

Practice Tip

How to choose the right suture material

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Many general practitioners treat lacerations and remove skin tumours. As well as good surgical technique, the right suture material is essential to achieve a good cosmetic result for one's patients.

Two types of sutures are used, absorbable ones for the closure of the deep tissues and either absorbable or non-absorbable ones for the skin closure, dependent on the technique used. In choosing one has to think of the tensile strength and absorption rate as well as the amount of irritation caused by the suture material.

Suture materials in general practice

Most general practitioners will use catgut for the subcutaneous layers and either polypropylene, nylon or silk for the skin closure. Three new sutures have recently been released on the market - poliglecaprone 25 (Monocryl), polyglactin 910 (Vicryl) and polydioxanone (PDS). *Table 1* shows the differences in these materials.

Catgut and poliglecaprone 25 lose most of their tensile strength within the first week, the difference between the two is the degree of tissue reaction, which is marked in catgut and only slight in poliglecaprone 25.

Polyglactin 910 and polydioxanone differ little from a practical point of view, they maintain most of their tensile strength for two weeks; the absorption rate however differs greatly with polyglactin 910 being absorbed after two months.

Both of these sutures are preferred where a deep suture is supposed to temporarily take tension off a wound. They are excellent for subcuticular skin closure because they only cause minimal and slight tissue reaction respectively.

The less tissue reaction a non-absorbable suture causes the better the cosmetic result will be - therefore nylon or polypropylene is preferred over silk.

Table 1. Comparison of commonly used suture materials.

Name	Tensile strength	Absorption rate	Tissue reaction
Catgut	Lost within 7-10 days	Within 70 days	Moderate
Poliglecaprone 25	50-60% at 1 week 20-30% at 2 weeks	Within 91-119 days	Slight
Polyglactin 910	65% at 2 weeks 40% at 3 weeks	Minimal till 40th day Complete in 56-70 days	Minimal
Polydioxanone	70% at 2 weeks 50% at 4 weeks 25% at 6 weeks	Minimal til 90th day Complete in 210 days	Slight
Polypropylene	Indefinite		Minimal
Nylon	Loses 15-20% / year	Degradates at a rate of 15-20% / year	Extremely low
Silk	Loses most or all at 1 year	Completely by 2 years	Moderate.