In medical science, "plastics" are referred to as **biocompatible polymers**. For a material to be used inside the human body, it must be non-toxic, non-carcinogenic, and capable of performing its function without triggering a severe immune response.

Here is a breakdown of the most common plastics and "putties" used in modern medicine, categorized by how they function.

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1. Structural & Hard Plastics

These materials are used where strength and durability are the priority, such as in joint replacements or spinal surgery.

- **PEEK (Polyetheretherketone):** This is a high-performance thermoplastic often used for spinal fusion cages and dental implants.[1] It is favored because its "stiffness" (elastic modulus) is very similar to natural human bone, which prevents it from damaging the surrounding tissue.[2]
  +1

- **UHMWPE (Ultra-High-Molecular-Weight Polyethylene):** This is a extremely tough, low-friction plastic.[3] It is the "gold standard" for the lining of hip and knee replacements, acting as the artificial cartilage between metal components.[4]
  +1

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2. Medical "Putties" (Cements and Fillers)

When you hear "putty" in a surgical context, it usually refers to materials that start as a paste or dough and then harden or get absorbed.

- **PMMA (Polymethyl Methacrylate):** Commonly known as **Bone Cement**.[5] It is a two-part system (powder and liquid) that a surgeon mixes in the OR.[6] It creates a dough-like "putty" used to anchor artificial joints to the bone. It hardens within minutes.
  +1

- **DBM (Demineralized Bone Matrix) Putty:** This is a biological putty made from processed human bone tissue.[7] It is used to fill gaps in bones (like a "spackle" for the skeleton) to encourage new bone growth.

- **Calcium Phosphate Cements:** These are synthetic putties that closely mimic the mineral composition of bone.[8] They are often used to repair cranial defects or complex fractures.

3. Soft and Flexible Plastics

These are used for components that need to bend, stretch, or provide a seal.

- **Silicones:** Used extensively for heart valves, breast implants, and hydrocephalus shunts. Silicone is highly inert and can stay in the body for decades without degrading.
- **PTFE (Polytetrafluoroethylene):** Known commercially as Teflon. In the body, expanded PTFE (ePTFE) is used for synthetic blood vessels (vascular grafts) and surgical meshes because its porous structure allows natural tissue to grow into it.[9]

- **Polyurethane:** Often used for the insulation on pacemaker leads and for temporary catheters because it is flexible yet resistant to the harsh environment of the bloodstream.

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4. Bioresorbable (Dissolvable) Plastics

These are designed to do a job and then disappear, saving the patient from a second surgery to remove them.

- **PLA (Polylactic Acid) & PGA (Polyglycolic Acid):** These are the materials used in **dissolvable stitches** and certain types of screws or plates for fixing small bone fractures.[10] Over months, the body breaks these plastics down into water and carbon dioxide.

Summary Table

Material	Common Name/Type	Primary Use
PEEK	Structural Plastic	Spinal cages, cranial implants
UHMWPE	High-density Plastic	Hip/Knee joint linings
PMMA	Bone Cement (Putty)	Securing implants to bone
Silicone	Elastomer	Tubing, valves, soft tissue implants

wonder if this is what is on top of my skull in the little crevass that has now formed due to sunshine

ePTFE[11]	Synthetic Fiber[12]	Vascular grafts (artificial veins)[13]
PLA/PGA	Resorbable Polymer	Dissolvable sutures and screws
