

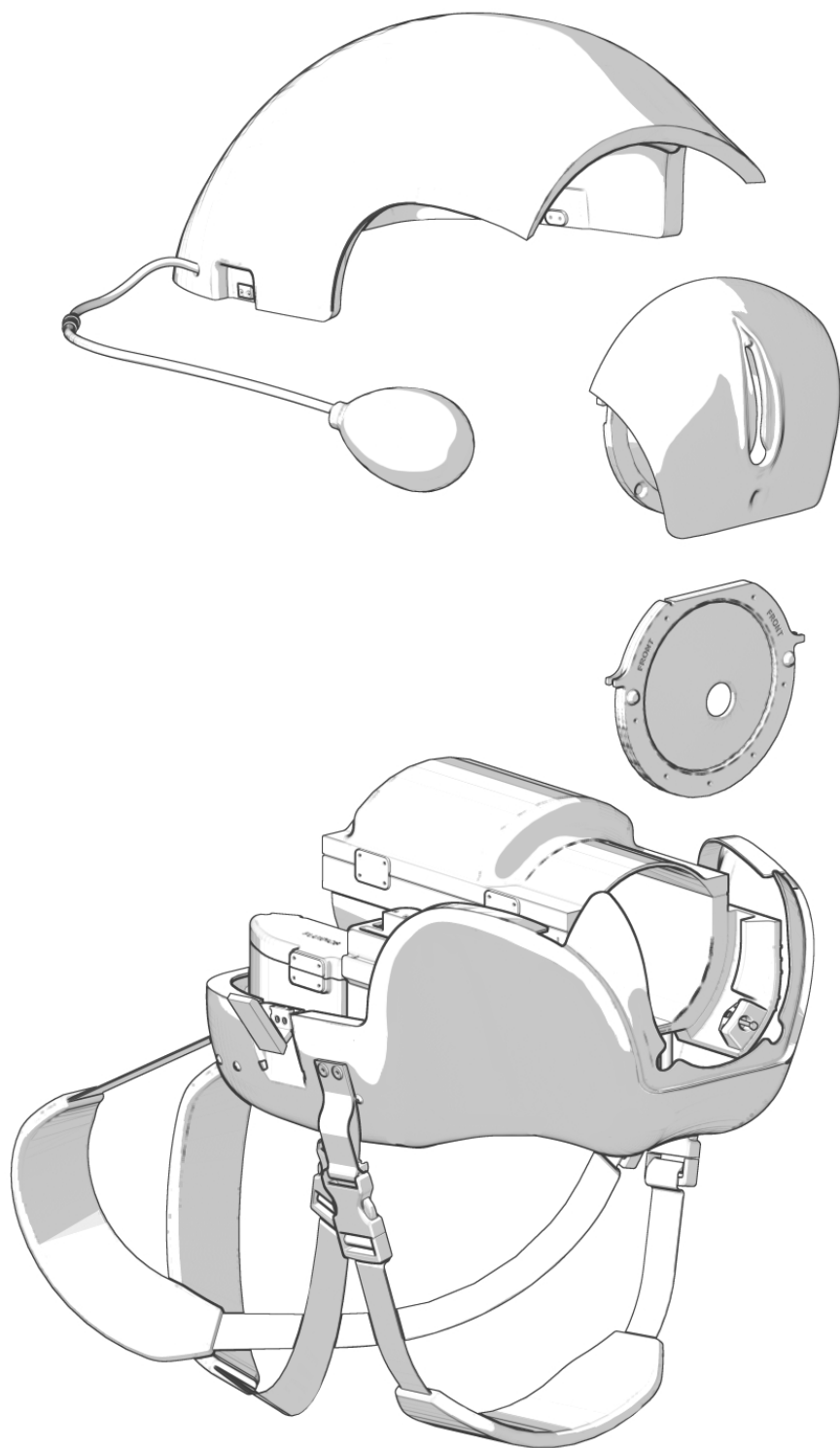


USER MANUAL



Customer Assistance
302-562-2110

Technical Support
302-562-2040





WELCOME TO YOUR NEW AVBIRTH!

HAPTIC FEEDBACK

Learners can practice appropriately coaching the patient during all phases of childbirth. The patient is cued about the onset, intensity, and duration of each contraction with haptic vibrations on the wrist.

NATAL FLUIDS

Facilitators can control the release of natal fluids from the two reusable bags housed within the abdomen.

PRE-PROGRAMMED SIMULATIONS

Three pre-programmed simulations have been created so the simulation can be automated and facilitators can focus on the actual simulation experience.

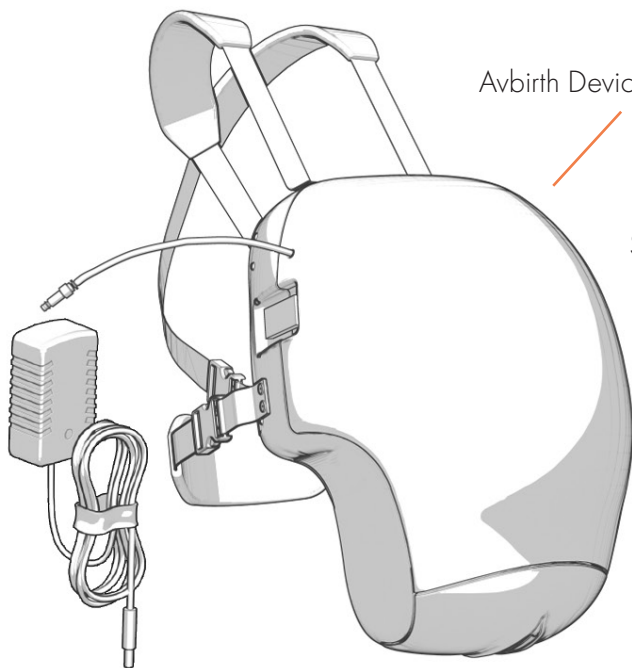
BIRTHING COMPLICATIONS

Avbirth offers the full range of vaginal birth presentations from uncomplicated to OB emergencies like shoulder dystocia.

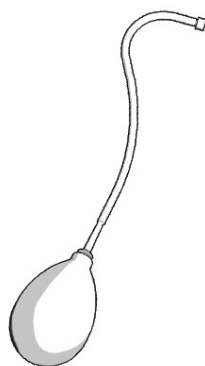
WHAT'S INCLUDED

Main Packaging:

Avbirth Device + Charger



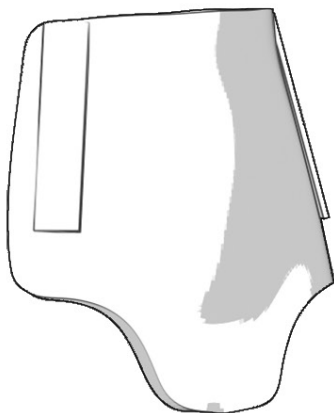
Squeeze Bulb + Tubing



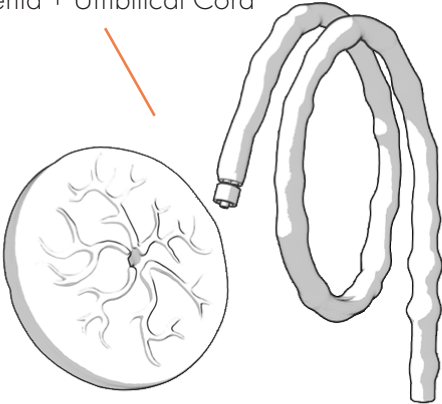
Baby + Swaddling Blanket And Hat



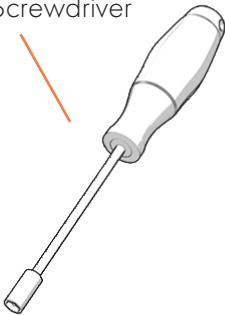
Comfort Foam



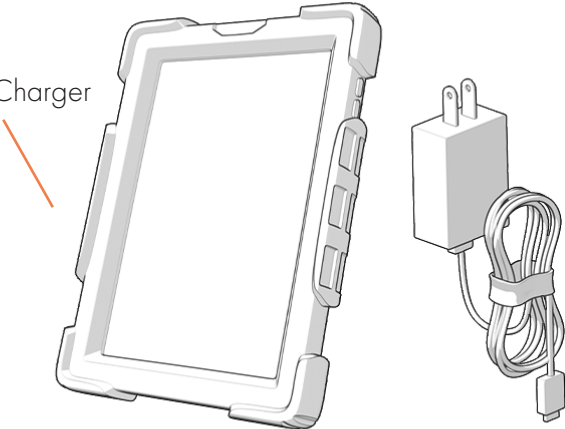
Placenta + Umbilical Cord



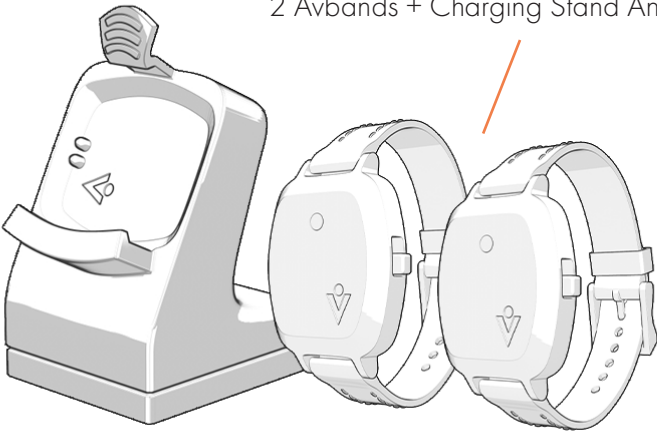
Socket Screwdriver



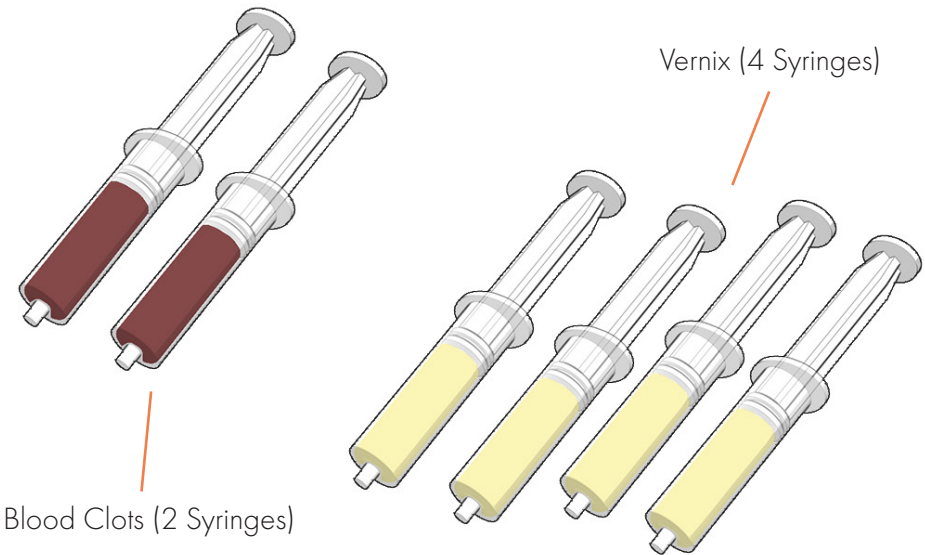
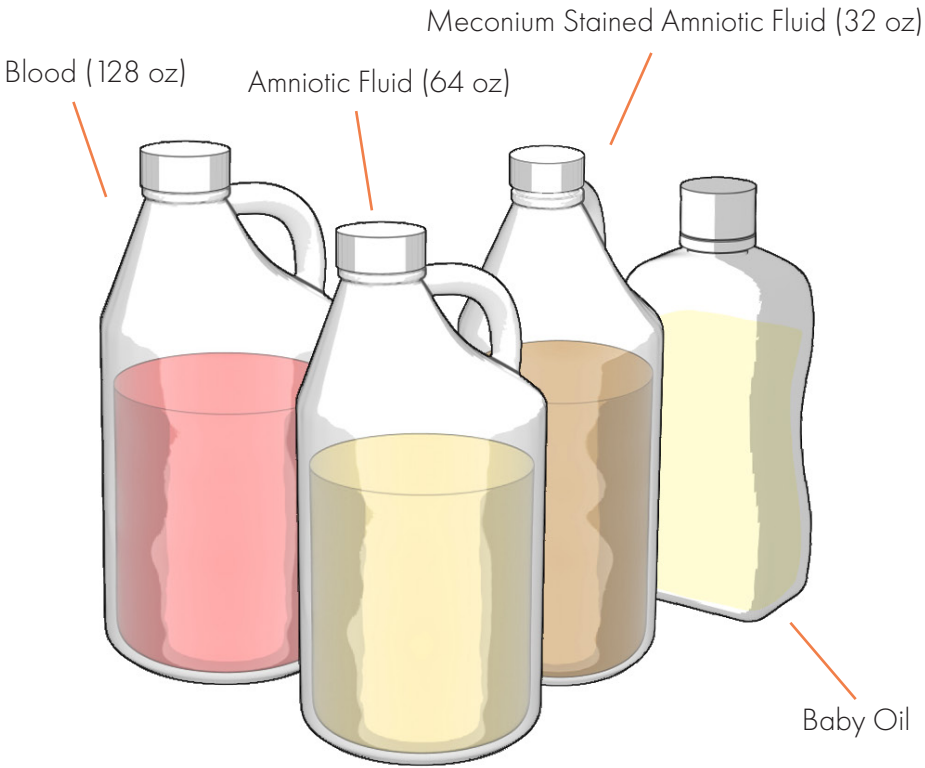
Tablet + Charger

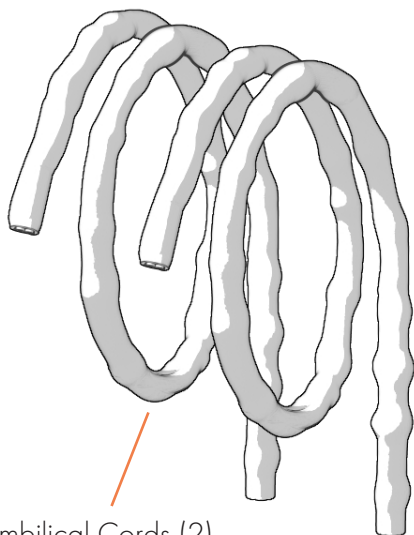


2 Avbands + Charging Stand And Charger

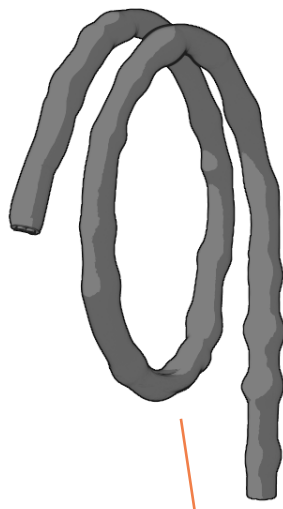


Disposable Packaging:



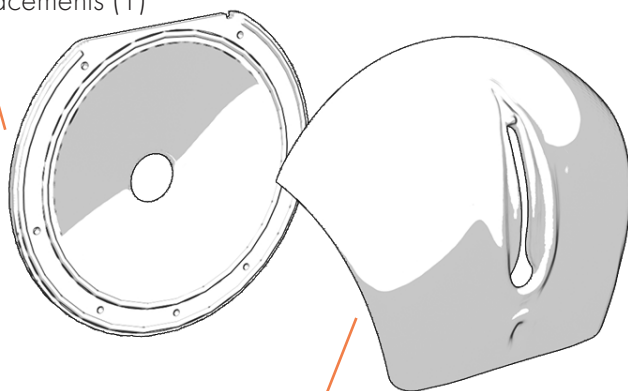


Umbilical Cords (2)



Meconium Stained Umbilical Cord (1)

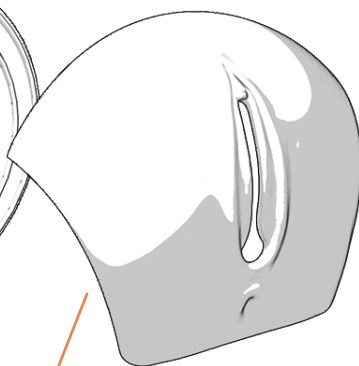
Cervix replacements (1)



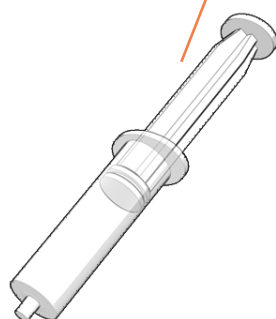
IV Bags (5)



Genitalia Replacements (1)



Syringe (1)

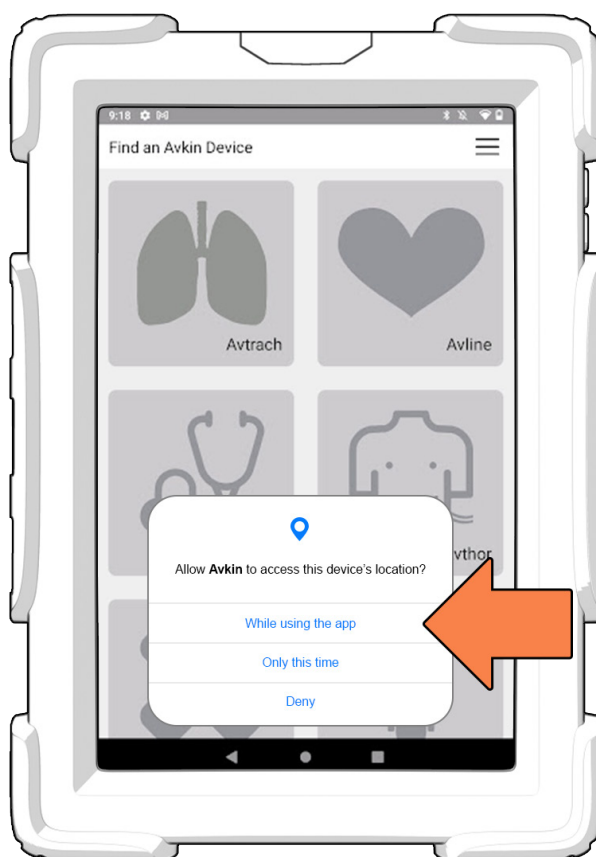


GETTING STARTED

Watch the instructional video on the Avkin website.

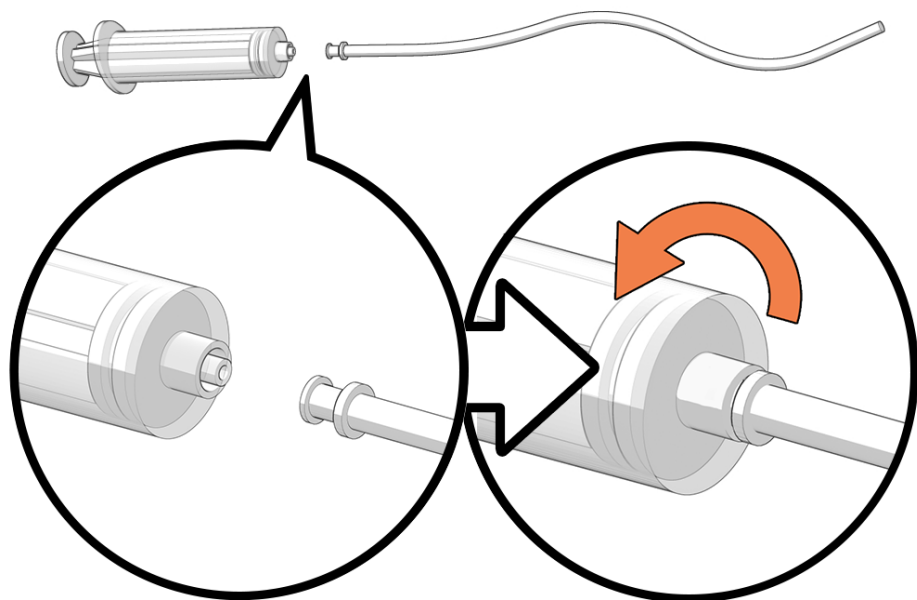
1 Download the Avkin App

- a** Available on the Android Google Play and iOS App Store
- b** Follow any prompts on the screen for allowing location access and Bluetooth

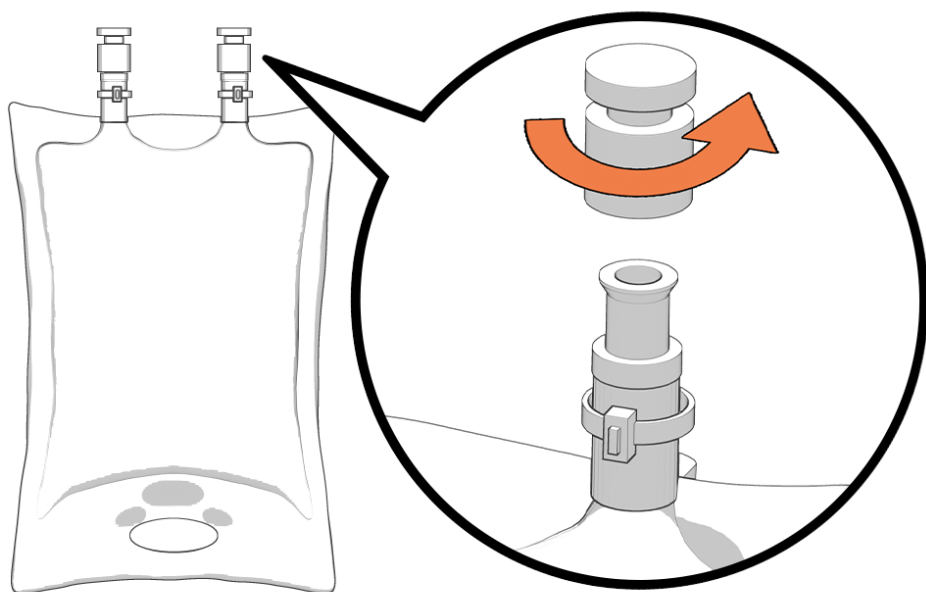


2 Preparing Fluidics

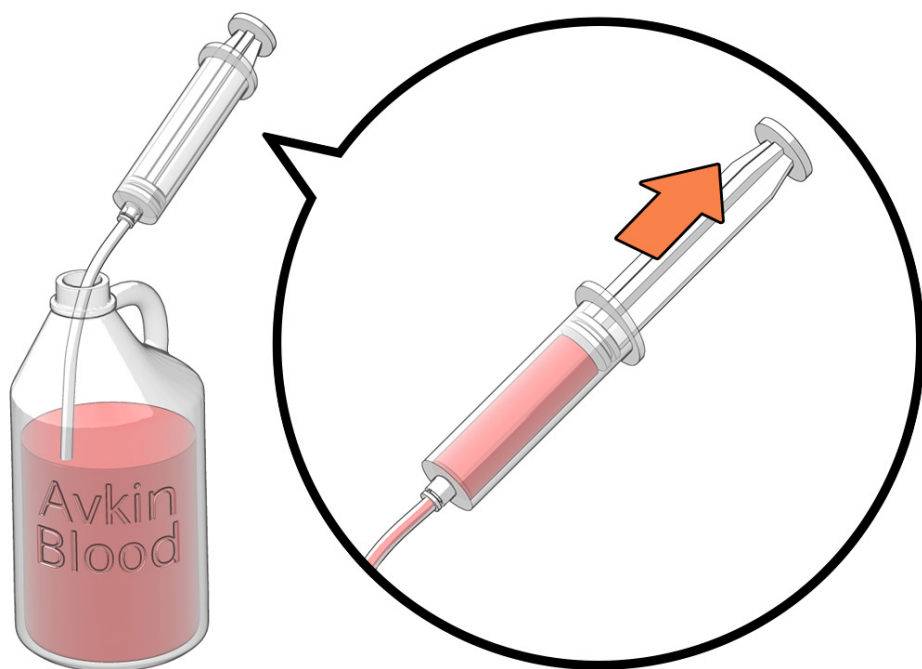
a Connect tubing to the 100ml syringe



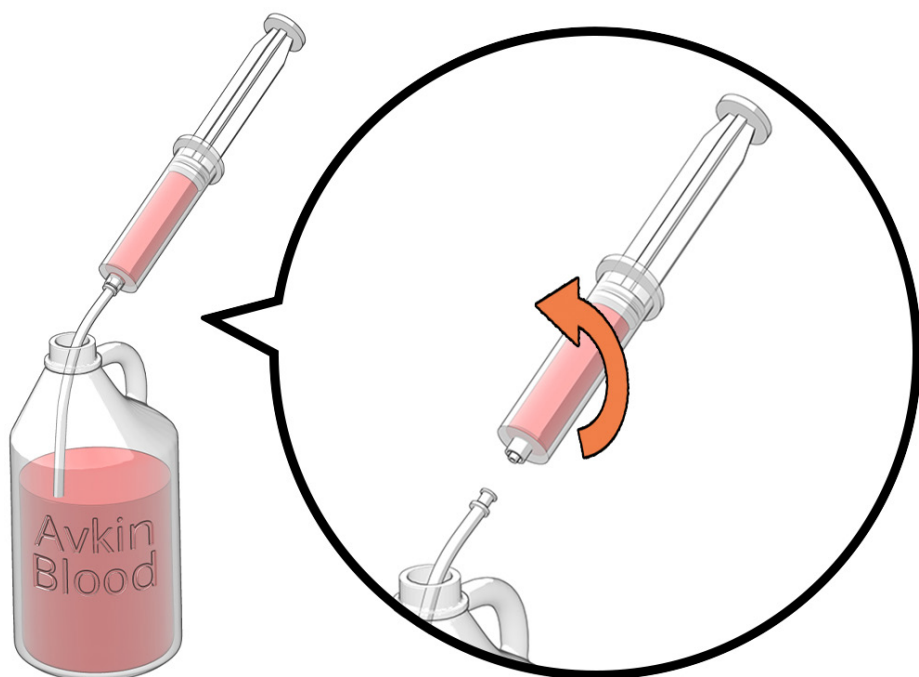
b Remove male cap from IV bag



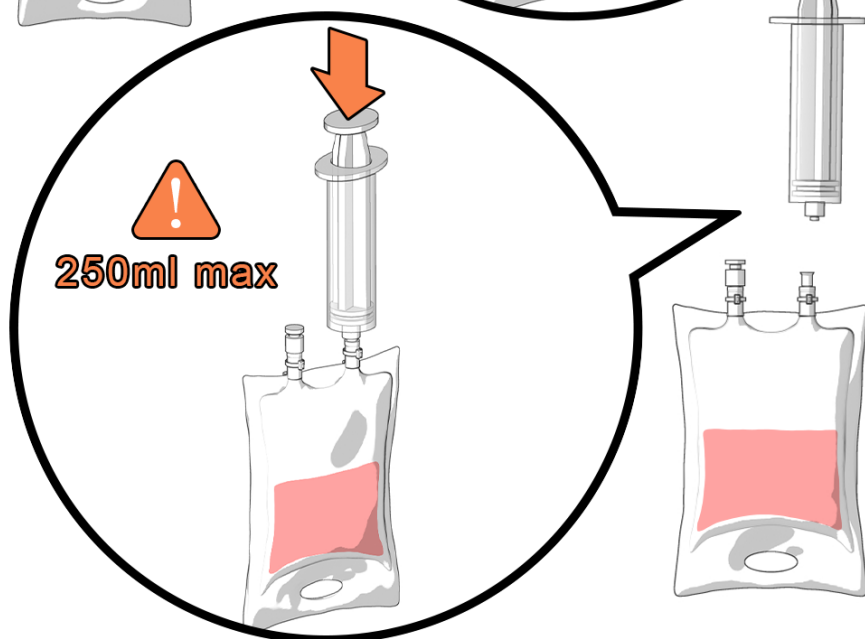
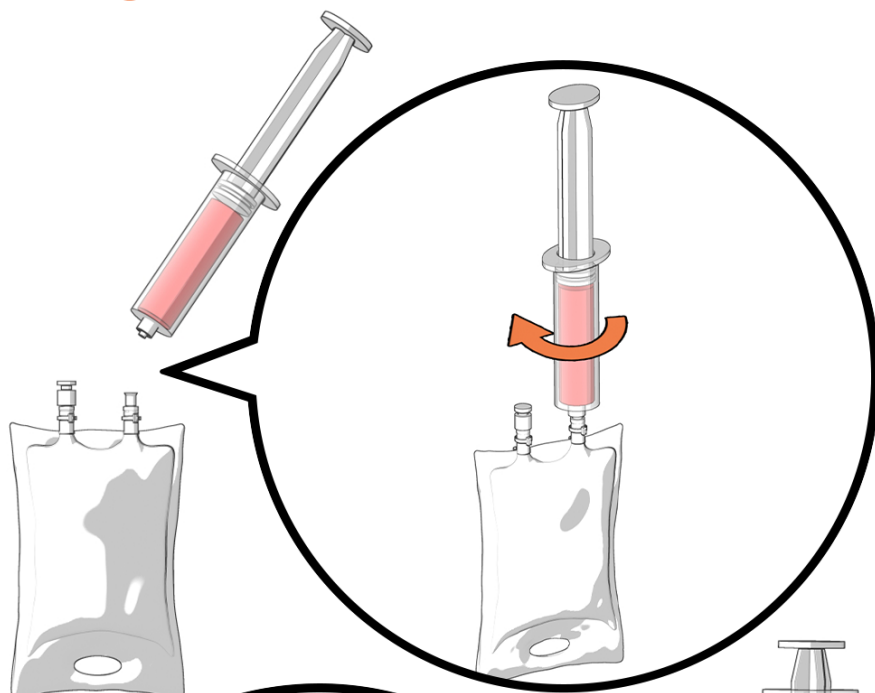
- c** Put tubing into fluidics container and pull fluid into 100ml syringe



- d** Disconnect syringe from tubing



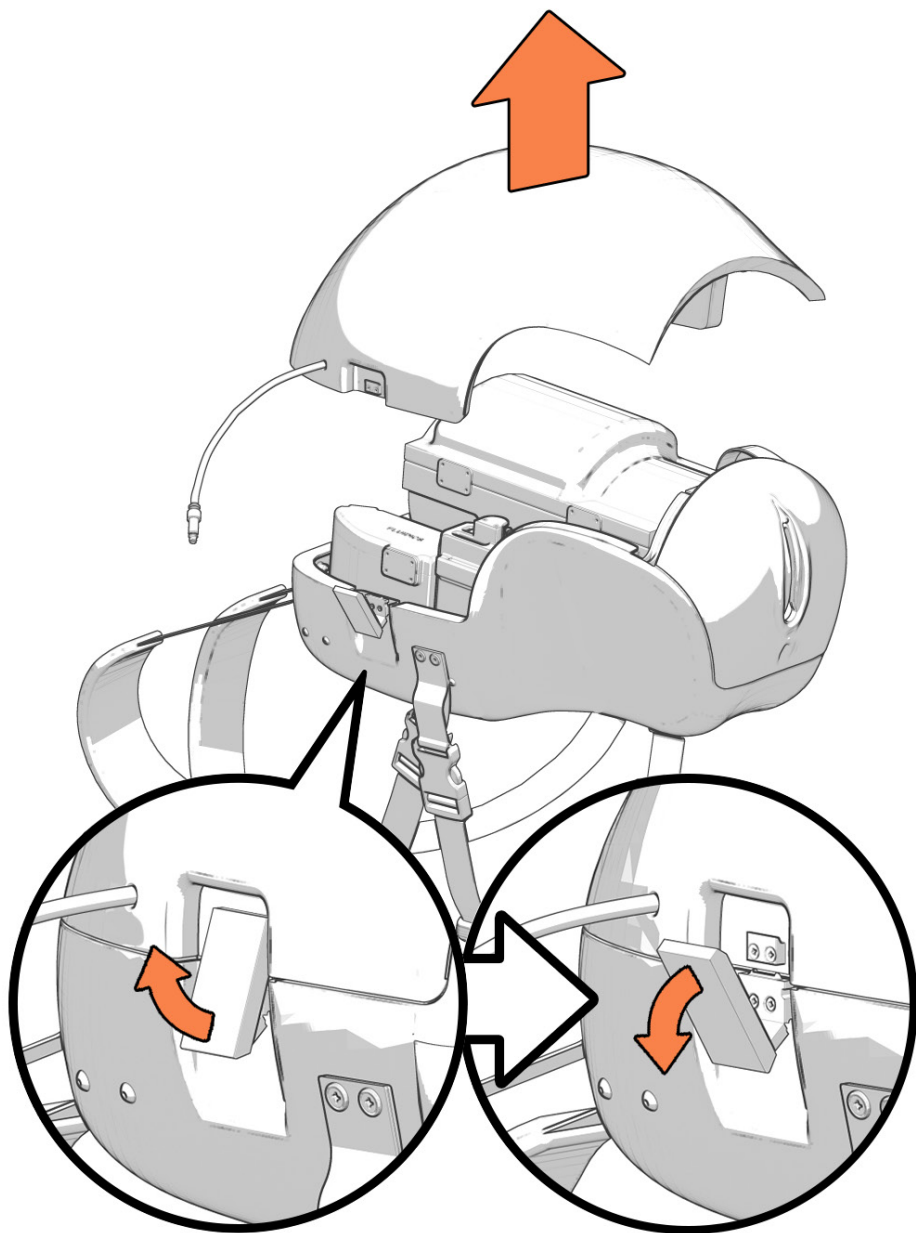
e Connect 100ml syringe to IV bag and insert fluid

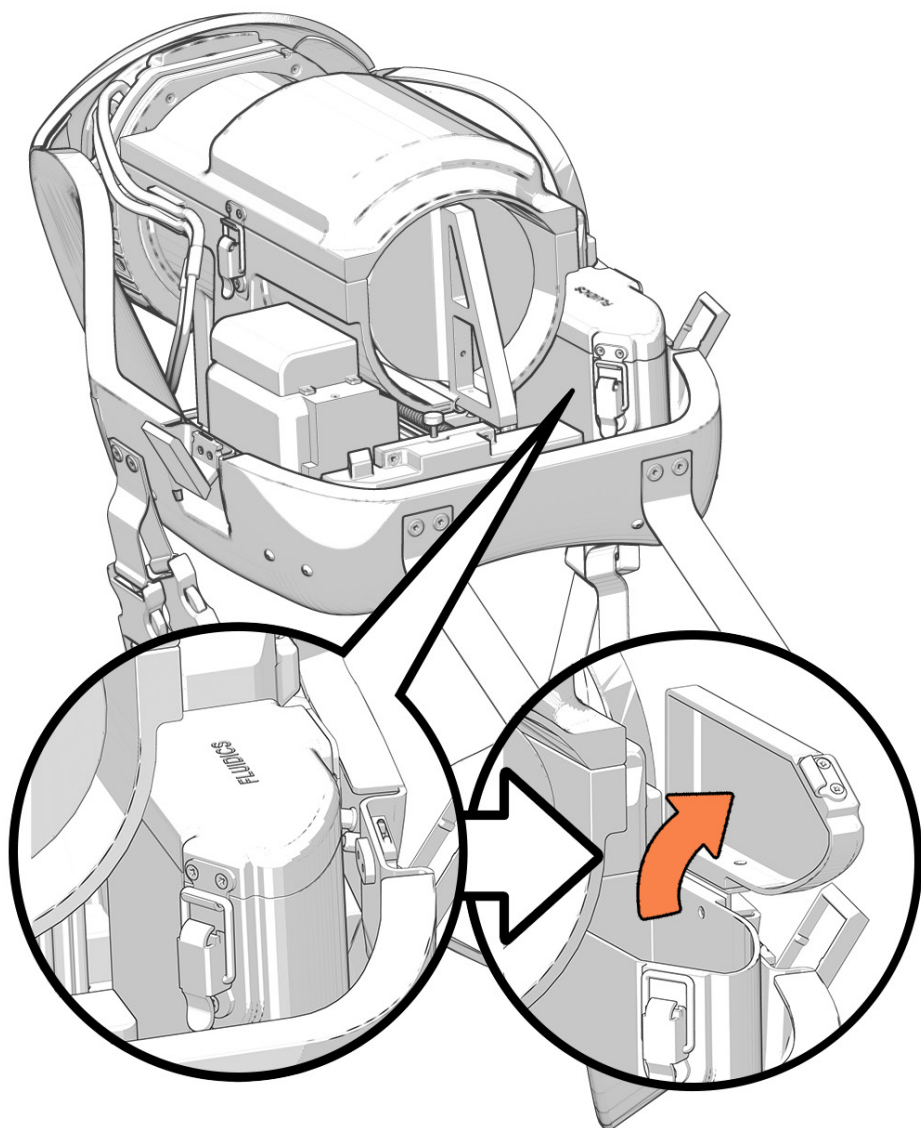


f Insert up to 250 ml of fluid into one IV bag, remove any excess air that is in IV bag

3 Load Fluidics

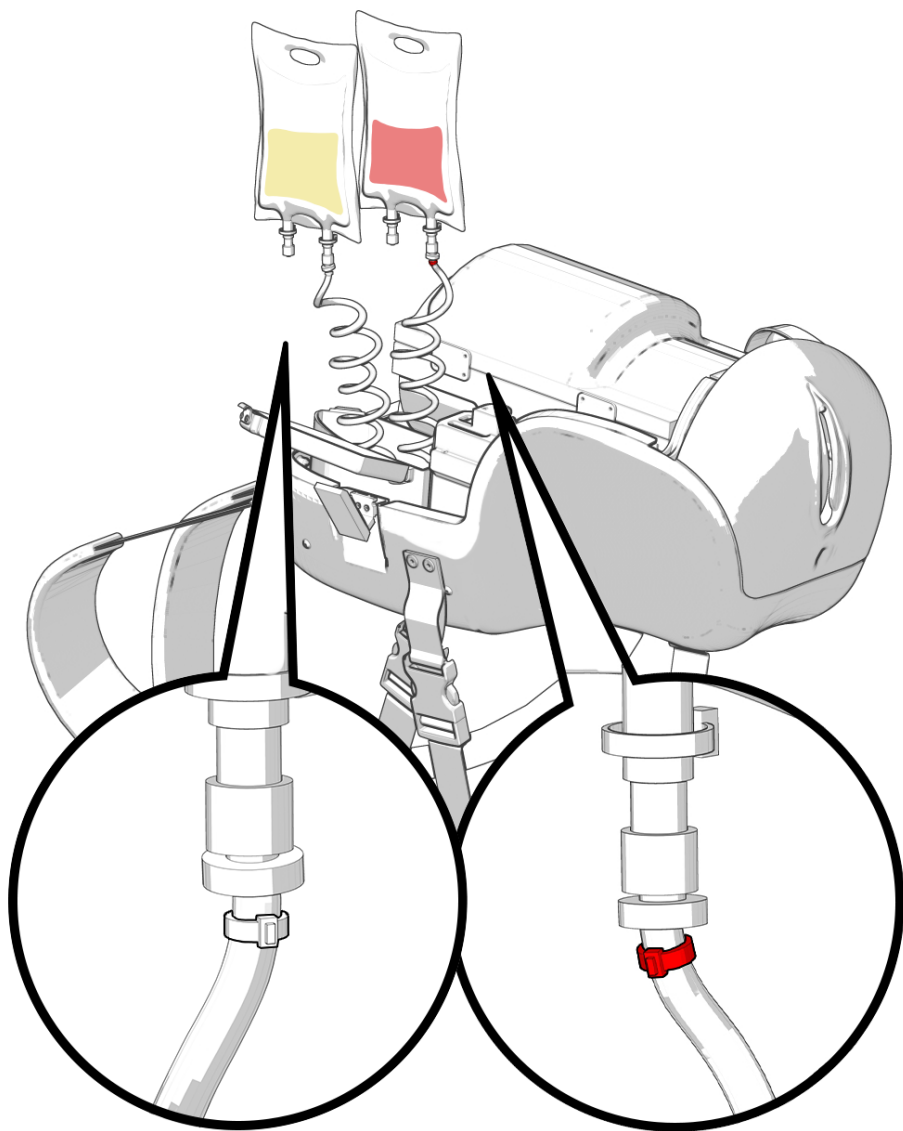
a Remove the silicone belly





C Connect the blood to the tubing with the red zip tie, connect the amniotic fluid to the white zip tie

i If you want just blood or just amniotic fluid, you can set them at this time by hooking up 2 blood or 2 amniotic fluid bags

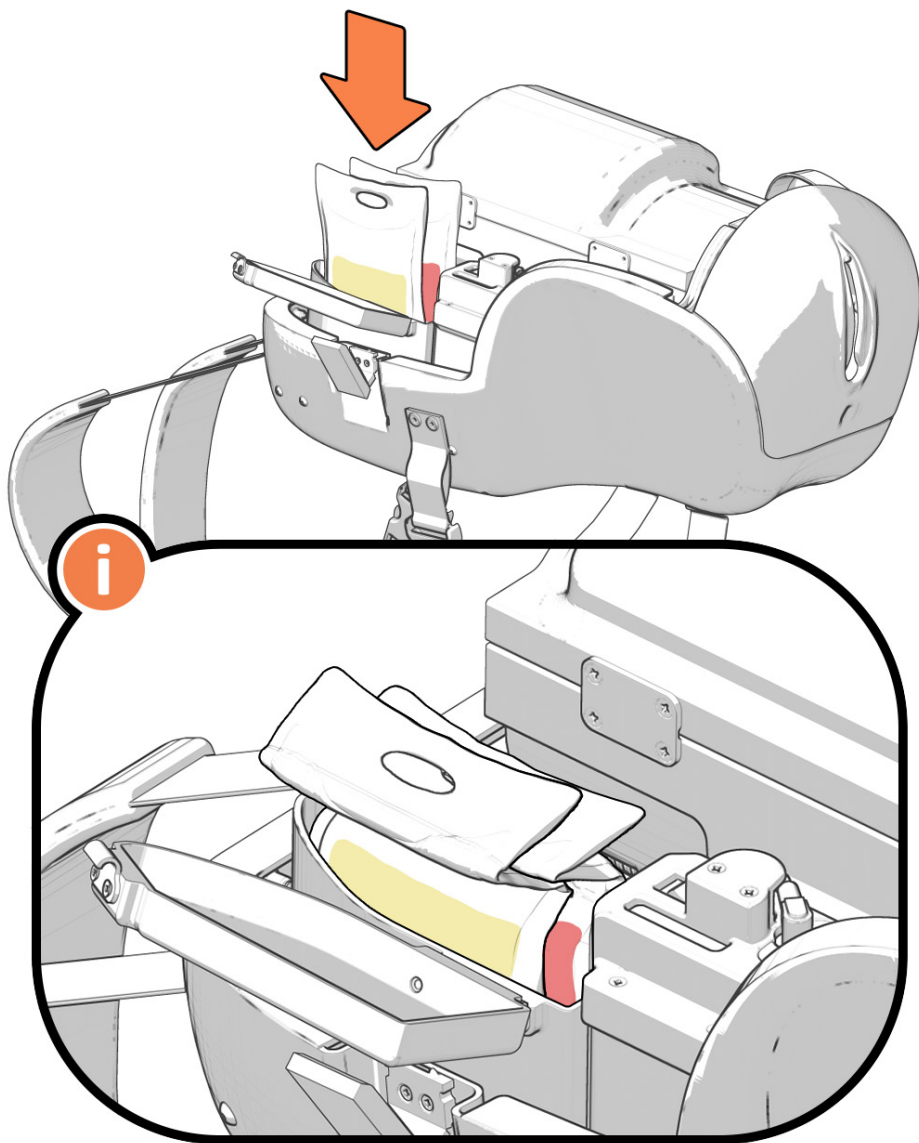


d

Put the bags next to each other and slide them into the fluidics chamber

i

Fold down the excess material at the top



e

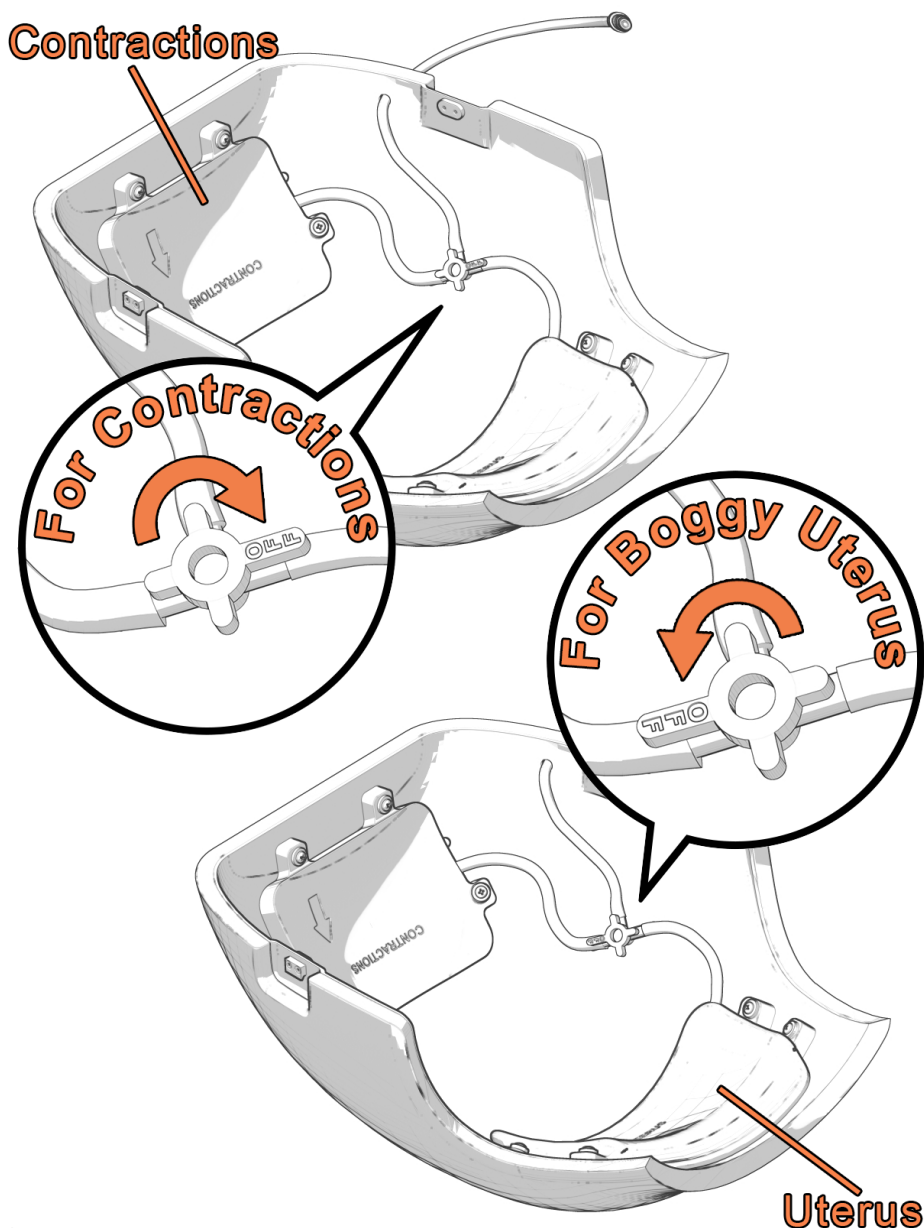
Close and clamp fluidics chamber

f

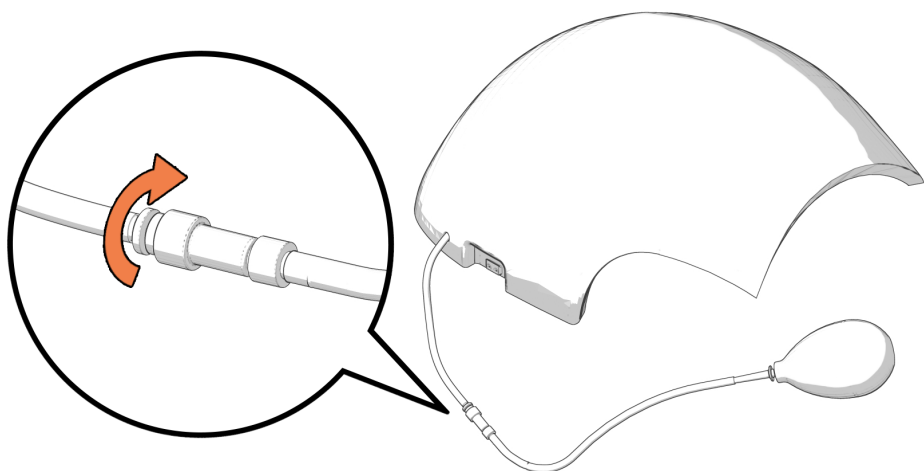
Fluid will last approximately 10 births

4 Preparing the Contractions/Boggy Uterus

- a** Select if you would like to run the contractions or boggy uterus.
Whichever you would like to run, make sure the “off” on the stop-cock is facing the opposite direction



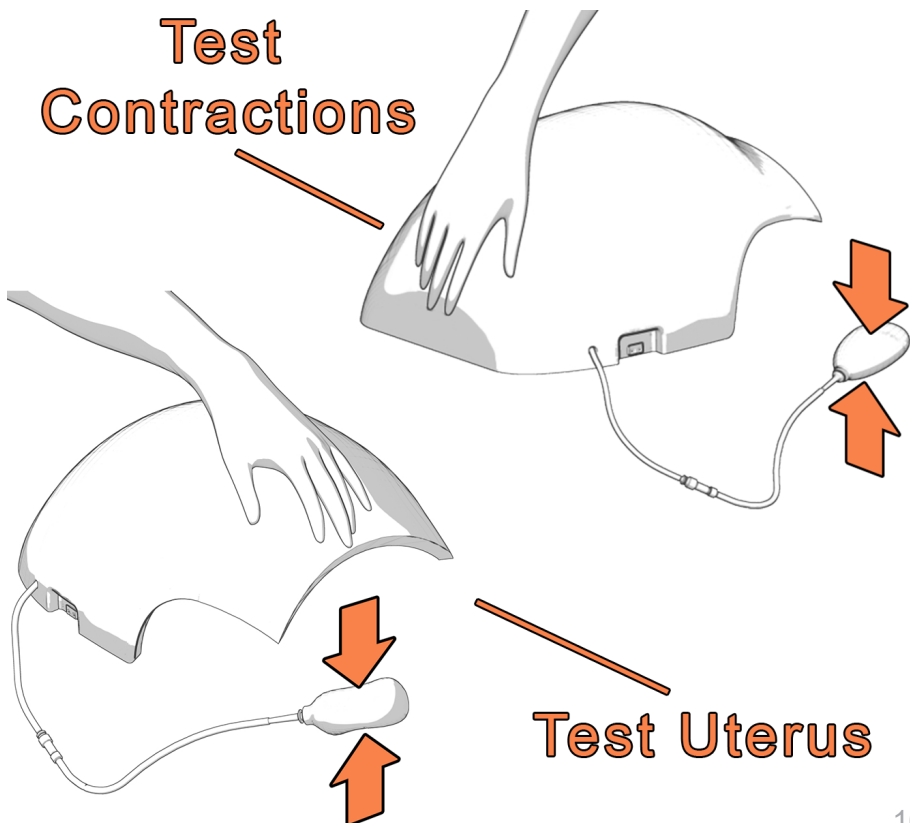
b Connect bulb and tubing to belly



c Test contraction/uterus strength

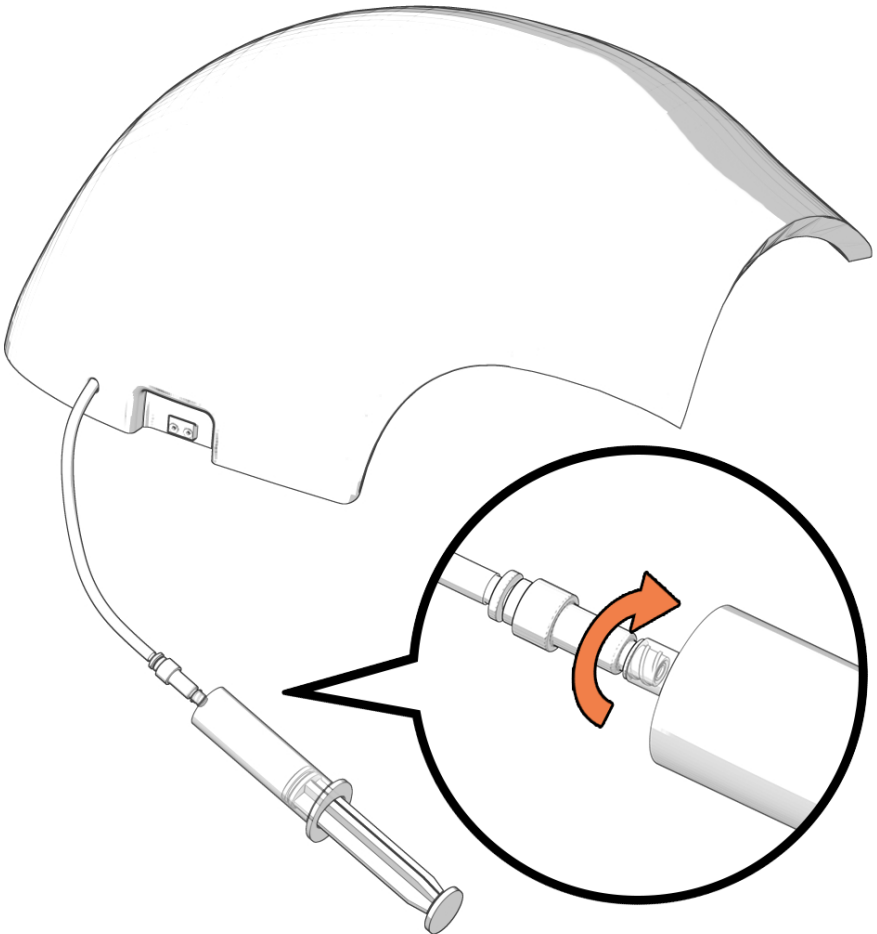
- i** Perform contraction by squeezing the bulb (30 seconds of squeezing in, 30 seconds of release)

Test Contractions



ii

If you would like a stronger contraction, remove the bulb and insert more air into contractions housing using a syringe in increments of 30 ml, if you would like a weaker contraction, do the opposite



iii

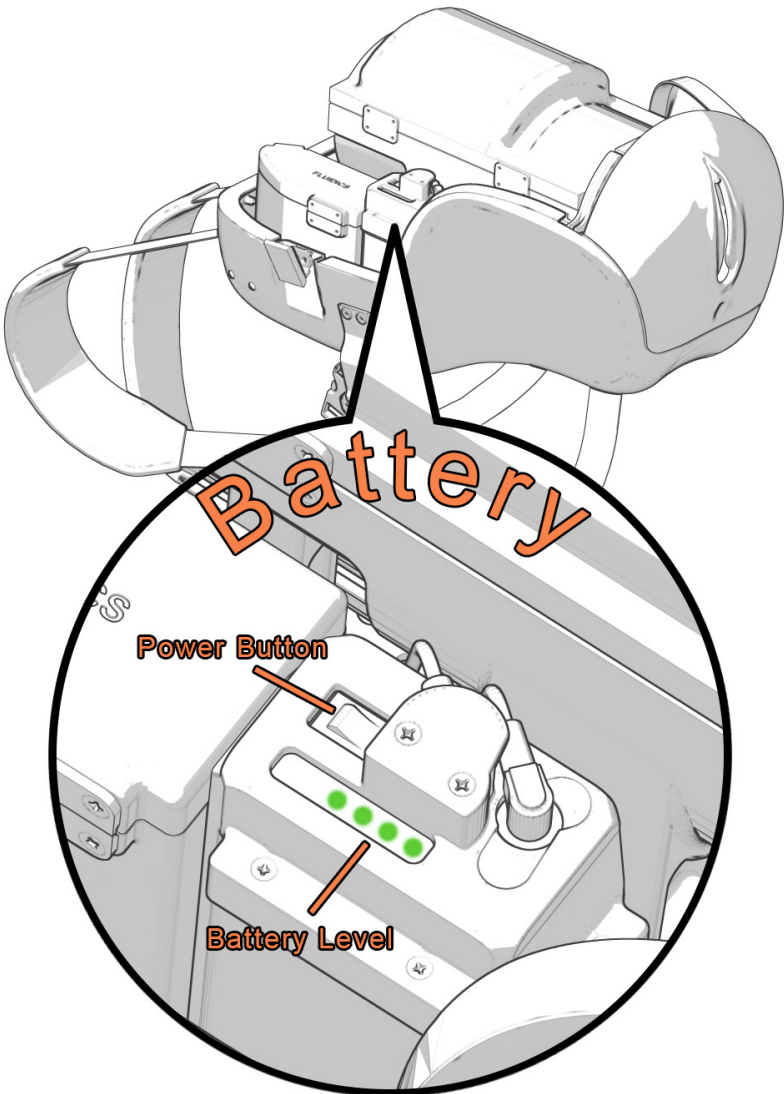
Test again and repeat

iv

If you would like the uterus to start firm and remain firm through the scenario, you can squeeze the bulb for the uterus and disconnect from the white connector. It will hold the air in and keep the uterus firm

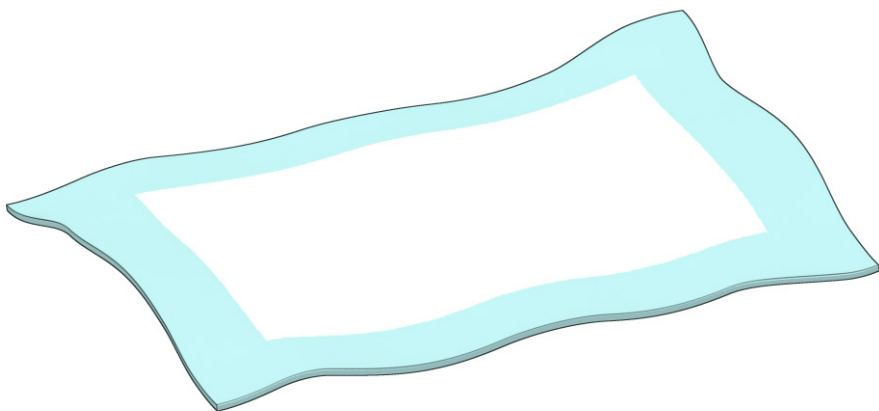
5 Turning on the Device

- a** Turn on battery of device
- b** The green dots on the battery tell you how much battery is left, this is also noted at the top of the app
- c** Battery will last 30 simulation hours

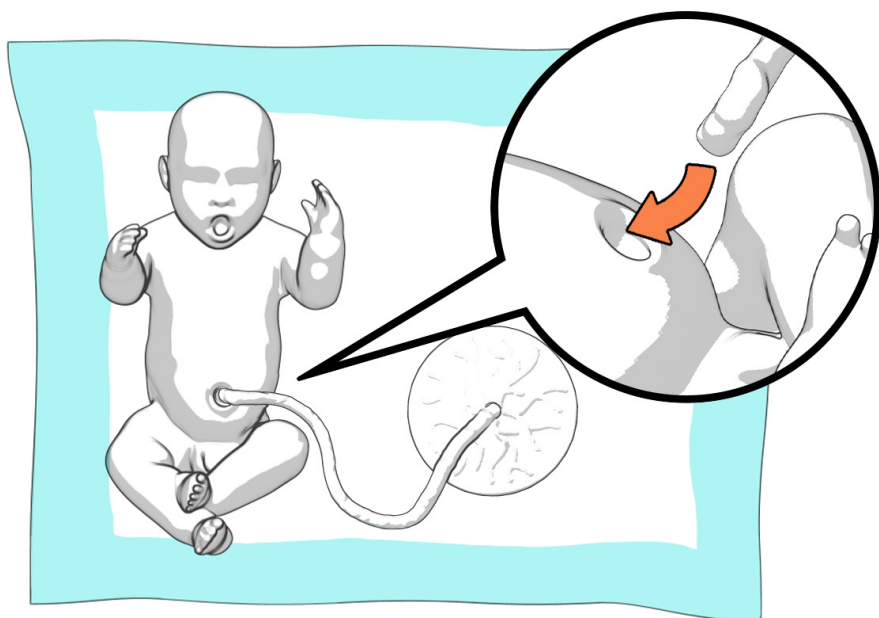


6 Preparing the Baby/Placenta

- a** Lay down a blue pad to lubricate the baby on top of

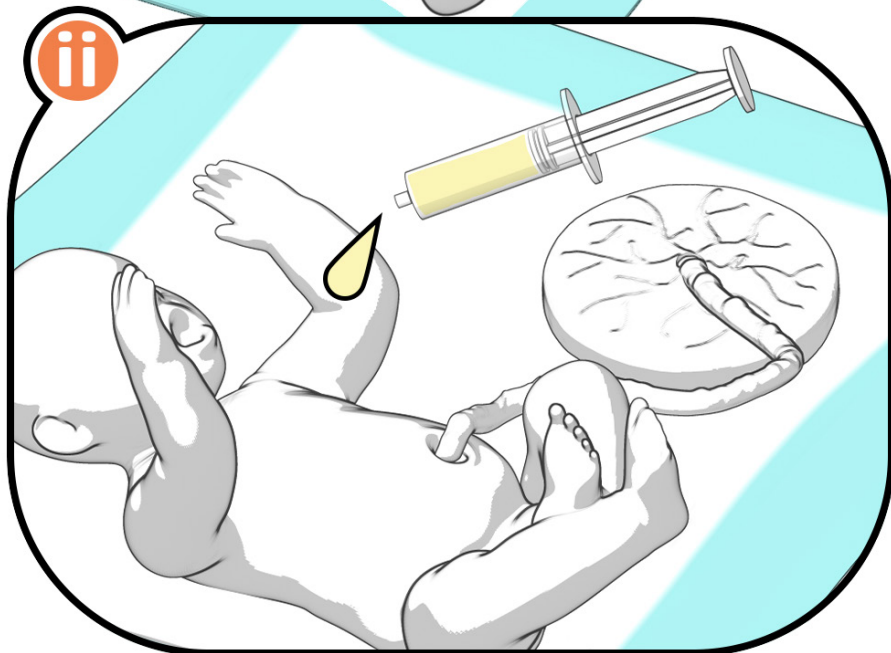


- b** Insert umbilical cord into baby's belly by pushing it in and towards the head



C Douse the baby in Johnson & Johnson Baby Oil

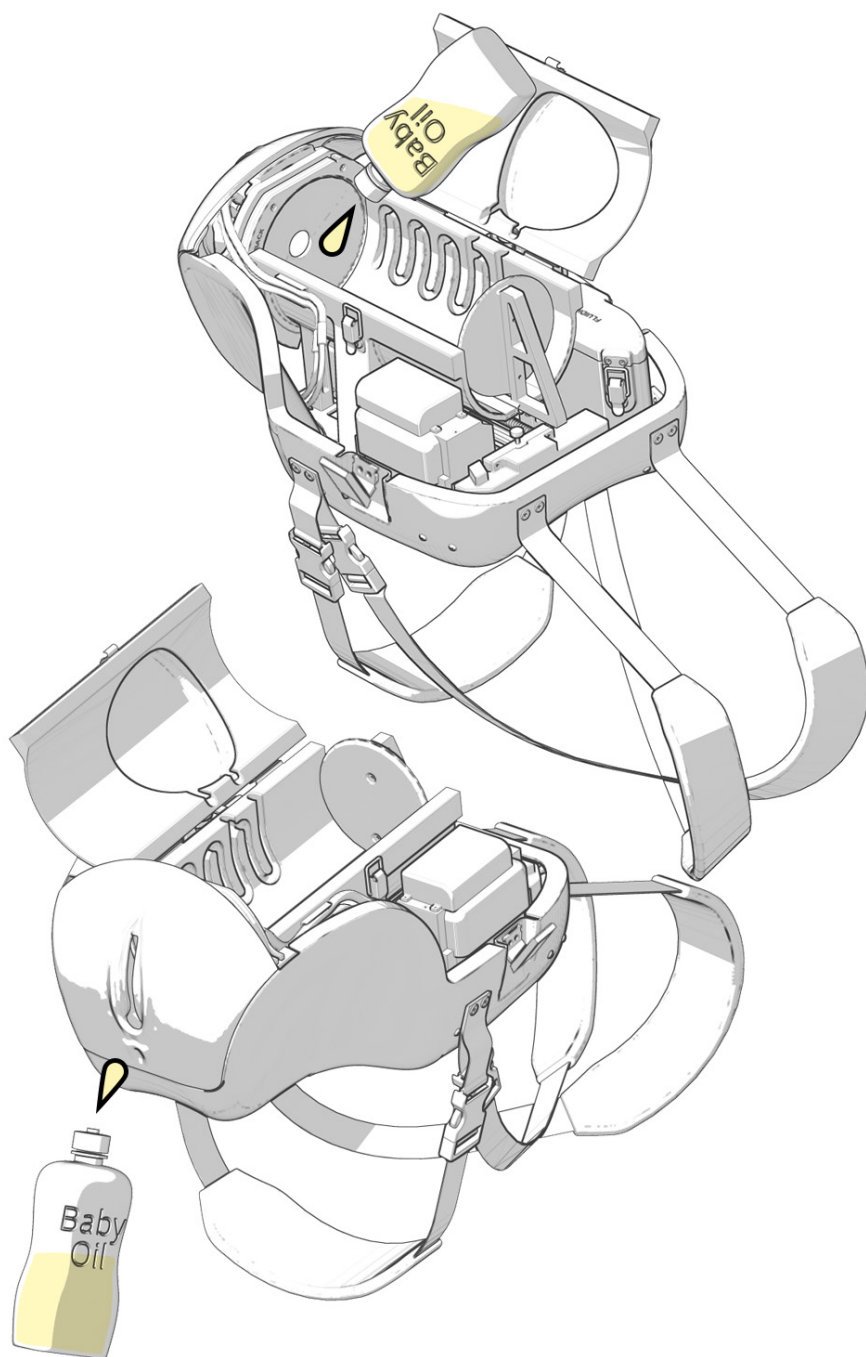
- i** Go over entire baby at least once, then go over head and shoulders once more especially if it's your first birth of the day
- ii** If wanted: add vernix onto baby, specifically into all the crevices



d Douse placenta in Baby Oil

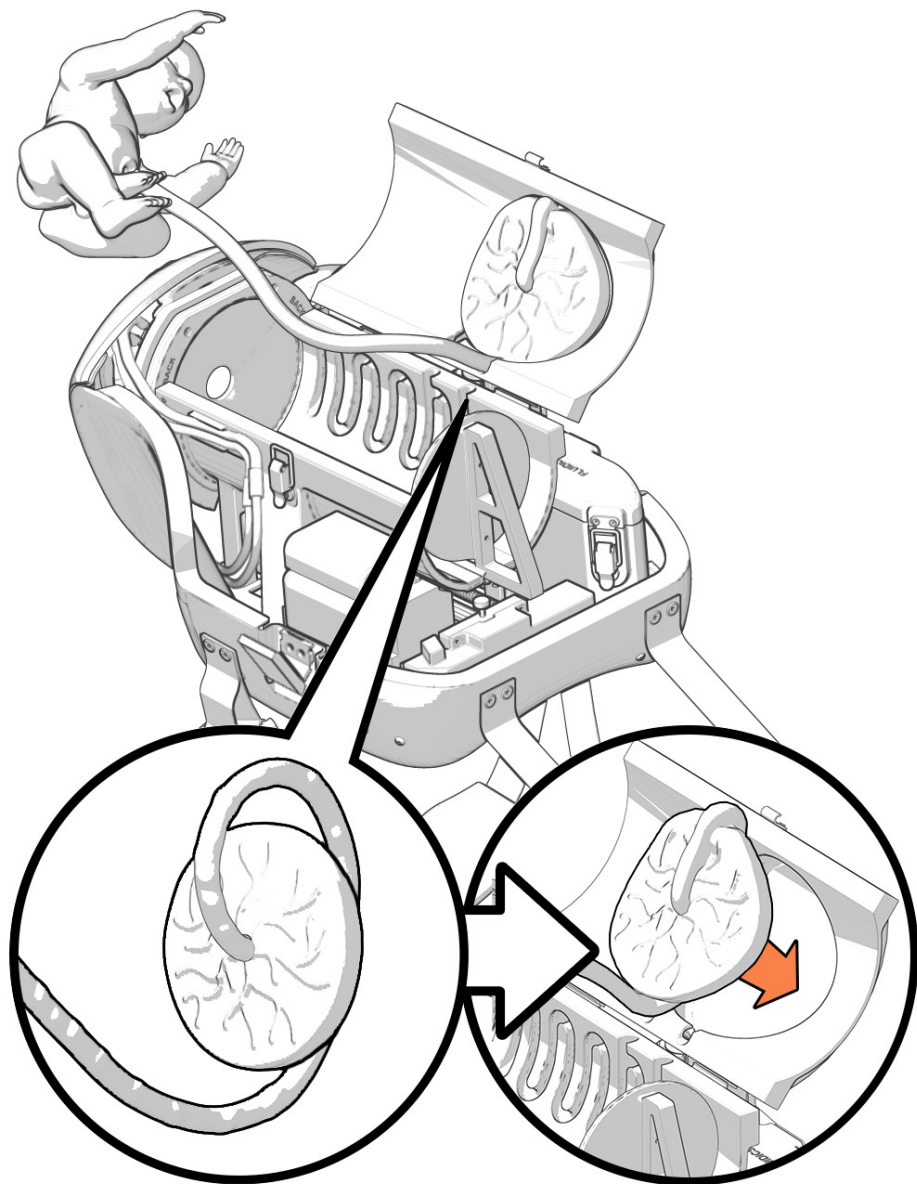
e

Put Baby Oil on Cervix and inside of genitalia



7 Loading the Baby/ Placenta

- a** Wrap umbilical cord around placenta at least once and put into the lid of the baby tube

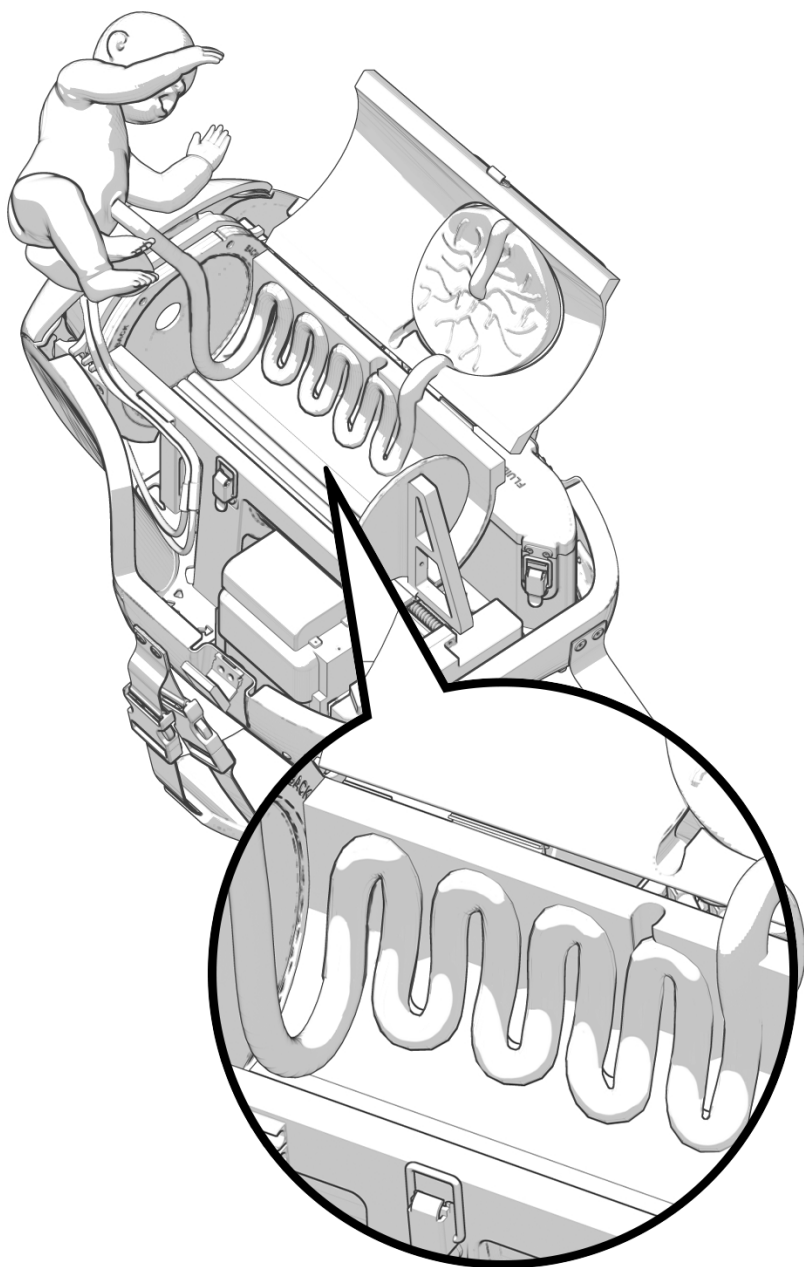


b

Put excess umbilical cord in track in baby tube

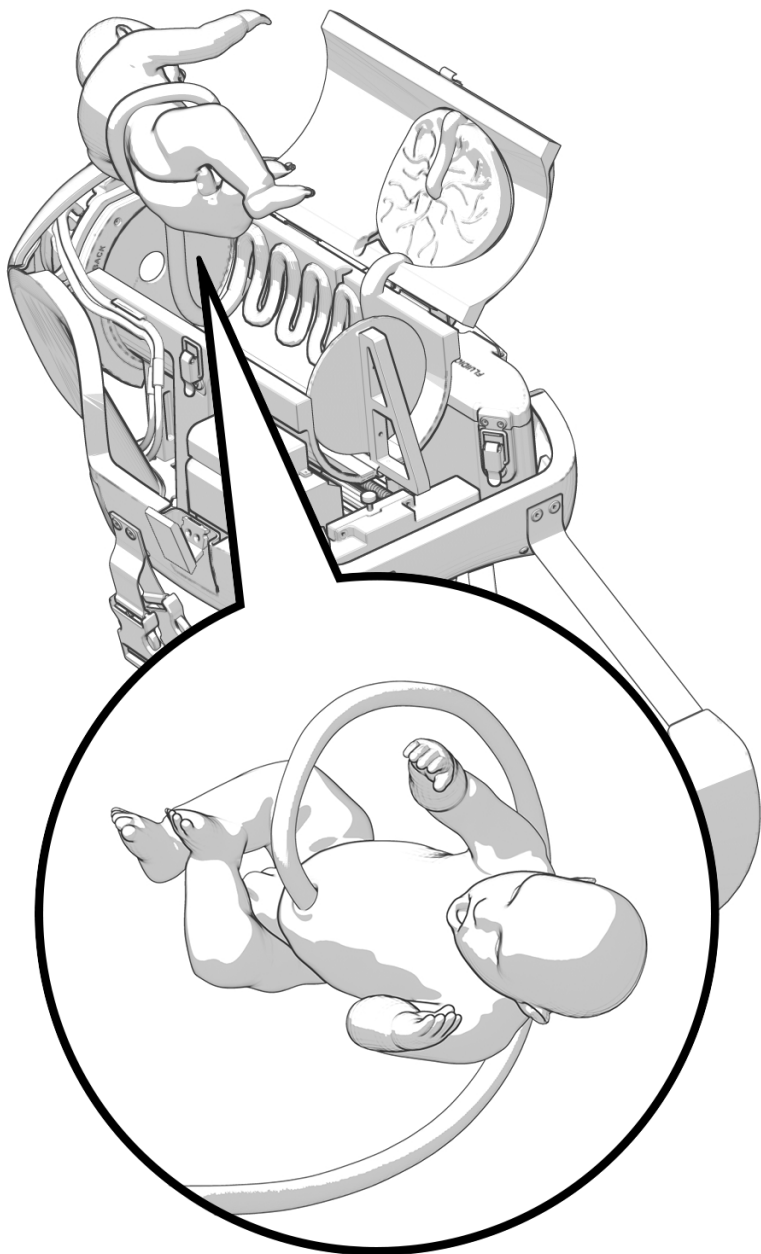
i

Always make sure you put the umbilical cord in the very back notch to avoid the baby's feet from getting stuck there



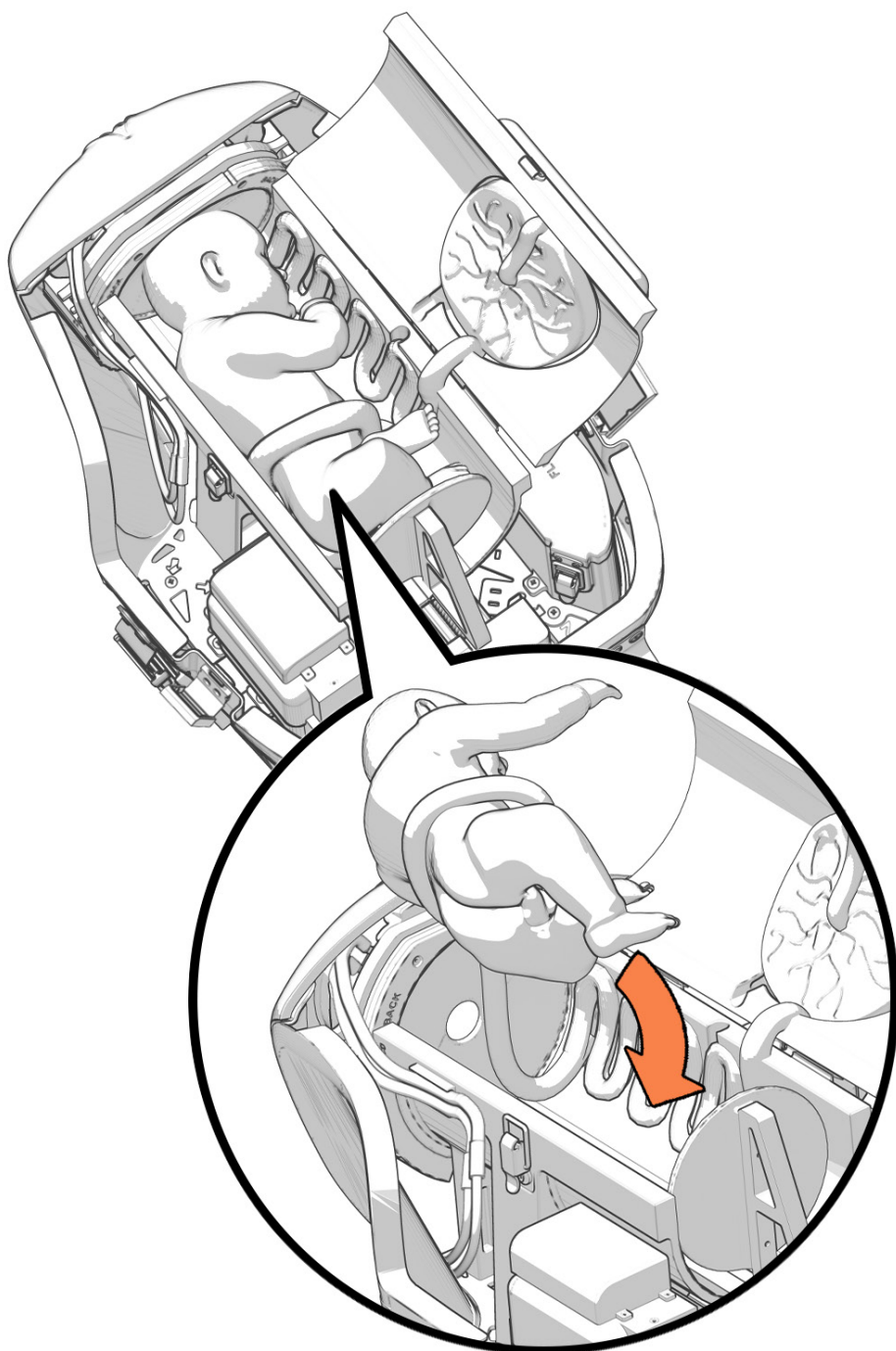
C Wrap umbilical cord at least once around the baby

i If doing skin to skin after the birth, wrap umbilical cord twice around baby to give enough slack to place baby on mom's chest

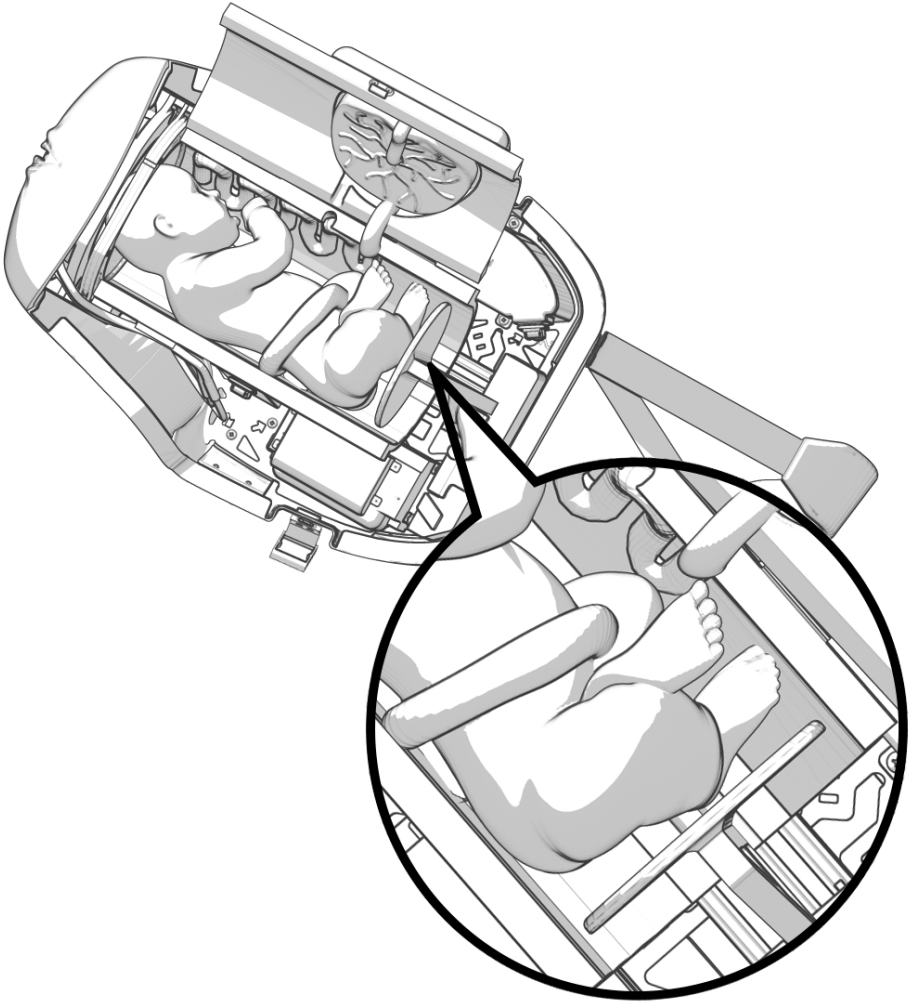


d

Place baby in baby tube in the orientation you prefer



- i** Make sure to tuck the feet in and fold the arms in front of the chest so they do not get stuck during birth



- e** Close baby tube, making sure there aren't any limbs getting pinched

- i** The baby should be getting squeezed in the tube, so you should feel a little resistance when closing the lid to the tube

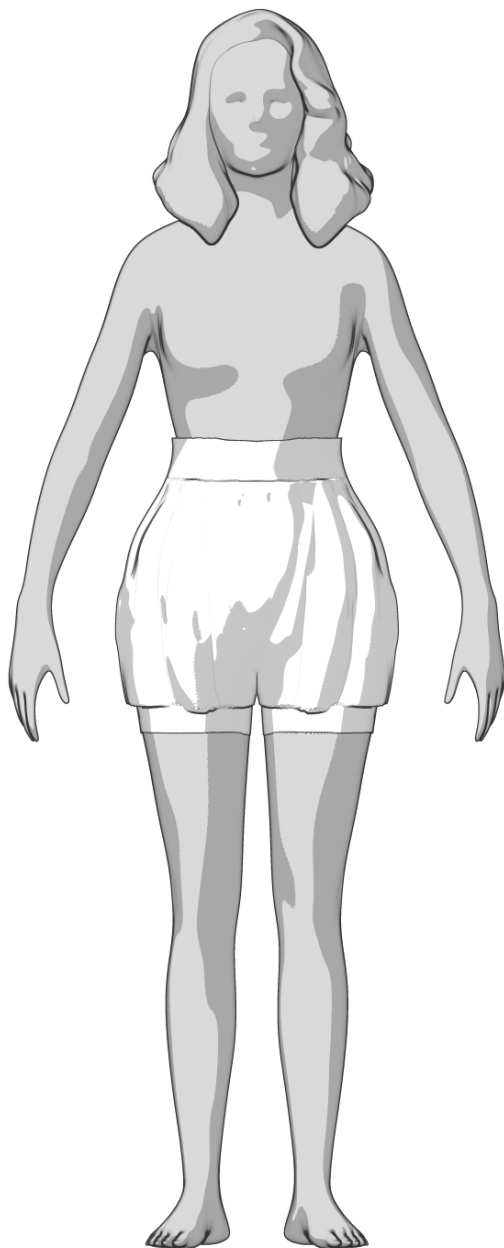
- f** Once the baby is loaded, put the belly back on the device and latch in

8

Putting on the Device/Foam Insert

a

If desired, have the Simulated Participant (SP) put on waterproof pants

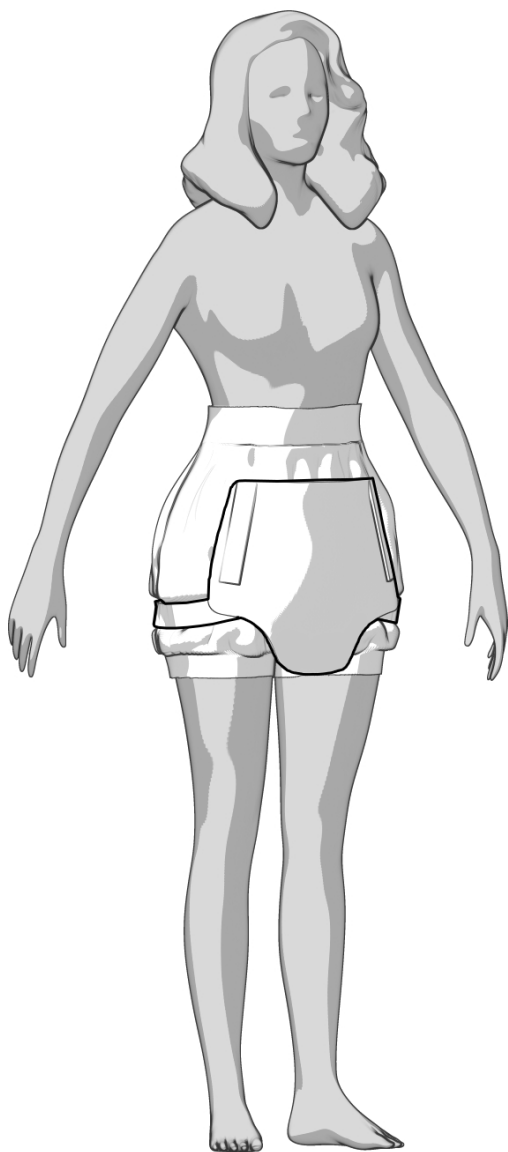


b

If you would like to use the foam insert, strap the foam insert around the SP's legs

i

If running shoulder dystocia, the foam insert is highly recommended



C Sit device up on bed and position onto your SP, the SP can hold the device by the straps

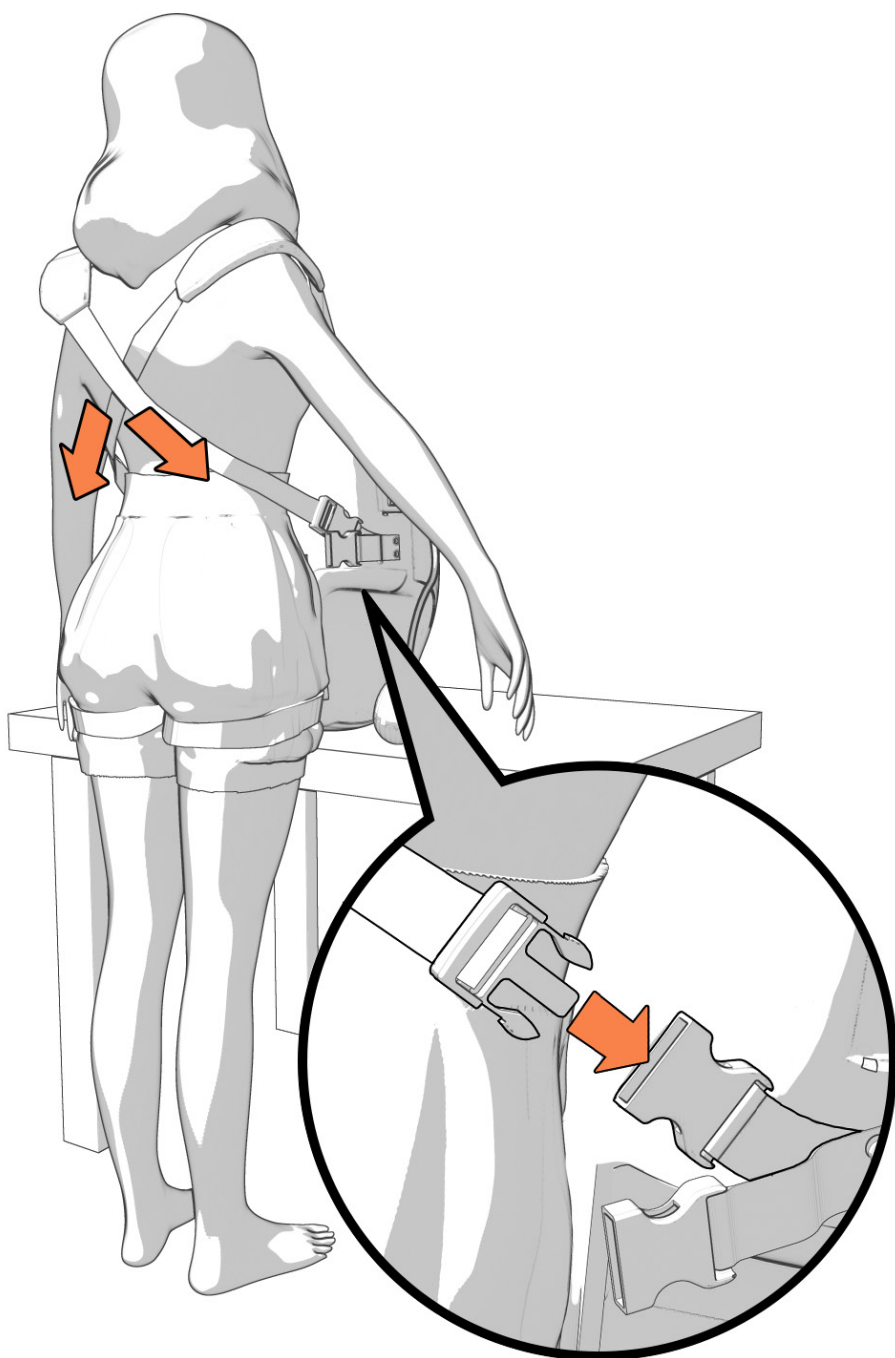
i It helps to adjust the height of the bed to sit well on your SP

ii The top of the device should land just under your SP's chest

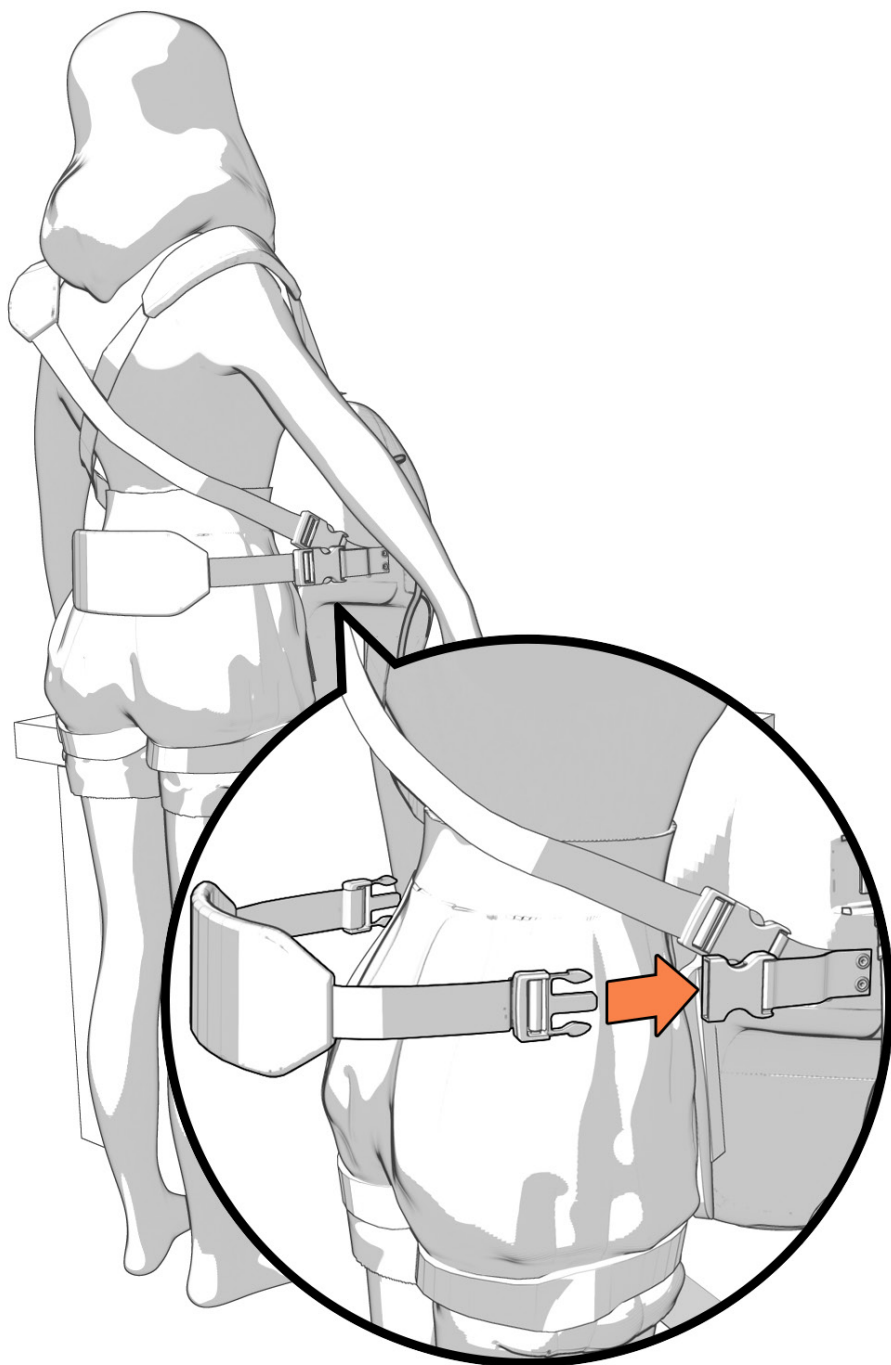


d

Criss-cross the straps behind the SP, adjust so they support the device



e Wrap back strap around SP and buckle in

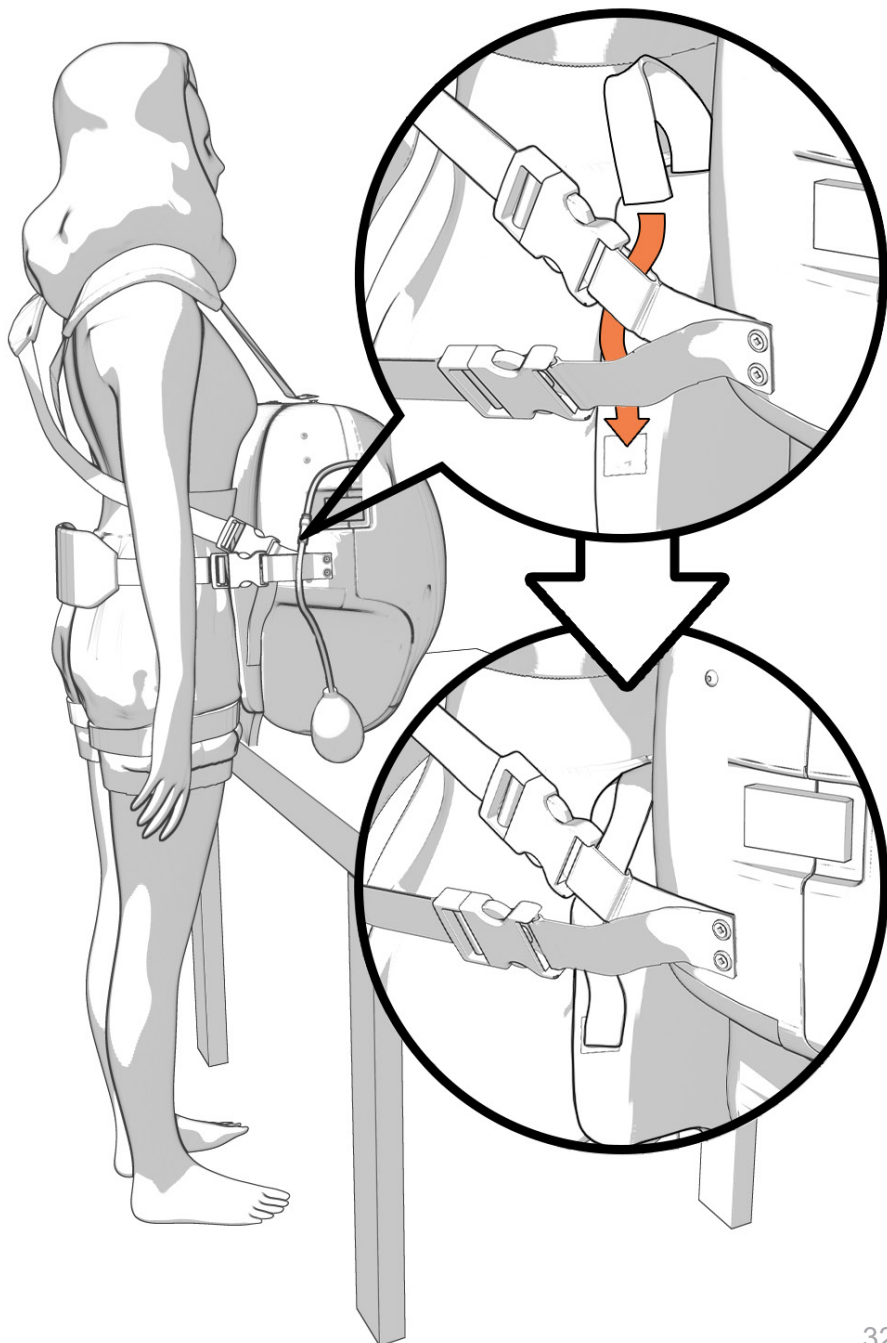


f

If using the foam insert

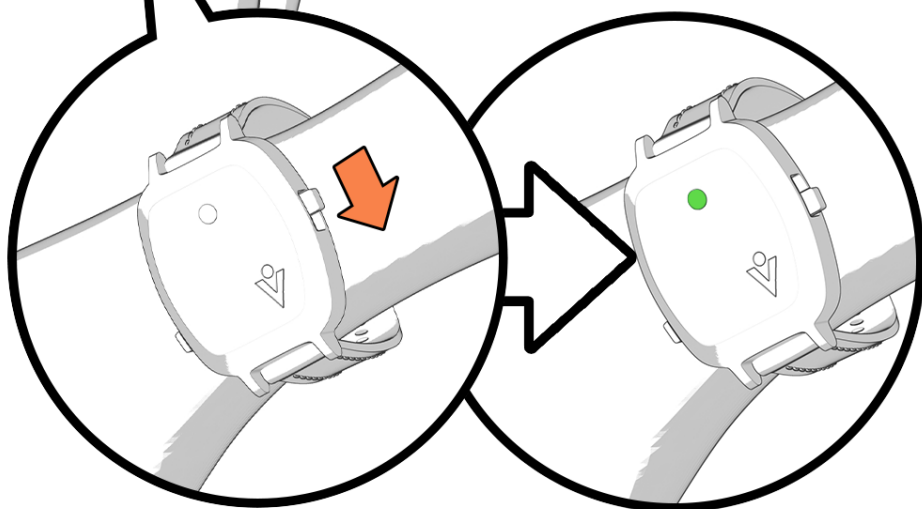
i

Put the two straps at the top of the foam insert through the bottom buckles of the device



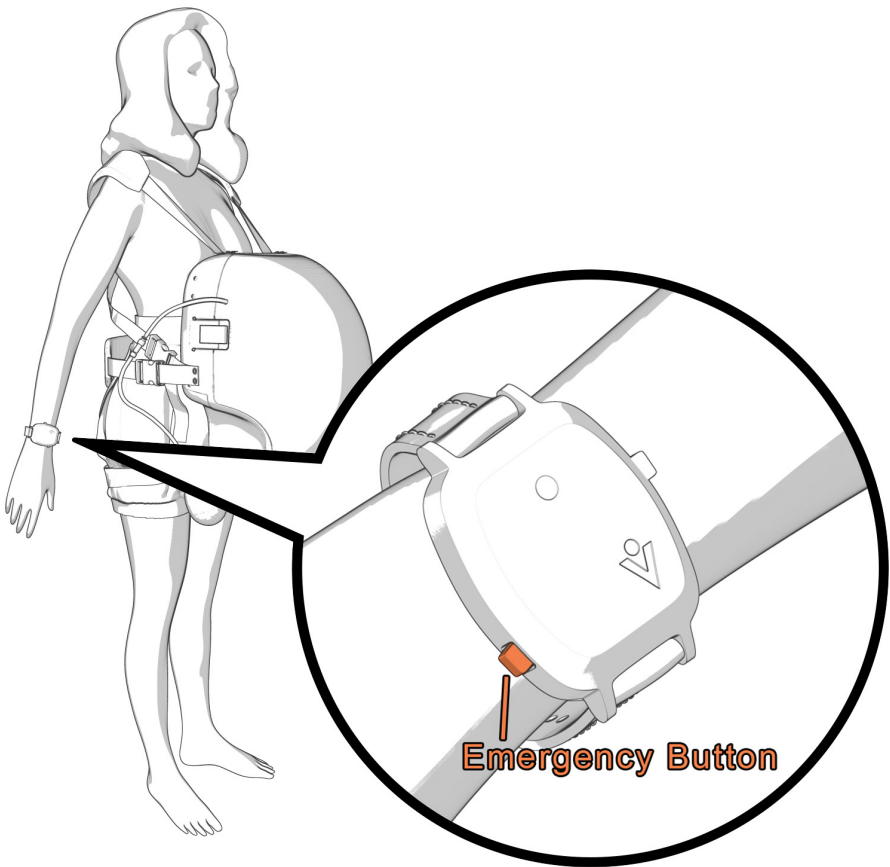


Have SP and support person put on and turn on Avbands - these will alert both members that a contraction is happening



h

Use the Avband emergency button if you are uncomfortable at any time during the simulation

**i**

It is very hard for most people to feel the head of the baby with their hand when it is coming out of the device while they are wearing it. If you cannot reach the head, please decline the offer if the learner suggests it

j

Positioning of the belly - For the most realistic experience, position the device so that the genitalia is aimed towards the bed and extends past the pelvis of the SP. You will not be able to tell if the device is sitting correctly as the wearer. Once in bed, ask the facilitator if the position of the Avbirth looks accurate and adjust the straps or bed positioning accordingly.

9 SP Tips

- a** Watch our SP training video!
- b** Wear either leggings or shorts - if wearing leggings, bring a change of clothes just in case
- c** Bring a spare set of socks
- d** Wear 1 patient gown backwards and one forward to fully cover the device and SP
- e** Remember to breathe when simulating contractions
- f** Make sure the device is tight enough to feel secure as you move around the room and the bed. If the device is uncomfortable on your shoulders, tighten the back strap
- g** If you are performing a standing birth, use the bed as support for the belly as you do the birth
- h** If you are doing a hands and knees birth, let the belly lay on the bed so you are not holding its weight

10 Tips for Delivering the Baby

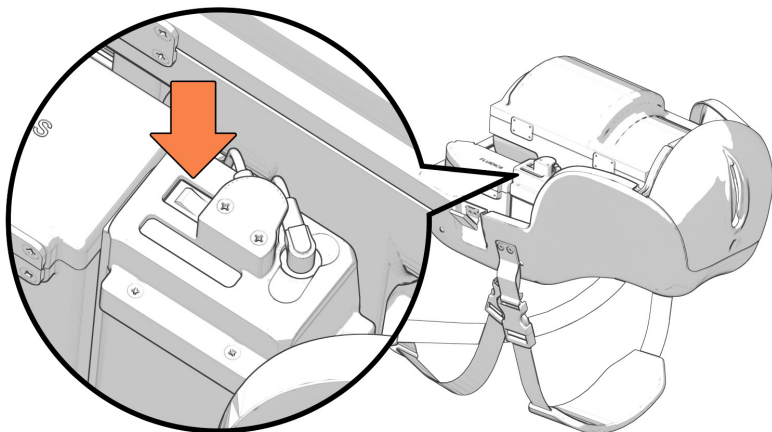
- a** Read the SP's Do's and Don'ts to make sure you are on the same page with them!
- b** You are welcome to cut the umbilical cord! We recommend cutting closer to the baby than the placenta to get the most out of the cord
 - i** If you optimize the umbilical cord you can get 8 uses out of one cord with 4" cuts. Replace the umbilical cord around 28" in length
- c** If performing a PPH scenario, set up a blue pad that starts between the SP and the device to minimize mess
- d** If running a custom scenario or direct controls, only run fluids before the 3rd contraction and after the baby is birthed
- e** Give feedback to SP on positioning of the belly when SP is laying down
- f** At the end of the scenario, wait 1 minute for the pusher to reset before delivering the placenta.

APP INSTRUCTIONS

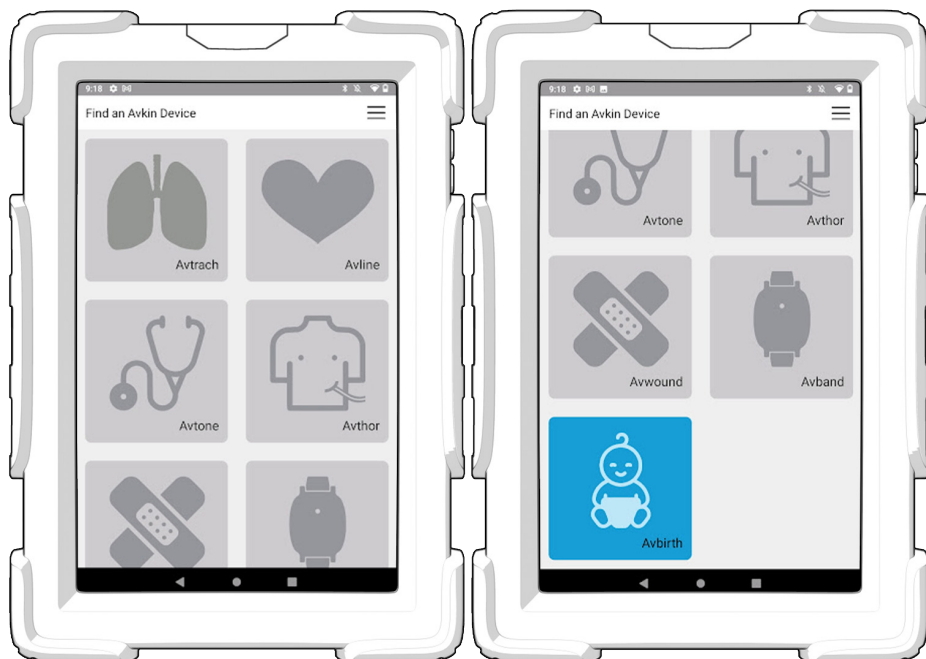
1 Connecting to Avbirth

a Open the Avkin app

b Turn on the Avbirth



c Scroll down to the square Avbirth tile with the baby icon. It should be blue. Press the square tile.



d

Press the next thin rectangular tile on the next page. The 'Connecting...' prompt should appear.



e

Once the connection is complete, the main Avbirth page with four square orange tiles appears.

2 Connecting/Mirroring Avbands

a Turn on the Avband

b From the main Avbirth screen with the 4 orange tiles, press one of the orange circle buttons in the top left of the Avbirth page

c Press OK



d Press the blue Avband tile on the next page.

e The 'Connecting...' prompt should appear.

f

Once the connection is complete, the Avband page appears.

g

A window pops up. Press 'Start'.



h

Once an Avband is mirrored to the Avbirth, contraction signals will be sent to the Avband. This alerts any Simulated Participant (SP) wearing them that a contraction is happening.

i

Press orange underlined 'Avbirth' to go back to the main Avbirth screen

3 Avband LED Controls

- a** In each Avbirth screen, you can press a mirrored LED icon to change the Avband LED color to alert the SP(s)



4 Priming the Pump

- a** Go to the main Avbirth screen with the four orange tiles
 - i** See pages 50-52 if you are unsure of how to do this
- b** Press the 'Prime Pumps' button
- c** Both the blood pump and the amniotic fluid pump will run for 10 seconds. This will fill up the tubing that goes into the genitalia so that the fluids will be immediately visible.



5 Prebuilt Scenario

- a** Go to the main Avbirth screen with the four orange tiles
 - i** See pages 50-52 if you are unsure of how to do this
- b** Press the 'Prebuilt Scenario' tile with the box icon



c Press whichever scenario you want to do



d Press the big orange button to start the scenario

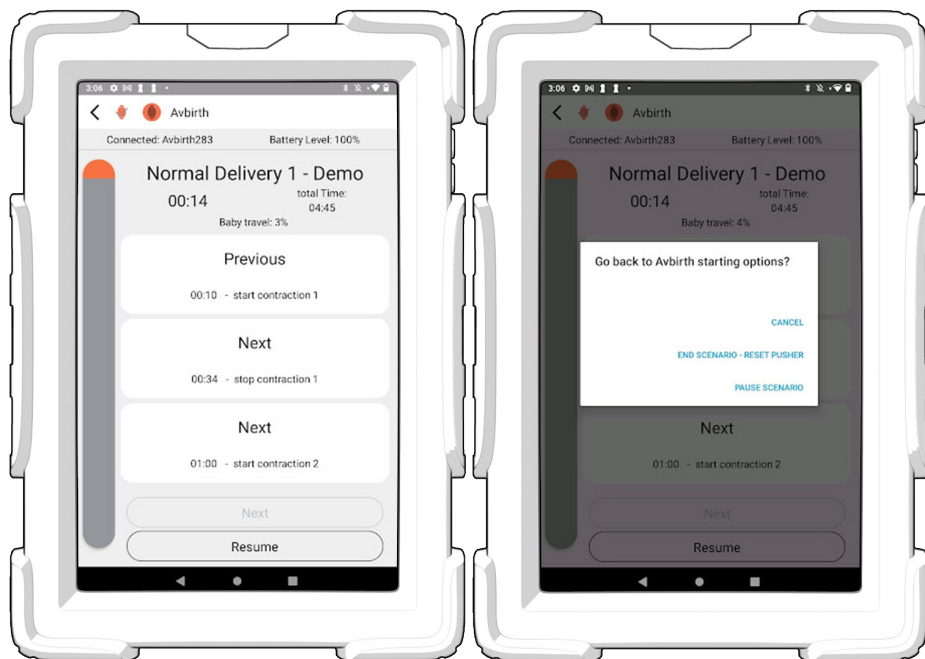
e You can pause the scenario by pressing the 'Pause' button

f

Once the simulation is complete, the pusher will reset so the placenta can be retrieved.

i

Caution - do not reach in to get the placenta while the pusher is still moving!



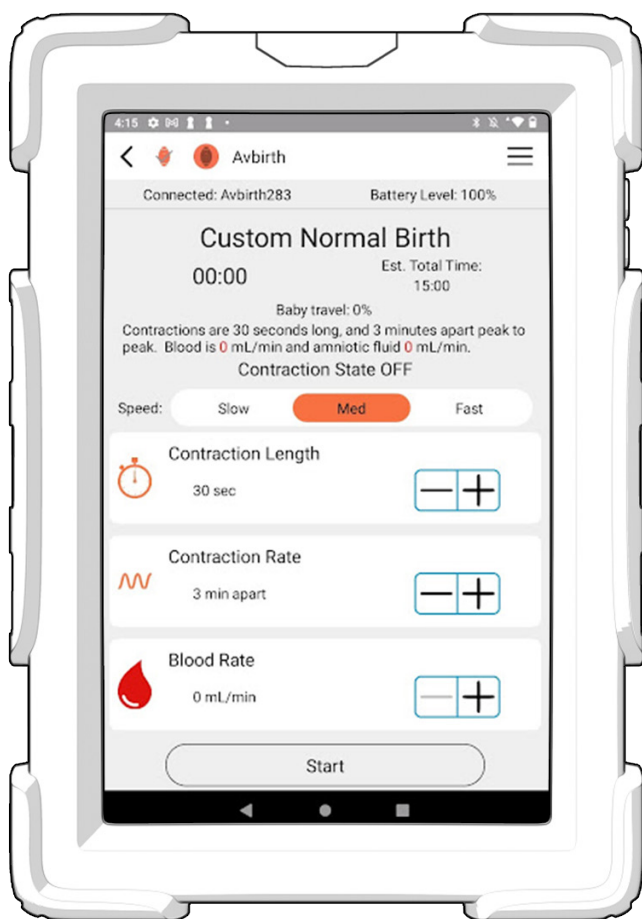
6 Custom Scenario

- a** Go to the main Avbirth screen with the four orange tiles
- i** See pages 50-52 if you are unsure of how to do this
- b** Press the 'Custom Scenario' tile with the pencil icon



- c** Choose your type of simulation
- i** Normal birth, Shoulder Dystocia, PPH, Water Breaking

- d** Set the speed (effects of speed of simulation), contraction length, contraction rate, and blood rate, and amniotic rate



- e** Press start to start the simulation

- i** You can adjust the settings while the simulation is running

- f** **CAUTION:** When simulation is over, pusher will reset. Only after pusher reset, should you pull the placenta out of the belly

7 iSimulate Control

- a** Go to the main Avbirth screen with the four orange tiles
 - i** See pages 50-52 if you are unsure of how to do this
- b** Press the 'iSimulate Control' tile with the heart monitor icon
- c** The iSimulate Control only works with the IOS tablet that comes with the FHM add-on. See separate iSimulate instructions to use this feature



8 Direct Control

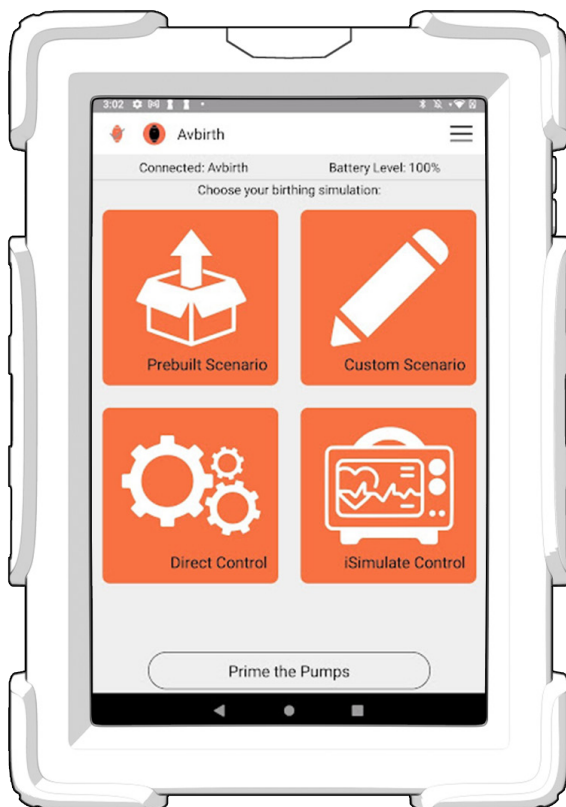
- a** Go to the main Avbirth screen with the four orange tiles
 - i** See pages 50-52 if you are unsure of how to do this
- b** Click the 'Direct Control' tile with the gear icon



- c** Direct control is useful for skills, or any other time you want exact control of baby station and progress of the birth, as well as troubleshooting and testing the function components of the device.

9 Getting Back to the Main Avbirth Screen

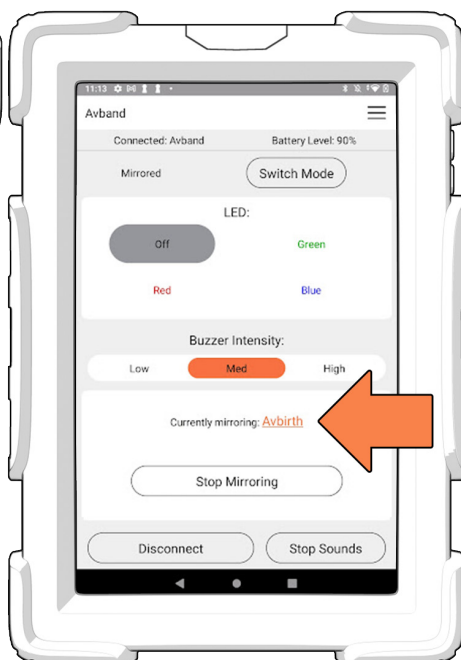
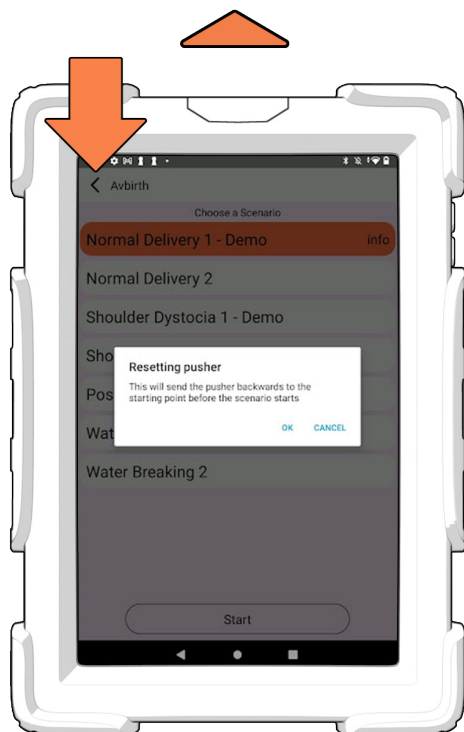
- a** The main Avbirth screen has four orange tiles.



- i** This is the first screen that you see when you connect to an Avbirth
- ii** It is the screen where you can mirror Avbands and choose which type of simulation you want to do.

b

From another Avbirth screen (Prebuilt Scenario, Custom Scenario, Direct Control, iSimulate Control): Press the back arrow

**c**

From a mirrored Avband screen: Press orange underlined 'Avbirth'

d From elsewhere in the app:

i Press the menu icon, Connected Devices,



ii Avbirth blue tile

10 Demo Mode

a Demo Mode is useful for testing out the functions and navigation of the Avkin app without having a physical device present

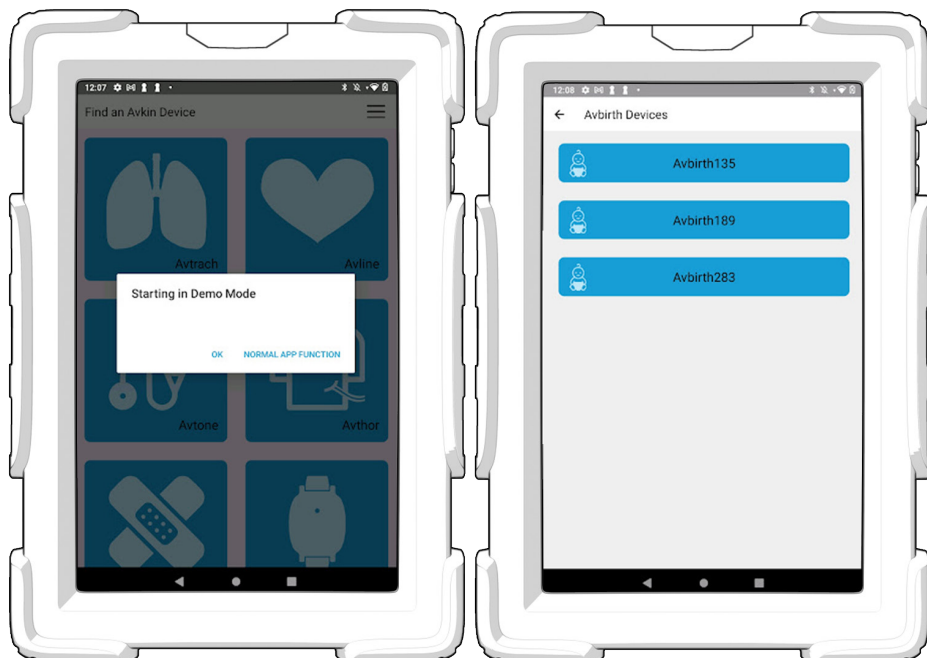
b Press the menu icon, then Demo Mode



c Press the big orange button to turn Demo Mode - the app will restart

d

You can now interact with any virtual Avkin device as if were physically in front of you

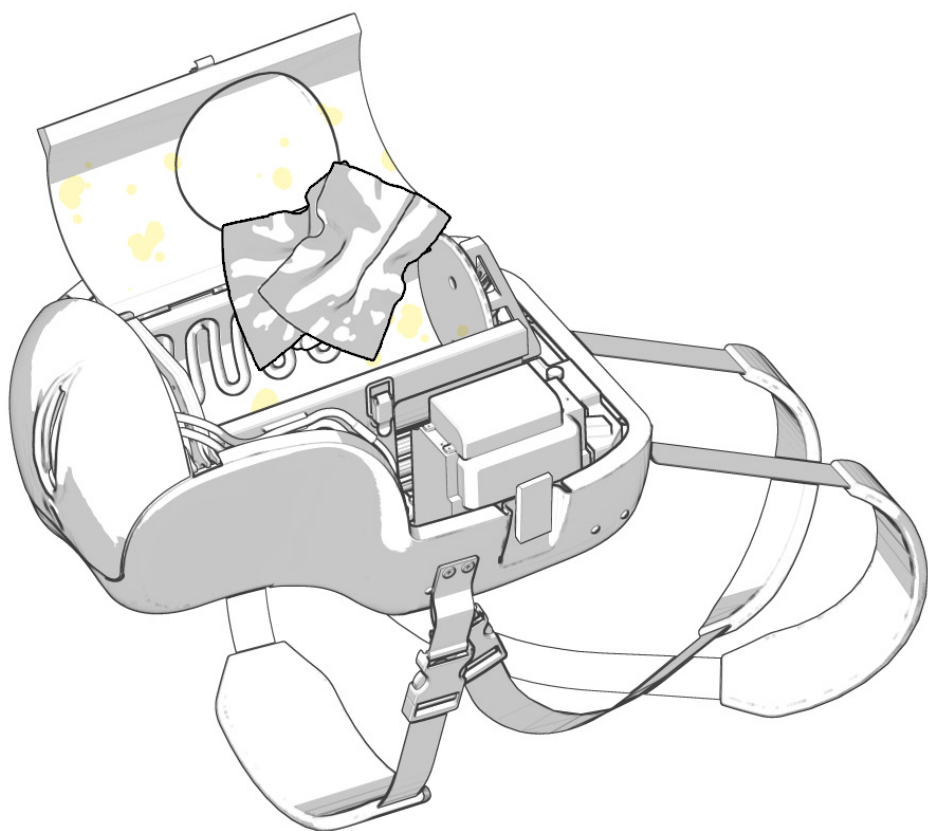


You can get out of Demo Mode and go back to interacting with physical Avkin devices at any time by pressing the menu icon, then Demo Mode, then the big orange button.

CLEAN UP AND MAINTENANCE

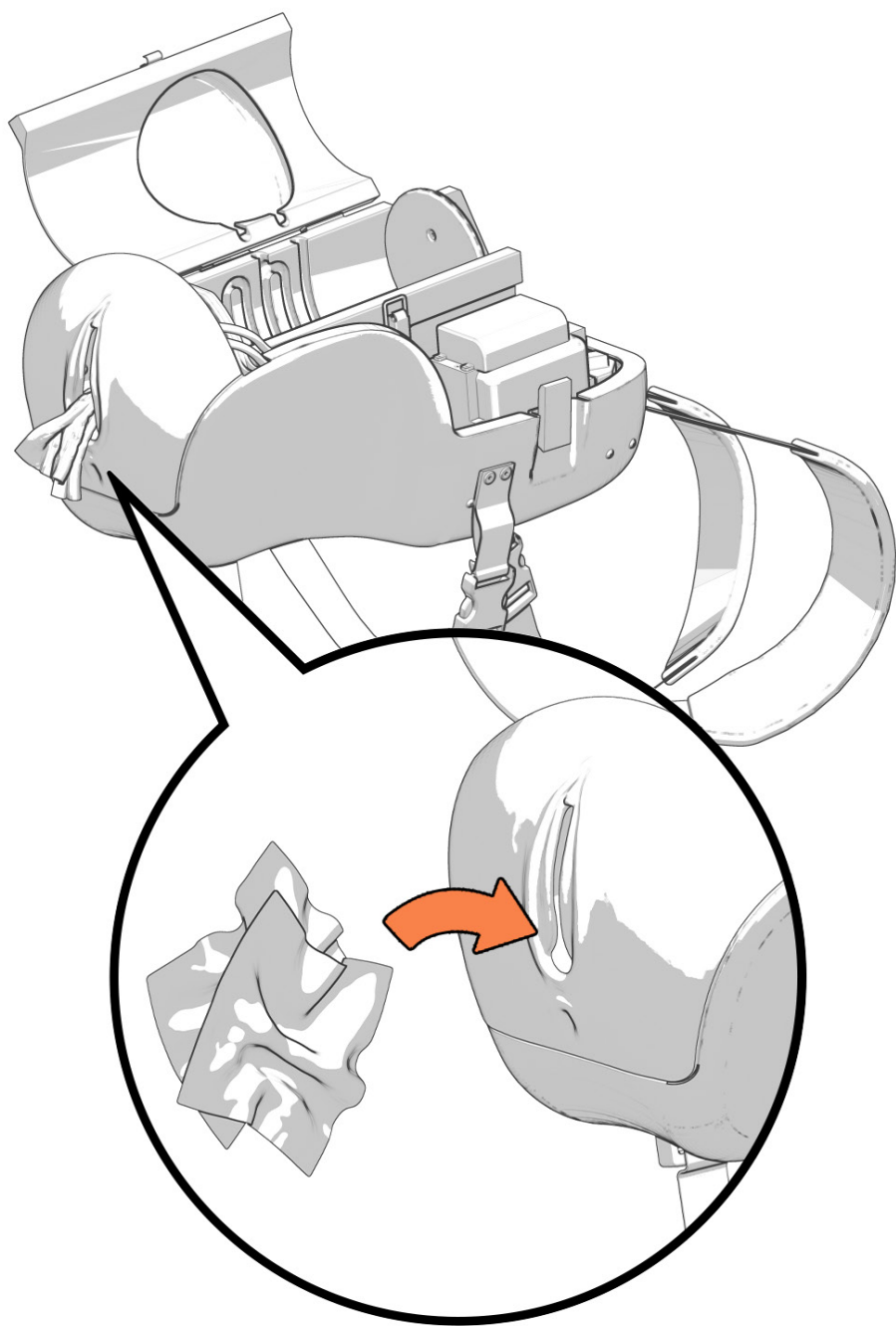
1 Daily Clean Up

- a** Wipe down all surfaces with a cloth, paper towel, sanitizing wipe, or hand sanitizer



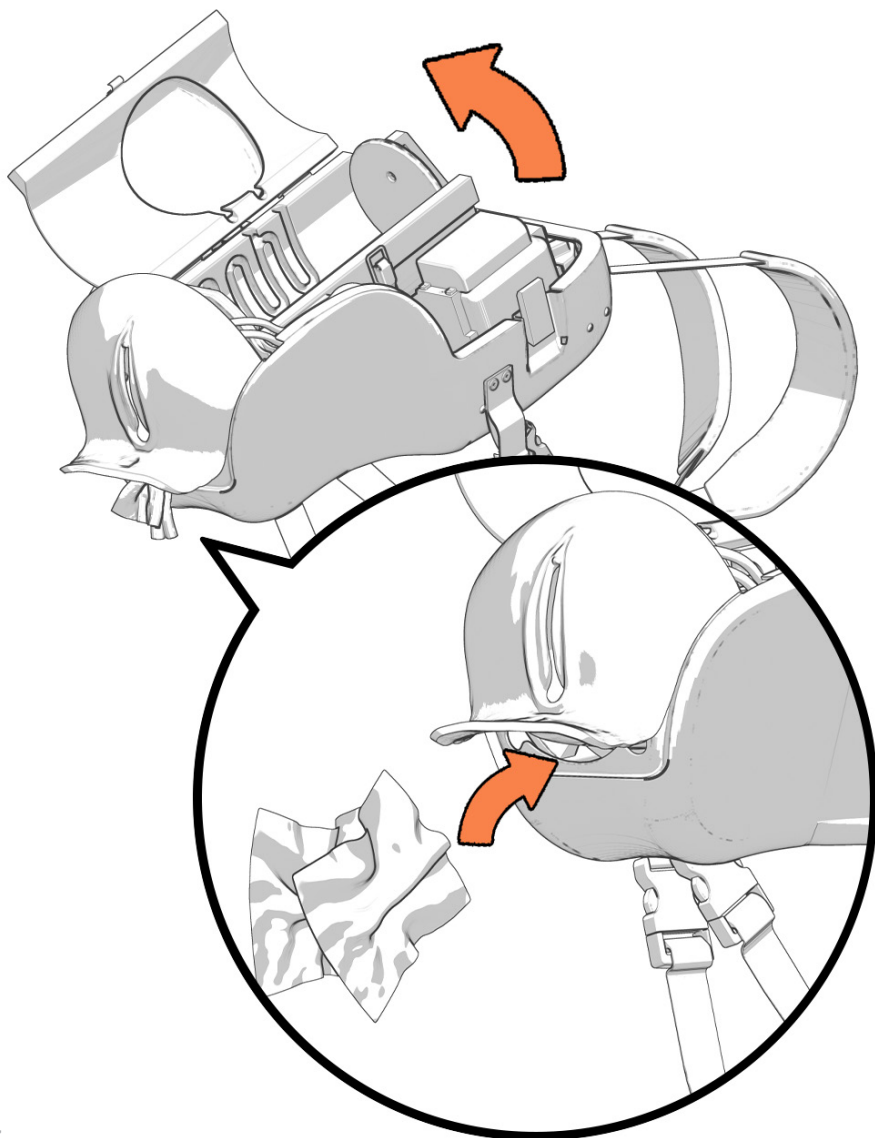
b

Absorb any fluids that are left in the pocket right inside the genitalia



C Tilt device forward, put cloth or paper towel in front of device underneath genitalia to collect any fluid that leaked to the bottom of the device

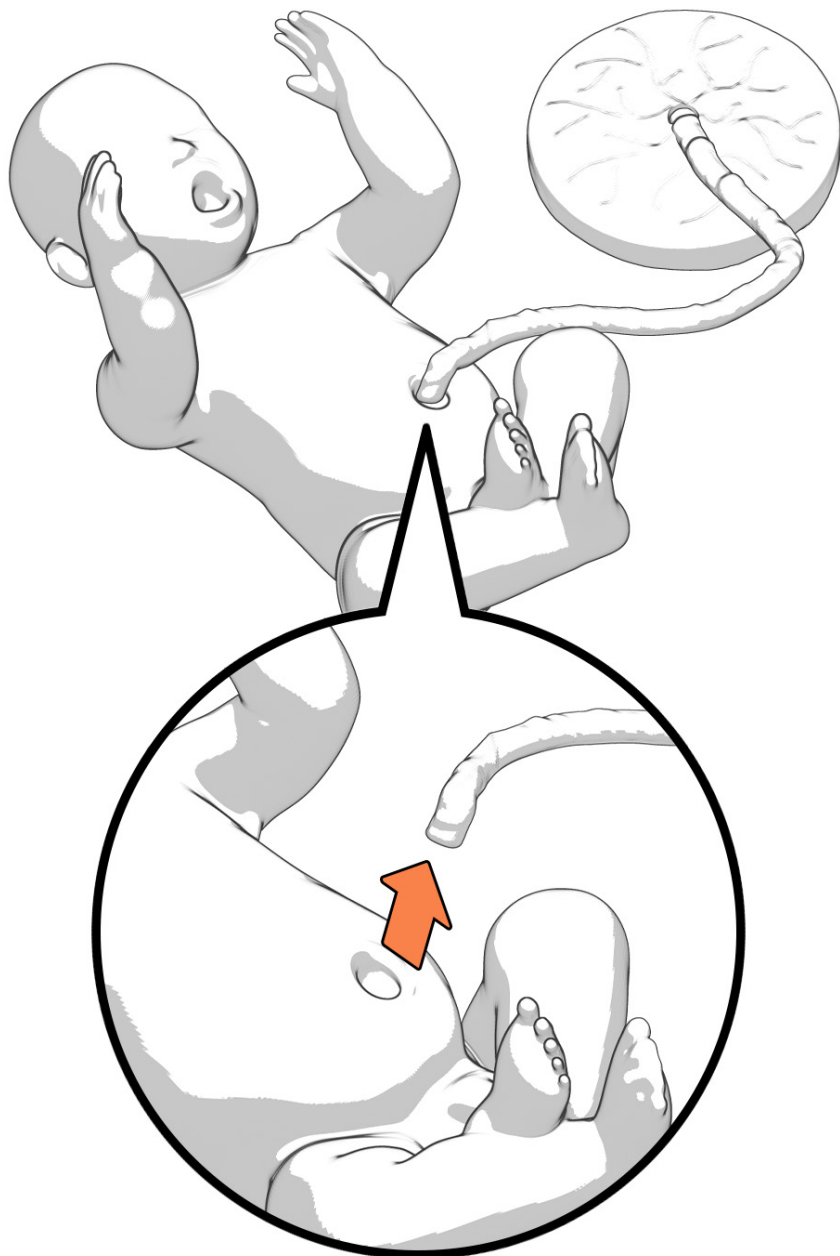
i If there is a lot of blood in this part of the device, it might mean that you are running blood when the baby is at later stages of birth. You can prevent blood in the system by not running fluids between the 3rd contraction and when the baby is born



d If you leave some fluids in the device, or do not wipe it down, it is ok. Avkin fluid is antimicrobial and will not grow any mold

e Baby clean up

i Remove the umbilical cord if desired for storage



ii

Wipe down the baby and placenta with a damp cloth, cleaning wipe, or hand sanitizer



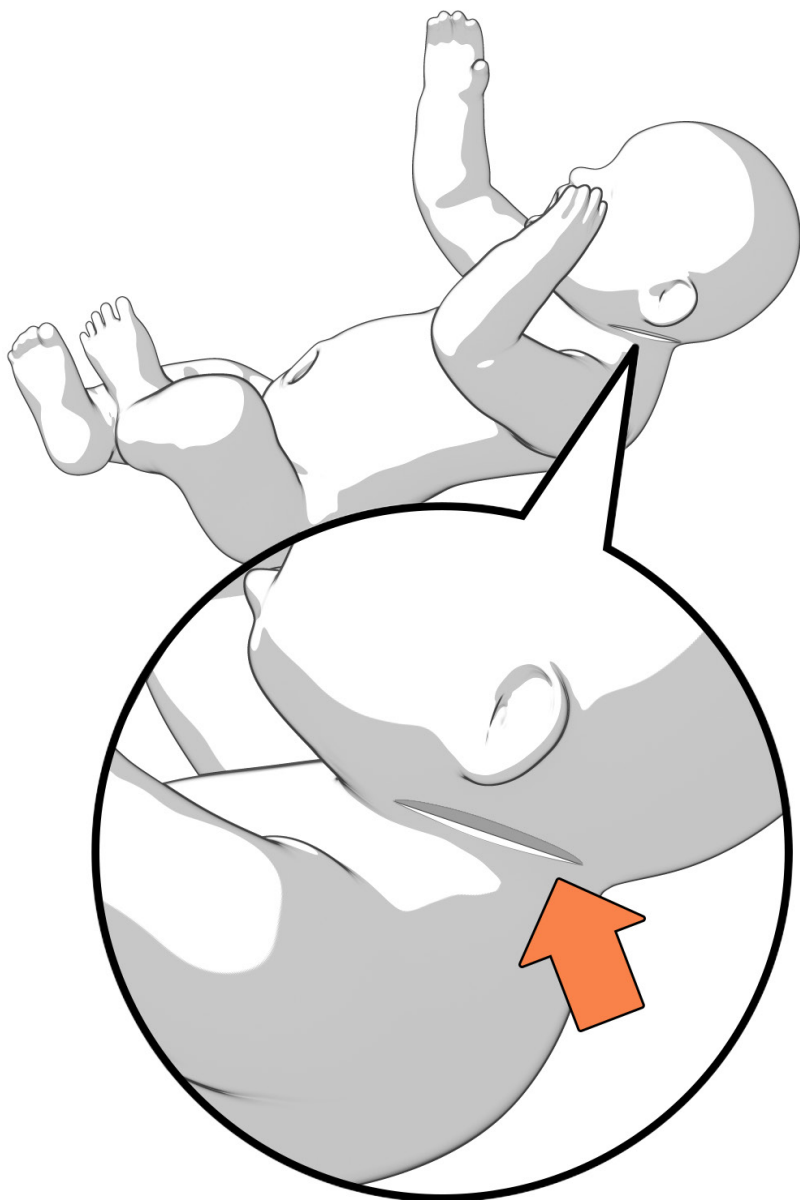
iii

There may be some vernix in the mouth, use the cloth/wipe to remove that as well

2 Long Term Clean Up

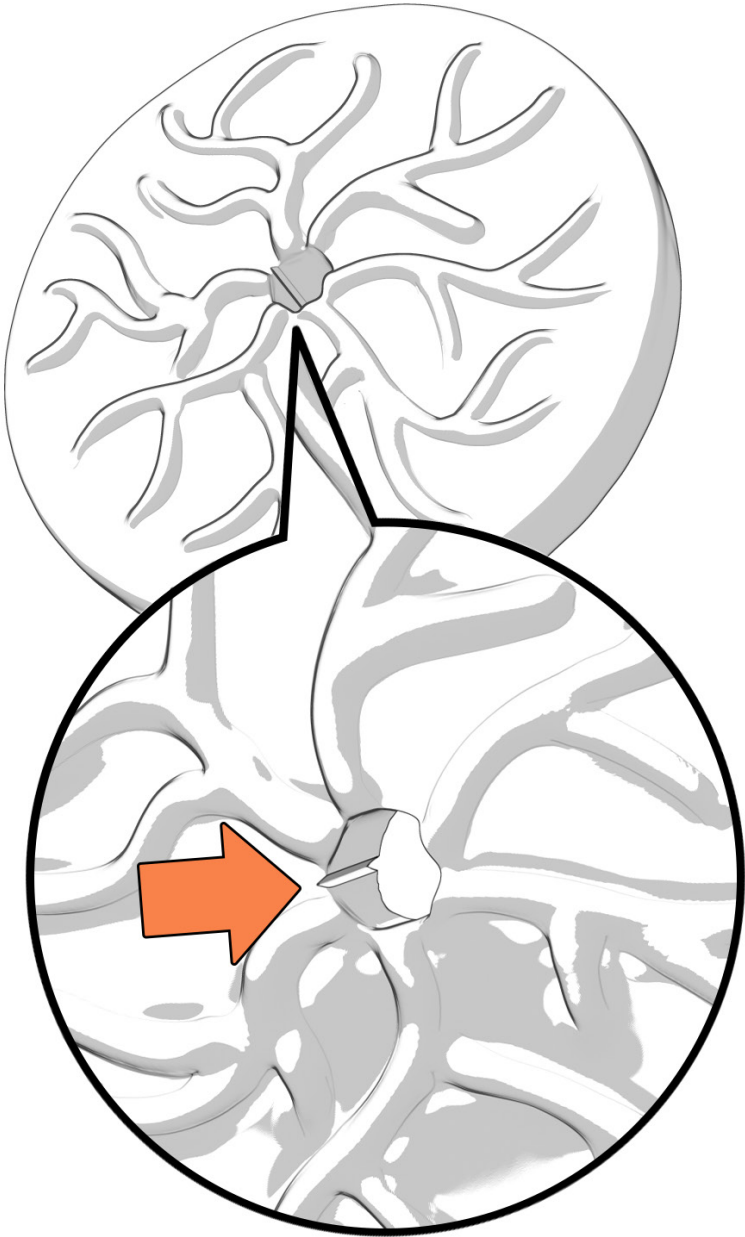
a Monitor Baby and placenta for micro tears

i Tears on baby may appear around neck, and at each joint. You may need to stretch the silicone slightly to see the tear forming





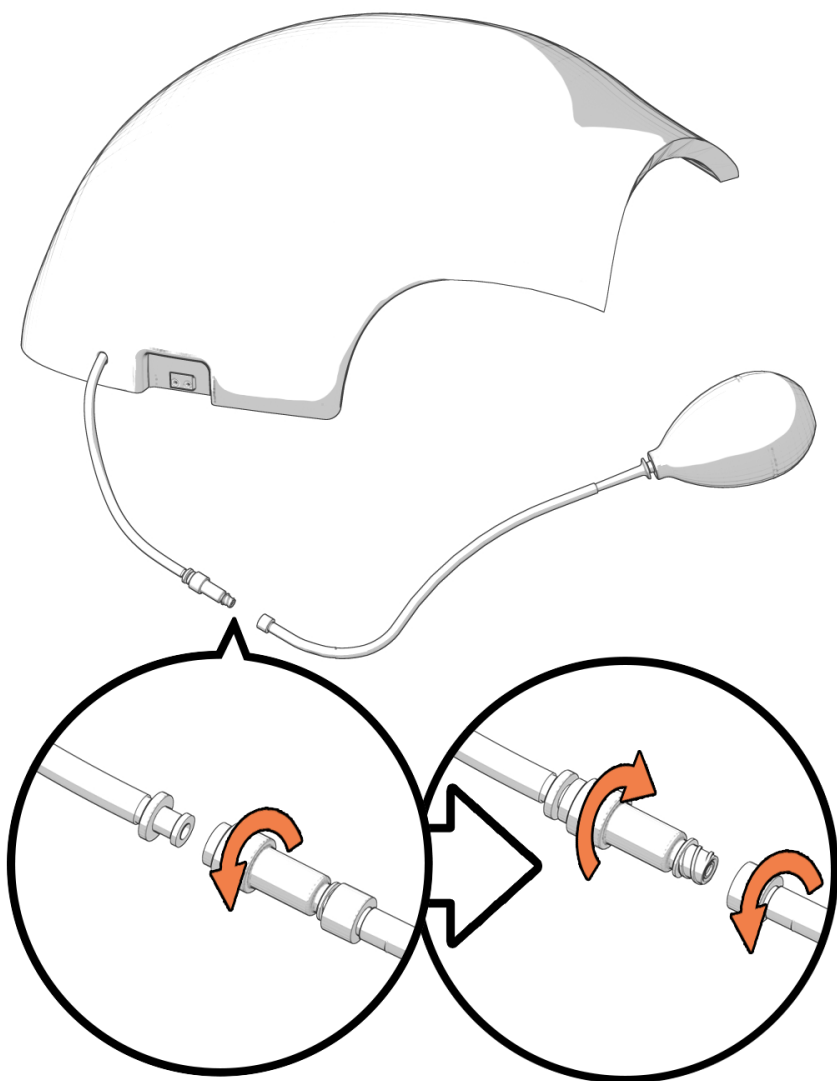
Monitor the placenta with the umbilical cord removed.
You may find tears in the center hole of the placenta



Adding silpoxy to those locations will increase the lifespan
of your baby and placenta

b Belly

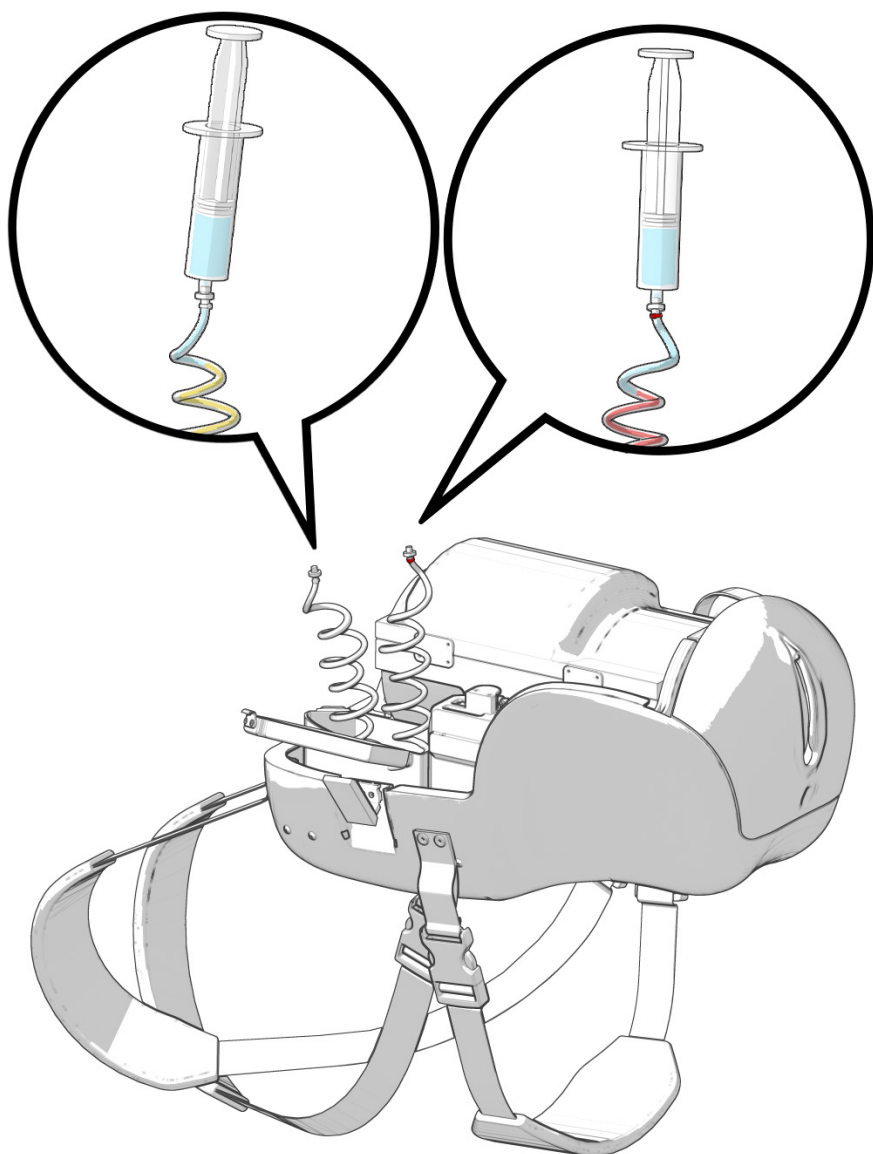
- i** Disconnect bulb from device on belly side of white connector to allow air to escape from the contractions/uterus, then reconnect the white piece



- ii** To clean the silicone belly and genitalia, wipe down with a cloth, use hand sanitizer or alcohol based cleaning agent if needed. To remove tackiness on belly or genitalia, use baby powder or cornstarch (use unsweetened cocoa powder for dark tone skin)

C Fluids

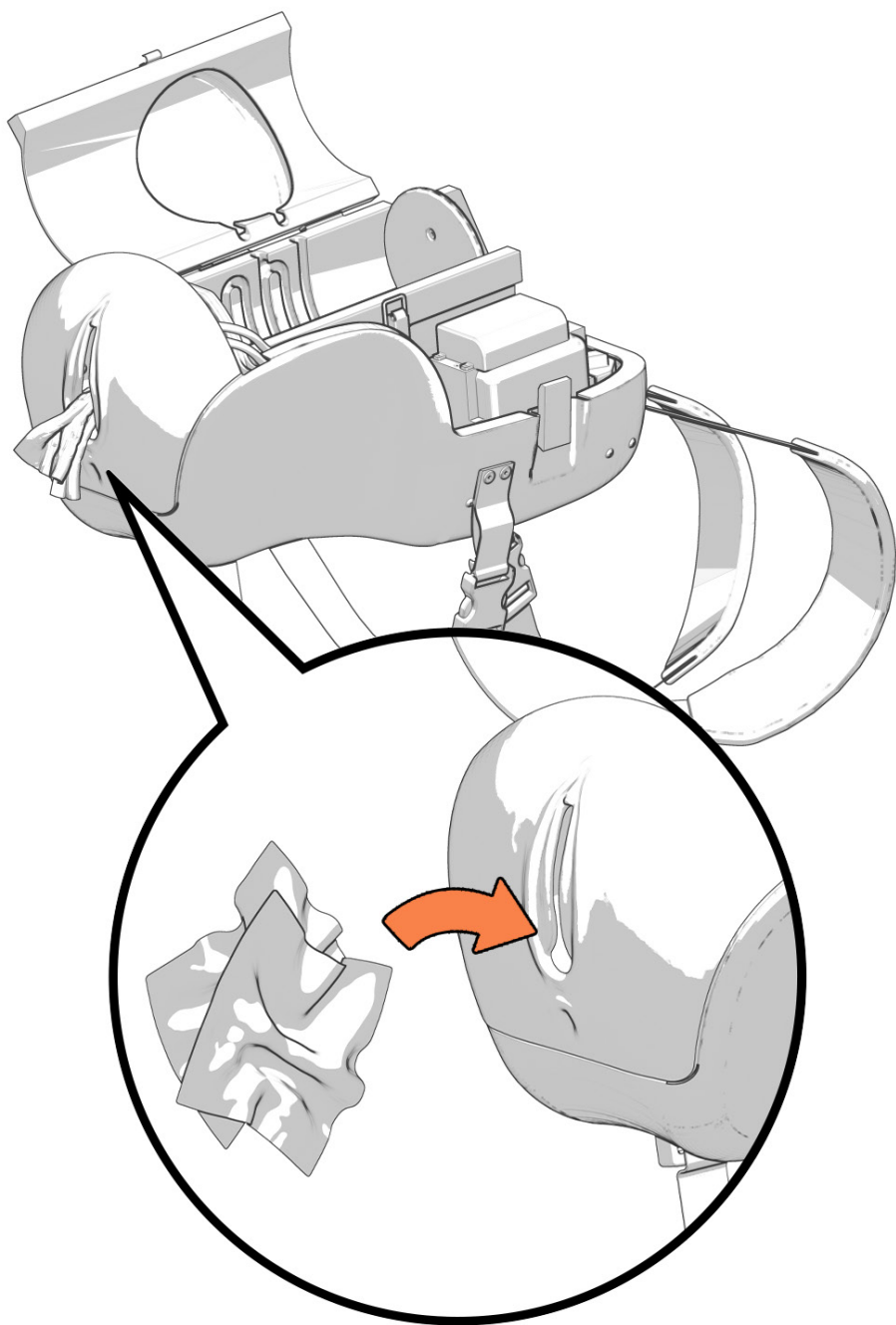
- i Remove fluids and flush with distilled water either by putting the ends of the tubes in a little cup of distilled water or fill up a syringe and connect to each tube



- ii If you are not using the Avkin fluids, flush with alcohol diluted with distilled water



Put paper towels in genitalia to absorb any fluids that you just flushed through

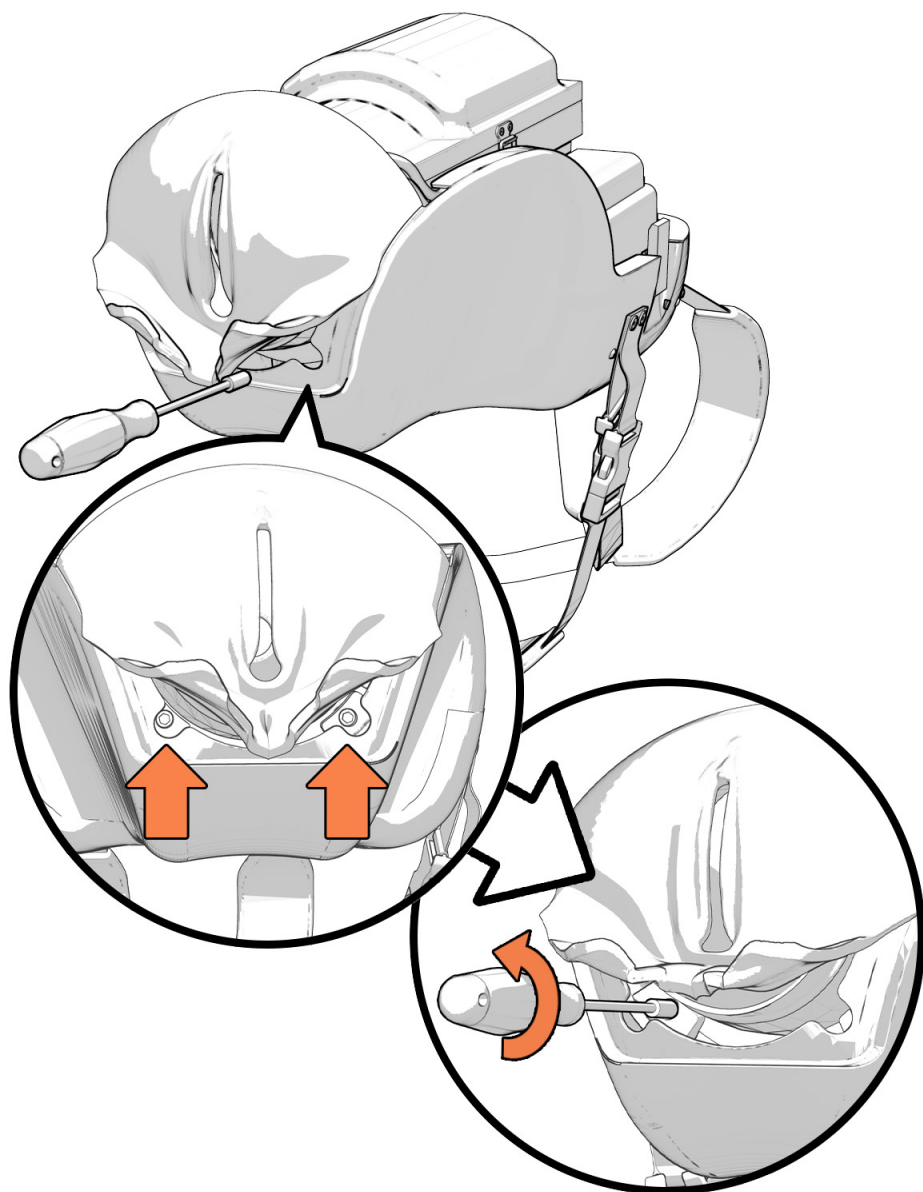


d

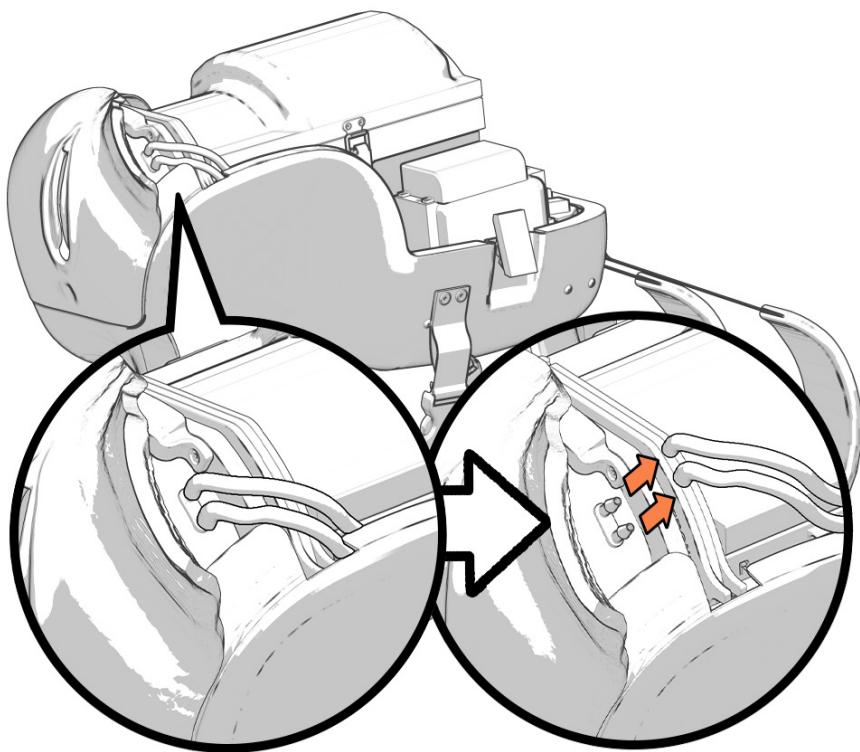
Remove genitalia and cervix, clean thoroughly and inspect for micro tears

i

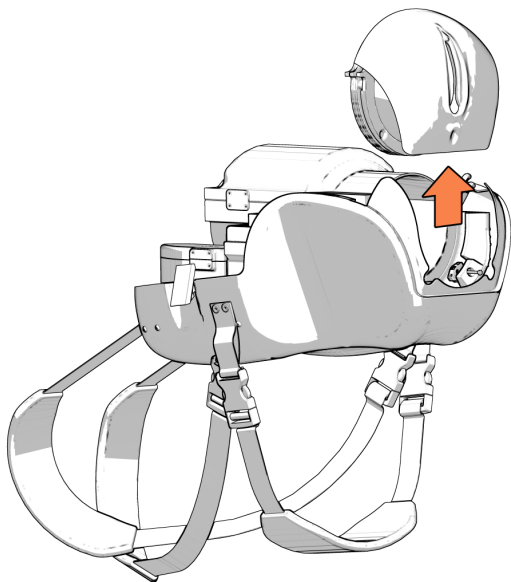
Unscrew two screws at the bottom of the genitalia by lifting the bottom skin flap of the genitalia and inserting the screw driver until you hit the screw. Unscrew until you feel resistance



- ii Disconnect the two tubes that are going into the top of
genitalia

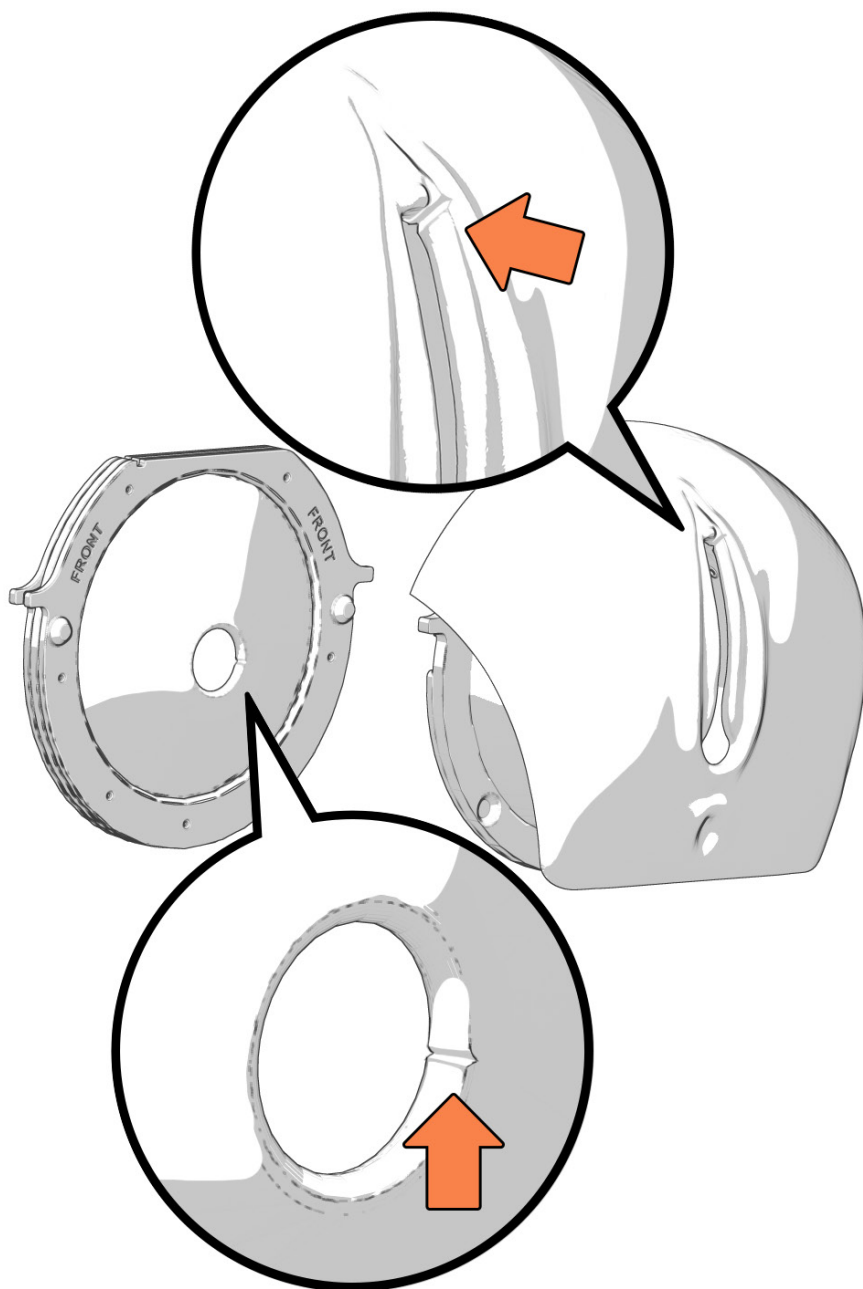


- iii Pull up on the genitalia and cervix to remove



iv

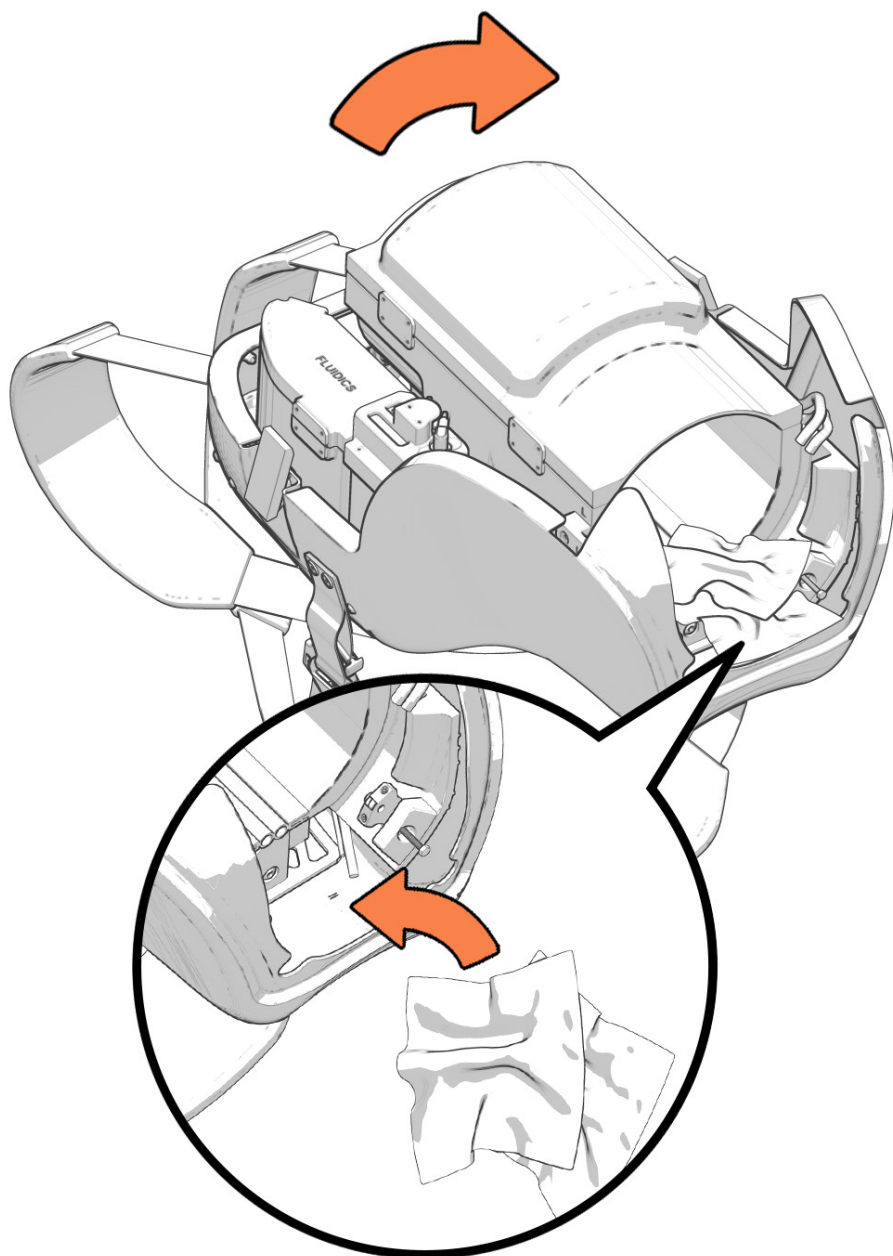
Replace cervix if you see any micro tears around the inner hole - micro tears on the cervix turn into big tears very fast (see next step)



v

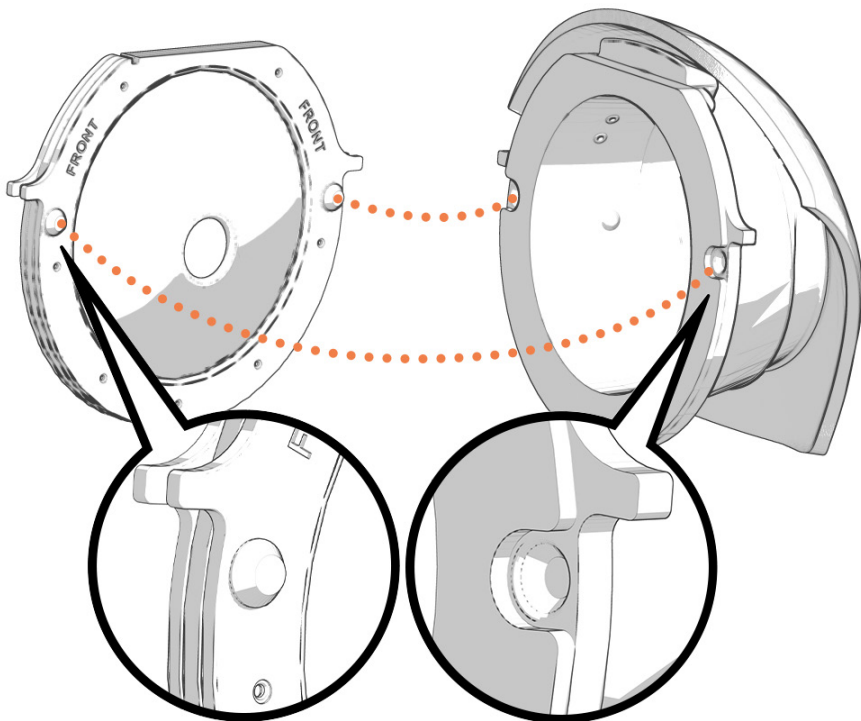
Repair with silpoxy or replace genitalia if you see micro tears at the top of the opening

vi Clean extra fluid under the genitalia and cervix

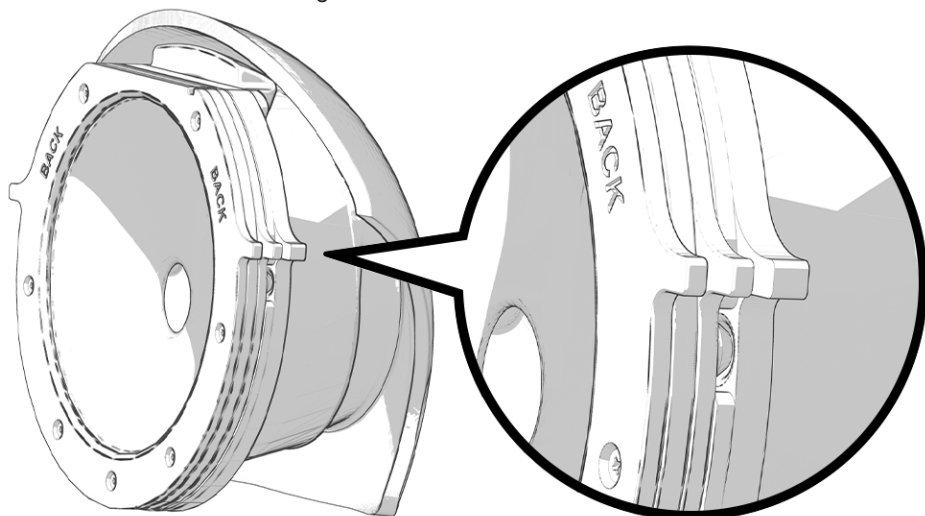


e Put genitalia and cervix back in device

i Align the notches on the front of the cervix with the notches on the back of the genitalia

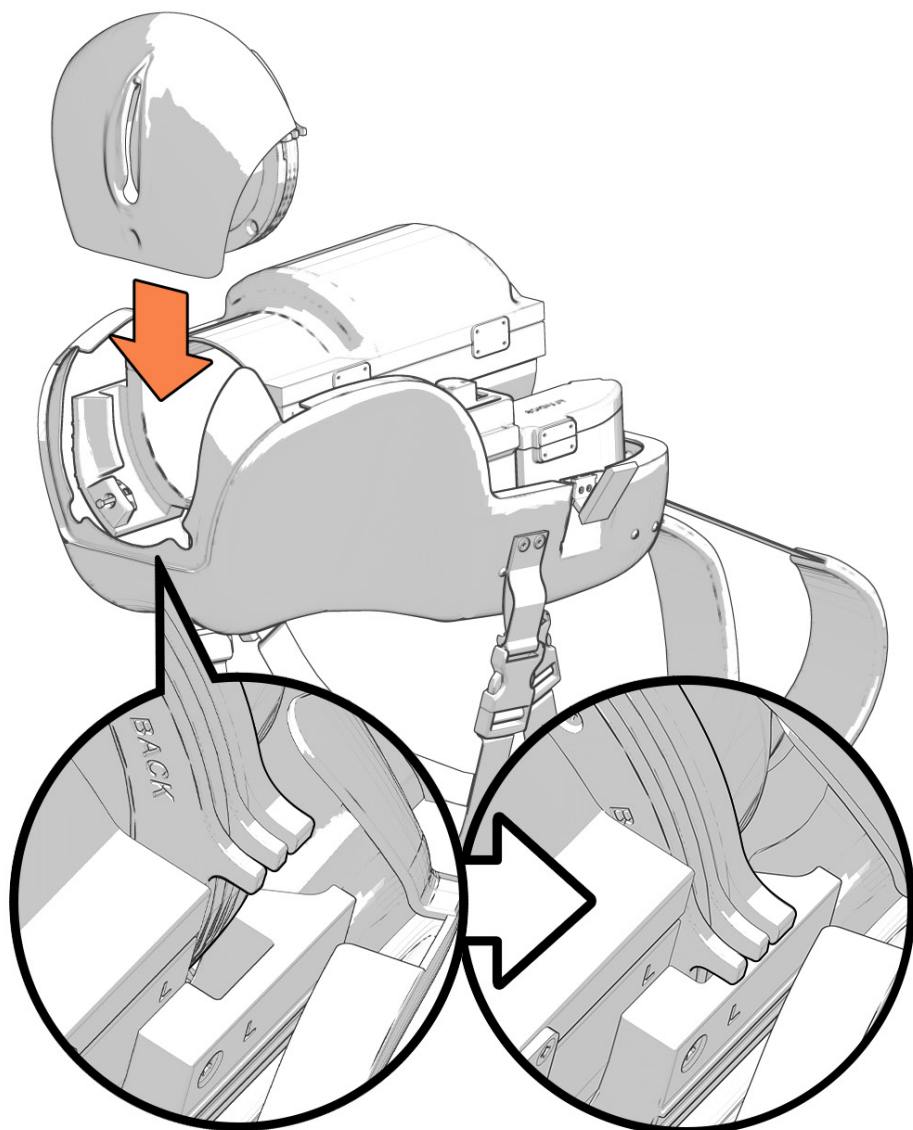


ii The side protrusions should also match between the genitalia and cervix



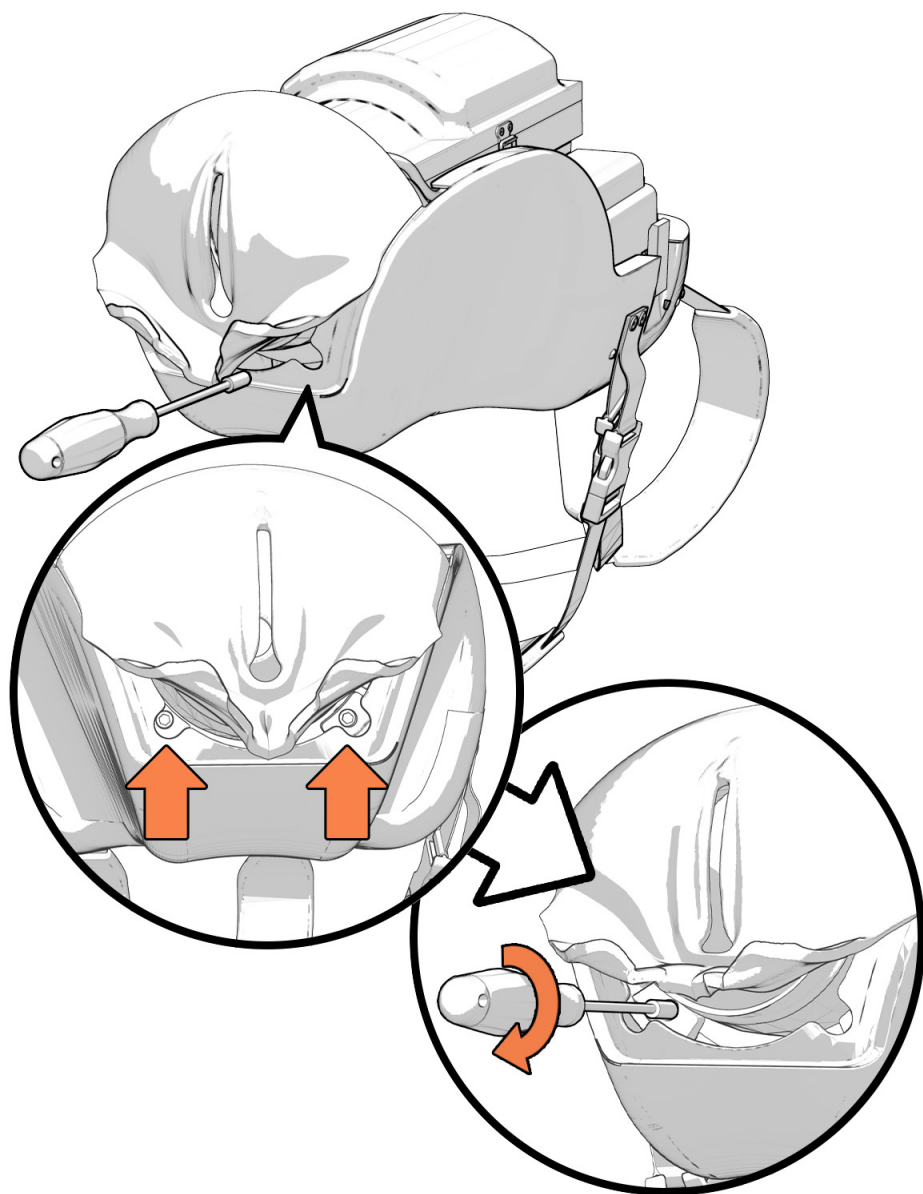


The side protrusions should lay on the edge of the baby tube, if the cervix and genitalia do not slide into the slot easily, loosen the 2 front screws more

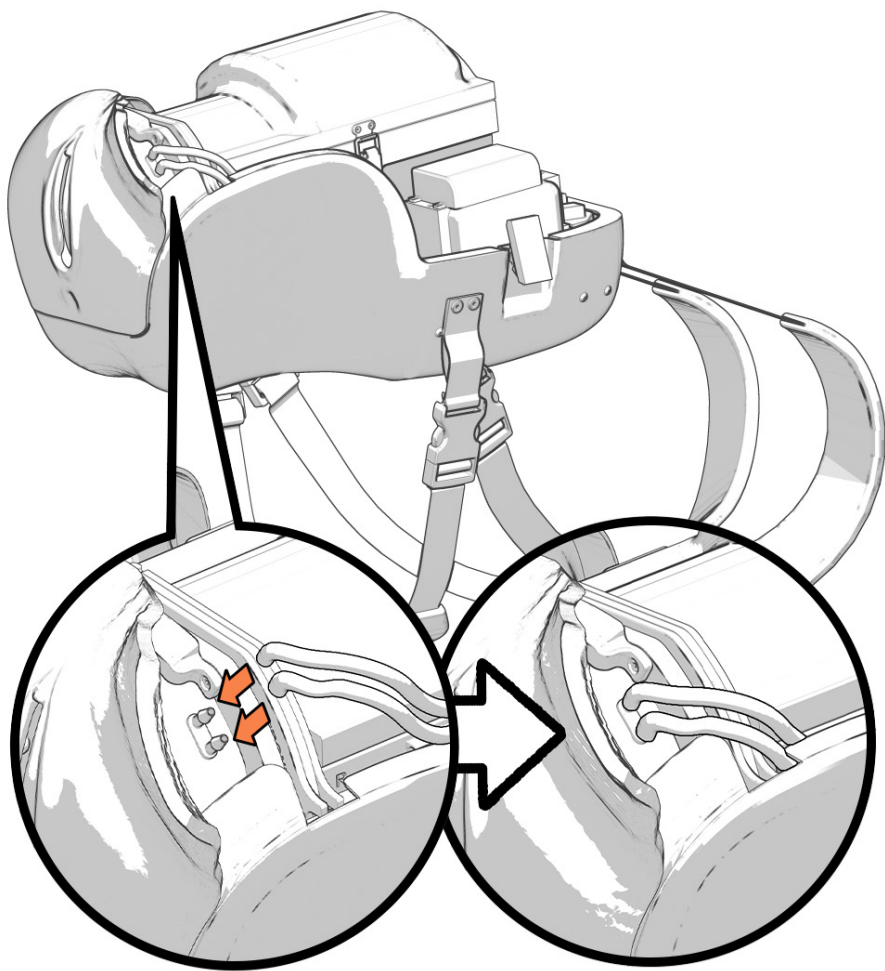


iv

Tighten the first screw until you feel resistance, then tighten the second screw all the way, then go back to tighten the first screw the remaining way to ensure alignment

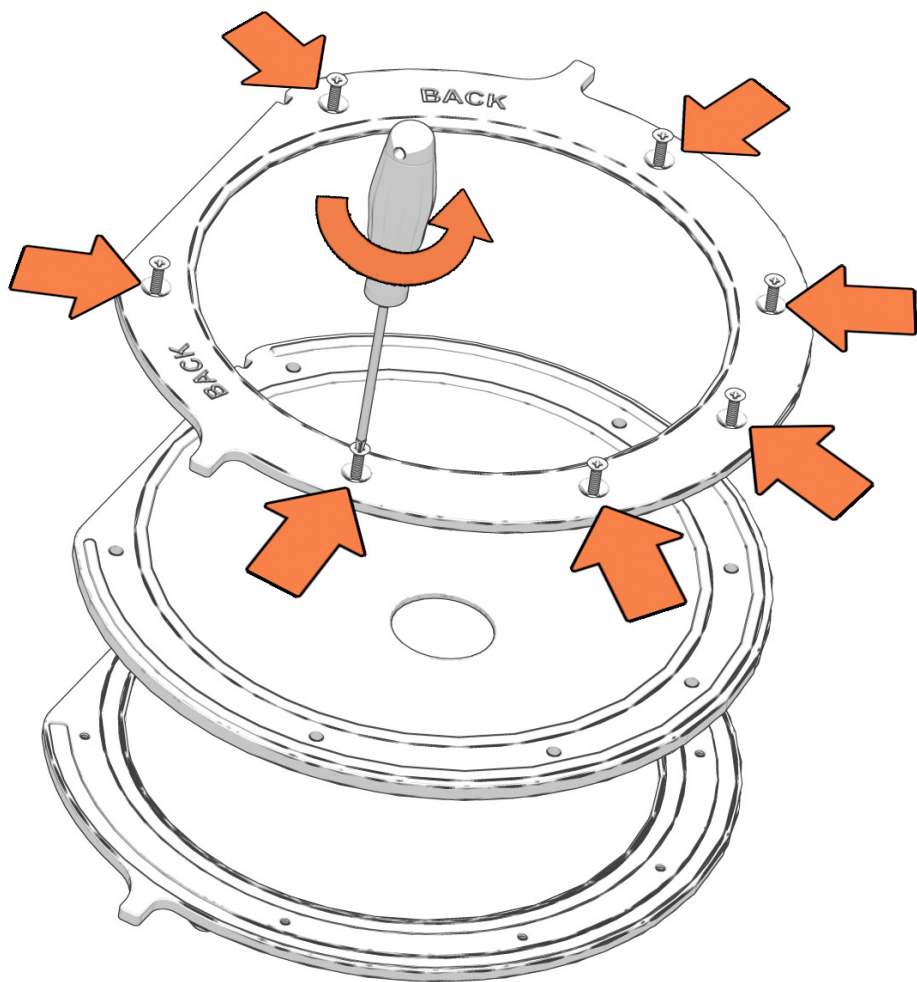


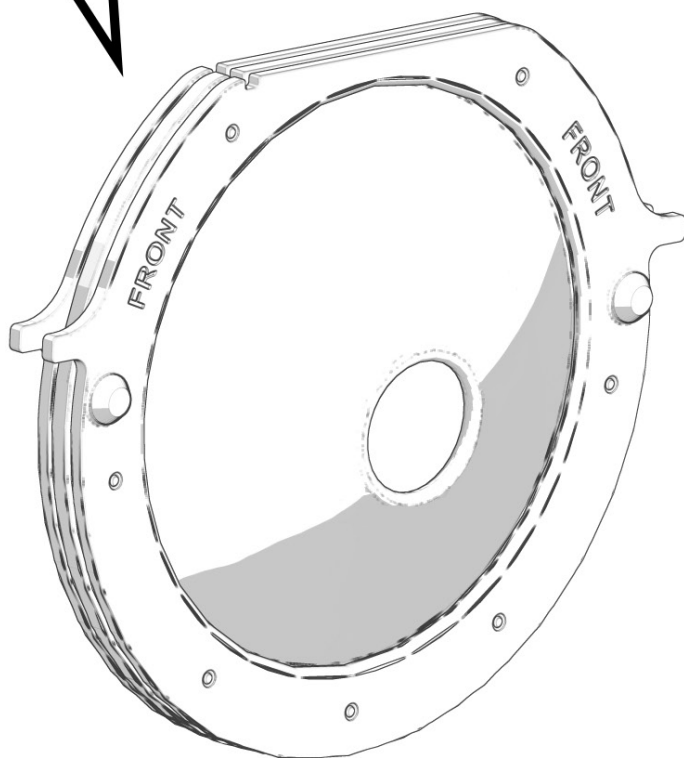
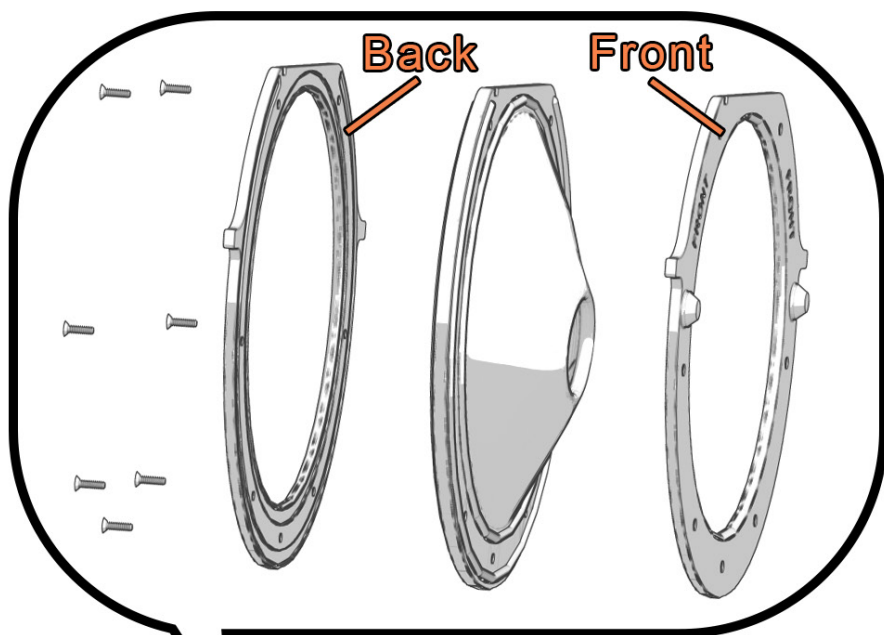
- v** Pull up on genitalia to make sure it is in place and secure
- vi** Attach fluidics tubes back to genitalia
- vii** It does not matter which tube attaches to which connector
- viii** You can use some lubricant if you have any issues connecting the tubes to the connectors



3 Replacing the Cervix

- a** If replacing the cervix, loosen the 7 screws around the edge of cervix. Put in your new silicone cervix with the dome facing towards the plastic cervix housing that says front. Tighten the screws into the cervix plastic.

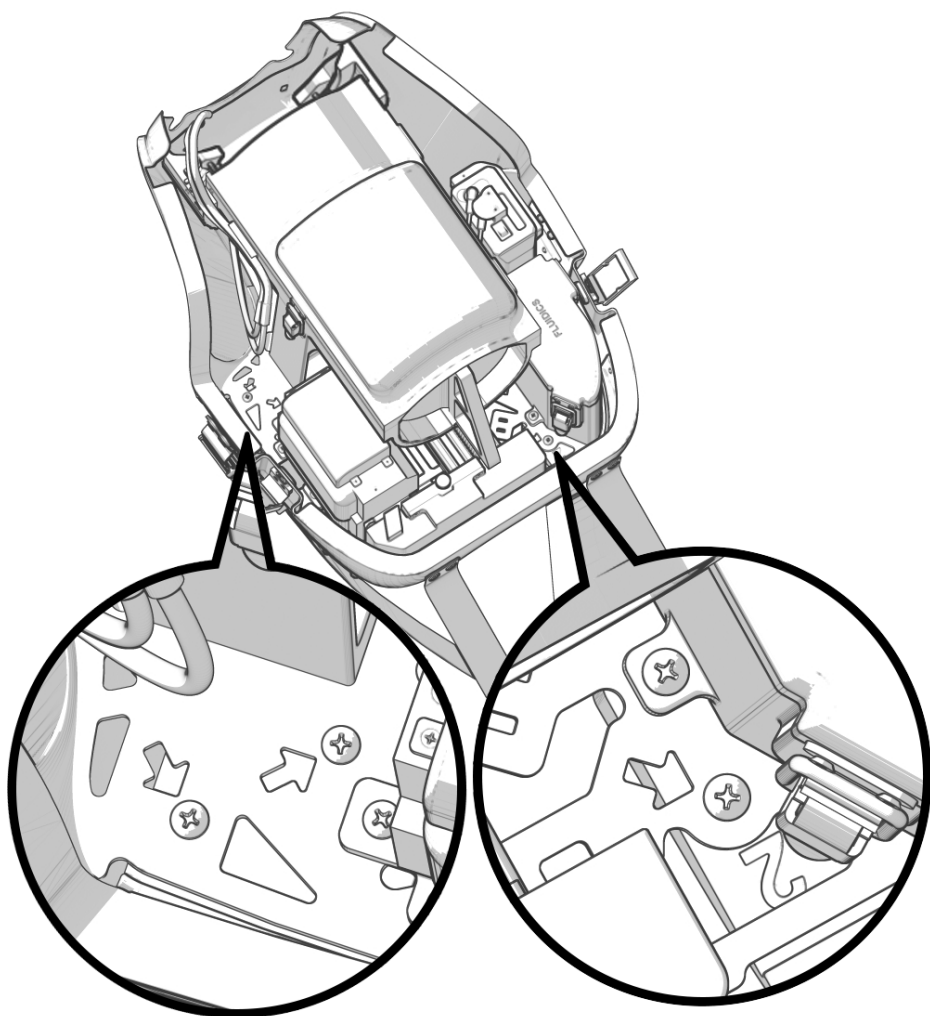




4 Optional Deep Cleaning

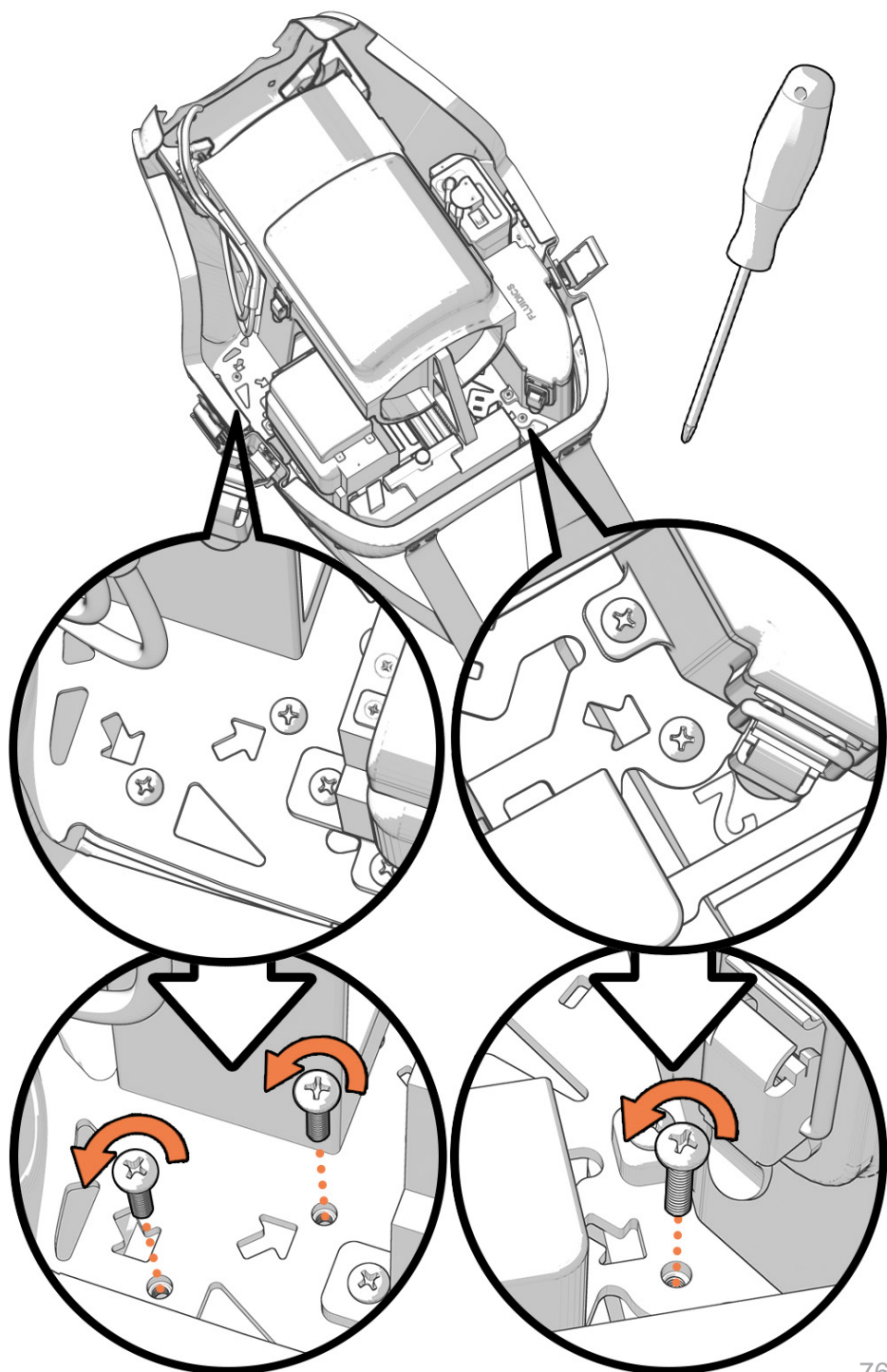
a This step is OPTIONAL and will have no direct impact on the functionality of the Avbirth, but since we are a simulationist owned and run company, we know you might like to do this step once a year during your big equipment cleaning

i With the genitalia and cervix removed from the device, identify the three screws in the baseplate of the device that have arrows pointing to them



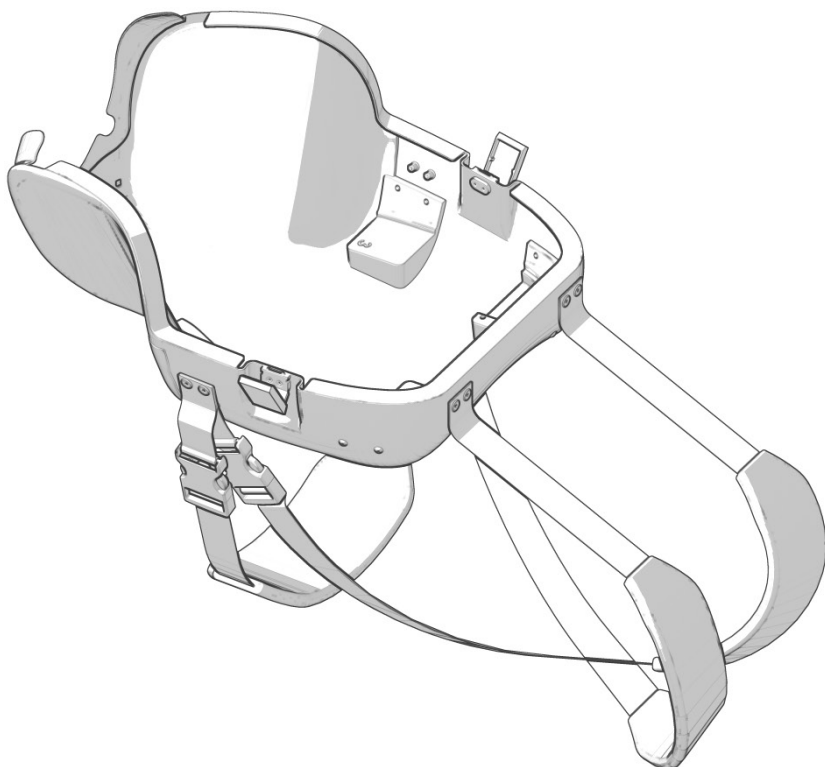
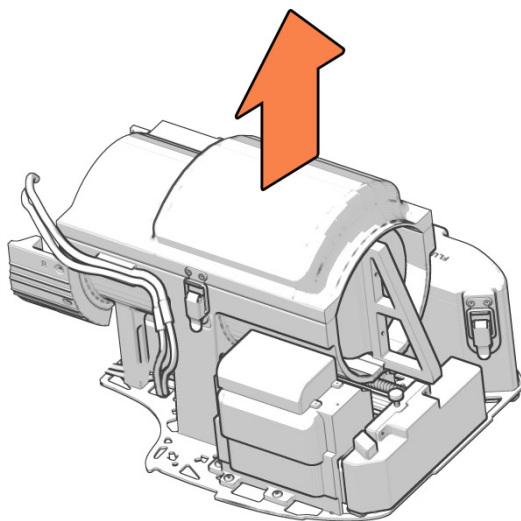


Unscrew these three screws



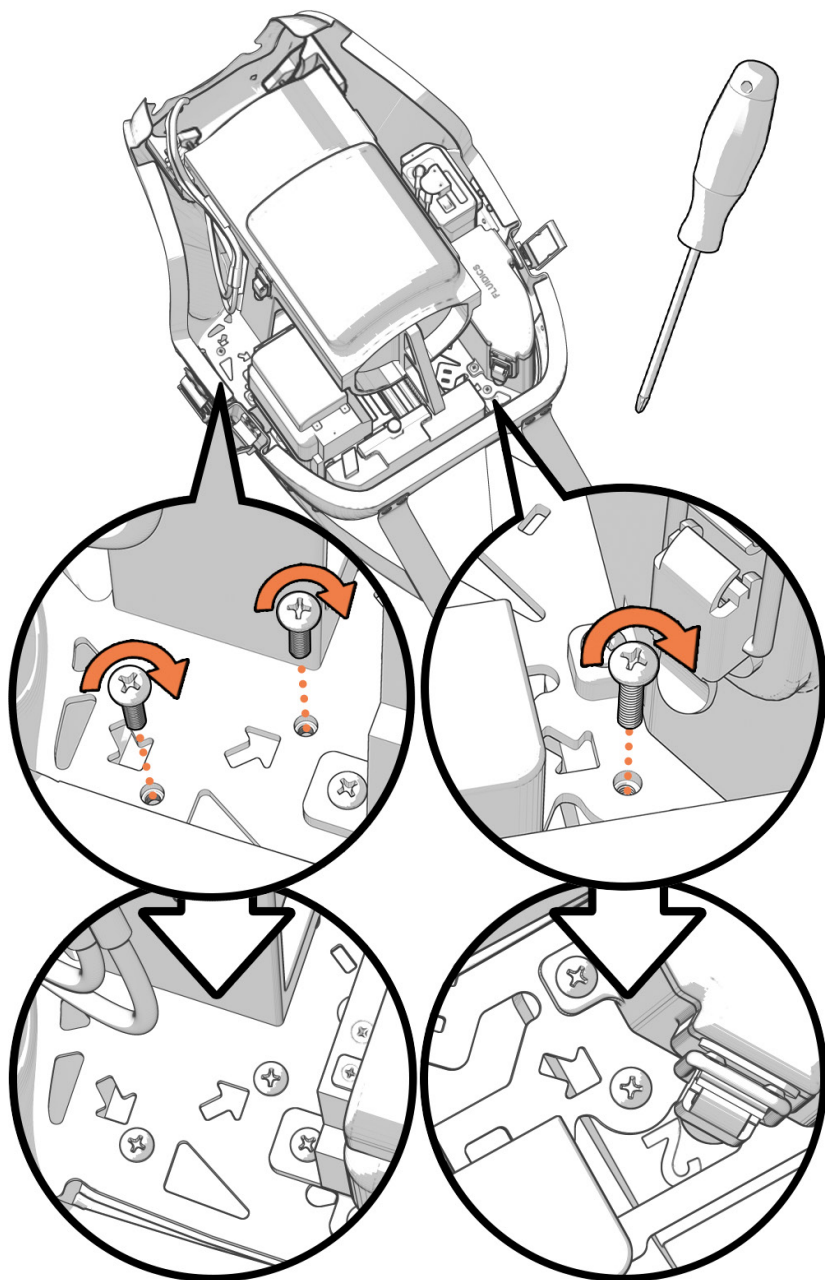


Lift the inner components of the device out of the carbon fiber base



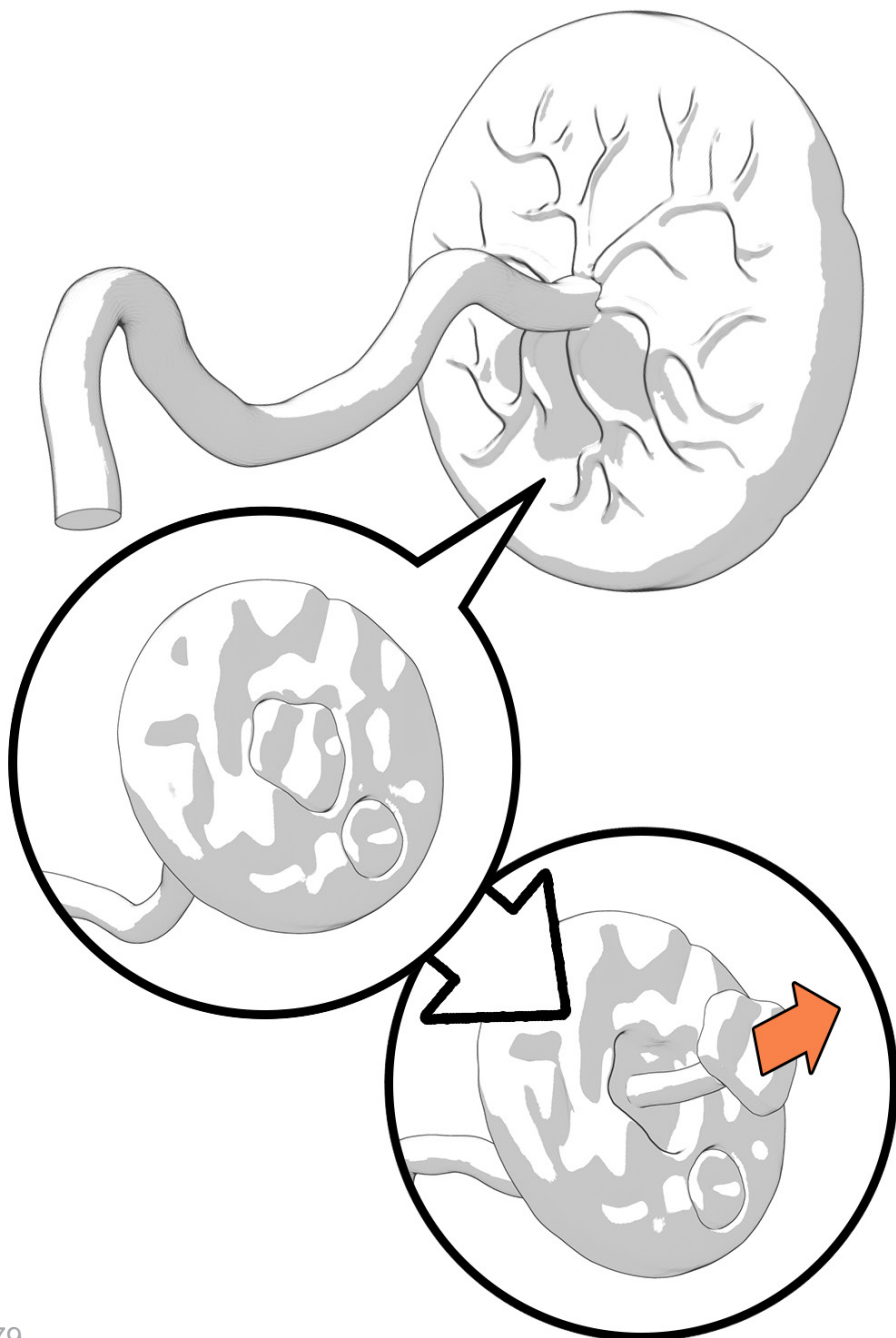
Clean the carbon fiber base by wiping it down

- v** Place the screws back in the holes they belong in
- vi** Reinstall the inner components of the device into the carbon fiber base
- vii** Screw the three screws back into place



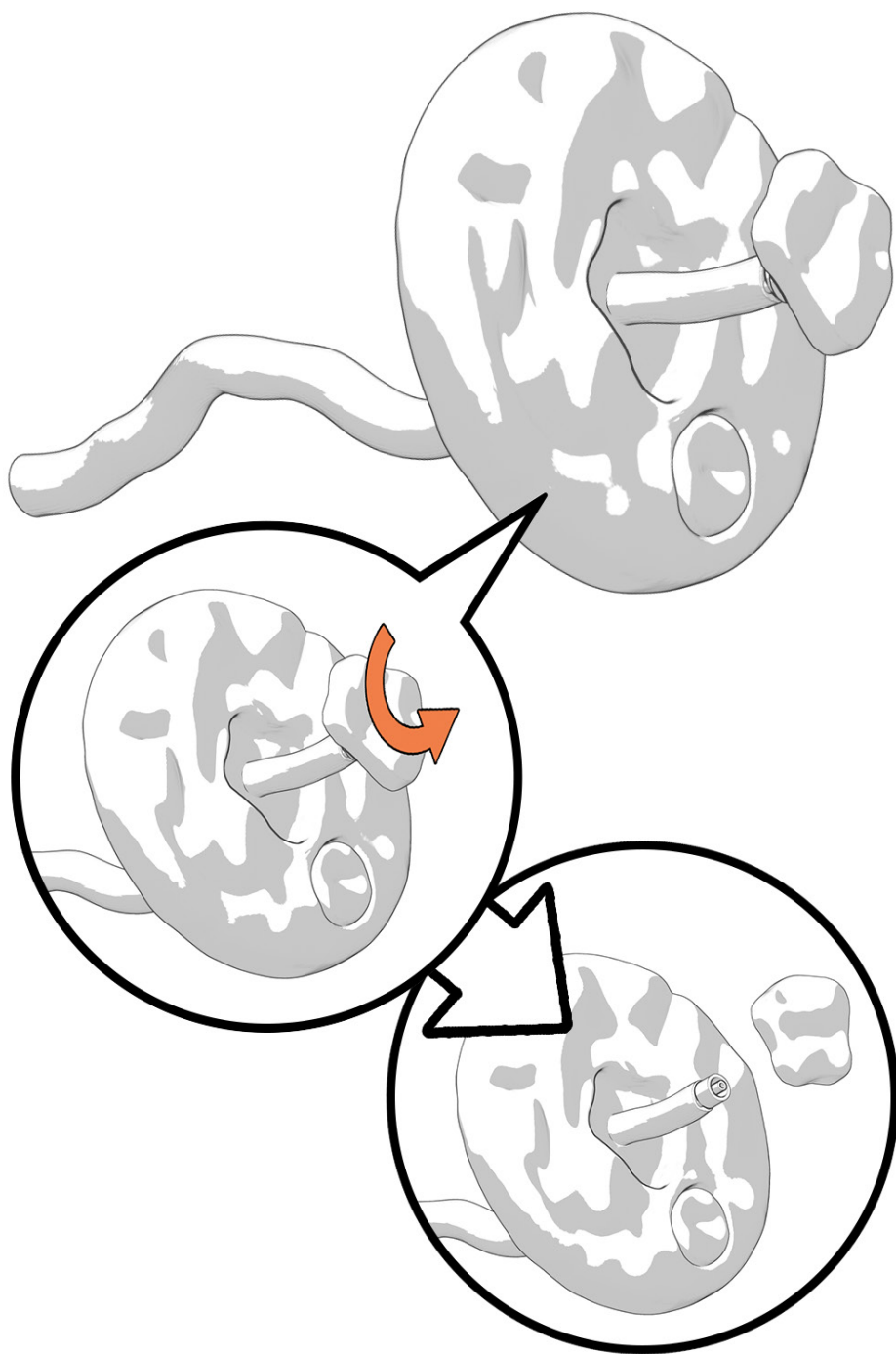
5 Replacing the Umbilical Cord

- a** Pull out the placenta cotelydon insert holding the umbilical cord



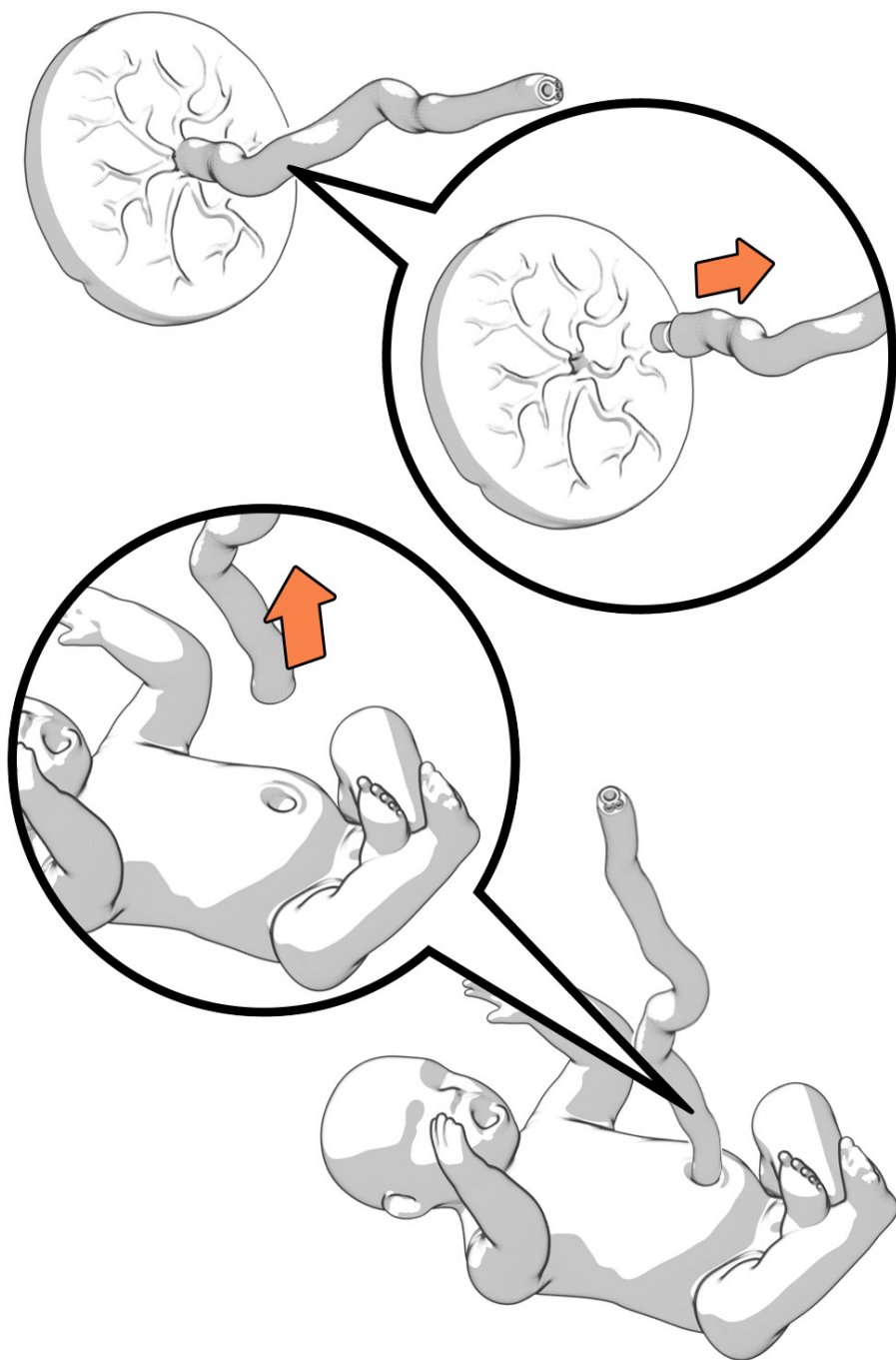
b

Twist the cotelydon off the umbilical cord



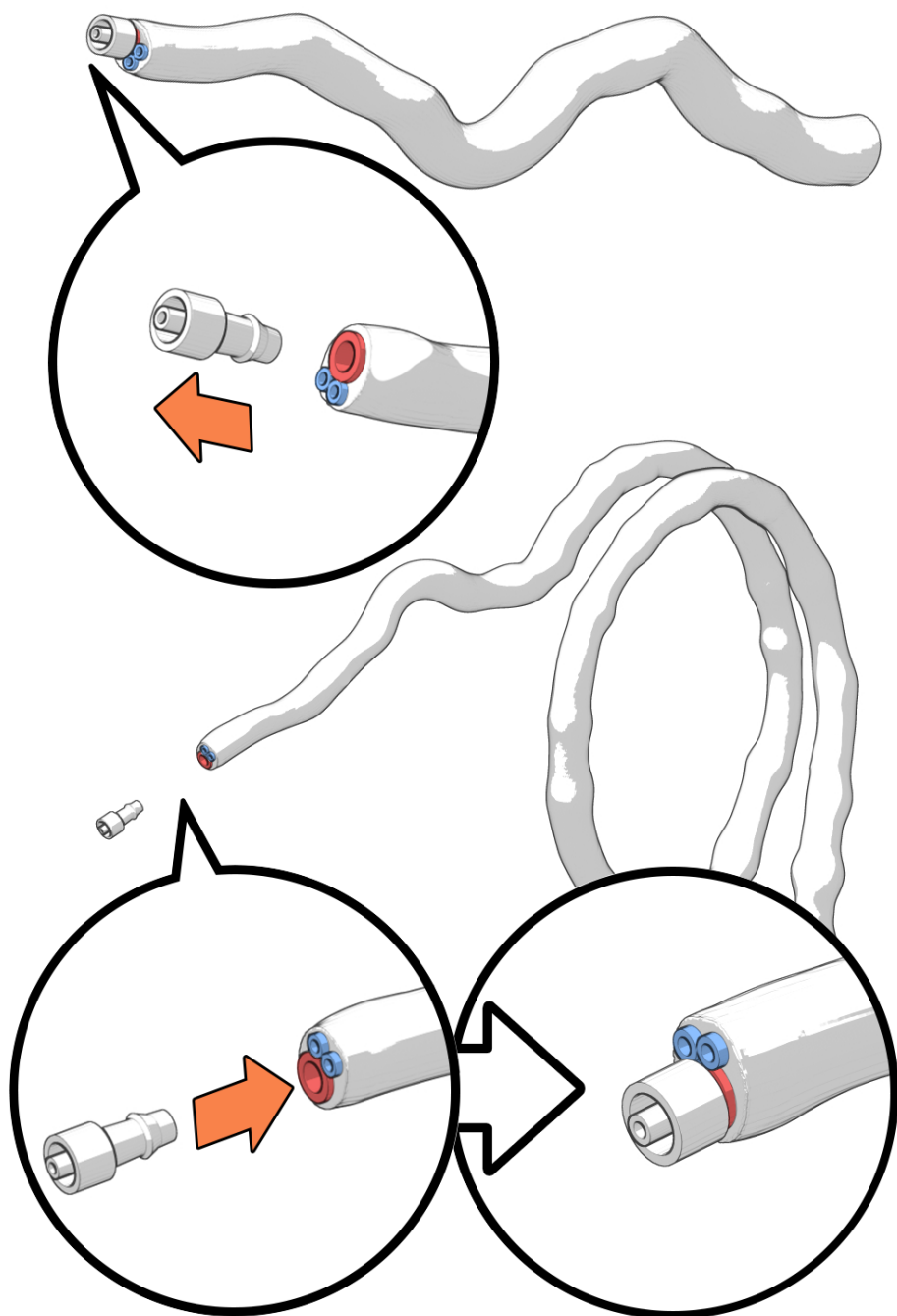
C

Pull the umbilical cord out from the placenta and baby's belly

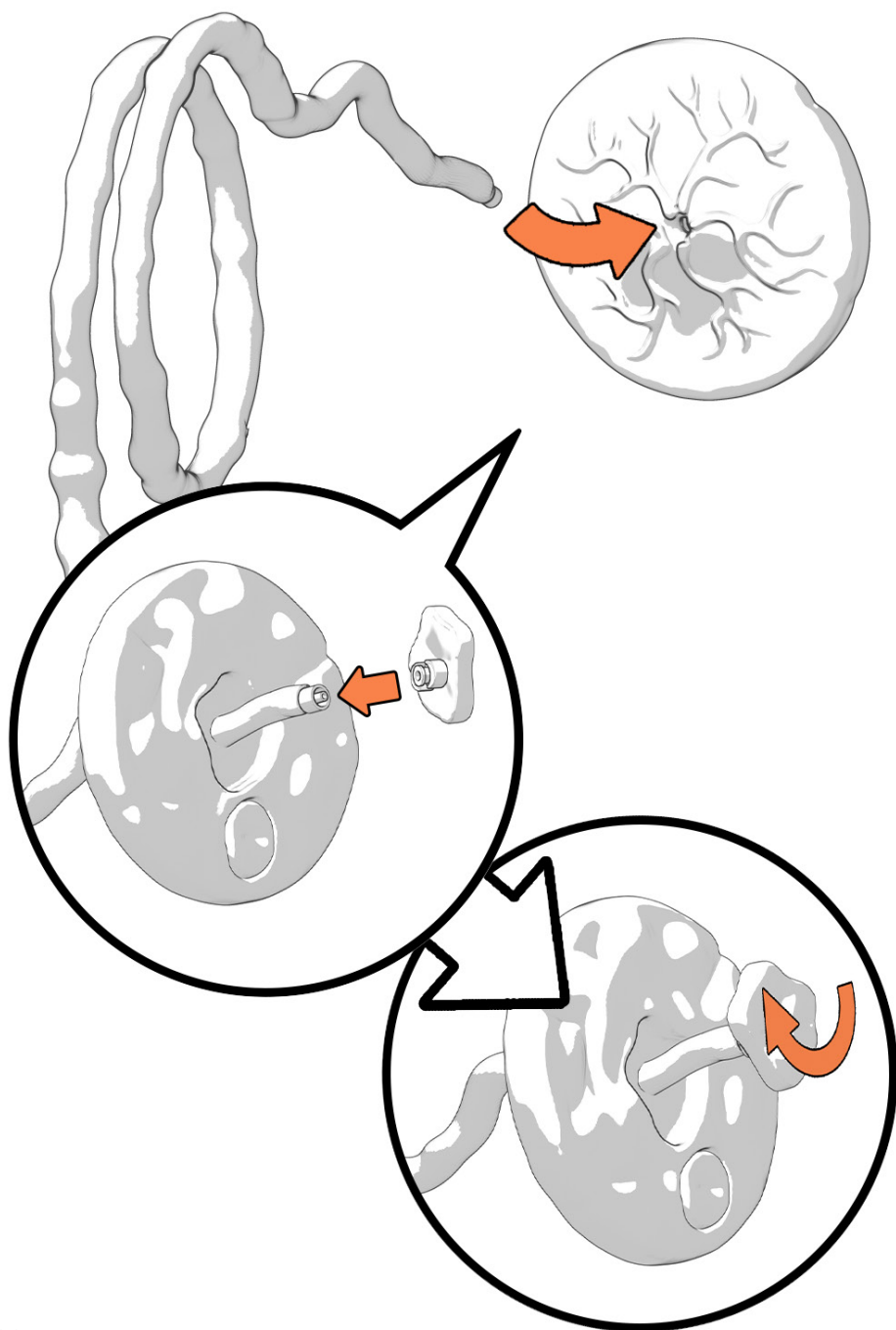


d

Remove the luer from the old umbilical cord and put it in the new umbilical cord, secure with ziptie

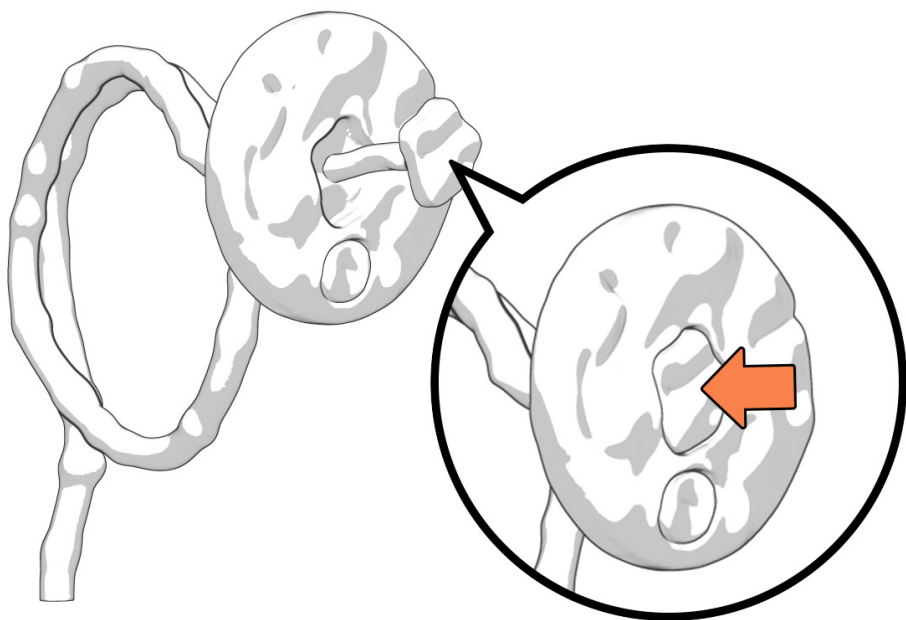


- e** Insert the luer end of the umbilical cord through the hole in the placenta, and twist into the cotelydon

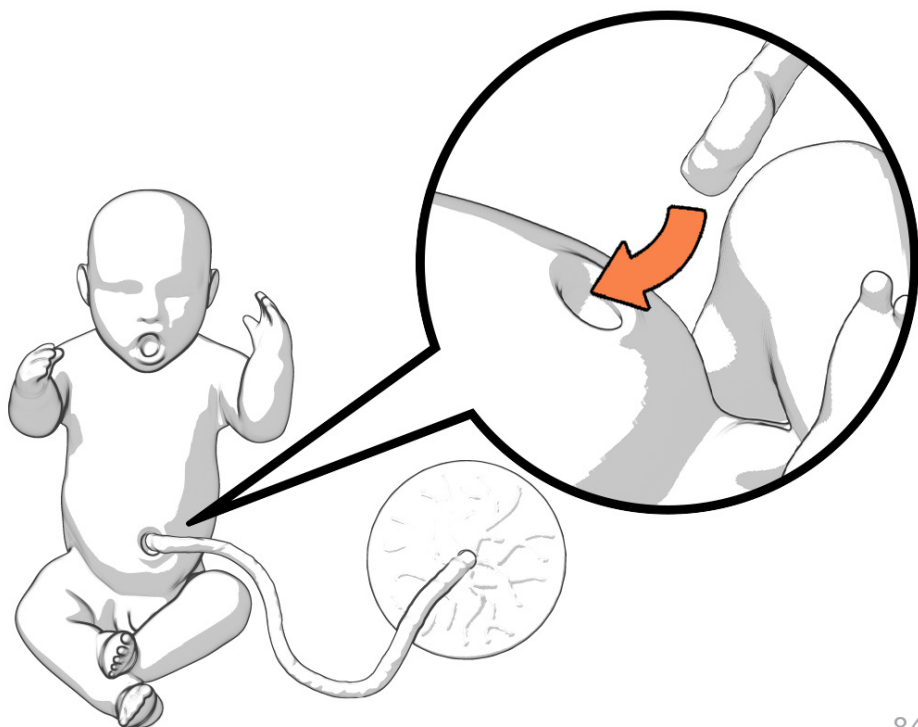


f

Place the placenta insert back into the placenta

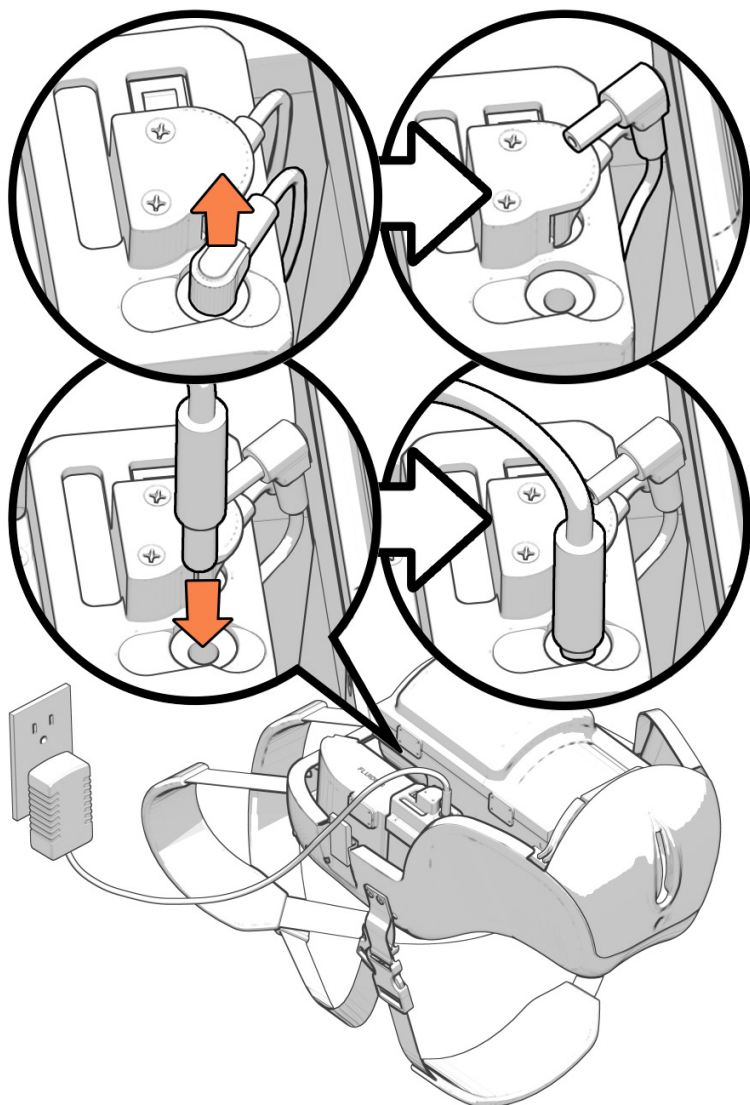
**g**

Insert the other end of the umbilical cord into the baby's belly



6 Charging

- a** On the Avkin App, a battery percentage is displayed at the top of the App
- b** The Avbirth battery lasts up to 30 simulation hours.
- c** To charge the battery, unplug the wire from the battery and plug in the charge cord.





AVBIRTH BATTERY SAFETY GUIDELINES



The Avbirth contains a rechargeable 24V Lithium Ion Polymer Battery that could cause injury if mishandled. Follow the proper handling procedures for the Avbirth, its battery, and its charger:

- Do not charge the Avbirth with any other charger than the one that came with it
 - Call Avkin for a replacement if you need a new charger
- Do not charge or use unattended
- When charging, keep away any flammable or conductive materials (ex: textiles, paper, metal, etc.)
- Do not disassemble the Avbirth battery
- Do not puncture the Avbirth battery
- Do not immerse the Avbirth battery in water or other liquids
- Do not expose the Avbirth to:
 - Extremely cold temperatures (below freezing, 32 deg F)
 - Extremely hot temperatures (above 130 deg F)
 - Direct sunlight
 - Hot vehicles
 - Mechanical impact (ex: throwing, dropping, etc.)
- Do not use the Avbirth if its battery is damaged
 - Call Avkin for a replacement if you need a new battery
- Store the Avbirth in a cool, dry place
- Keep the Avbirth away from children - it is not a toy
- Refer to FAA guidelines for airplane transportation of devices with installed lithium batteries:
 - The Avbirth battery capacity is 82.88Wh, which falls under the 100Wh upper limit for a battery to travel in checked baggage on an airplane while installed inside a device
- Turn the Avbirth completely off (power switch on the battery)
 - It is off when all of the green lights are off
- Protect it from accidental power-on
- Pack it to cushion it from damage

Avbirth is provided by:



www.avkin.com