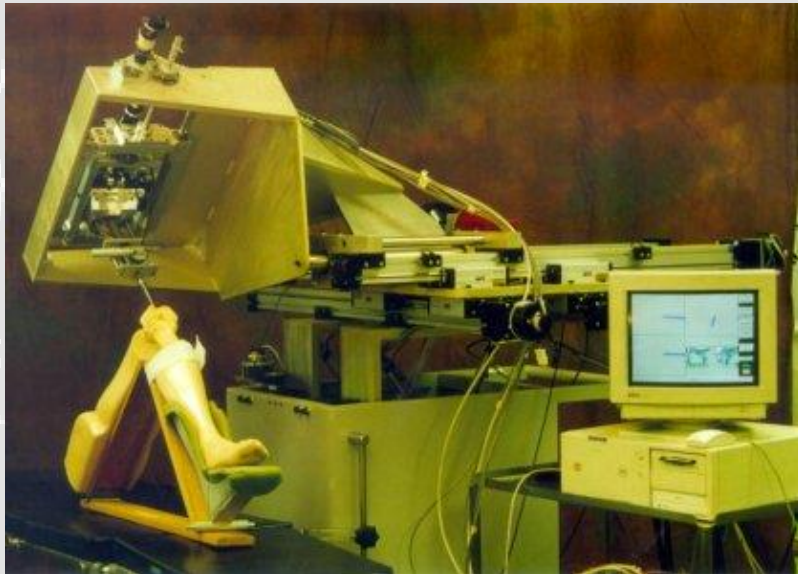
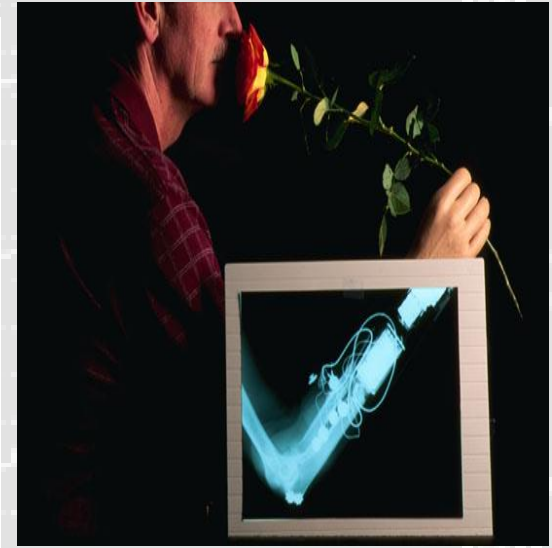
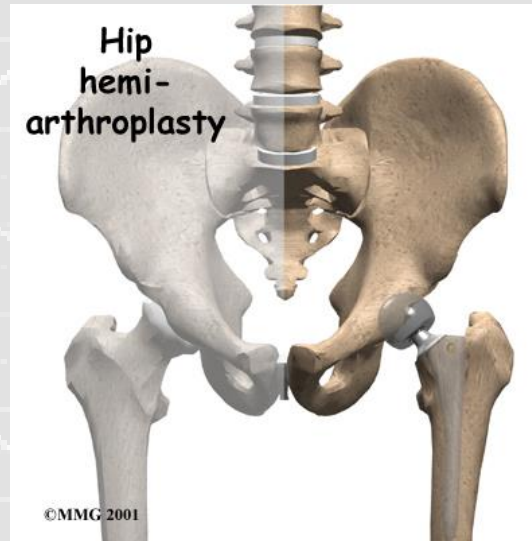
Support a damaged biological structure

Enhance an existing biological structure

IMD-Materials used



Prosthetic Devices - Implants



Robotic
device for
knee
prosthesis
implantation



IMD



Applications

**Electrically-
powered
implants**

**Active
implants:**
Pacemaker...

**Bio-
implants**

Biomaterial
tissues: skin
cornea...

**Dental
implants**

Artificial
tooth

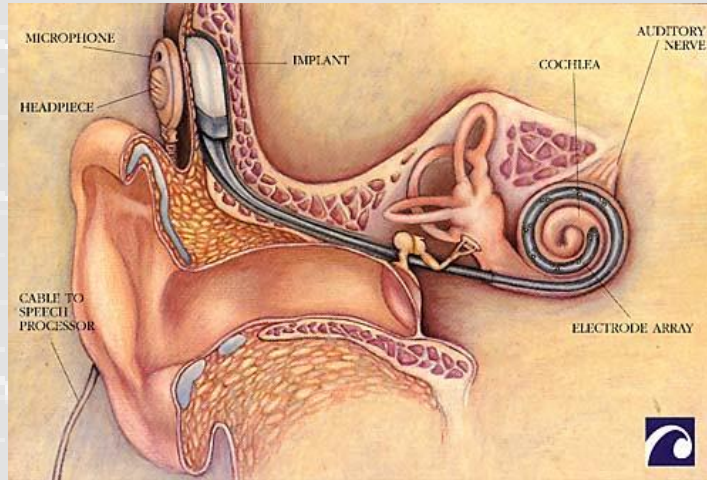
**Orthopedic
implants**

Correct the
affected joint
...

Prosthetic Devices – “Artificial Organs”



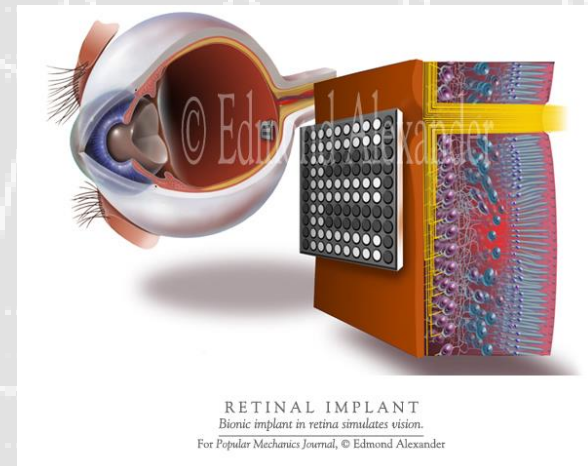
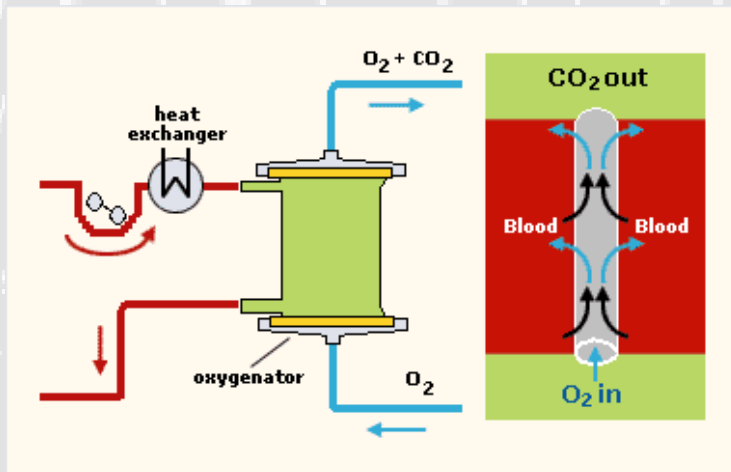
Artificial heart
Cardio-pulmonary bypass



Cochlear implant



Ventilator



Retinal implant

IMD



- **Four components of information security**



Active implantable medical devices



Types

- Implantable cardiac pacemakers
- Implantable defibrillators
- Cochlear implants
- Implantable nerve stimulators (FES)
 - Limb function stimulation
 - Bladder stimulators
 - Sphincter stimulators
 - Diaphragm stimulators
 - Analgesia
- Implantable infusion pumps
- Implantable active monitoring devices



THANK YOU