

GLASS FOR INITIAL PIERCING

While everyone can agree that glass is fine to wear in a healed piercing, there has been a heated debate on the acceptability of glass for use in initial piercings for years. Generally the argument goes that there is not enough scientific data regarding glass as an implant grade material. The limited data that we do have regarding different glass types being implanted shows that the surface of some glass types coming under attack and developing surface texture and even scaling within a matter of weeks. In a study done in the 1970's comparing sixteen glass types implanted in mice, fused quartz performed with the least amount of attack. The majority of glass types currently being used in piercing jewelry have no research whatsoever on glass and bio-compatibility.

The other side of the argument usually goes that many experienced piercers have used glass in initial piercings with a great deal of success for years and that no one has ever developed a glass allergy, so common sense and practical experience prove that glass is an appropriate material. Glass does not become pitted or textured when worn in initial piercings. In reality an implant is a much harsher environment than in a piercing where the wound can breathe and the jewelry can be easily removed if problems develop.

It could also be argued that there are no implant grade standards for gold or niobium, both of which are approved by the APP for initial piercings. The argument that gold has been used for thousands of years in piercing jewelry could be used for glass as well, since glass has an ancient history of use in body jewelry.

Not that glass is completely problem free. A condition identified by piercers as "wet ear" will occasionally occur. It has been theorized that wet ear happens not as a reaction to the glass itself, but paradoxically because of the non-porosity of the glass (normally a great advantage in inserting glass and in wearing comfort). In humid climates and on certain individuals, a slight irritation and sweatiness may occur as the glass does not "breathe". Normally the body adjusts and the irritation goes away after a couple of days.

A POSSIBLE ANSWER- BIO-GLASS 8625

Since the late 1960's scientists began experimenting with special glass types to be used in bone reconstruction and dental applications with great success. Certain bio-active glass types actually bond with tissue and bone, and demonstrated anti-microbial and anti-inflammatory properties. Powdered bio-active glasses have actually been formulated into skin creams, make up, and toothpaste for their healing properties.

A cousin to the bone-bonding glass was developed for "fibrous tissue encapsulation", a bio-compatible sheath for transponders implanted in animals. This glass is Schott Bio-glass 8625. Bio-glass 8625 does not bond to soft tissue or bone; it actually has the opposite problem of migrating (anti-migration caps are added in transponders to solve the problem). Bio-glass 8625 has been extensively tested in a series of studies on rats, rabbits, dogs, pigs, and horses since the 1970's. This technology is now used to track tens of thousands of dogs in the USA, to identify herds of cattle, as well as track and

identify endangered species. More recently it has been implanted in humans to record individual health information.

Bio-glass 8625 is a soda-lime glass. When implanted Bio-glass 8625 is not inert, it actually forms a calcium capsule around the implant. You can compare the calcium layer around bio-glass to the oxide layer around titanium that gives titanium its bio-compatible characteristics.

“As Thieme et al. (1987) have already measured by means of X-ray emission (PIXE), an ion-exchange reaction occurs in the aqueous environment on the surface of the alkali-containing bioglasses, which proceeds in two phases as claimed by Hench (1974). Phase 1 is dominated by the alkali loss in exchange for hydrogen ions; calcium also diffuses from the material. In phase 2 occurs the hydrolytic cleavage of the Si-O-Si bond with subsequent disintegration of the material. The exchange reactions proceed over about two weeks. Later on is formed a predominantly calcium-containing surface film preventing further leaching of the material.”

In 1994 the FDA approved Bio-glass 8625 for use in humans. The VeriChip Corporation has been implanting transponders in humans for several years to provide health information on diabetic patients. The electronic chip inside the glass sheath contains the patient's health history and data. Chips are placed in the upper arm or in the hand.

There has been a storm of opposition by Christian groups and other privacy advocacy groups who are worried about the misuse of the technology and the “Mark of the Beast”. Last year the Associated Press published an article about cancer tumors forming around transponder chips in mice, implying that they are unsafe. The FDA defended their approval and the VeriChip Corporation issued a twenty page paper detailing (among other things) The Rodent Foreign Body Sarcomagenesis Phenomena, which basically says rats and mice have a unique propensity to develop tumors around implanted devices, regardless of the type of implant. The Associated Press article did not speculate what the cause of the tumors was, but considering that bio-glass has been tested in many studies on different animals and even on humans in bone reconstruction, it seems unlikely that the glass itself is the cause of the tumors in mice.

It has been argued that glass would not meet the requirements of Fitness of Purpose for initial piercings due to breakability issues. I would argue that the damage done by the piercing itself is greater than any danger presented by the jewelry breaking. Furthermore any impact to the ear that would be sufficient to break the glass jewelry would cause much more damage than any potential additional damage caused by the glass breaking.