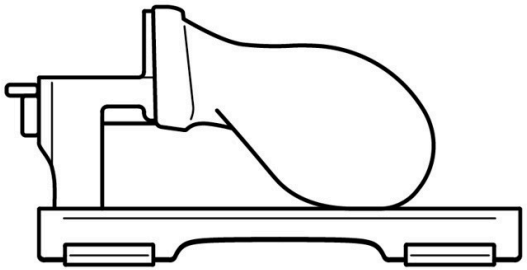
VasectoPro™

The Vasectomy Simulator

Instruction Manual :
assembly and maintenance

English version



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FOREWORD

VasectoPro™ is a simulator (a scrotal model) for learning vasectomy techniques. Developed through a collaboration between the School of Design, the Faculty of Nursing, and the Faculty of Medicine at Laval University in Quebec City, Canada, this handcrafted simulator was produced with the support of a grant from the *Fonds d'innovation en pédagogie des sciences de la santé Gilles-Cormier* of the Laval University Foundation.

VasectoPro™ offers a realistic simulation of all steps involved in vasectomy procedures as recommended in clinical practice guidelines from North America and Europe. It enables trainees to safely develop their skills, thereby reducing the need for live-patient procedures during training. However, it is not a substitute for hands-on experience with live patients. The simulator should be used exclusively within a structured training program under the supervision of a qualified instructor.

This instruction manual is not intended to provide any detail as how instruments are handled and use. For more information on surgical techniques, including no-scalpel vasectomy, visit **vasectopro.org**.

MATERIAL LIST

01 Base stand

02 Latex tubing simulating the vas deferens

03 Scrotum simulator

04 Cord and testicle simulator (x2)

05 Wide roll of plastic film simulating the vas sheath

06 Gauzes (x2)

07 Suture material

08 Lubricating gel (x2)

09 3ml syringe with 30G needle

10 Plastic bags (x10)

NOTE

Vasectomy surgical instruments may or may not be included.

If not, you will need to obtain the following instruments:

01 For exposing the vas deferens using the no- scalpel technique (NSV)
•NSV dissecting forceps
•NSV ring forceps

02 For vas deferens occlusion by mucosal cauterization and fascial interposition by ligation
•Hemostatic forceps
•Surgical scissors

Other surgical instruments may be required depending on the surgical techniques used.

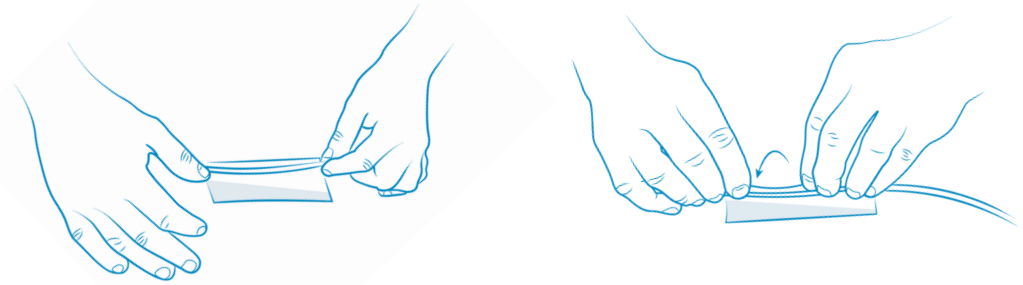
ASSEMBLY STEPS

1 - Simulation of the vas sheath

Unroll a 15-cm strip the plastic film on a flat surface (work desk or counter) and cut it.

Take the latex tube. If you have one long piece, cut it in half. If you have two long pieces, don't cut them. Keeping your tubing as intact as possible helps conserve the length for later use.

Lay one end of the latex tubing parallel to the long edge of the plastic film, leaving 1 cm of the latex tubing protruding from the plastic film.



Maintaining close contact between the plastic film and the latex tubing, roll the latex tube forward until it is completely wrapped with the plastic film. Roll the assembly a few times so that the plastic film fits snugly to the latex tubing.

Repeat the wrapping on the other tube so that you have two vasa dementia (latex tubes), each with simulated fascia (plastic film) wrapped around the vas.

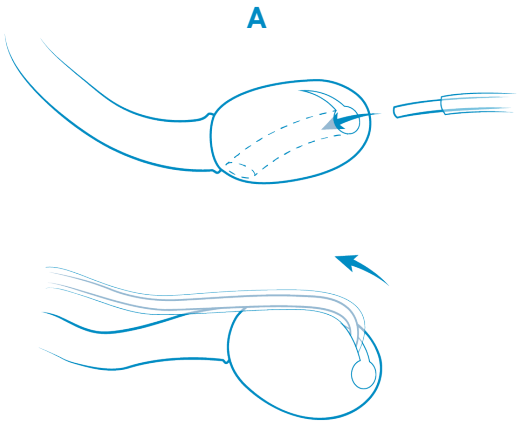
2 - Assembling the vas deferens on the testicle

The vas deferens can be positioned in two different ways depending on the level of experience already acquired with the simulator.

A. For beginners

Insert 2 cm of the end of the latex tubing covered with the plastic film into the hole under the testicle.

Place the latex tubing in the slot on the testicle. It does not matter whether the film is stuck in the slot or not.



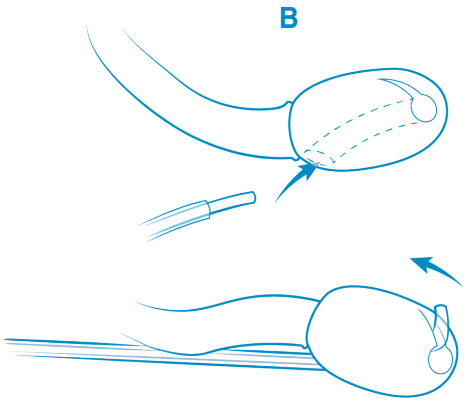
B. For a greater challenge

Insert the end of the latex tubing covered with the plastic wrap into the hole on the testicle until 0.5 cm of the latex tubing comes out of the hole under the testicle.

Stick the latex tubing in the slot under the testicle. There should be less than 1 cm of the tubing protruding outside the testicle.

In this position, the vas deferens will be more difficult to isolate from the cord.

Repeat to assemble the other vas deferens with the testicle.

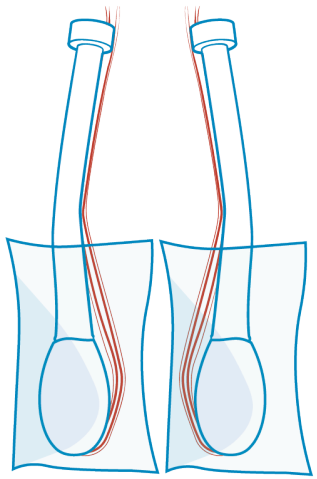


3 - Inserting the testicles into the bags

Insert each vas/testicle assembly into a plastic bag. The plastic bag will prevent the assembly from coming into contact with the lubricating gel (next step). Without this pouch, the vas may slip and detach from the testicle.

The testicle fits tightly in the plastic bag. Do not put lubricant in the plastic bag. You must gently push on the testicle with your finger or with the end of the hemostatic forceps or the ring forceps to make it slide into the bag.

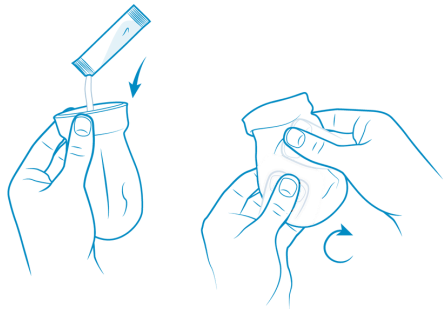
Make sure the testicle is in the bottom of the bag.



4 - Applying the lubricating gel

Put the contents of one envelope (3.5 g) of lubricant inside the scrotum.

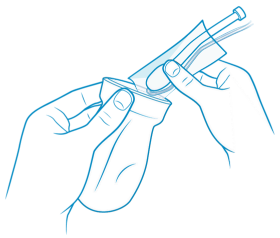
Make sure the entire surface is well covered with lubricating gel by rubbing the inner walls of the scrotum together.



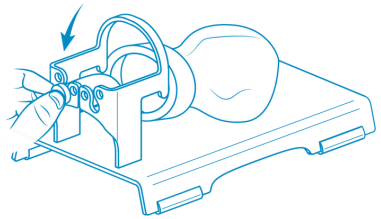
When the two envelopes of lubricating gel have been used, use any water-based lubricating gel. Do not use petroleum-based lubricants (such as Vaseline®).

5 - Assembly of cords, vasa and scrotum on the support

Place both plastic bags each containing vas, cord and testicle - one by one - into the lubricated scrotum.

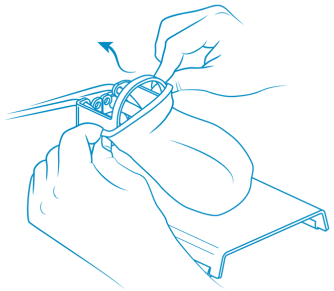


Insert the cords into the corresponding openings on the support.



Feed the vasa through one of the holes either side of the cord fixation. We would initially recommend the hole medial to the cord (See next section **Positioning the vas deferens** for more information).

Make sure that each of vasa are in the median position with respect to the laterally positioned cords in the scrotum. If necessary, reposition them.

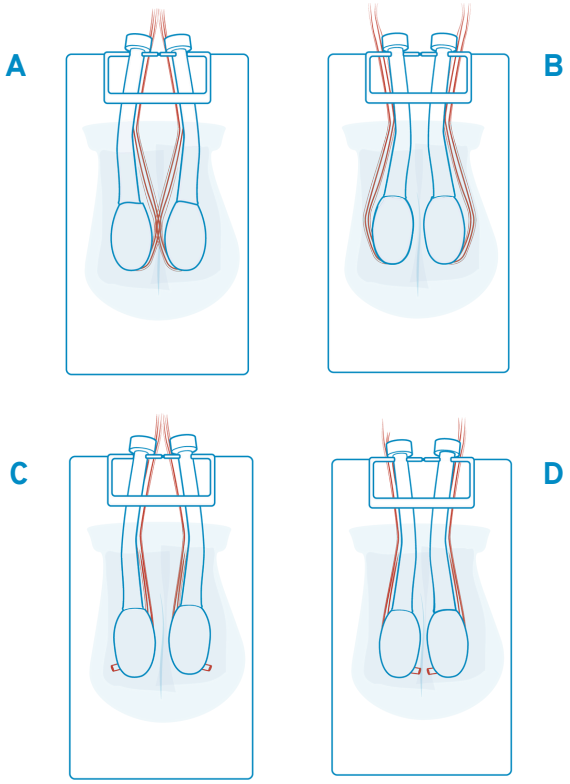


Install the scrotum on the support, ensuring that one of the three median raphes is in the central position. Make sure again, that each vas is in the middle position with respect to the cords. If necessary, reposition them.

Positioning the vas deferens

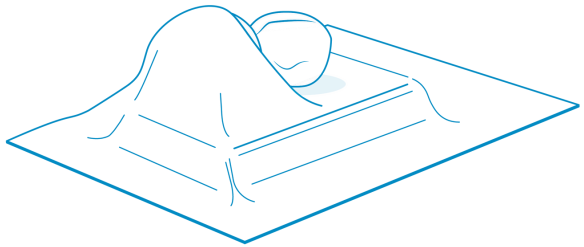
In addition to the suggested initial position (A), it is possible to position the vasa laterally to the cords and to insert the latex tubing in the lateral and upper holes of the support to vary the difficulty in isolating the vas from the cord (B).

For variation, the vasa can be inserted in the upper poles of the testis as assembly shown in Step 2B (page 3) (C and D).



6 - Adding a surgical field (optional)

To make the simulation more realistic, it is possible to add a fenestrated surgical field (not included with the simulator). The support will then be hidden under the surgical field.

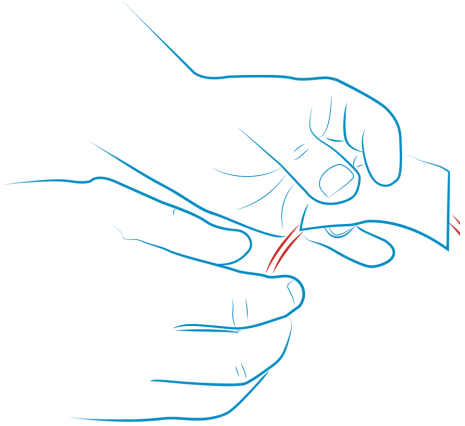


Your VasectoPro™ is now ready to use.

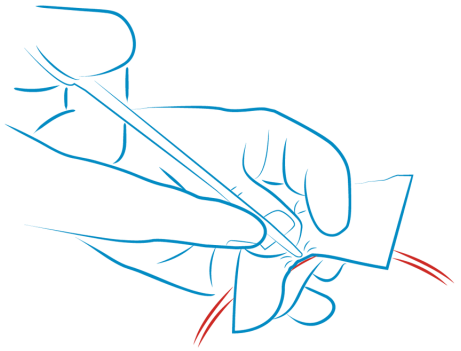
USING THE SIMPLE GAUZE MODEL

To fully benefit from the learning experience of vasectomy with VasectoPro™ and prolong its duration of use, begin the practice using a simple model consisting of a piece of a gauze and the 15 cm latex tubing.
Without the realism obtained with the VasectoPro™, the simple model makes it possible to learn and practice the basic techniques of NSV.

1-Holding the vas with the three-finger technique

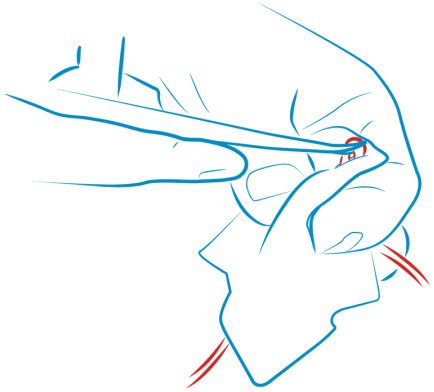


2-Grasping the vas with the ring forceps



3- Delivering the vas from the scrotum including :

- Positioning the two no-scalpel vasectomy instruments
- Piercing the simulated skin (gauze) using the dissecting forceps
- Spreading the tissues with the dissecting forceps to free the vas
- Rotating the dissecting forceps to expose the vas
- Regrasping the vas with the ring forceps



*Anesthesia techniques with mini-needle and jet gun (Madajet®) can also be simulated with the simple model.

USE OF THE VASECTOPRO™

Warning

When stretching the tissues with the dissecting forceps, care must be taken not to tear the scrotum. Stretch the scrotal tissues symmetrically on both side of the vas to create an opening of less than 1 cm.

VasectoPro™ makes it possible to perfect the basic techniques of No-Scalpel Vasectomy described with the simple gauze model. It also allows mastering the following essential surgical gestures :

- Isolating the vas deferens from the spermatic cord and positioning it under the median raphe.
- Identifying the vas sheath (fascia)when exposing the vas deferens.
- Stripping the vas sheath to complete the exposure of the vas deferens.
- Performing vas occlusion with different methods including :
  - Cauterization of the vas mucosa (the 3 ml syringe with 30G needle can be used to simulate electrocautery or thermal cauterization of the vas mucosa).
  - The fascial interposition over the prostatic end of the vas. Note that in humans, when the vas is divided, the prostatic segment usually retracts spontaneously into its sheath. With the simulator, it is necessary to exert a slight pressure on the end of the prostatic segment with the tip of the hemostatic forceps in order to bury it into the sheath (which can sometimes also be necessary in live humans). If it is difficult to bury by pushing it, the latex tubing behind the simulator can be pulled very lightly so that between 2 or 3 mm (no more) of the prostatic segment of the vas is buried in the sheath.

DISASSEMBLY AND MAINTENANCE

Caution

Do not leave the cords attached to the base stand and do not crush them during storage, they could be permanently deformed.

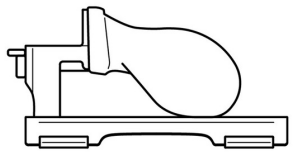
1-Carefully remove the cords, vasa and scrotum from the base stand.
2-Remove the cord/testicle/vas assembly from the plastic bag, taking care not to pull on the cord.
Incise the plastic bag with a scissor, tear it and then carefully remove the assembly.
3- Separate the vas from the testis.
4- Discard the used segment of the vas (latex tubing) and sheath (plastic film). The rest of the latex tubing (about 140 cm remaining after first simulation) will be used again (see Assembly).
5-Clean the lubricant lining the inside of the scrotum by rinsing it off with warm tap water. Dry the inner and outer walls of the scrotum. Store.
6-If lubricant gets on the testicle, cord, or vas, rinse with warm water and pat dry before storing.

CUSTOMER SUPPORT

Visit the **vasectopro.org** website for more information.

You will find:
•Trouble shooting services for the use of VasectoPro™.
•How to order additional or replacement components.

Thank you for supporting VasectoPro nonprofit organization by purchasing this vasectomy simulator.



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