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## Standard Terminology for Surgical Suture Needles<sup>1</sup>

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### 1. Scope

1.1 This terminology covers general definitions for surgical needles.

### 2. Terminology

2.1 *Definitions of Terms Specific to the Instrument* (See Fig. 1):

**attachment area**, *n*—portion of the needle where the attachment of the suture takes place. For example, eyed, drilled, and channel.

**body**, *n*—central portion of the needle intended to be grasped by the needle holder.

**chord length**, *n*—the straight line distance between the two ends of a curved needle.

**curvature**, *n*—the shape of the needle viewed in profile. Some common shapes include, but are not limited to: straight,  $\frac{1}{2}$  curve or “ski”,  $\frac{1}{8}$  circle,  $\frac{1}{4}$  circle,  $\frac{3}{8}$  circle,  $\frac{1}{2}$  circle,  $\frac{5}{8}$  circle, and compound curvature (see Fig. 3).

**cutting edge**, *n*—cutting edges are made of various geometric shapes, that is, triangular, diamond, and hexagonal. The various edges may be sharpened by the manufacturer depending on the user performance.

**needle length**, *n*—the distance measured along the needle curvature from end to end.

**needle radius**, *n*—the radius of the uniformly curved portion or portions of the needle measured from the centerline of the needle body.

**needle wire diameter**, *n*—the gage or thickness of the needle wire, measured at a location between the needle body and the attachment area, where either no or minimal work has taken place.

**point**, *n*—portion of the needle intended to initiate tissue penetration.

**point configuration**, *n*—the shape of the point. Some common point configurations include, but are not limited to (see Fig. 2): taper, trocar, blunt, spatulated, conventional cutting edge, reverse cutting edge, cutting taper, and side cutting needle.

**swage**, *n*—the term used to describe any attachment method that uses mechanical force to crimp the end of the needle and firmly hold the suture in place

2.2 *Definitions of Terms Specific to Mechanical Properties of a Surgical Needle:*

**bright or mirror finish**—highly reflective surface.

**finish**—the final surface visual appearance of a needle, that may be classified as follows:

**maximum bend moment**—the greatest moment applied to a needle during a bend test.

**needle ductility**—a measure of the amount of plastic bending a needle can withstand.

**satın, matte, or black finish**—a reduced reflective surface varying from a dull appearance to a blackened surface.

**yield bend angle**—the angle at which the yield bend moment occurs.

**yield bend moment**—the amount of moment required to initiate plastic deformation during a bend test.

### 3. Keywords

3.1 needle; stainless steel- surgical applications; surgical; suture needle

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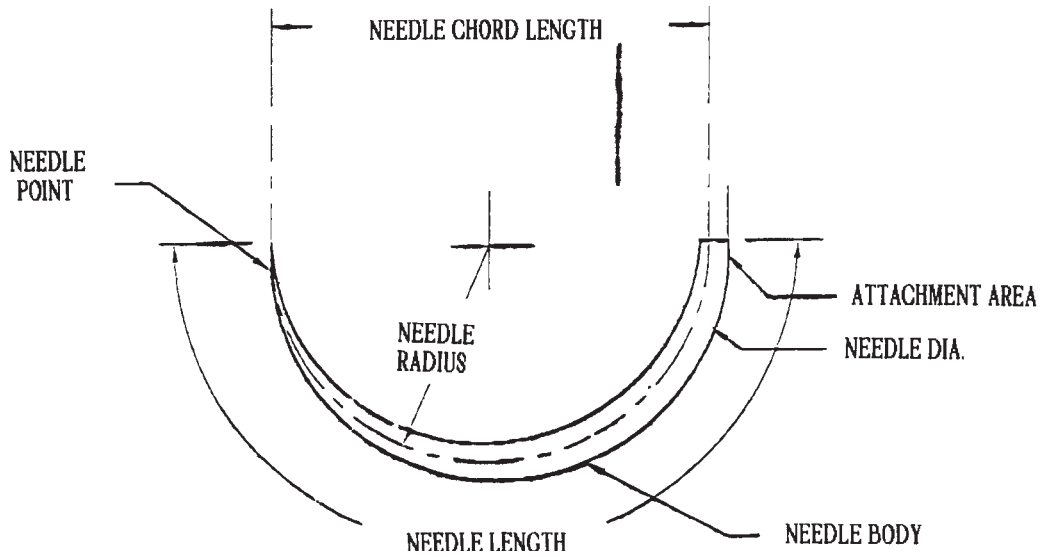


FIG. 1 Schematic of a Surgical Needle

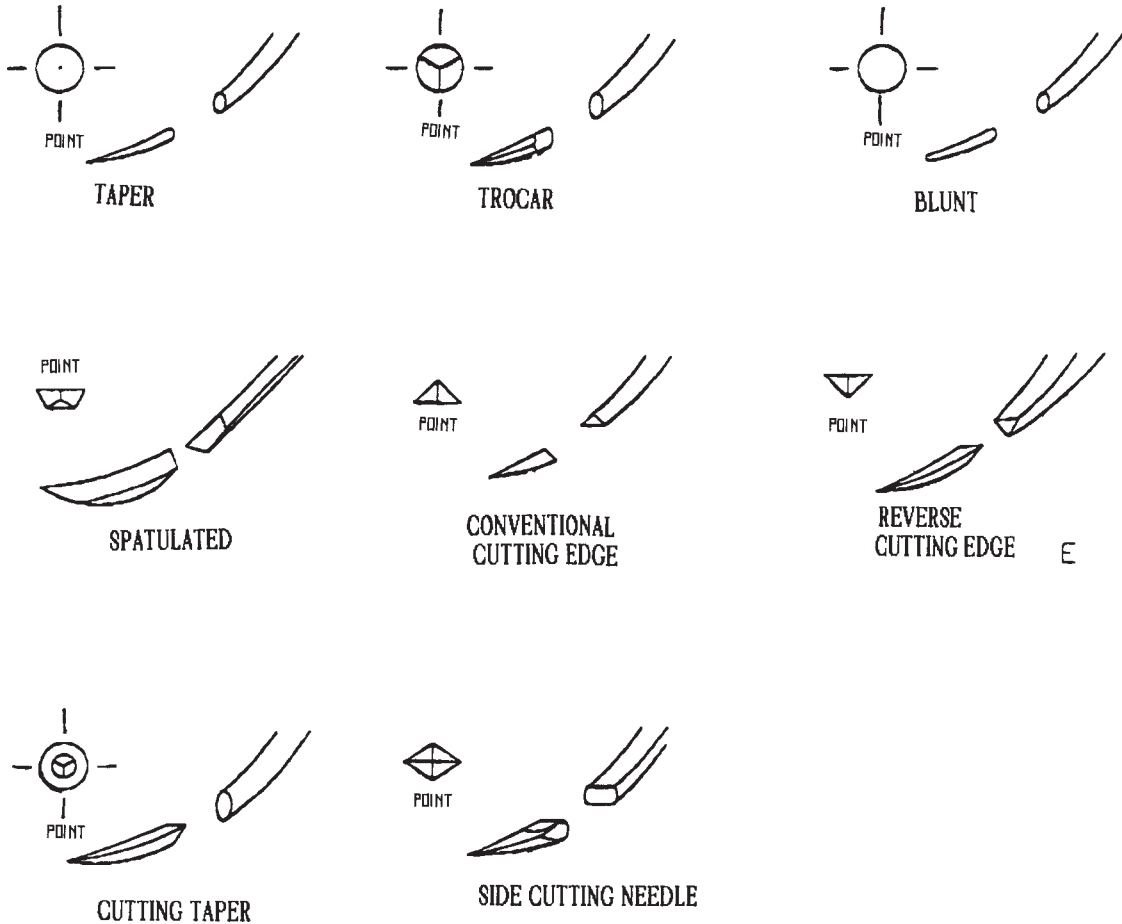


FIG. 2 Typical Point Configurations

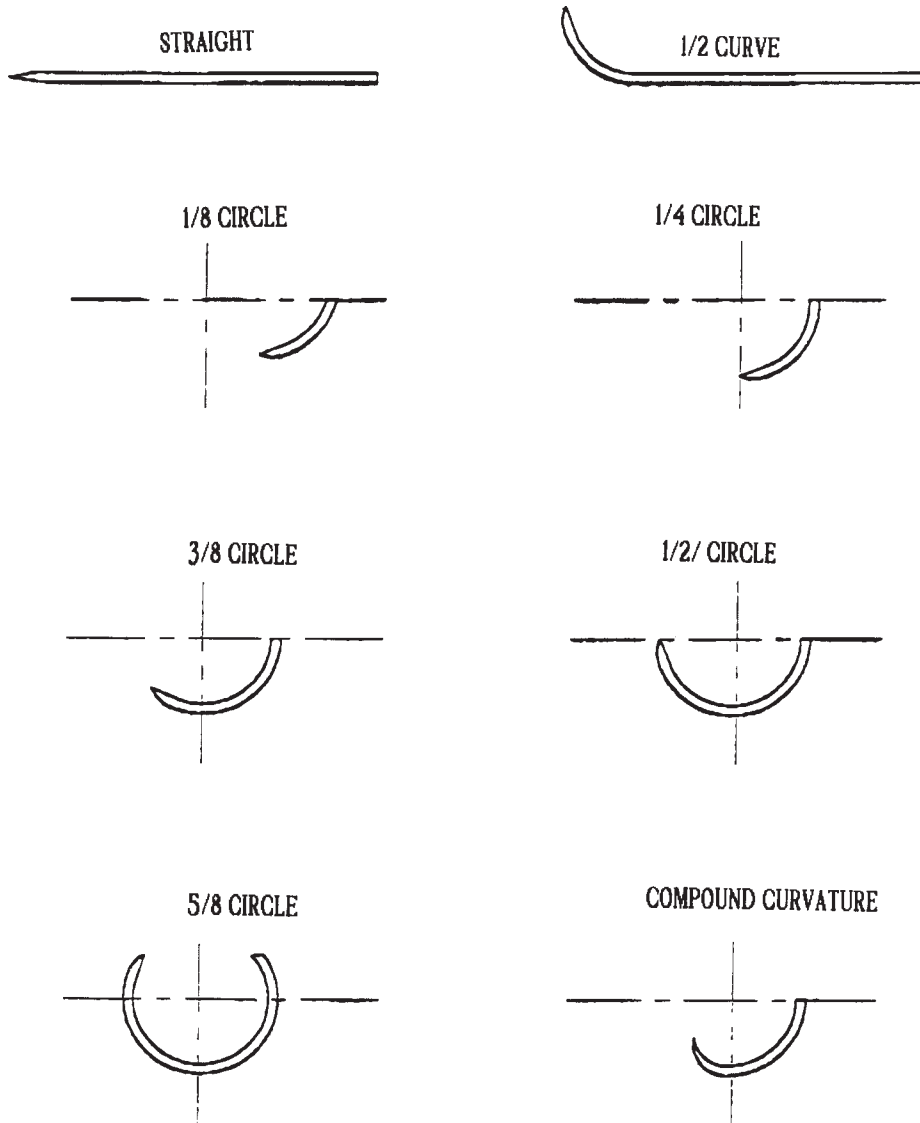


FIG. 3 Typical Curvatures

## APPENDIX

(Nonmandatory Information)

### X1. RATIONALE

X1.1 Because there is a clinical need for a variety of surgical suture needles for surgical procedures, they are manufactured in various configurations and from various materials. For practical purposes these devices supplied by different manufacturers necessitate a defined system of terms.

X1.2 The terms defined in this terminology are the most commonly used for surgical suture needles. However, the intent is not to prohibit technological innovation or to exclude surgical suture needles manufactured with other types of features.

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