

Many materials are similar to that of the heart, like the muscles and tissues of other animals, but the problem with using those materials is that they are not likely to be accepted into the body as if they were an actual human valve. Most biomedical engineers use materials like silicon, stainless steel, titanium, and pyrolytic carbons to make a more permanent solution for the damaged or dying valve. These materials will not die or deteriorate over time and provide a solution that doesn't require being accepted into the body. These mechanical solutions to a living problem fulfill the purposes and last for extended periods of time, if not forever.

Since our job seems to be to create a valve that is more similar visually and in its properties than how it actually functions this wouldn't apply. We would want to test muscles and tissues more similar to a human. We decided on pig and cow tissues and muscles as the two best solutions because they are very similar to tissues and muscles of a human. We will still test silicon, stainless steel, titanium, and pyrolytic carbons in order to have a good idea of how every possible material performs in a heart valve. This will allow us to compare the benefits and disadvantages of each to make an educated decision on which we should include in our prototype.

Overall, our project is designed to be as accurate to an actual heart as possible. We can only create a prototype with professional grade equipment. This type of equipment can range from containers to scalpels.

The part that makes this very complicated is that we do not have instant access to these materials and some also come with hefty prices



