

1 Introduction

The following properties have been determined as important for the most appropriate wire:

- Diameter less than 2mm
- High flexibility
- Biocompatible

2 Procedure

The equipment necessary is as follows:

- Vernier Caliper
- Ruler
- Wires to be tested

Utilise the caliper to determine the wires' diameter.

In order to determine the wire's flexibility, we utilise the following method:

Lay the wire under test on a horizontally and perpendicular to an edge, then push it forward until a certain length l extends over the edge. We then measure the vertical deflection, δ_{max} . The flexibility, c can be determined by

$$c = \frac{\delta_{max}}{l^4} \quad (1)$$

3 Raw data

The wires of appropriate dimensions and material are as follows

Diameter	Coating	Flexibility (cm^{-3})
1.10	Polyurethane	0.001544
1.90	Silicon	0.001749

4 Analysis

Both polyurethane and silicon are known to be long-term biocompatible, therefore a final solution may come down to the individual cost of the wiring –something beyond the scope of this report.