

Suture Clinic Quick Reference Guide

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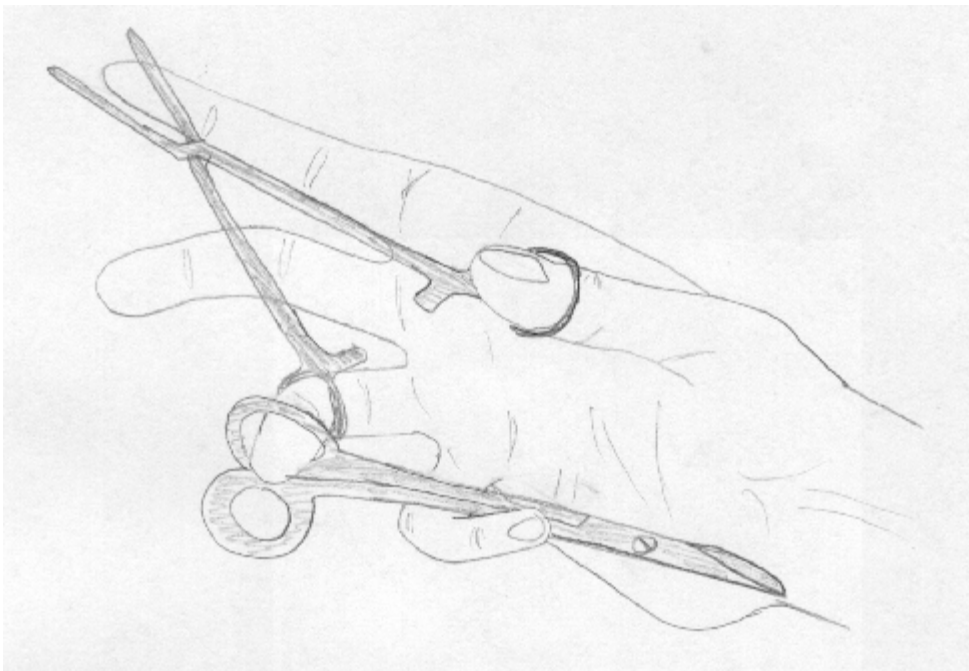
Written and Illustrated by Jason DeVries
Edited by Joe Ades

This is a quick guide to use with the ACFAS suture workshops. It will give you some useful information about the materials you will be using, and outline some of the techniques that you will be practicing. You probably will not be able to study this guide and then do these techniques, but it is made to help remind you of how to do things you have learned.

INSTRUMENTS

For the \$5 equipment fee, ACFAS will provide you with a scissors, needle holder, and forceps. They are very basic and when you suture in a clinic or rotation they would be unacceptable, but they are useful for learning techniques.

First thing you need to do is be able to hold the instruments. You should be able to have all three pieces in your hands at once, and not have to put them down while suturing. You will find that each clinician will have their style and method, and that will be the “right” method at the time. We will teach the thumb and ring finger method for the scissors and needle holder, and the pencil grip for the forceps.

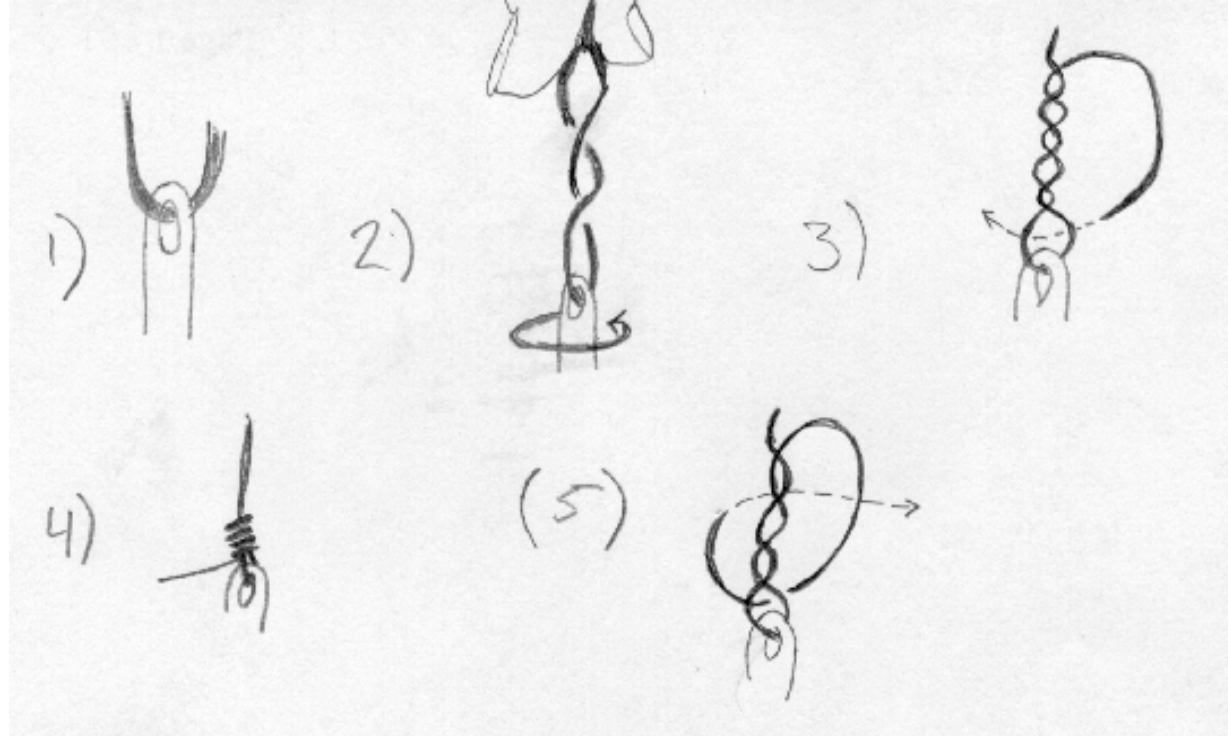


Holding the needle holder and scissors in the manner illustrated above will allow you to have both instruments in your hand, without them getting in your way and letting you use both without putting anything down. Use the needle holder like this, then when you need to use the scissors, you can use your fifth finger to flip it up to your third finger and cut whatever you need to.

When you come to workshops, we will provide needles, sutures, and gloves to use. We will use curved needles with eyes to tie the suture in. There are needles that have the suture planted into them, called swaged needles, but we will not be using them in workshops. To tie the suture onto the needle, you can use whatever method you wish. We will however recommend the “fisherman’s knot” as it is strong and small.

Fisherman's Knot

- 1) slip the suture through the eye
- 2) twist it around
- 3) put the end of the suture through a space made between the needle and the twisted suture
- 4) pull it tight.
- 5) If that does not seem to be enough, you can also put the end back through the loop made by bringing the end through the space (step 3)



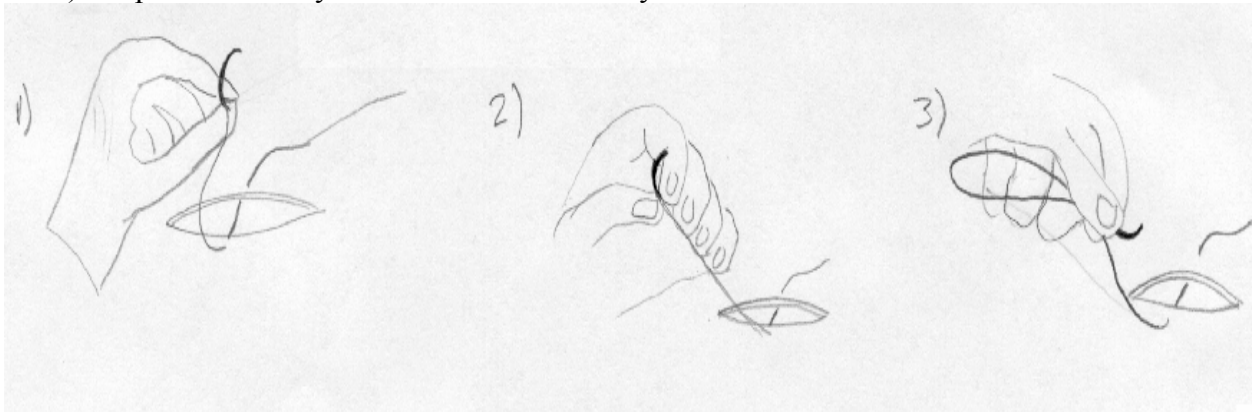
As far as the sutures we use, they will be synthetic, non-absorbable sutures. There are absorbable sutures, usually made of gut or some synthetics, but they will not be necessary in workshops. The size of the sutures can be described by one of two systems, either metric or United States Pharmacopoeia (USP). The more common is USP and they have sizes from 7, the largest at 4.1mm, to 14-0, which I can't imagine what its used for its so small. Most of the time in practice you will use 3-0 and 4-0, which is good for skin and subcuticular stitches and what we will use in workshop.

SUTURING

In these workshops we will teach five basic suturing techniques. Also, we will teach techniques of gathering the suture, and tying off the ends of the stitch.

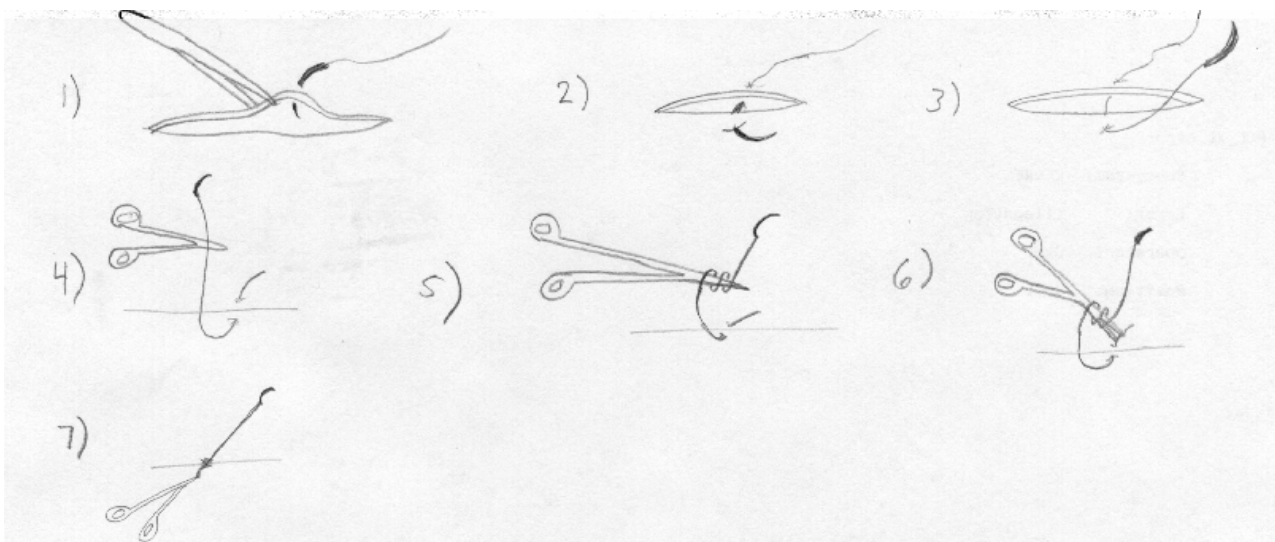
Gathering – use this for every suture to get the excess line out of your way and off the table.

- 1) Push the needle through skin with needle holder, then with thumb and index finger grasp the needle and pull the suture through
- 2) Using your fifth digit pull the suture into your hand as you re-grab the suture with your thumb and index finger.
- 3) Repeat. This way the line is out of the way.



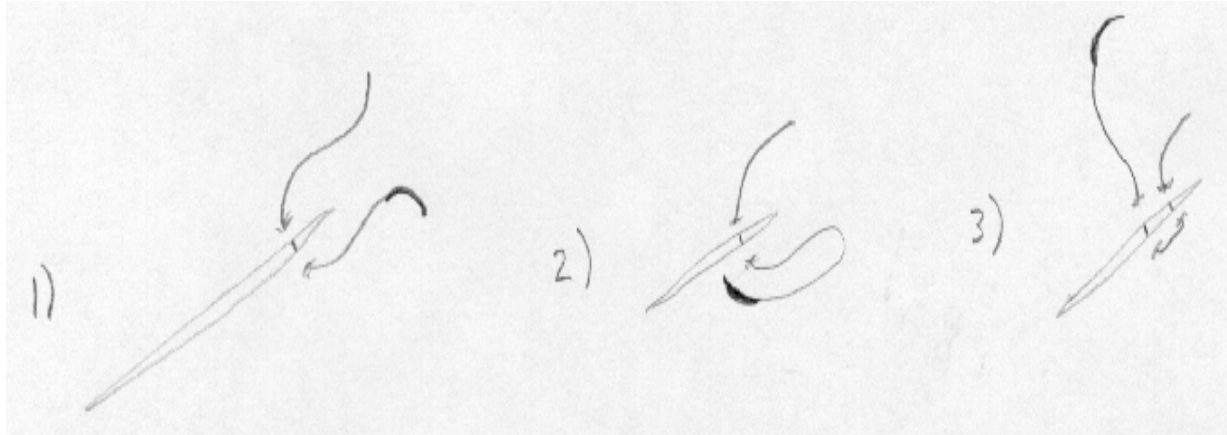
Simple Interrupted – this is a very basic stitch used to close small wounds

- 1) Pull up the skin on one side of the wound with your forceps, then take the needle with your needle holder and push the needle through.
- 2) Push the needle through the skin on the other side of the wound and pull the needle, gathering up the excess suture.
- 3) Pull suture through until about 2 cm are left on the first side
- 4) Tie the suture.
 - a. Wrap the end with the needle on it around the end of the needle holder 2 times.
 - b. Use the needle holder and grab the end of the suture that is sticking out on the first side.
 - c. Pull tight, perpendicular to the wound
 - d. Repeat, only this time wrap the suture around the needle holder in the opposite direction, and only once.
 - e. Repeat one more time, same direction as the first throw, and only once.



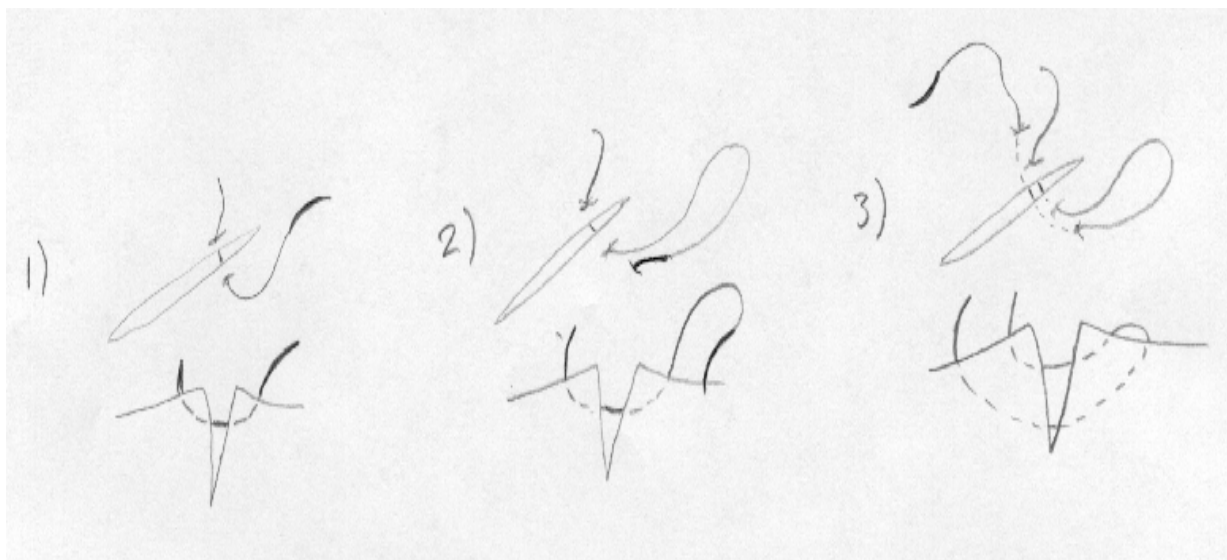
Horizontal Mattress – this is equal to 2 simple interrupted sutures and constrains minor blood vessels along the wound edge

- 1) Go through the skin on both sides of the wound with your needle
- 2) On the second side of the wound, follow parallel to the wound and reinsert the needle through the skin
- 3) Emerge on the opposite side, pull the suture through, leaving about 2 cm on the end, and tie the ends as illustrated above.



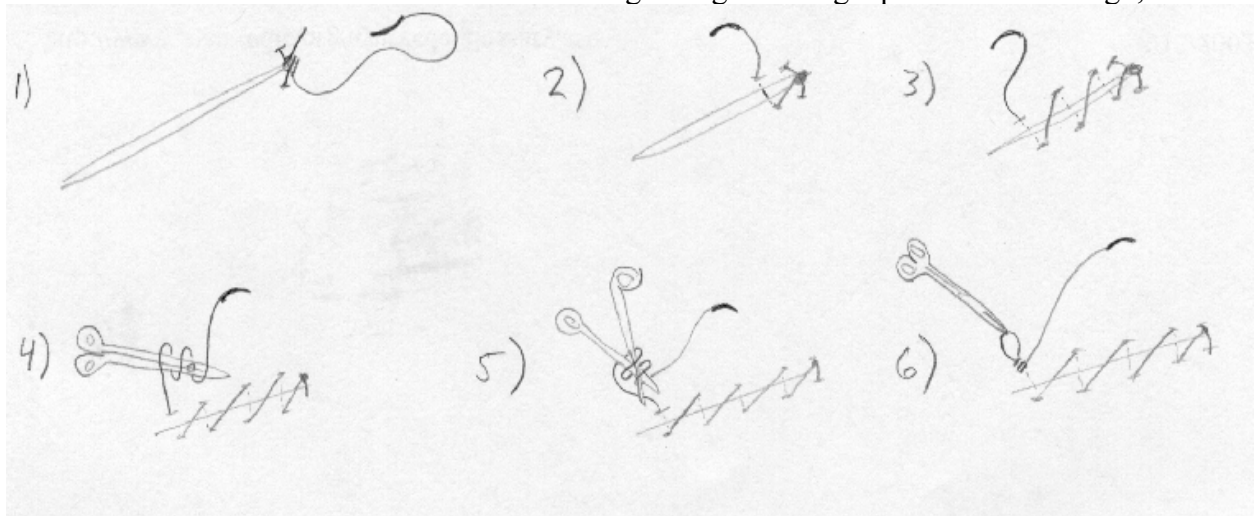
Vertical Mattress - this goes both deep and superficial and constrains minor blood vessels and provides maximum suture strength.

- 1) Go in and out of the wound, narrow and shallow
- 2) Reinsert the needle on the same side as the exit, but further from the wound
- 3) Push needle back to other side of wound, this time going deeper than the first pass.
- 4) Pull suture tight and tie ends as before.



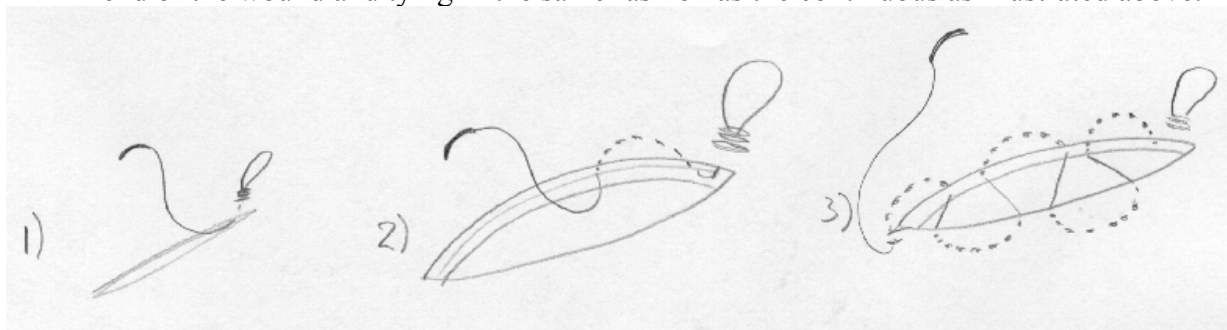
Continuous – This is for longer wounds

- 1) Start like a simple interrupted suture and tie it off, but don't cut the line leading to the needle
- 2) Reinsert the needle the same distance from the wound, but following along down its edge. Once inserted, push the needle perpendicular to the wound and out the other side.
- 3) Don't tie, but instead reinsert the needle down wound and so the suture crosses over the top of the wound. Then go through wound perpendicular again.
- 4) Repeat this process until to the end of the wound, then tie off
 - a. Pull the end through and the suture tight.
 - b. Just like before, wrap the line around the needle holder
 - c. Then, use the needle holder to grasp the same line that is wrapped around the needle holder, very close to the skin.
 - d. Pull tight and you should have a small loop and a knot right by the skin. Repeat once or twice to make the knot big enough to not get pulled back through, and cut.



Subcuticular Continuous – This is used for cosmetic reasons as the stitches will all be underneath the skin. It's recommended to use Steri-Strips to reinforce the outside.

- 1) Insert the needle into the skin at one end of the wound and pull through. Tie the end in the same manner as the end of the continuous as illustrated above.
- 2) Pull up skin on one side of the wound and insert needle intradermally and do "half moon" in skin.
- 3) Pull needle through so the suture is in the dermis on one side of the wound in half moon shape.
- 4) Reinsert the needle on the other side of the wound in a similar fashion, backtracking a little along the wound.
- 5) Continue this through the wound and end by sticking needle back out of the skin at the end of the wound and tying in the same fashion as the continuous as illustrated above.



HINTS

- 1) Try not to make the sutures so tight that the skin “puckers” under the stress. You want the skin to be tight to each other.
- 2) Try to do things with all instruments in your hand right away, that way you don’t develop bad habits.
- 3) Try to make sutures look uniform and neat. Watch distances from each other and the wound. Cut sutures after they are tied close to knot.
- 4) Remember that the way we are teaching is one way of many. Each clinician will have you do it their way, and probably call you crazy for doing it any other way.
- 5) Practice makes perfect. Try to come to a few workshops, or get materials to do it at home. You can only get better, faster, and more confident.