

Supplementary Material 1. Low-fidelity model

As far as we know, there are no commercially available high-fidelity or low-fidelity models for the pericapsular nerve group (PENG) block. Our low-fidelity model underwent multiple iterations. We described our method for creating this model below and hope that it will be useful for others.

Multiple studies describe the effectiveness of low-fidelity models in helping emergency physicians simulate ultrasound guided procedures. Tendons and nerves can be mimicked by yarn soaked in ultrasound gel. Vessels can be mimicked by straws filled with ultrasound gel. Lastly, ballistic gel serves as an excellent medium for ultrasound and has been used to create various different simulators.

To build our low-fidelity PENG simulator, we purchased the following: a plastic skeletal pelvis model (Amazon, Seattle, WA, USA; \$35.96) as illustrated in Supplementary Fig. 1, a 15-L clear plastic bin (Home Depot, Atlanta, GA, USA; \$4.97), 2 lbs of Knox gelatin powder (Amazon, \$20.37), and a Hamilton Beach 6-Speed open handle hand mixer (Target, Minneapolis, MN, USA; \$27.26).

The goal was to encapsulate the pelvis in gelatin while simultaneously ensuring the yarn and straws are suspended in the appropriate anatomical locations. We proceeded with a two-layer technique. We used tape to secure the pelvis to the bottom of the bin. We mixed 9 L of boiling hot water with 24 ounces of Knox gelatin to create the first layer. We used multiple pots and a water kettle to bring tap water to a boil and pour it into the bin. We introduced 2.6 ounces of gelatin for every liter of water utilizing the hand mixer to reduce clumping. It is important to make sure there is immediate mixing of the gelatin powder to avoid clumping. We recommend an electronic hand mixer to ensure the gelatin is equally mixed throughout the bin. Once all 9 L are in, there will be a foamy layer on top illustrated in Supplementary Fig. 2. We used a spoon to slowly scoop out the foam and any remaining clumps. The model needs to be left in the refrigerator for a minimum of 6 to 8 hours but we opted to leave it in the refrigerator overnight.

Once sufficient time has passed, the gelatin will harden and you may notice air bubbles at the top. You can use a spoon or a knife to remove any air bubbles that may have risen to the surface. With a knife, make an incision over the iliopubic eminence, cut a small piece of yarn soaked in ultrasound gel and place it on both sides. Use plastic straws filled with ultrasound gel and place just lateral to the pubic symphysis. Ensure that there is no air inside the straw and cut the straw if needed to the desired length. At this point, you may use the space around the pelvis and place small pieces of yarn to serve as target practice for the in-plane approach. Supplementary Fig. 3 illustrates the yarn and straws in their appropriate places.

Lastly, boil 3 to 4 L of water and mix in Knox gelatin powder using the electronic hand mixer in a separate pot. Slowly introduce the pre-mixed solution into the bin so as to not disturb the yarn and straws until the entire pelvis is covered. Place it back in the fridge for 4 to 6 hours and the model is ready for use. Please note that in this initial model, we did not place pieces of yarn around the pelvis to serve as target practice, but after an iterative feedback process, we did for the second model we made. Supplementary Fig. 4 demonstrates the final product.

We added a thin layer of water on top of the model to prevent ultrasound gel requirement during the training session. We found that the thin water layer greatly diminished the artifacts left over by the needle in between learners as an added benefit.

Once the model was used for a session, we were able to refrigerate the model for several weeks. Prior to the next session, only the top layer was cut out and a new layer was added and the model was ready to be reused. Roughly 1 L of water and 3 ounces of gelatin were used to replace the top layer. This model lasted through multiple sessions over 10 weeks. At each session, the model underwent well over 100 needle sticks without leaving any significant leftover artifact.