

# Suture Skills Review

**Hive Mind Study Group @NMI, 11/15/2023  
w/ Gloria Campise, LM, CPM**

# Session Objectives

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- Importance of skills practice for proficiency
- Assessment of Tears & Indications for Suture Repair
- Practice Materials
- Suture Materials
- Placing Stitches
- Tying Knots
- Types of Stitches
- Knowledge share throughout this session

# How do we gain expert suturing skills?

Watch & learn, watch & assist and practice, practice, practice, and more practice.

- Midwives' suturing proficiency & skill means lifelong comfort, health, and wellbeing for birth givers.
- Optimal healing goals for:
  - Sexual activity
  - Self esteem & self image
  - Urinary (& bowel) function
  - Pelvic floor integrity



# Assessment

To suture or not to  
suture?  
and informed choice

- Identify landmarks
- Assess trauma to tissues, vessels, etc. “Skid mark,” 1°, 2°, or deeper tear (3° & 4°)?
- Approximate tissues
- Within your scope?
- Make a plan
- Alternatives to suture



# Quick Review: Alternatives to Suture

- Mermaid legs
- Japanese suture clips
- Manuka Honey
- Nori Seaweed
- Surgical glue
- Other alternatives?

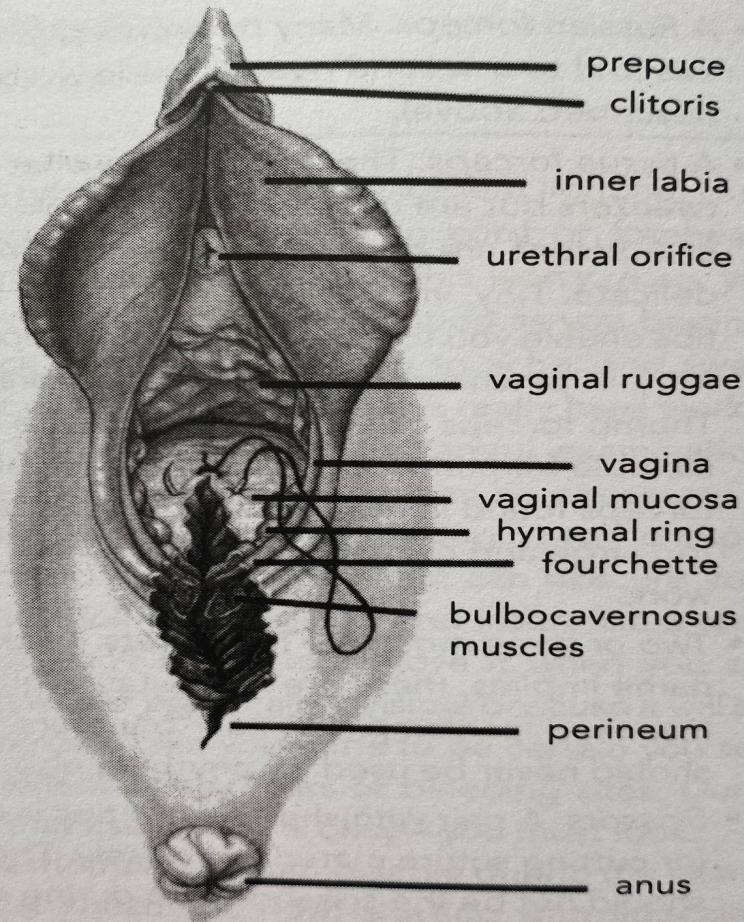
## **Considerations for alternatives:**

- Skid marks or 1° tears?
- How many other children?
- Over all health & wellbeing?
- Postpartum support?
- How likely to rest and be “mermaid” like?
- What other considerations?

# Landmarks & Assessments

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- Labia
  - Urethra
  - Clitoral Hood
  - Vaginal Rugae
  - Perineal Skin & Muscle Body
  - Hymenal remnants
  - Anal Sphincter
  - Cervix
- Apex of tear
  - Length and depth of tear
  - Approximation of tissues coming back together
  - Make a plan for repair
  - If you have another midwife with you, (I hope you do!), review the repair plan.
  - Example: How it was modeled to me.

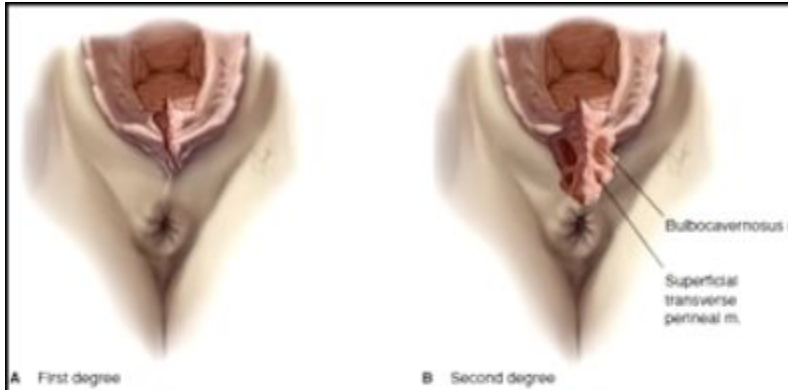


## Anatomical Landmarks

Image from Davis (2019),  
p.176

**OOH CPM**

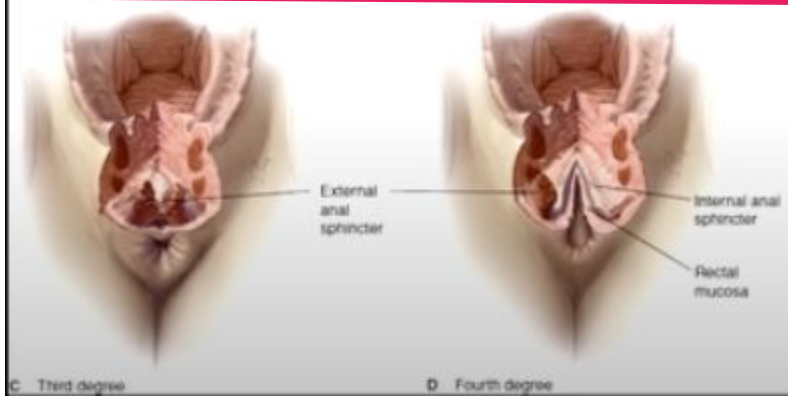
First Degree



Second Degree

**Transfer Care to OB**

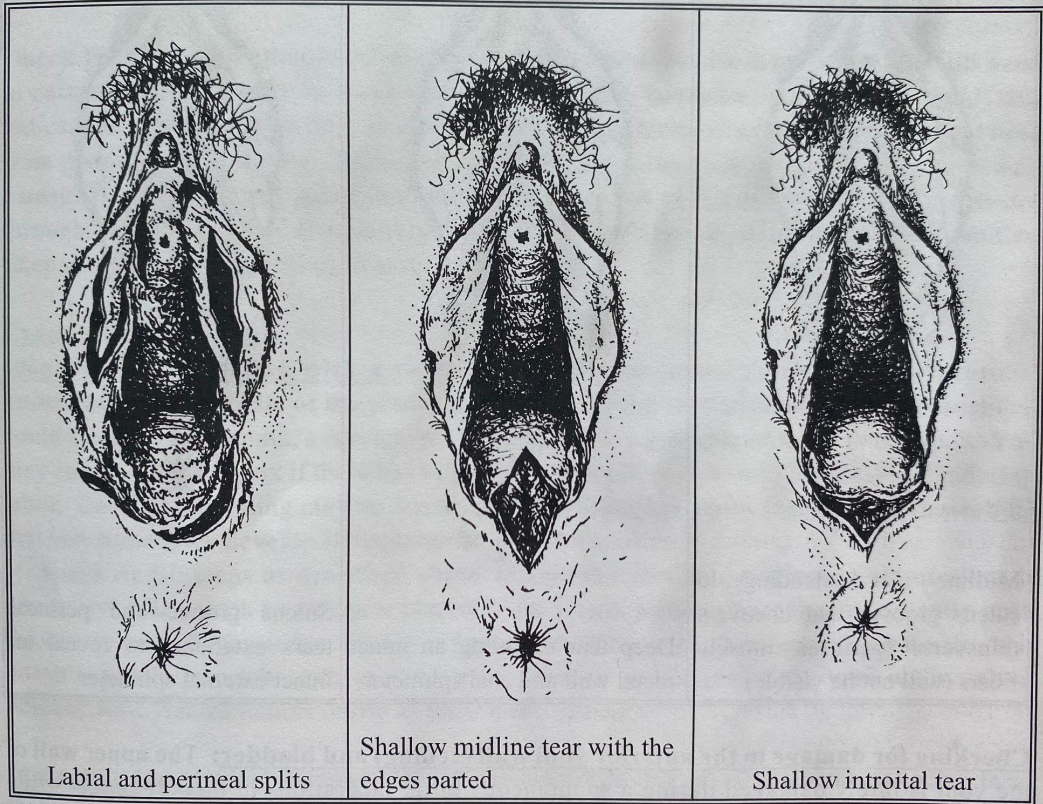
Third Degree



Fourth Degree

Image from Williams Obstetrics (2013), p.





Images from Frye (2010), p. 475

# Indications for Suture Repair

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## Indications for OOH Suture Repair by CPM:

- hemostasis is needed
- 1° & 2° tears in vaginal vault
- tears in perineal body
  - Perineum skin
  - Bulbocavernosus muscle
  - Perineal transverse muscle
- torn vessels
- tears to clitoral hood, labia, etc.
- **Birth Giver's informed choice and preference.**

## Indications for Transfer to OB Care for Suture Repair:

- 3° and 4° tears
- Tears that you cannot easily approximate or are not able to adequately suture within your skill set/scope of practice
- Unable to achieve hemostasis
- (Share case examples: sulcus tear, cervical tear, etc)

# Key Points: Assessments & Systematic Plan for Repair

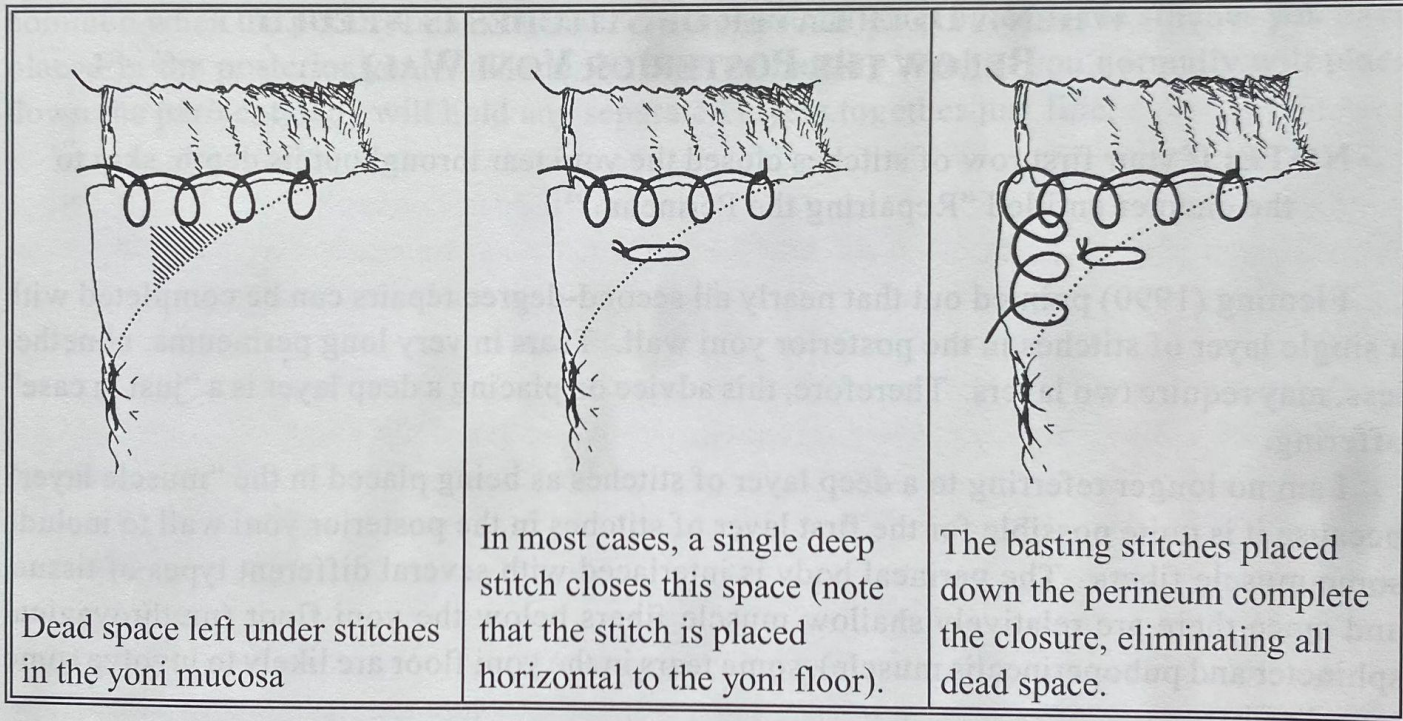
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1. Informed Discussion, Consent & good communication with client throughout procedure
2. Remove clots & blot blood for clear visuals
3. Locate the apex of the tear
4. Assess depth of tear
5. Consider digital-rectal exam
6. Approximate tissues by using anatomical landmarks
7. Repair in 3 stages: vaginal mucosa, deep tissue, subcutaneous skin closures.
8. Be sure to close all “dead space”
9. Consider digital rectal exam after repair

**What is your routine assessment and systematic plan for repair?**

**Student Midwife Knowledge Share!**

- Finger tip as assessment tool
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Images from Frye (2010), p. 484

# Discussion: Informed Choice

# Practice Materials

Practice simulations regularly for muscle memory and developing proficient skills

- Foam block, or large sponge (from paint section of hardware store), sharpie pen.
  - Chicken thighs/beef tongue, Dollar store gardening foam, T-Pin needles, sharpie pen.
  - Shoe/tissue box (optional)
  - Foam sheet & sharpie pen
  - Purchased simulation models
  - Instruments, suture & needle, syringes, med vials
  - Gloves, headlamp, mirror
-

## Practice Tip

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Many people practice and put their hands and arms everywhere as if they have a huge 360° space to work in. In reality, we are working on a real human who has legs, and a vagina that is not as exposed as our practice simulation materials. All of this limits where and how far in any direction our hands can go when we place sutures, tie knots, use our instruments, etc.

Keep this in mind when you practice. Consider using a shoe box over your simulation model and or keeping your fingers, hands, and arms within a specific range, more like 45° space to work within.



# Examples of Practice Simulations

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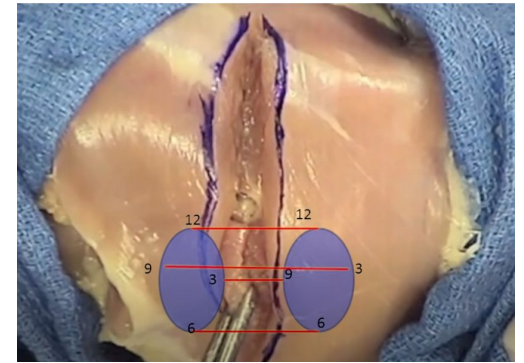
[Making Models For Suturing Simulation, Nell Tharpe](#)



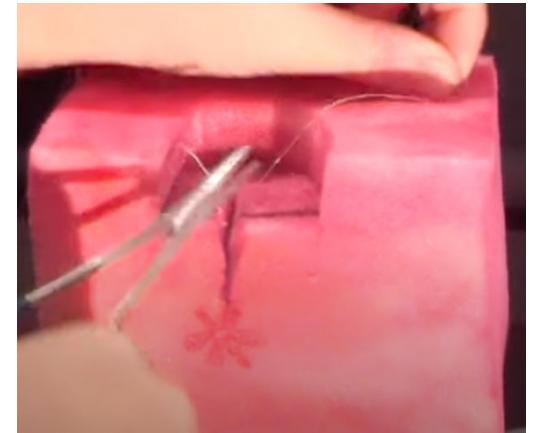
[Nell Tharpe](#) on YouTube



[Nell Tharpe](#) on YouTube



[Perineal Laceration Repair Simulation](#)



[Lurenacme, Perineal Repair After Childbirth Youtube](#)



# Suturing Tools

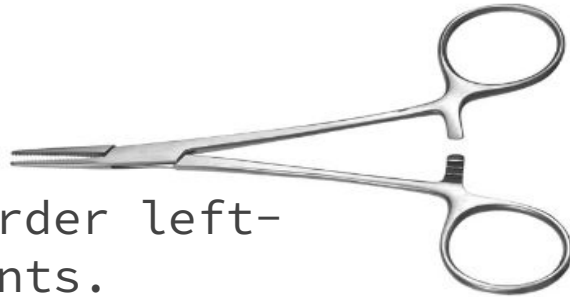
If you don't have a suture kit yet, get one and start practicing!

- Instruments
- sutures & needles
- local anesthetic
- needle & syringe
- Sterile lube
- Sterile gloves
- Sterile gauze
- Other helpful tools?

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# Instruments

- Needle Drivers
- Tissue Forceps
- Scissors
- Mosquito forceps
- What else do you have in your suture kit?



\*May need to special order left-hand dominant instruments.

# Needle Holder Skills

- Fingers in loops, or holding outside of loops
- Practice locking/unlocking needle holders - should be smooth and with ease
- Needle orientations - load pointing left / right and holding needle end (not the point or on suture)
- **Hands-free** load needles and grasp needle after a bite with desired pick up tool either tissue forceps or another needle driver
- DO NOT grab needle with your fingers from the tissues. You will see this, but it is not safe.
- *What other skills have you learned up from your preceptors or in apprenticeship?*

# The Suture Packet

Braided = multifilament  
Violet = dyed so you  
can see it better

Size of suture

Type of suture: Vicryl\* - synthetic  
suture trademarked by Ethicon, Inc.

Length of suture  
(27-36" is usually  
sufficient)

CT = Circle Taper  
and description of  
needle

Shows exact  
size and  
shape of the  
needle

Shows tip  
of needle



Expiration  
date (note  
expired for  
practice!)

Lot #

\*There's also Vicryl Rapide which  
absorbs sooner than regular Vicryl.

# Suture Strand Materials & Sizes

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- **Vicryl**<sup>®</sup> - Polyglactin 910 Suture; has 75% of its original breaking strength at 14 days and 50% at 21 days(Al-Qattan, 2005).
- **Vicryl Rapide**<sup>®</sup>- Irradiated Polyglactin 910 Suture; dissolves sooner; has 50% breaking strength at 5 days and almost none at 14 days.(Al-Qattan, 2005)
- 3.0 for most repair jobs we encounter; vaginal mucosa, deep perineal muscle
- 4.0 for fine labial, clitoral, periurethral repair
- 2.0 for episiotomy repair
- 27-36 inches long is usually sufficient; if you open another pack of suture, it should be the same type for same dissolve time
- **Chromic gut** - often for clients who don't want synthetic suture; or if you prefer using this material; animal product



# Suture Needles

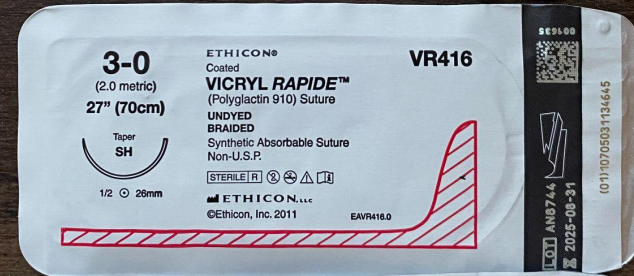
Most commonly used:

CT = Circle Taper

SH = Small Half Circle

And the options are endless!

See page 317 to 322 of Frye (2010) for images, charts, sizes, tips, and uses of suture needles.



# Local Anesthesia

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- Lidocaine Hydrochloride IM 1% or 2% (w/ or w/o epi\*)
- Max individual dose: 300 mg (4.5 mg/kg) (Rx AOM App)
- 1% = 10 mg/mL = 100mg/10mL. (Rx AOM App)
- 2% = 20 mg/mL = 200mg/10mL.(Rx AOM App)
- Redheads metabolize differently; sometimes need more medication
- 10 ml Syringe (regular or control top)
- Alcohol swabs (clean vial top)
- Needles
  - Larger for drawing up meds into syringe
  - Smaller for injecting meds into tissues
  - Or use the same needle for both
- Onset is immediate to a few minutes, lasts 20 to 30 minutes

\*What are the benefits, drawbacks, and contraindications for lidocaine with epinephrine?



# Local Anesthesia

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## **Inject slowly!**

### **Aspirate & Push Technique**

Place needle along tear edges at multiple points. Aspirate, if no blood appears (indicating needle is not in a vessel), then you can begin to inject .5 to 1 cc in each area to be sutured.

### **Withdraw & Inject**

Place needle into tissues parallel to wound edge (aspirate to make sure you are not in a vessel) and inject as you withdraw the needle.

This method is good for tissues parallel to the perineum

### **Need More Anesthesia?**

Use NEW needle and syringe to draw up medication and to inject. Remember max limit of 300mg/mL.



# Other tools/materials

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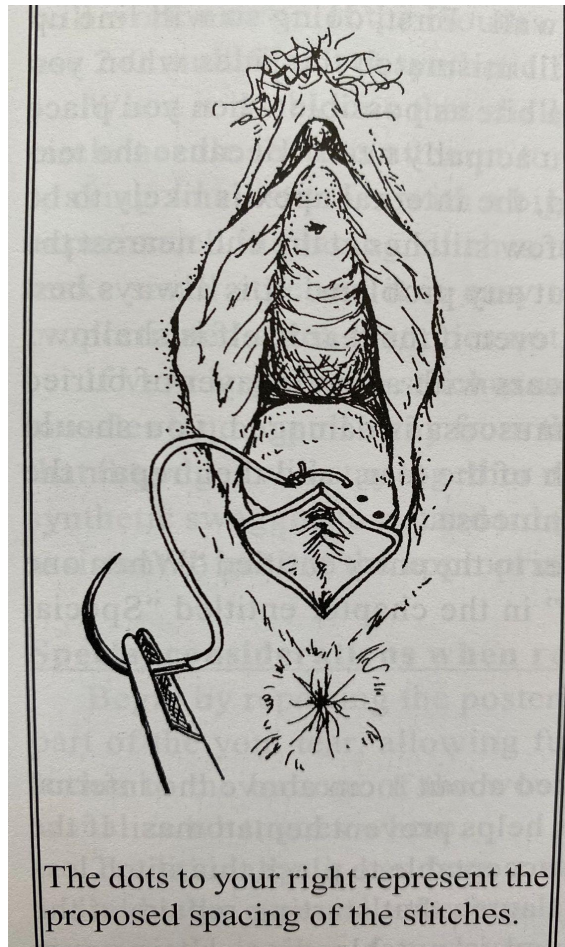
- Sterile Field
  - Sterile Gloves
  - Sterile Lube
  - Sterile gauze
  - Lidocaine Jelly/spray
  - Headlamp & good lighting
  - Other instruments?
  - Retractor?
- Assistant (especially for creating and keeping the sterile field)
  - What else do you use?
    - Midwifery Wisdom Suture Assistant (foot rests for client that packs down compactly)

# Placing Basic Stitches

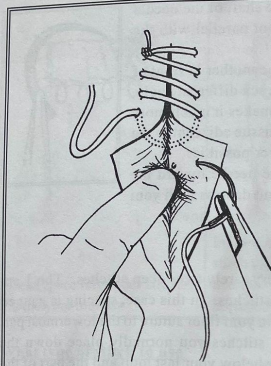
- At the apex of the tear
- Approximate tissues
- Place into intact tissues, not friable edges
- Place stitches about 1 cm apart



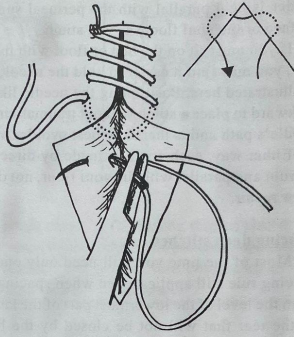
**Anchor Stitch.**  
Image from Frye (2010), p. 506



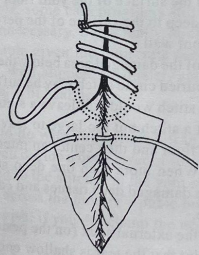
Place anchor  
stitch 5 mm to 1  
cm above the apex  
of the tear.



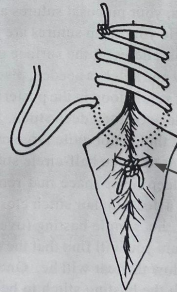
Palpate to locate the bottom of the last suture loop placed in the yoni mucosa and palpate for the trough of the tear. This will help you position the deep stitch. Insert the needle into one side of the tear and bring the tip out just in front of the trough of the tear.



Remove the needle completely and reinsert it opposite its exit point. (The insert shows a schematic view from above.) Keeping the point of the needle visible in the center helps to prevent the needle from penetrating the bowel wall.



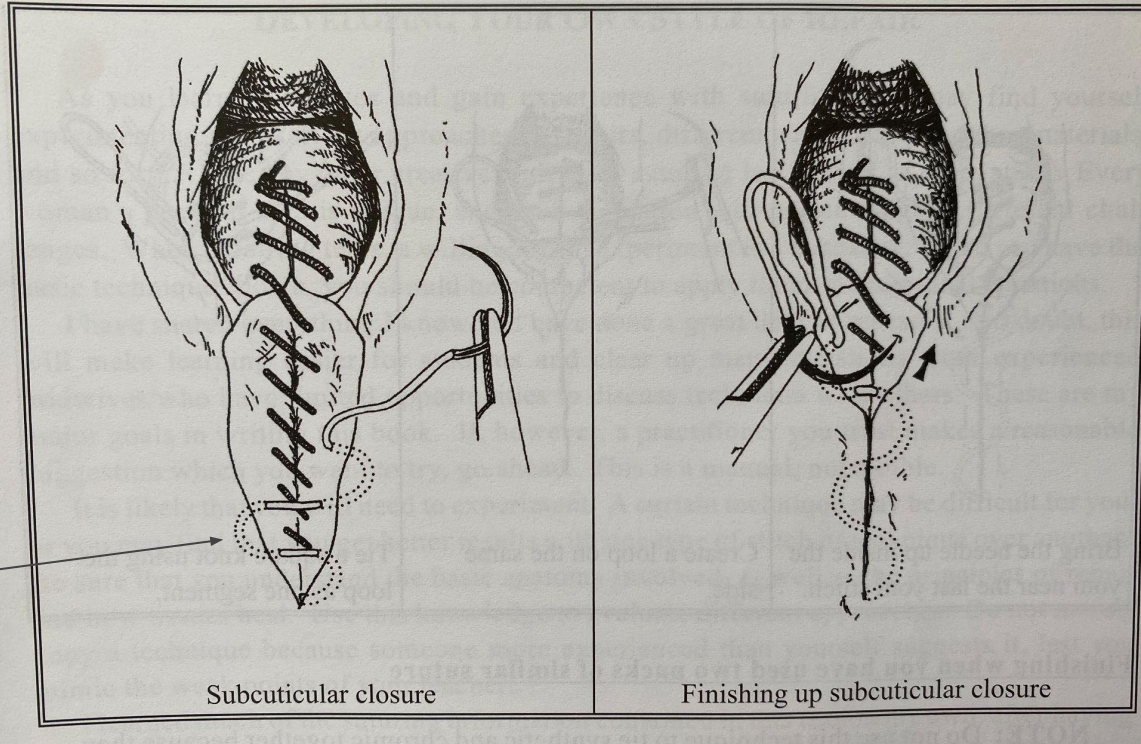
Now the suture is threaded through the tissue like this.



If only one stitch is needed, cut both ears and tie it off. If more are needed, use this stitch as your anchor and place additional continuous stitches, as needed.

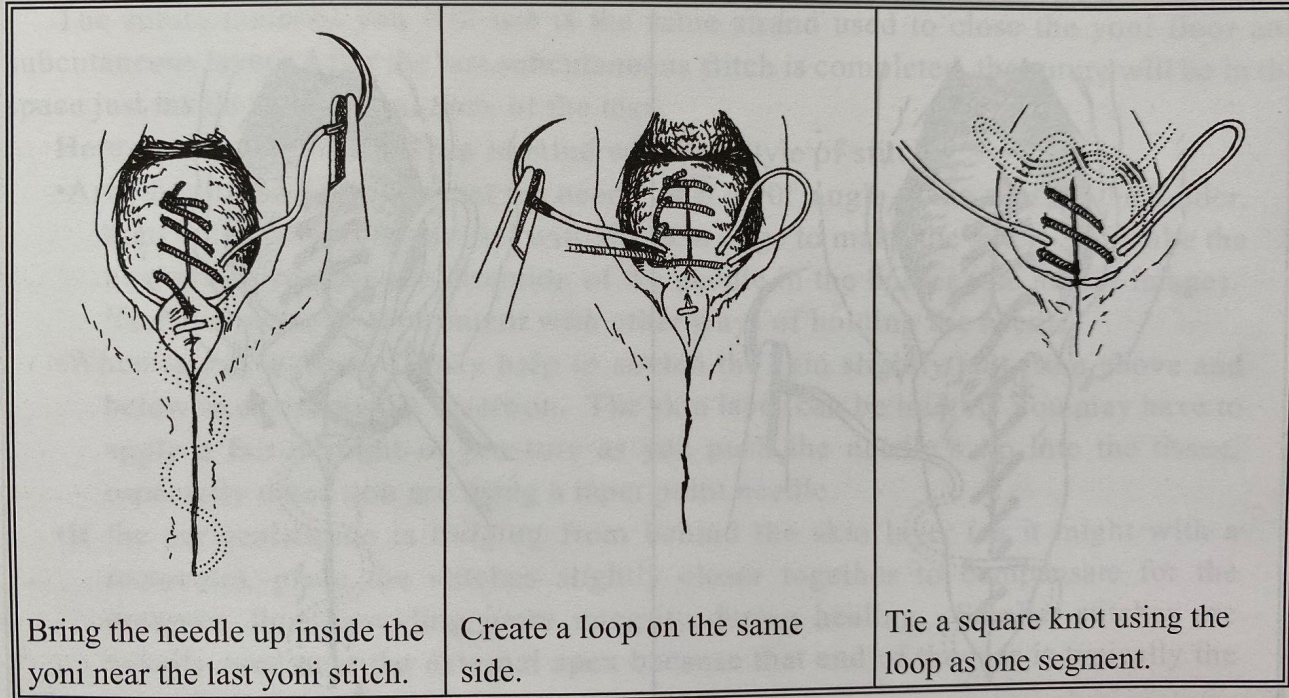
**Continuous Stitch**

**Deep Interrupted Stitch**



**Subcuticular Sutures. Images from Frye (2010), p. 521**





Images from Frye (2010), p. 522

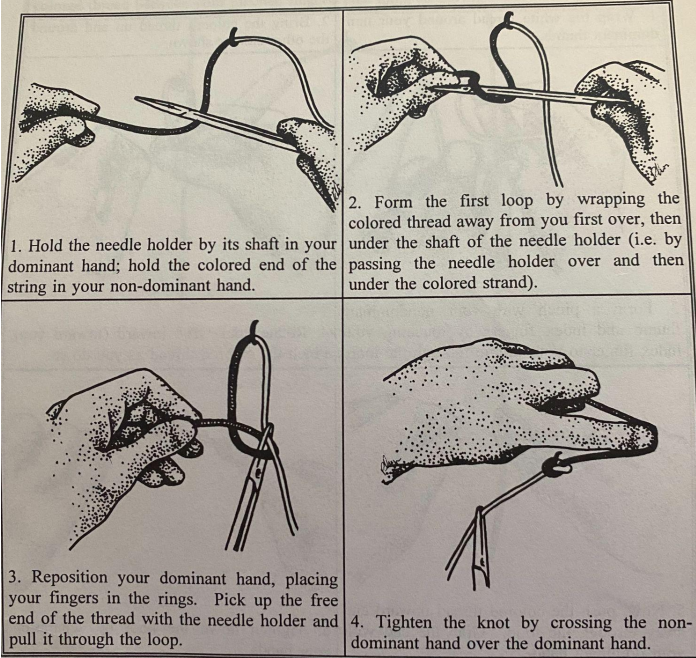
# Tying Knots

- Square Knots
- Surgeon's Knots
- 3-5 ties/throws for security
- Hand tied knots
- Instrument tied knots
- Frye says the knot is the weakest point in the suture loop.

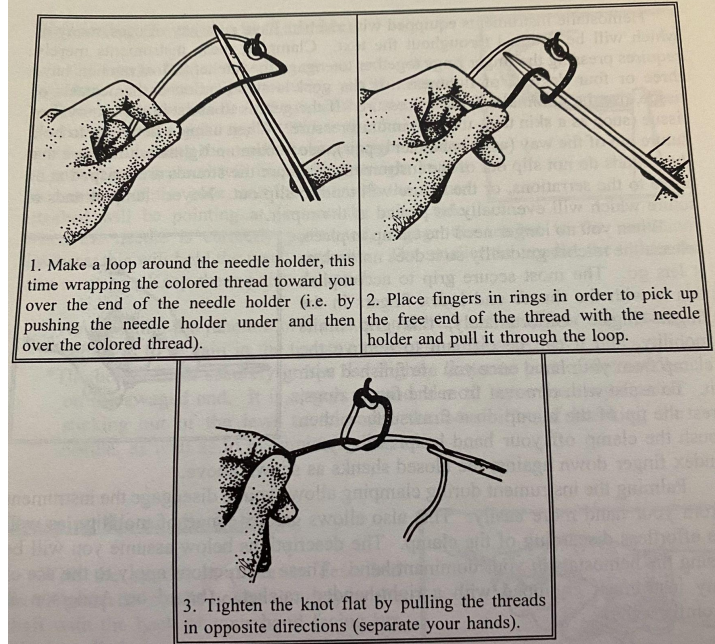


The majority of your knots will be in small places. An instrument tie will be easier than hand tying. To begin an instrument tie, place your colored thread on your nondominant side and get out your needle holder.

First throw:



Instrument tie: Second throw:



Make your third throw by repeating the first throw. If using synthetic, repeat the second throw to complete two full square knots.

Images from Frye A. Healing Passage (1995). P 106-107



Check Out CNM, Nell Tharp's Channel on YouTube:

- [Instrument Tie 1](#)
- [Instrument Tie 2 with Loop](#)
- [Instrument Tie 3 single suture end](#)
- [One Handed Tie Knot](#)

You can conduct other YouTube searches (use discretion) for knot tying and types of stitches.

# References & Resources

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1. AL-QATTAN M.(2005). *Vicryl Rapide® Versus Vicryl® Suture*. Sage Journals, Volume 30, Issue 1.
2. Davis E. *Heart & Hands: A Midwife's Guide to Pregnancy and Birth, 5th Edition Newly Revised and Updated*. Ten Speed Press.
3. Frye A (2010 and 1995). *Healing Passage: A Midwife's Guide to the Care and Repair of the Tissues Involved in Birth, 6th Edition*. Labrys Press.
4. Rx AOM App. Association of Ontario Midwives, Rx AOM App for pharmaceutical and herbal medicines.
5. Tharp N. YouTube Channel Videos. URL: <https://www.youtube.com/@nelltharpe5213>
6. Teaching Videos. *Perineal Laceration Repair Simulation*. [With Chicken Thigh]  
YouTube: <https://youtu.be/nDwkVLw3ekE?si=lXpuXqc5r8czH4fA>
- 7.

# Tools Mentioned by NMI Students

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This is a tool for purchase to help with placing client's legs when suturing.



## *Suture Assistant*

Make your life easier and allow more comfort for your clients with the Midwifery Wisdom Suture Assistant!

- Fits on standard beds
- Accommodates all sized bodies
- Lightweight and portable
- Increased space and possibilities
- Easy repositioning
- Provider comfort & and visibility

**\$289**

Available to purchase online with easy shipping right to your home

Future accessories include:  
Carry Case  
Bottom Support  
Side Cart Tray



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