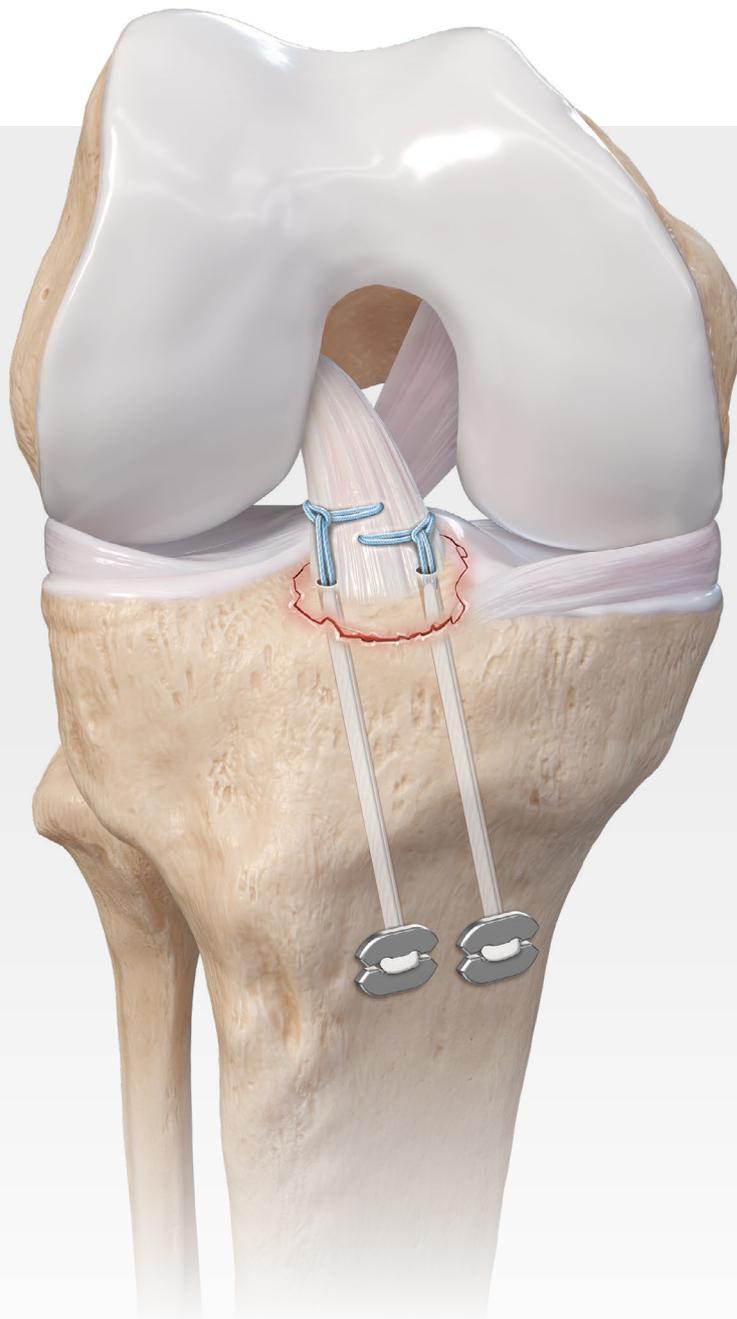


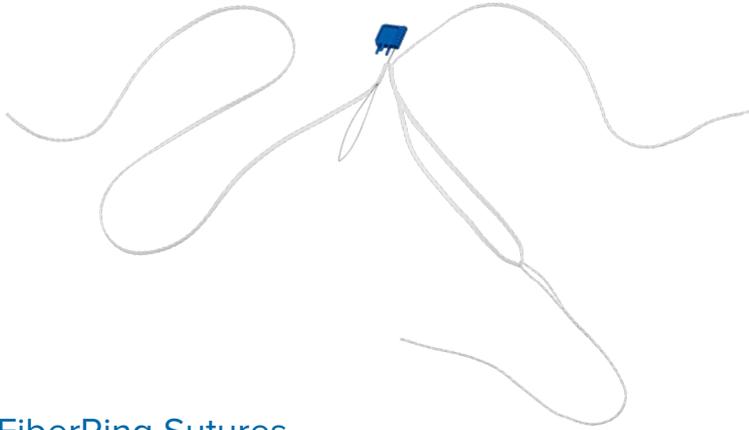
# Tibial Spine Avulsion Repair Using ACL Repair TightRope® ABS Implant and FiberRing™ Sutures

Surgical Technique



## ACL Repair TightRope® ABS Implant

The ACL Repair TightRope ABS implant allows for convenient repair construct assembly using FiberRing™ sutures through conventional arthroscopy portals at the level of the joint, combined with the ability to easily pass the Repair TightRope ABS implant through minimally invasive, 2.4 mm tunnels and using ABS buttons for retensionable, adjustable cortical fixation.



## FiberRing Sutures

FiberRing sutures make connecting the ACL Repair TightRope ABS implant to the avulsed ACL simple and straightforward for a retensionable anatomic repair. FiberRing sutures are available in multiple length options to facilitate surgeon suture configuration preferences and patient needs. For repairing tibial spine avulsion injuries, 35 mm FiberRing sutures are typically the preferred option.

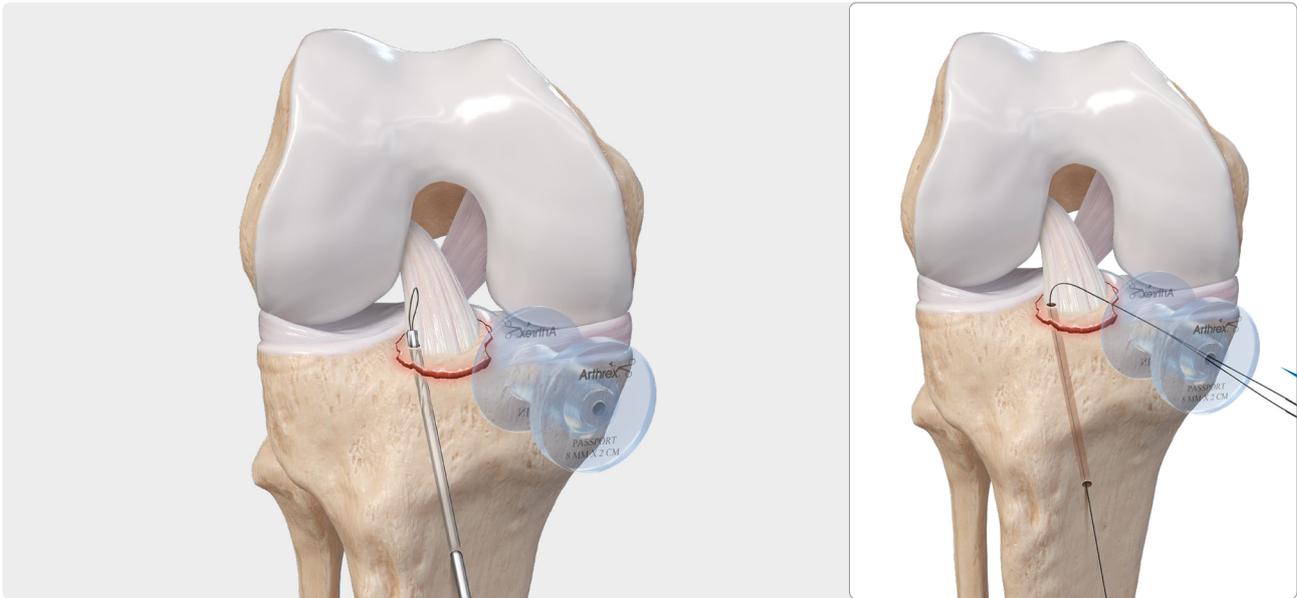


## Surgical Technique



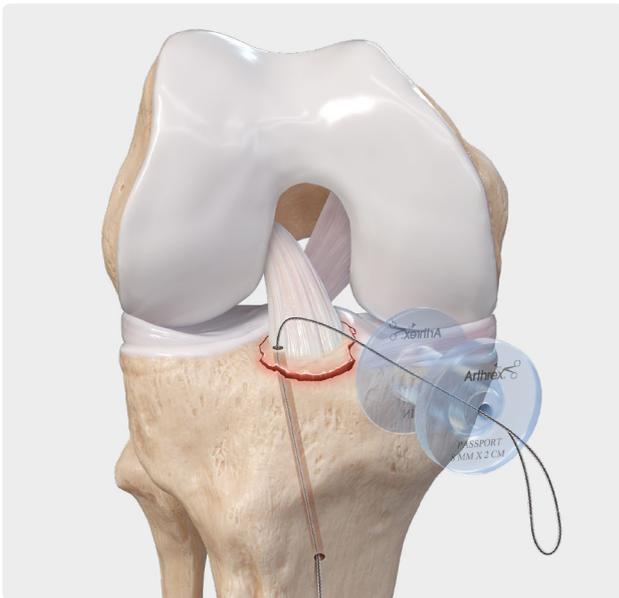
1

Place the tibial guide at the margin of the fragment and advance a 2.4 mm cannulated drill pin through the tibia until it is visible in the joint.



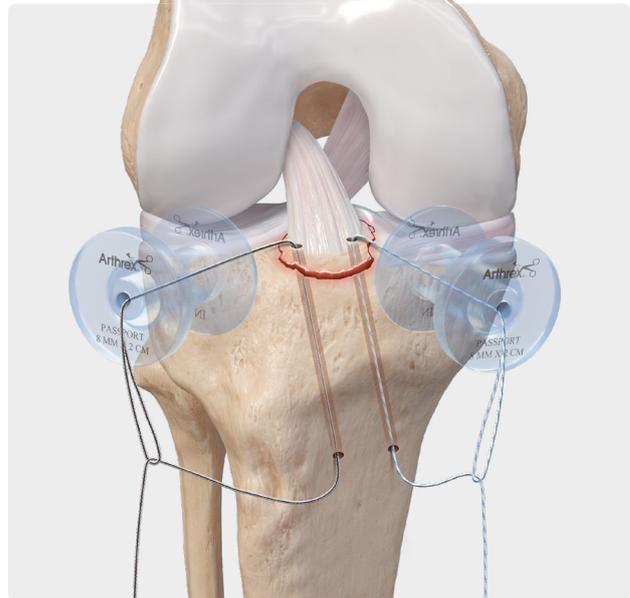
2

Remove the inner trocar of the cannulated 2.4 mm drill pin and advance the nitinol wire loop through the cannulated drill into the joint, then retrieve it through the PassPort Button™ cannula using a KingFisher® retriever.



3

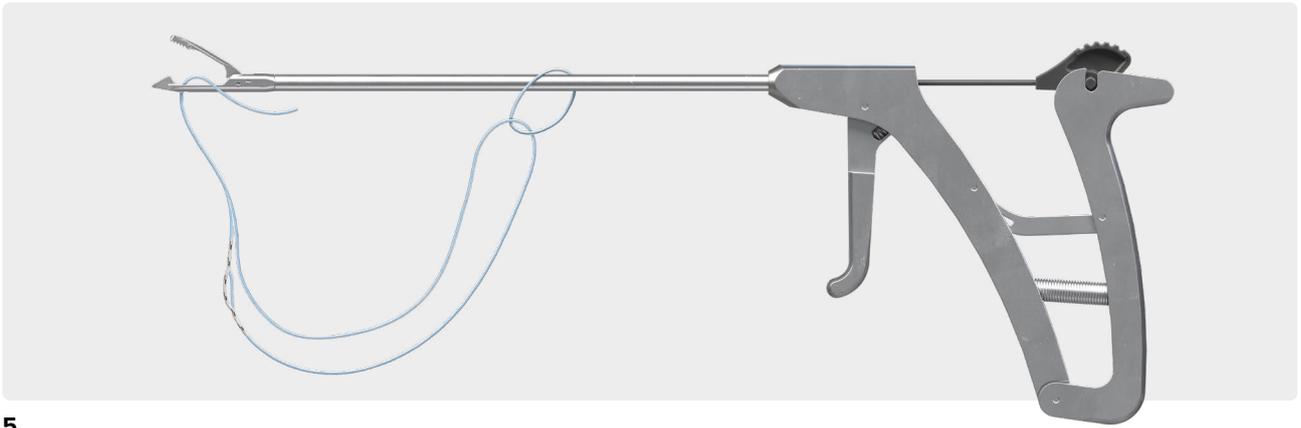
Using the nitinol wire loop, shuttle the single tail of a FiberSnare® suture through the tibia, leaving the looped end out of the PassPort Button cannula.



4

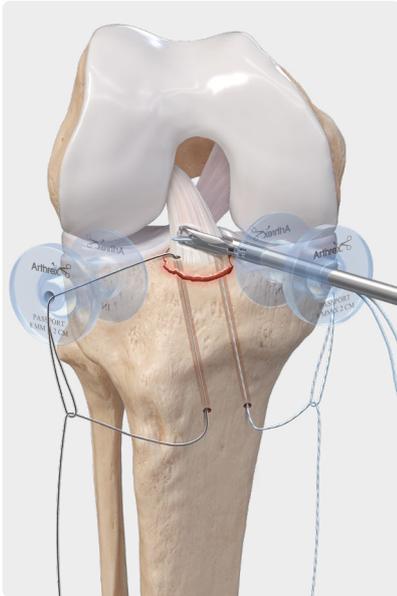
Repeat the drilling and passing steps for the second tibial tunnel.

**Note:** It is recommended to use two PassPort Button cannulas for suture management and to optimize visibility and maneuverability inside and outside the joint.



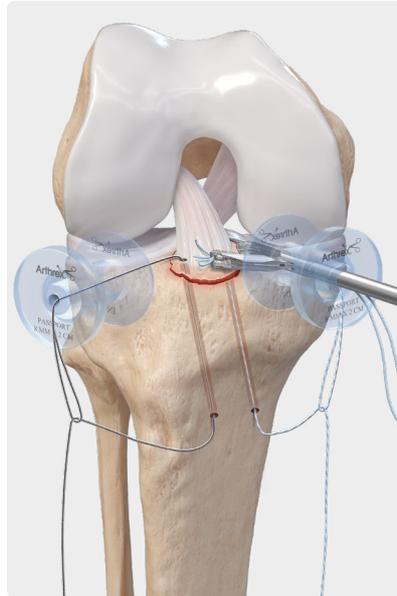
**5**

Load the FiberRing™ suture by passing the small ring portion of the FiberRing suture over the tip of a FastPass Scorpion™ suture passer. Then load the single end of the FiberRing shuttling suture into the bottom jaw of the FastPass Scorpion suture passer.



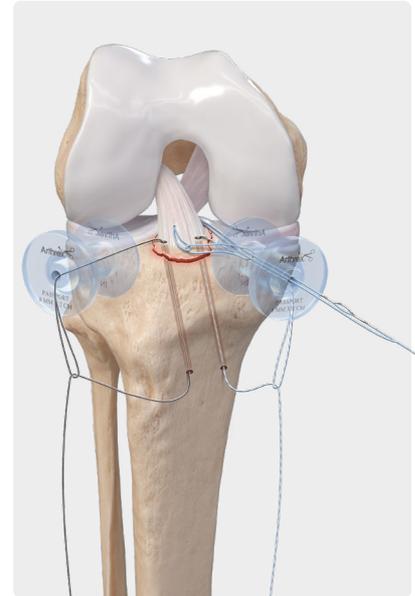
**6a**

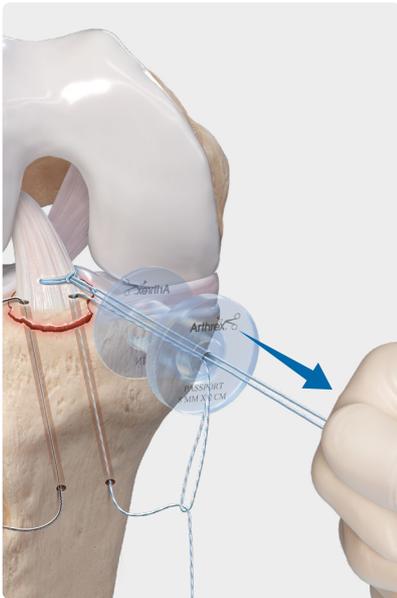
Using the FastPass Scorpion suture passer, pass the FiberRing suture through the distal portion of the ACL. Visually confirm the FiberRing suture has been captured in the top jaw of the FastPass Scorpion suture passer and gently remove the instrument.



**6b**

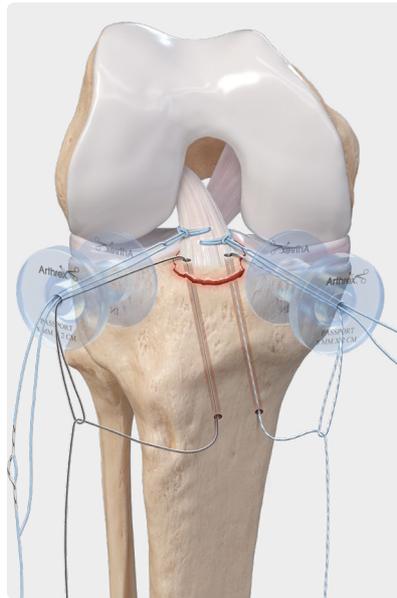
As the FastPass Scorpion suture passer is removed from the knee, the FiberRing luggage tag will begin to reduce down into the joint and onto the ligament.





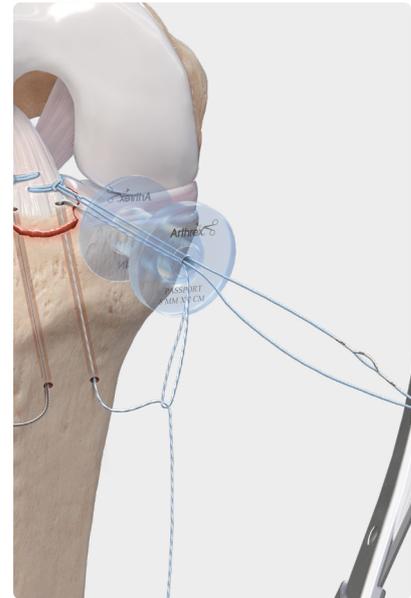
**7**

Remove the FiberRing™ suture from the FastPass Scorpion™ suture passer and gently pull the end of the FiberRing shuttle loop to fully cinch down the FiberRing suture at the ACL to form the luggage tag stitch.



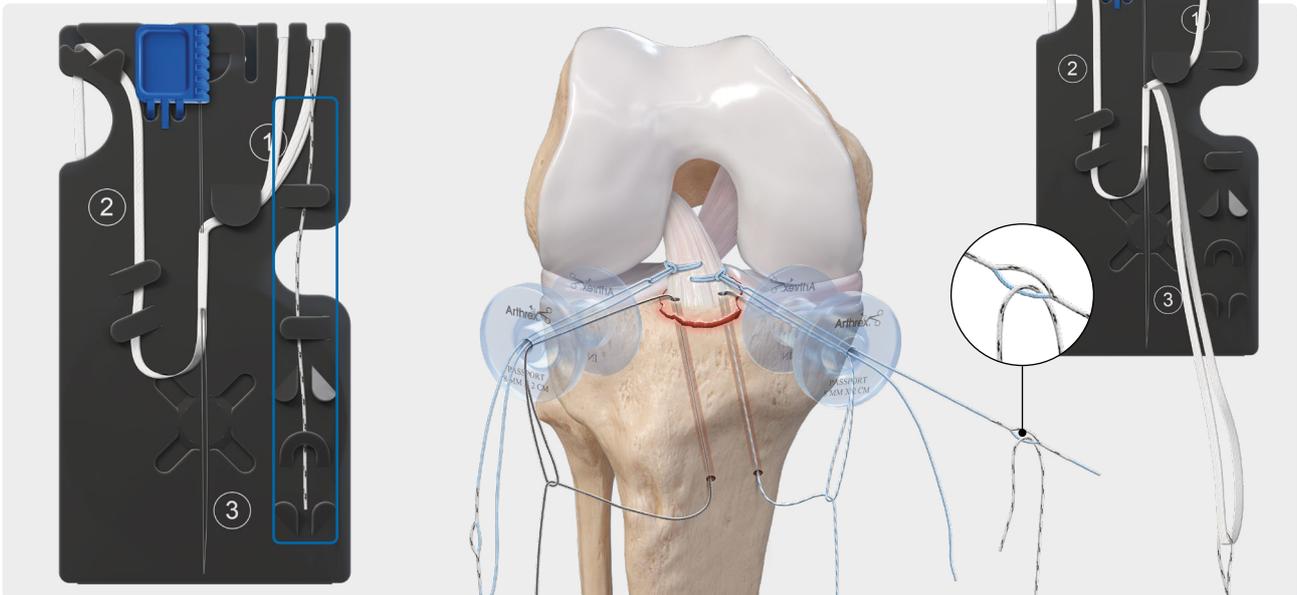
**8**

Repeat passing steps to place a second FiberRing suture in the ACL. Passing from the alternate portal can help improve suture fixation.



**9**

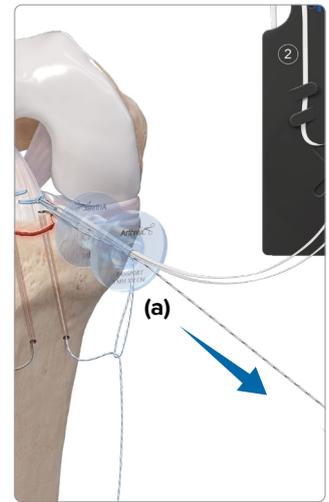
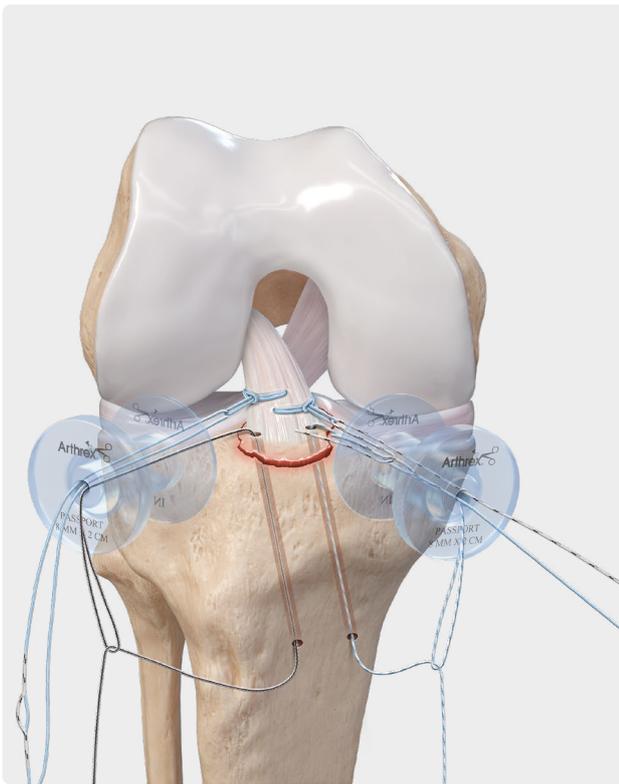
Use FiberWire® scissors to cut the FiberRing shuttle loop just below the splice, leaving two tails.



**10**

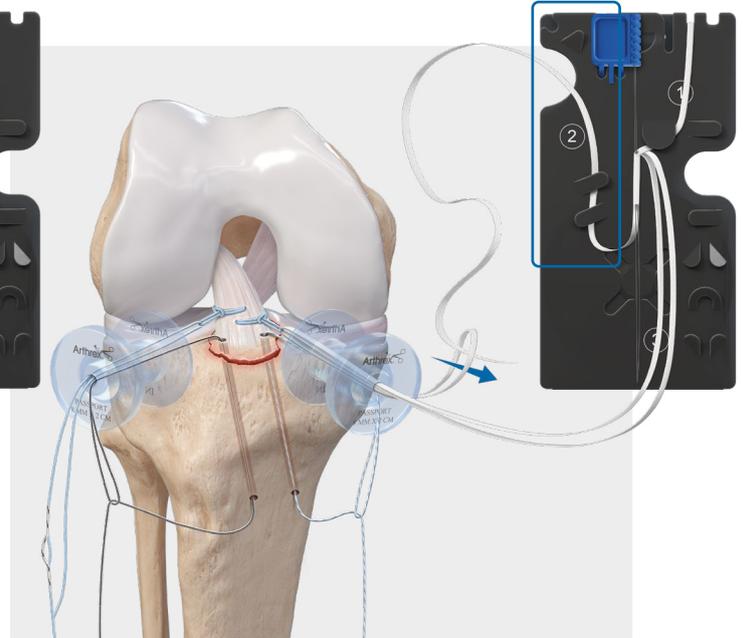
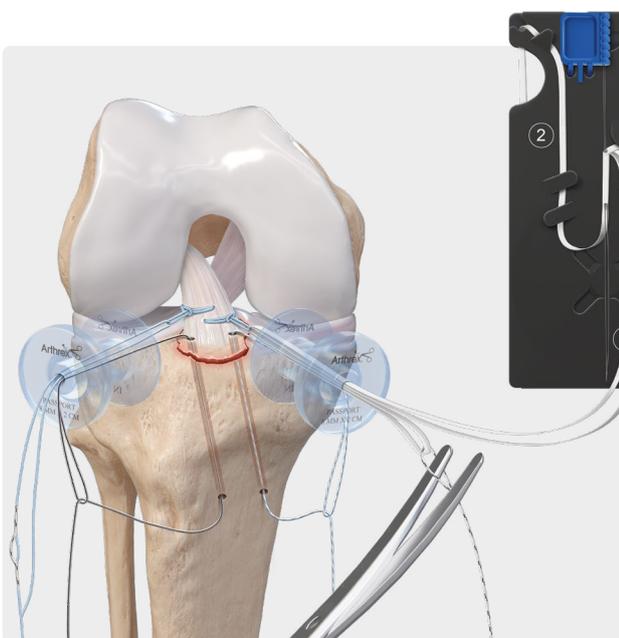
Identify and unravel the black-and-white TigerWire® leader suture located at the **(1)** on the ACL Repair TightRope® ABS assembly card.

Load approximately 2 inches of the black-and-white leader suture from the **(1)** section of the card into the suture eyelet of the FiberRing shuttle loop.



**11**

Pull the free tail of the FiberRing™ shuttle loop to shuttle the black-and-white TightRope® leader suture through the luggage-tagged FiberRing suture and back out of the Passport Button™ cannula **(a)**. Once the leader suture is passed, the FiberRing shuttle loop may be discarded.

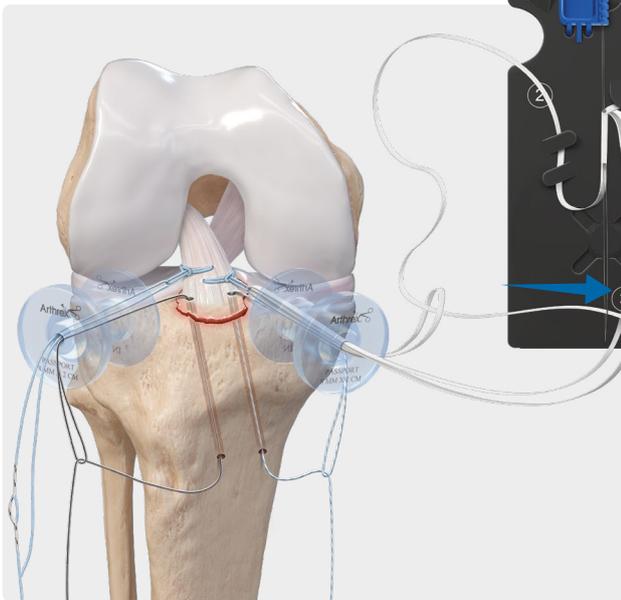


**12**

Use FiberWire® scissors to remove the black-and-white leading suture and discard.

**13**

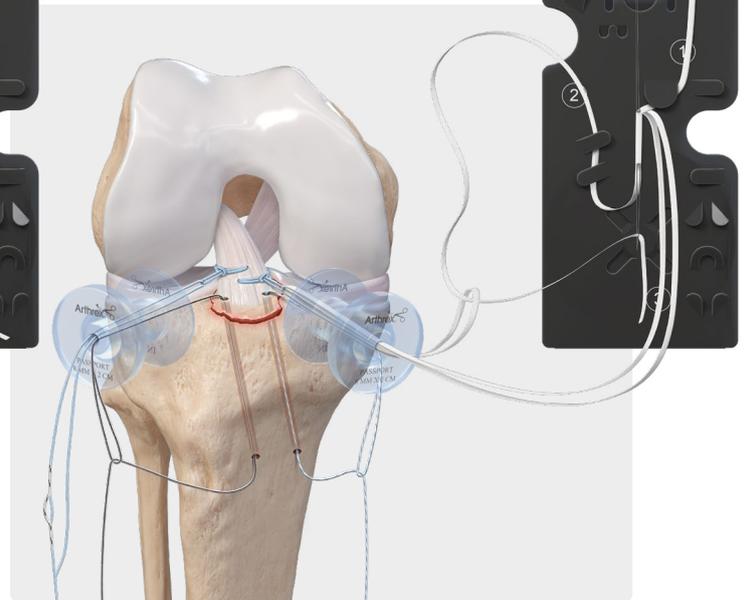
Identify and unravel the open suture limb of the TightRope suture labeled **(2)**. The limb is located in the cutout on the left edge of the card and will unspool from a wheel in the center of the packaging card. Pass the single tail through the previously shuttled ACL Repair TightRope® loop.



14

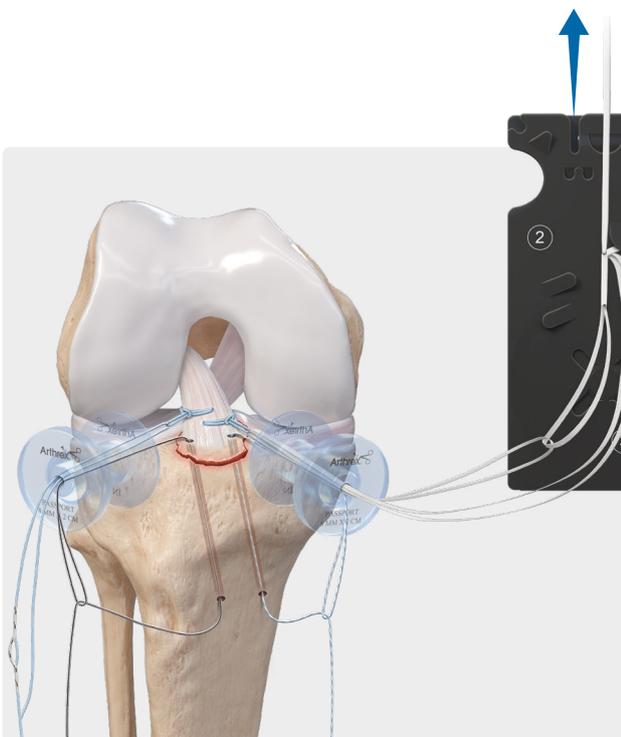
Load 1-2 cm of the single white suture tail labeled (2) through the nitinol passing loop.

**Note:** Fold the suture over the wire to form a crease to prevent the suture from sliding during passage.



15

Pull the blue threader to complete the pass.



16

Pull the newly created white shortening strand to remove slack from the loops.



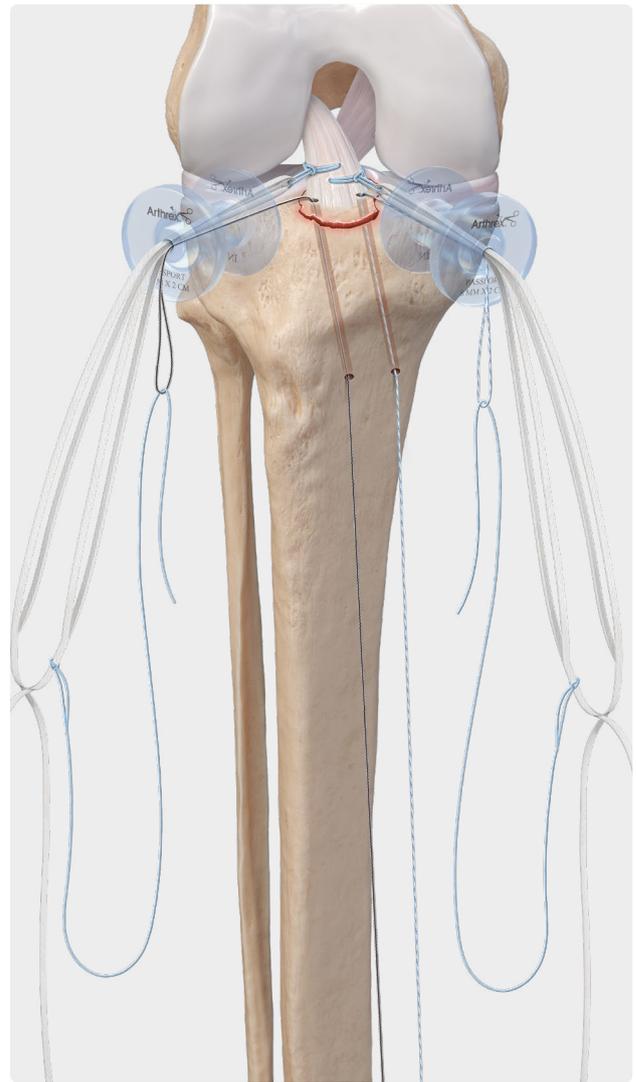
17

After removing the implant from the back of the card, discard the packaging card.



**18**

Repeat steps 9-17 to attach an ACL Repair TightRope® ABS implant to the other FiberRing™ suture.



**19**

Using a size 0 FiberLink™ suture, create a luggage tag adjacent to the splice of the TightRope® implant. Load the single limb of the FiberSnare® suture into the loop of the previously placed FiberSnare suture for tibial shuttling.



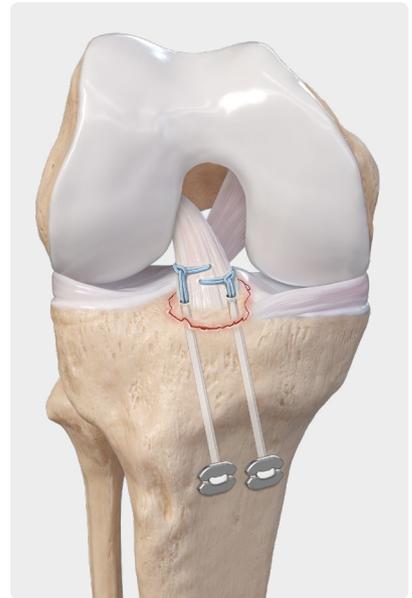
**20**

Pull distally on the FiberLink™ sutures to shuttle the TightRope® implants out of the tibial tunnels. Remove the FiberLink shuttle sutures following passage.



**21**

Load the ABS button onto the TightRope loop.



## 22

With the knee in extension, pull the white shortening strands to advance the ABS button to bone. Cycle the knee and retension the construct as needed.

| **Note:** Ensure the button has a clear path to bone to avoid trapping soft tissue under the button.

## Ordering Information

Implants	
ACL Repair TightRope® ABS implant	AR-1588R-TN
FiberRing™ suture w/ shuttle loop, 25 mm	AR-7282-25
FiberRing suture w/ shuttle loop, 35 mm	AR-7282-35
FiberRing suture w/ shuttle loop, 45 mm	AR-7282-45
FiberRing suture w/ shuttle loop, 55 mm	AR-7282-55
TightRope ABS button, 8 mm × 12 mm	AR-1588TB
Additional Disposables and Instrumentation	
PassPort Button™ cannula, 8 mm × 2 cm	AR-6592-08-20
0 FiberLink™ FiberWire® suture w/ 1.5 in closed loop at one end, (blue)	AR-7258
Ratcheting drill sleeve, 2.4 mm	AR-1510FD-24
2.4 mm cannulated drill and passing wire	AR-1594D-24
FastPass Scorpion™ SL suture passer	AR-13999MF
HD Scorpion™ needle	AR-13999HDN
ACL ToolBox instrument set	AR-1900S
RetroConstruction™ drill guide system instrument	AR-1510S

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