



SUTURING & KNOT TYING

POWH Surgical Skills Program

2021

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ANATOMY OF SKIN

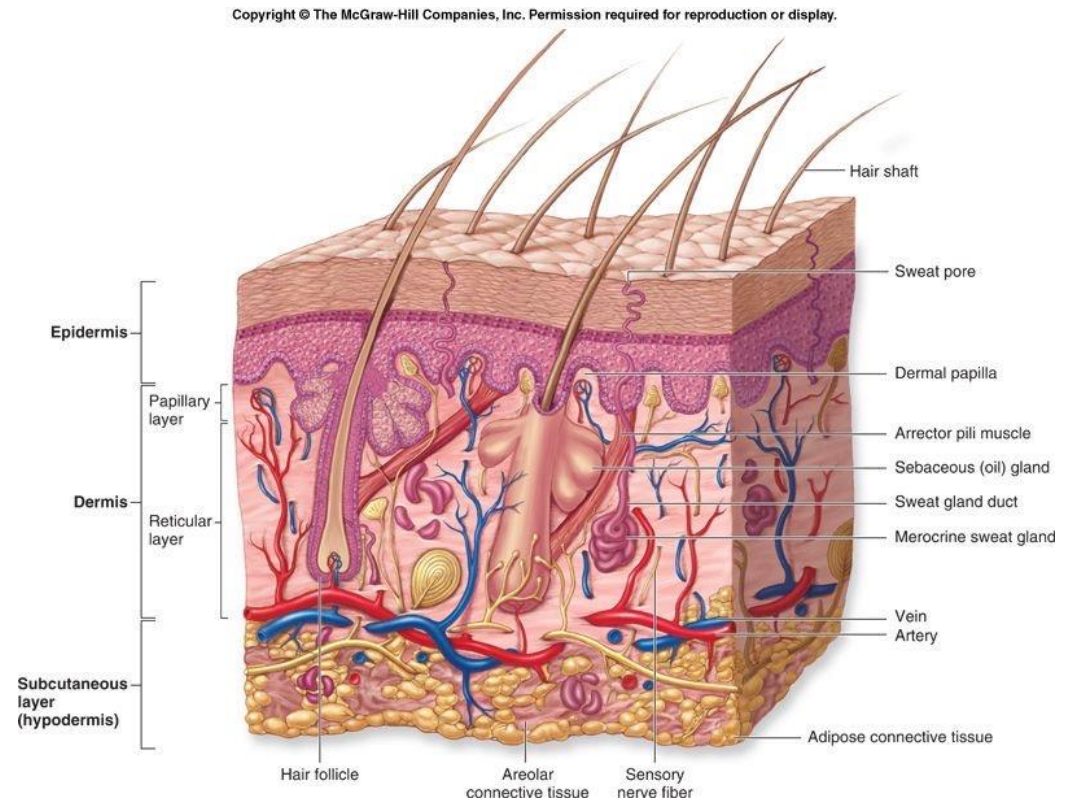
Hypodermis

Dermis

- Reticular layer: contains sebaceous glands, sweat glands, hair follicles
- Papillary layer

Epidermis

- Basale
- Spinosum
- Granulosum
- Lucidum
- Corneum



GOALS

- ❖ Apposition
- ❖ Provide adequate tension
- ❖ Maintain Haemostasis
- ❖ Aid Wound Healing
- ❖ Avoid Wound Infection

Aesthetically pleasing scar

WOUND CLOSURE

Primary

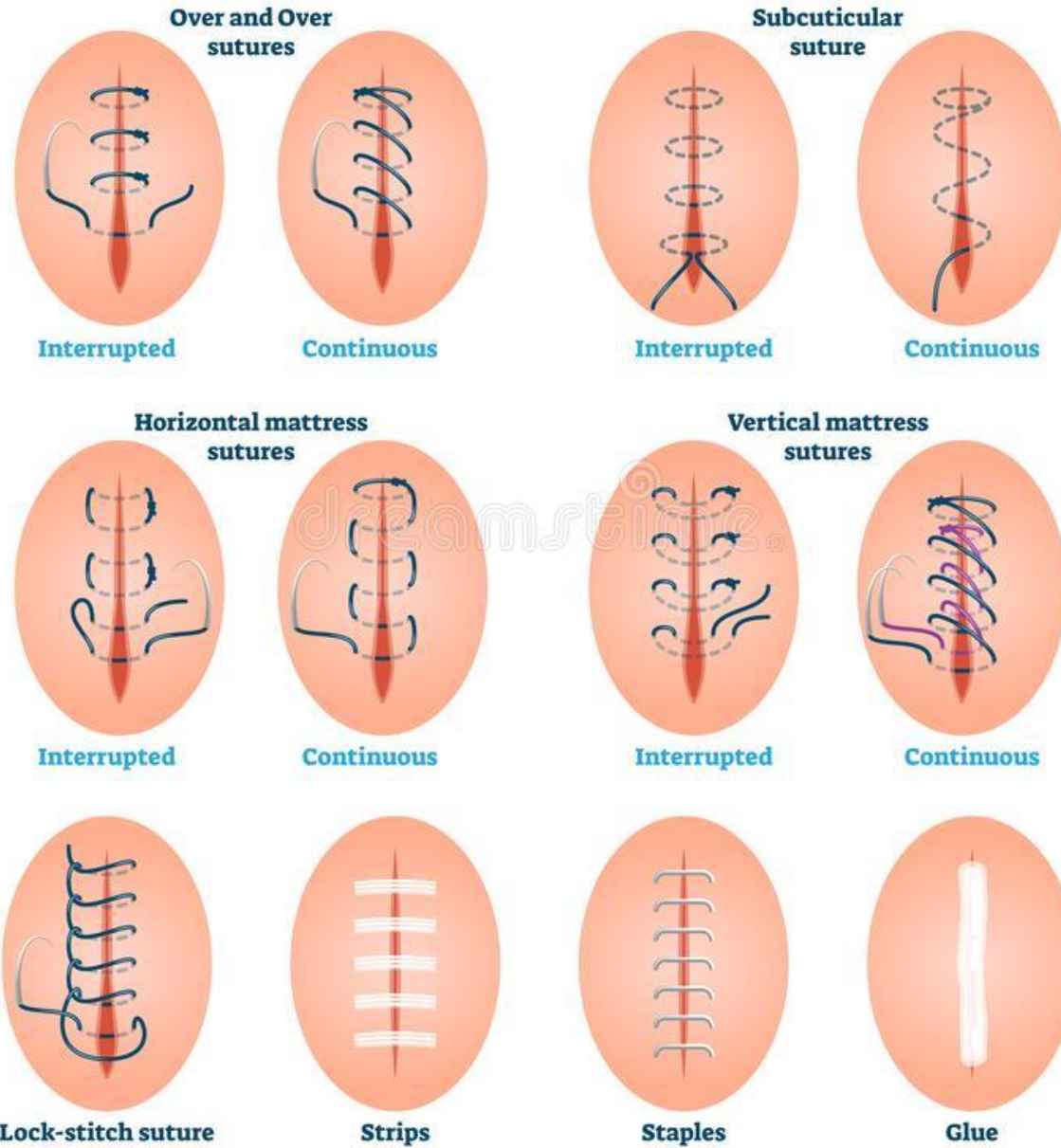
Secondary Intention

Delayed

Simple vs. flap vs. graft

Sutured vs. stapled vs. glue vs. dressing

SURGICAL STITCHES



THINGS TO THINK ABOUT...

Wound Related

- Type
- Clean/Dirty
- Closure



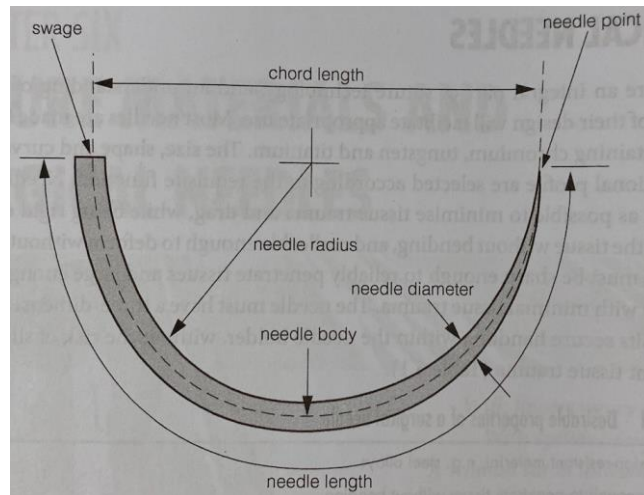
MORE THINGS TO THINK ABOUT...

Equipment related

- Needles

- Size and shape

- Type



- Sutures

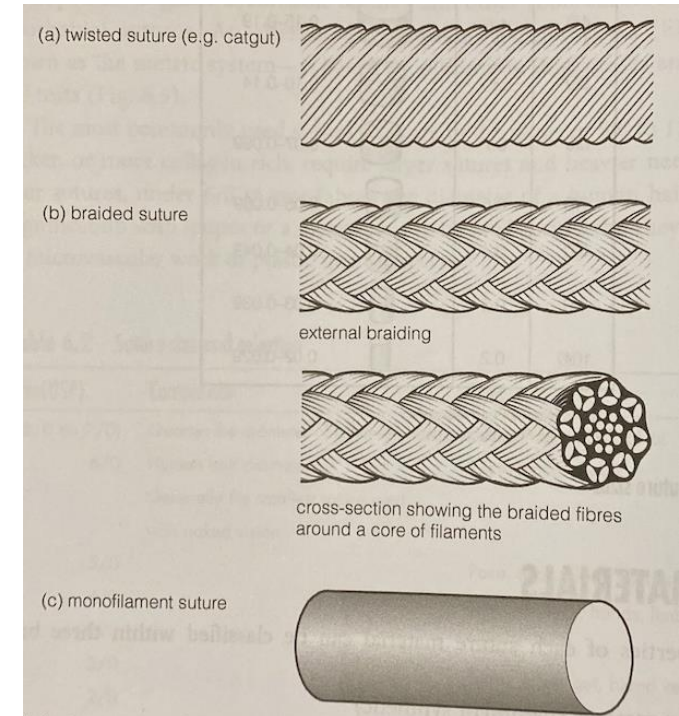
- Natural vs synthetic

- Absorbable vs Non-absorbable

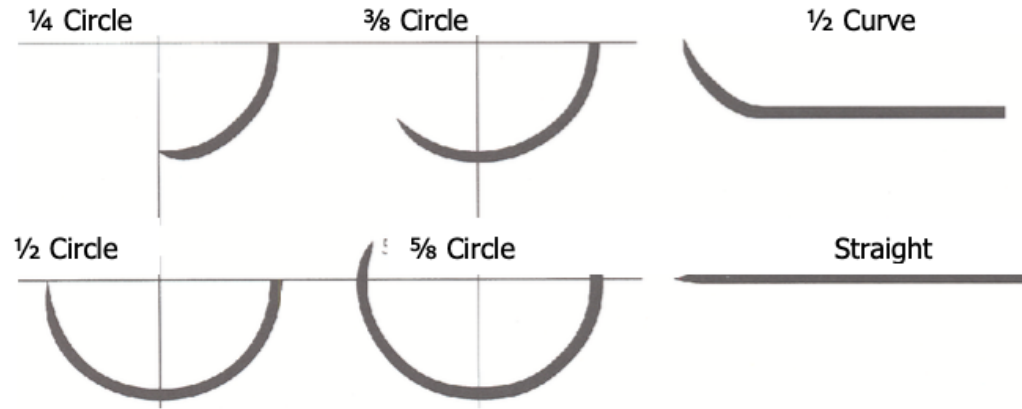
- Polyfilament vs monofilament

- Thread size

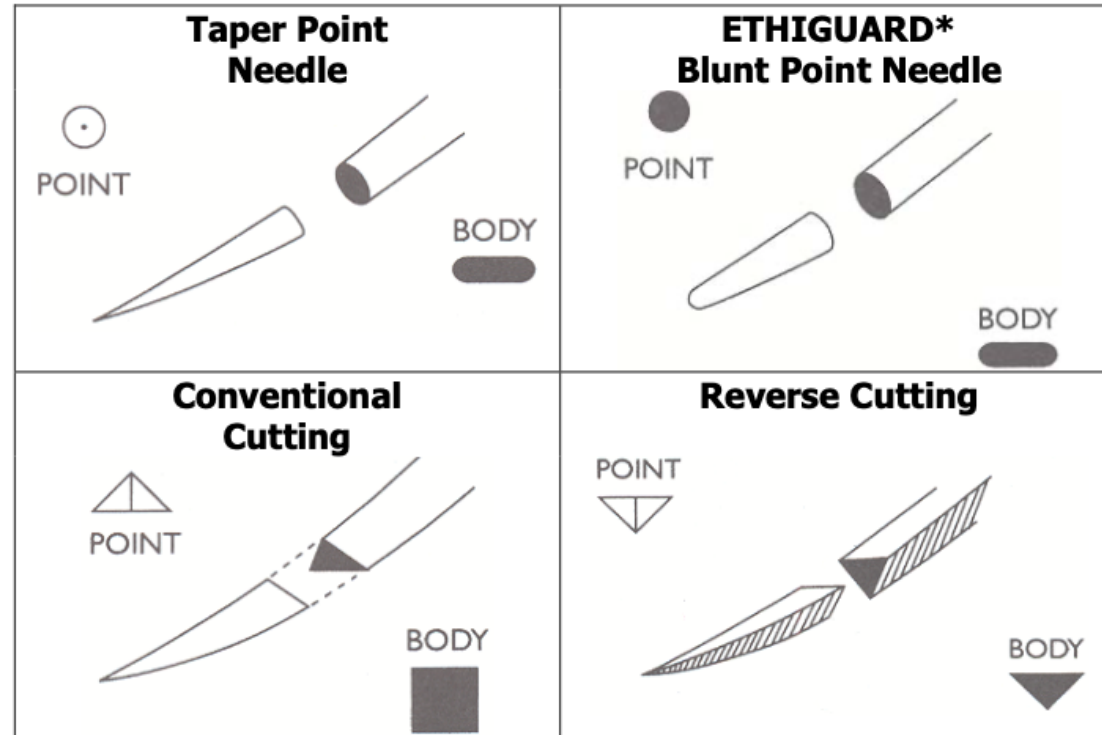
- Dyed vs Undyed



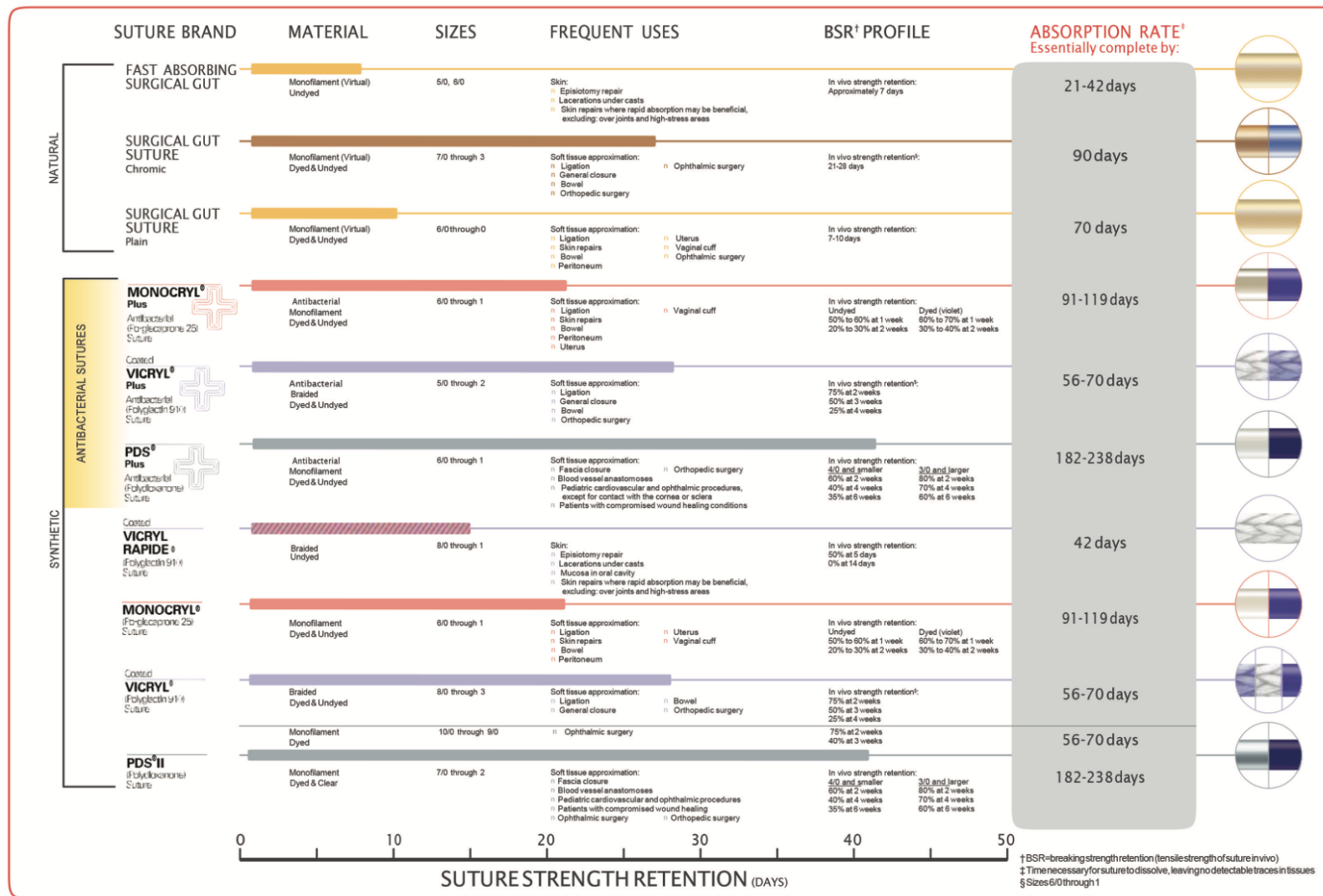
Needle Shapes



Needle Types



Absorbable Sutures: The Strength You Need for the Choices You Make

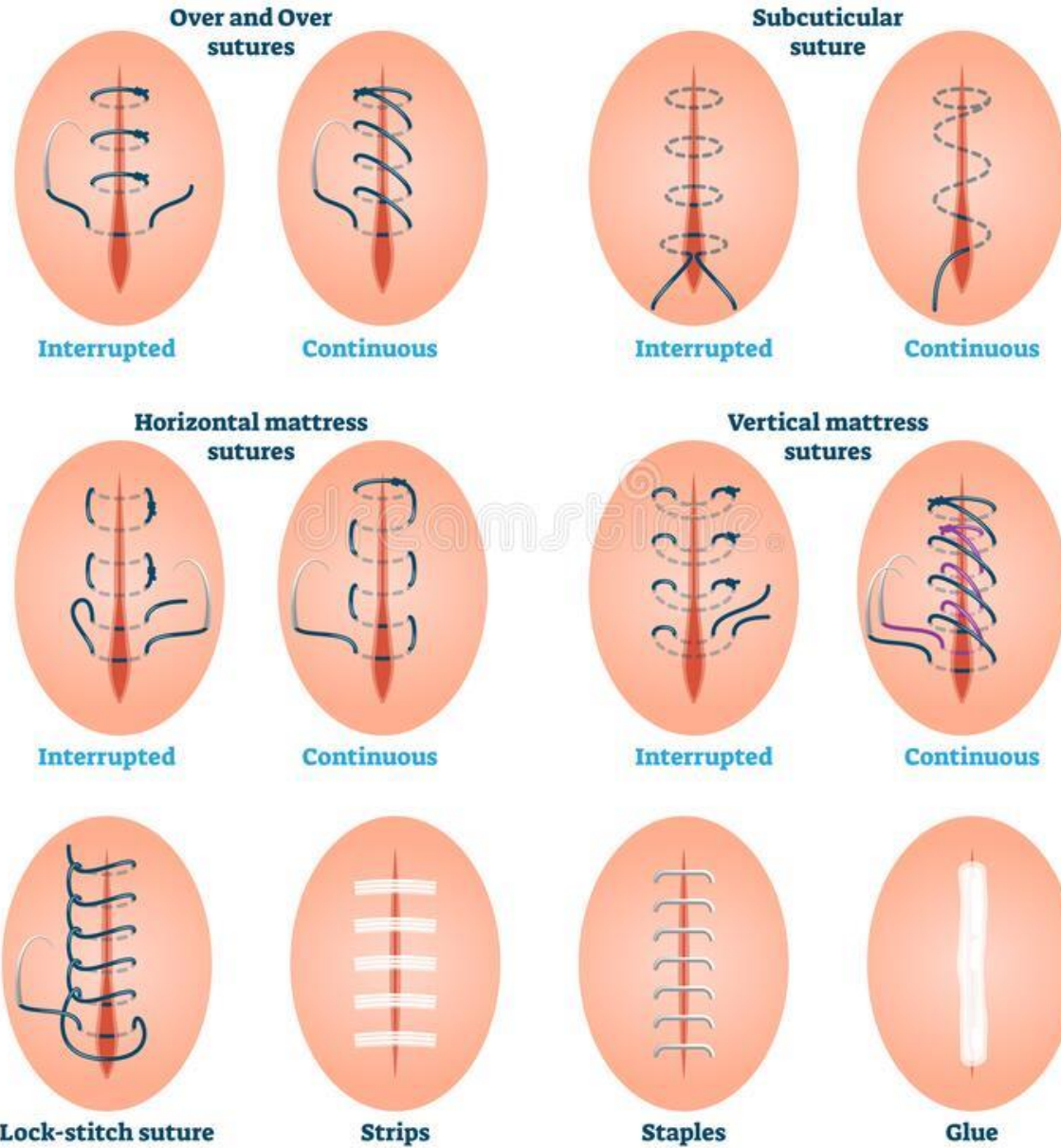


Nonabsorbable Sutures: The Strength You Need for the Choices You Make

	SUTURE BRAND	MATERIAL	SIZES	FREQUENT USES	BSR† PROFILE	
NATURAL	PERMA-HAND® Silk Suture	Braided Black	5, 2 through 7/0	General soft tissue approximation and/or ligation: n Cardiovascular n Ophthalmic n Neurological	Gradual loss of all tensile strength over time	
	SURGICAL STAINLESS STEEL Suture	Monofilament Silver Metallic	7 through 5/0	Soft tissue approximation: n Abdominal n Sternal Closure n Orthopedic procedures including cerclage and tendon repair	Indefinite	
SYNTHETIC	NUROLON® Nylon Suture	Braided Black	1 through 6/0	General soft tissue approximation and/or ligation: n Neurological n Cardiovascular n Ophthalmic	Gradual loss of tensile strength over time	
	ETHILON® Nylon Suture	Monofilament Black/Green/ Undyed (Clear)	2 through 11/0	General soft tissue approximation and/or ligation: n Cardiovascular n Ophthalmic n Neurological n Skin Closure	Gradual loss of tensile strength over time	
	MERSILENE® Polyester Fiber Suture	Braided Green / Undyed (white) Monofilament Green	1 through 6/0 10/0 through 11/0	General soft tissue approximation and/or ligation: n Cardiovascular n Ophthalmic n Neurological	Indefinite	
	ETHIBOND EXCEL® Polyester Suture	Braided Green / Undyed (white)	5, 2 through 7/0	General soft tissue approximation and/or ligation: n Cardiovascular n Ophthalmic n Neurological	Indefinite	
	PROLENE® Polypropylene Suture	Monofilament Blue / Clear	1 through 10/0	General soft tissue approximation and/or ligation: n Cardiovascular n Ophthalmic n Neurological	Indefinite	
	PRONOVA® Poly (Hexafluoropropylene-VDF) Suture	Monofilament Blue	2/0 through 8/0	General soft tissue approximation and/or ligation: n Cardiovascular n Ophthalmic n Neurological	Indefinite	

† BSR=breaking strength retention (tensile strength of suture in vivo)

SURGICAL STITCHES





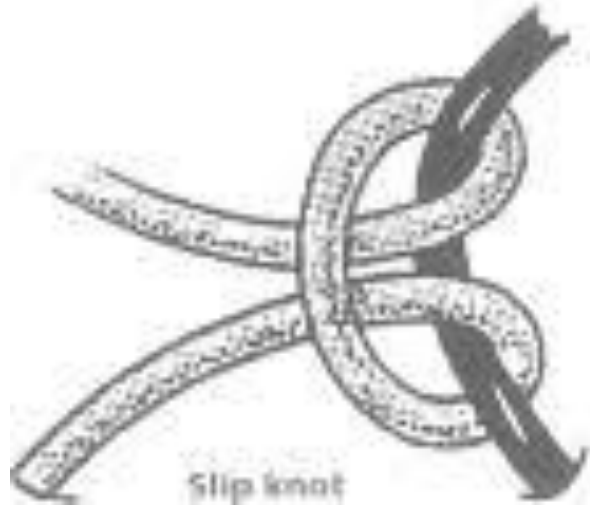
KNOT TYING



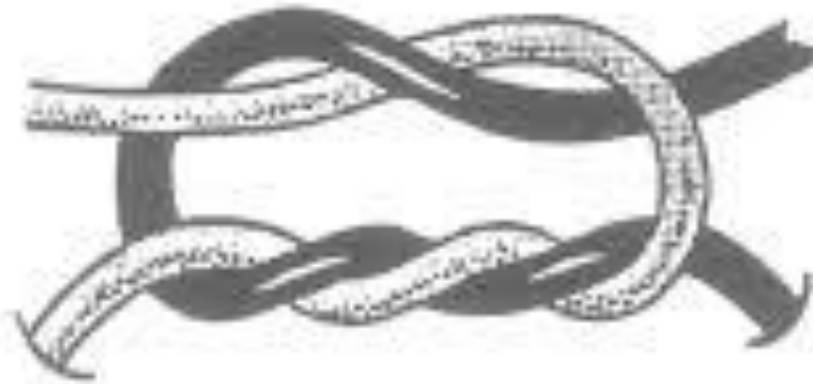
Square knot



Granny knot



Slip knot



Surgeon's knot







DEMONSTRATION



SETTING UP



TISSUE HANDLING



SIMPLE INTERRUPTED



INSTRUMENT TIE



VERTICAL MATTRESS



HORIZONTAL MATTRESS



**CONTINUOUS
SUBCUTICULAR**



**HAND TIES:
ONE HANDED
TWO HANDED**



BARRON STITCH

