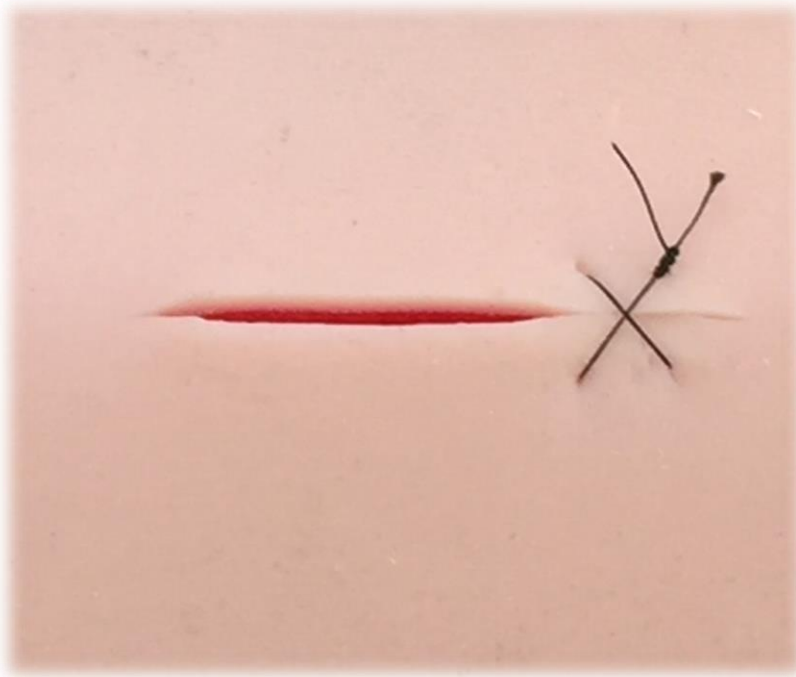


# Cruciate Sutures



## Disclaimer

A series of booklets has been developed by the Clinical Skills Lab team (staff, recent graduates and students) from the School of Veterinary Sciences, University of Bristol, UK.

Please note:

- Each booklet illustrates one way to perform a skill and it is acknowledged that there are often other approaches. Before using the booklets students should check with their university or college whether the approach illustrated is acceptable in their context or whether an alternative method should be used.
- The booklets are made available in good faith and may be subject to changes.
- In using these booklets you must adopt safe working procedures and take your own risk assessments, checked by your university, college etc. The University of Bristol will not be liable for any loss or damage resulting from failure to adhere to such practices.

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Year Group: BVSc4 +



### Equipment for this station:

- Silicon suture pad or tea towel
- Needle holders (Mayo or Gillies)
- Rat tooth forceps
- Mayo scissors
- Suture material (*usually a reel of nylon suture material is used in the clinical skills lab; sometimes packs with a swaged needle are available*)
- Needle – use a triangular cutting needle for skin
- Gloves (*use non-sterile vinyl gloves in Clinical Skills Lab*)
- Stitch removal scissors

### Considerations for this station:

- Swaged needles must be disposed of in a sharps container
- Other needles should be re-used (unless blunt or bent in which case dispose of in a sharps container)
- Needles are sharp and can cause injury
- Consider practising suturing wearing gloves (use the non-sterile vinyl gloves in the Clinical Skills Lab to reduce cost)
- For correct instrument handling techniques refer to the booklet 'CSL\_SP06 Surgical Instruments'
- When selecting suture materials refer to the booklet 'CSL\_SP07 Removing Suture Material from a Cassette or Pack'

Anyone working in the Clinical Skills Lab must read the 'CSL\_I01 Induction' and agree to abide by the 'CSL\_I00 House Rules' & 'CSL\_I02 Lab Area Rules'

Please inform a member of staff if equipment is damaged or about to run out.



# Clinical Skills: Cruciate Sutures



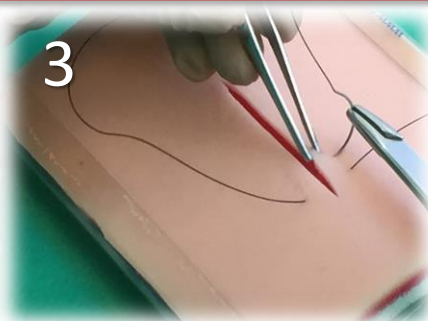
1  
Only practise cruciate sutures once competent at performing simple interrupted and simple continuous sutures.  
Pass the needle through the skin on the far side of the incision.

N.B. Start suturing at the end of the incision nearest to your dominant hand (right end if right-handed).

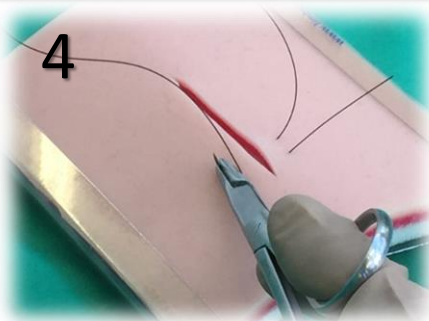


2  
Pass the needle through the tissue on the near side of the incision; remember to roll your wrist to follow the curve of the needle through the tissue, minimising tissue damage.

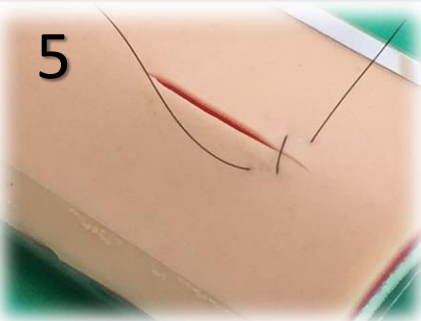
Pull the suture through until the short end is approximately 3-4cm long.



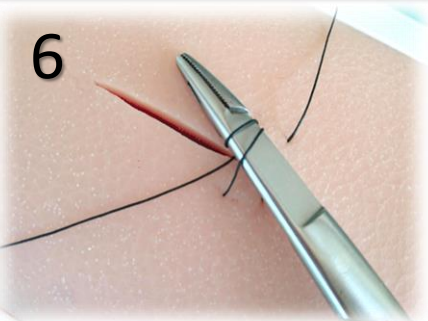
3  
Do not tie a knot or cut the suture at this point, but pass the needle through the tissue again, approximately 1cm away from the first part of the suture.



4  
The needle and suture material should pass through the tissue perpendicular to the incision at all times.



5  
Pull the suture through until the suture material lies flat over the top of the incision (it will be in a diagonal direction as shown in the photo).

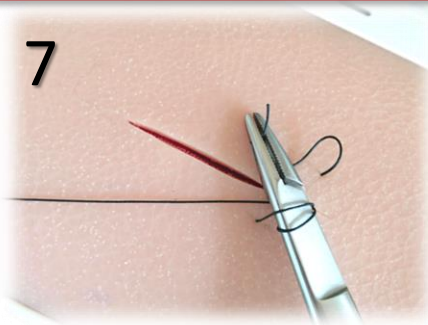


6  
Tie a knot in the same way as for a simple interrupted suture – see booklet 'CSL\_S01 Simple Interrupted Suture (silicon skin pad)'.

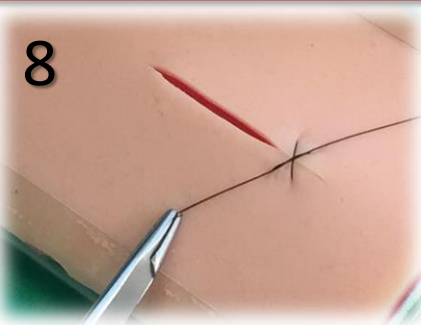
Place the needle holders over the incision, and wrap the long end of the suture material around them **twice**.



# Clinical Skills: Cruciate Sutures

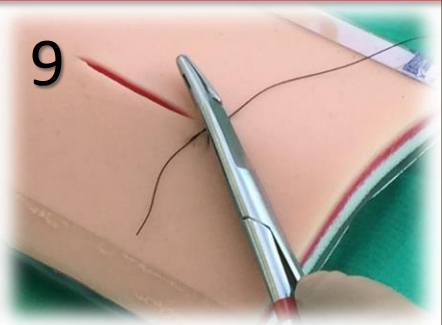


7  
Grasp the short end of the suture material near the free end. Pull it towards yourself and through the loop around the needle holders.



8  
Pull evenly with both hands to maintain an even tension. The suture should be tight enough to appose the wound edges but not too tight or the suture may cause discomfort and the skin may swell.

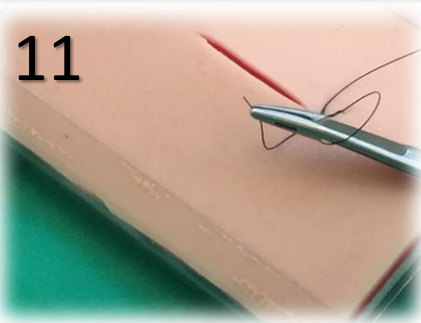
*Note: The short end of the suture material is now on the near side of the incision.*



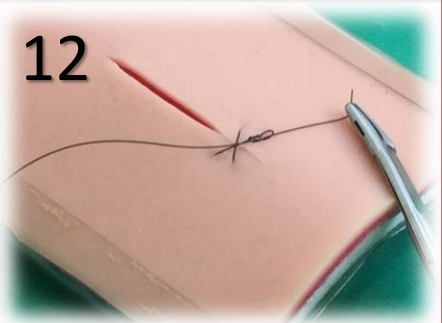
9  
Make a second 'throw': Place the needle holders over the incision.



10  
Wrap the long end of the suture material **once** around the needle holders.



11  
Grasp the short end of the suture material near the free end with the needle holders.



12  
Pull the short end through the loop.

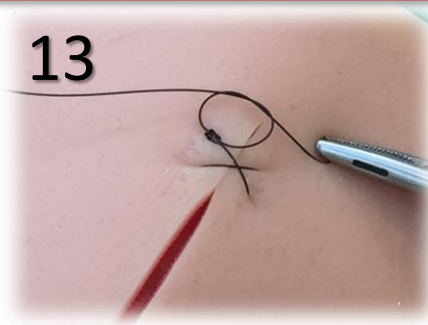
*Note: The short end of the suture material is now on the far side of the incision.*



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# Clinical Skills: Cruciate Sutures

13



Continue with 2 more  
'throws' i.e. until there is a  
total of 4.

14



Cut the ends to  
approximately 1cm.  
N.B. The suture ends need to  
be long enough to grasp and  
hold when removing the  
sutures.

15



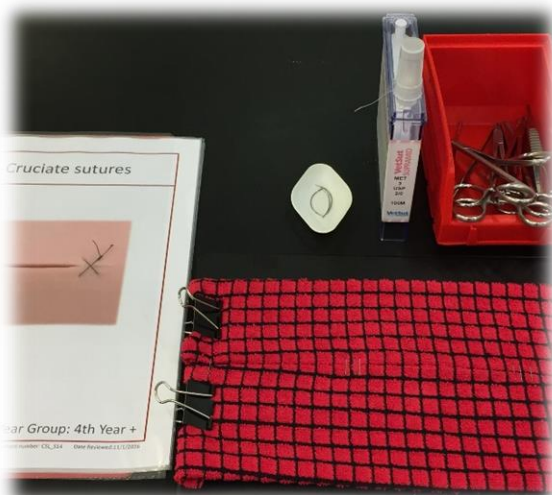
Having placed a cruciate  
suture, the edges of the  
wound should be nicely  
apposed.



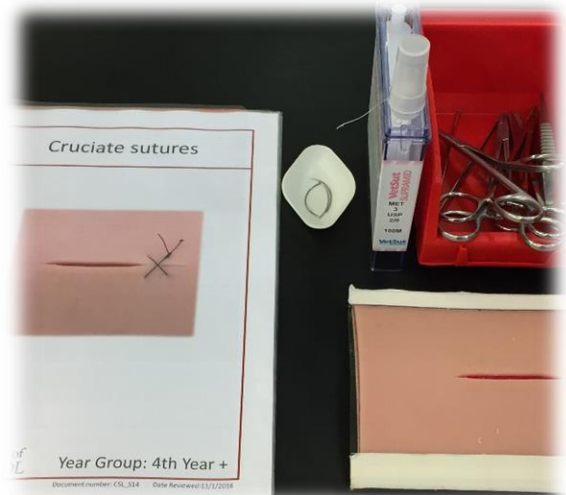
# Resetting the station: Cruciate Sutures

1. Remove all sutures using the **stitch removal scissors**
2. Put waste suture material and any packaging in the bin
3. Needles
  - If using a swaged needle, place in a sharps bin
  - Other needles should be re-used (unless blunt or bent in which case dispose of in a sharps bin)
4. Place instruments in the tray provided
5. Leave the area tidy

*Station ready for the next person:*



If using the tea towel



If using the silicon pad



## I wish I'd known: Cruciate Sutures

- Skin sutures must not be placed too tightly otherwise inflammation will develop with swelling, redness and discomfort surrounding the incision. The sutures may then appear to be tighter than when initially placed.
- Cruciate sutures can be used instead of simple interrupted e.g. for a long incision or wound, and provide good apposition of wound edges.
- The serrated edge of instruments i.e. the inside of needle holder jaws, are rough and should not be used to grasp or loosen suture material (except to grasp the short end when tying a knot). The suture will be damaged by the serrated edge and could then breakdown prematurely.

Some tips for checking your suturing technique:

1. When finished, the two sides of the wound will be:
  - Apposed for the whole length of the incision
  - With no gaps at either end or between sutures
2. Sutures will be at the correct tension
  - Not too tight: indicated by 'cutting in' to the skin
  - Not too loose: leaving gaps for dirt and infection to enter
3. Sutures will not be too close to the incision
  - Each suture is about 5mm away from the incision edge
4. Sutures will be placed at similar intervals from each other and the suture ends are consistent in length.