Impact of Silastic Thickness in Eye Plaque Radiation Therapy

**Problem:** Silastic seed carriers appear to be manufactured with varying thickness

**Question:** How does added distance between seeds and tumor impact dose?

**Aims:**
1. Quantify variability of Silastic thickness
2. Determine effect on tumor dose
Results:

1) Thickness measurements of 13 Silastic inserts

<table>
<thead>
<tr>
<th>Category</th>
<th>Thickness</th>
<th># Inserts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>2.0 mm</td>
<td>5</td>
</tr>
<tr>
<td>Medium</td>
<td>2.5 mm</td>
<td>2</td>
</tr>
<tr>
<td>Thick</td>
<td>3.0 mm</td>
<td>6</td>
</tr>
</tbody>
</table>

2) Dose Calculations

- Prescription Dose: 85 Gy to tumor apex
- Dose decreases as Silastic increases
- Why?
  - Added distance from seed to tumor
Conclusion:

• As Silastic insert thickness increases, the tumor receives lower dose than prescribed

Recommendations:

• Quality assurance procedures should be developed to verify Silastic thickness
• Communication with vendors if Silastic inserts are not in agreement with standards.