Metal Foam

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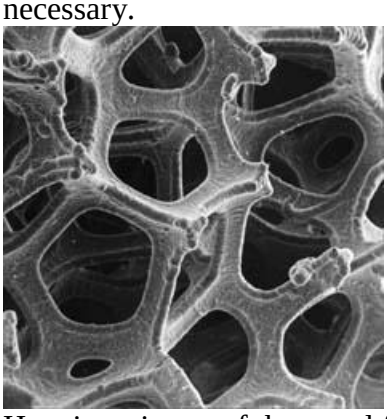
Introduction:

For years doctors have been using titanium metal rods as implants but there are some complications with these. The rods carry more weight of the body then the bones do as a result the rod puts pressure on the bone where it isn't used to it. As the stress on the bone continues the bone cells around the rod start to die. This leads to surgery where surgeons need to remove the old implant and replace it with a new one. The titanium rod is being replaced by an implant called metal foam. Metal foam is light weight, porous and strong material that will hopefully change the idea of implants forever.

Why use it?

The metal foam would work extremely well as an implant. The pores in the foam allow blood vessels and bone cells to grow inside of them integrating the bone with the metal foam. This gives the implant great stability and strength because now the bone has grown into the implant rather than around it like the titanium rod. Since the bone grows into the foam the body is much less likely to reject the implant and make surgery necessary.



Here is a picture of the metal foam as you can see it has many interconnecting pores that make it easy for the blood vessels and bone cells to grow into. When comparing the design of the metal foam to that of a normal bone the structures are nearly identical.

How it's made

One must use certain molds to make the metal foam. When using a salt mold one must first pour in large grained salt into a mold. The salt is then heated and put under pressure to make them fuse together. Molten metal is then poured into the mold, it then hardens the mold it placed in water and the salt I dissolved leaving only the porous metal.

Metal foam will hopefully be the newest implant in hospitals because it works so much better than the traditional metal rod implants.

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