

# How do you use the AiM™ Vascular Mapping Kit?

**ASOUND**<sup>®</sup>  
ERGONOMICS LLC

# Protocol for Successful Skin Mapping

Evaluate vessel anatomy, perform measurements, etc. according to your laboratory's protocol prior to applying the **AiM™** device to the imaging transducer.

Once all of the pertinent anatomical information is obtained and you are ready to mark the skin:

- Thoroughly clean the transducer to ensure that all of the gel is removed from the transducer prior to applying the **AiM™** device .
- Apply the **AiM™** device to the transducer as directed by the instructions for use.
- Mark the course of the target vessel or anatomy of interest with the **AiM™** device.

\* It is extremely important that you do not scan back over previously delivered ink marks. This will cause significant smearing of the ink.

# Technical Considerations

It is recommended that you use a linear or curved linear transducer in the frequency range of 4 to 12 MHz with the **AiM™** device for optimal delineation of the reference lines.

\*If you use a higher frequency transducer (ex. “hockey stick transducer”) for evaluating the anatomy, simply change to a 4 to 12 MHz linear transducer when you are ready to use the **AiM™** device to mark the skin. Optimal image resolution of the target anatomy is not necessary to make accurate marks on the skin. Visualization of the target anatomy and reference lines is all that is required for accurate ink mark delivery.

The minimum depth setting on your ultrasound system should be 4cm or deeper when using the **AiM™** device. A depth setting shallower than 4cm may interfere with the delineation of the reference lines in the image.

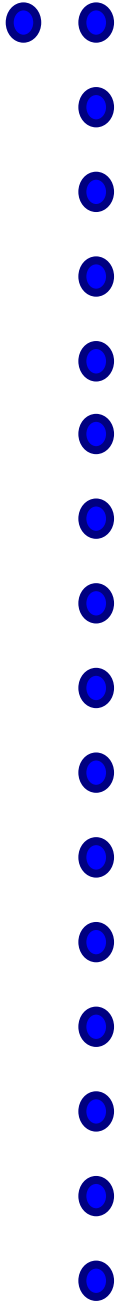
For optimal reference line delineation produced by the Shadow Guide™ it is suggested that you turn compound imaging off.

(Example of compound imaging technology: SonoCT).

# Applying AiM™ Device to the Transducer



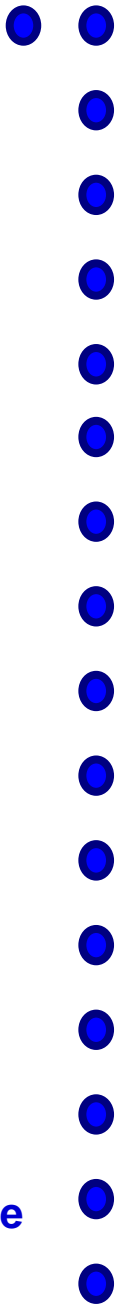
Remove the paper cover from the adhesive backing.



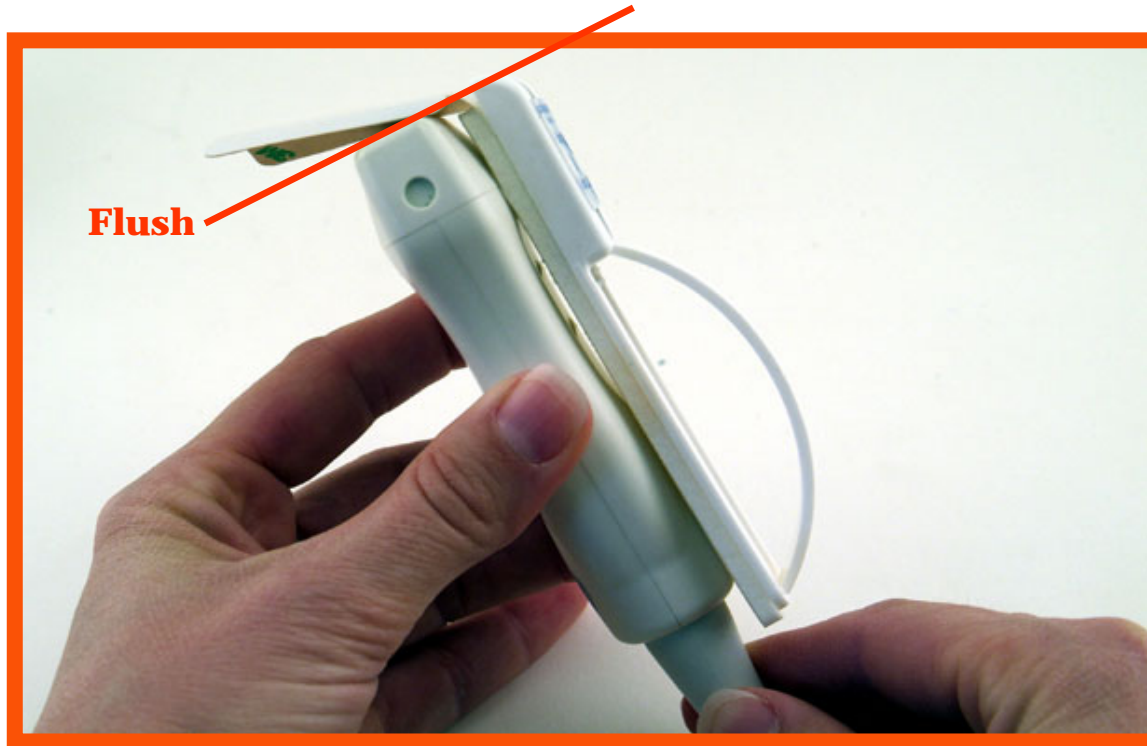
# Applying AiM™ Device to the Transducer



Place **AiM™** device upright on a flat surface. Move the center of the transducer toward the adhesive backing. This ensures that the scanning surface of the transducer and the **AiM™** device are flush with each other when in contact with the skin.



# Applying AiM™ Device to the Transducer

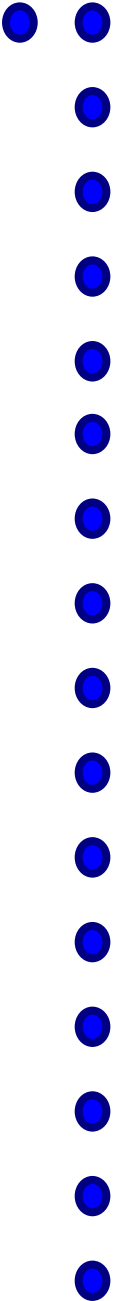


Press the device against the transducer to ensure that the device is well adhered. The bottom edge of the AiM™ device should be flush with the scanning surface of the transducer. If not, gently remove the AiM™ device and reapply following the instructions on the previous slides.

# Applying Shadow Guide™ to the Transducer



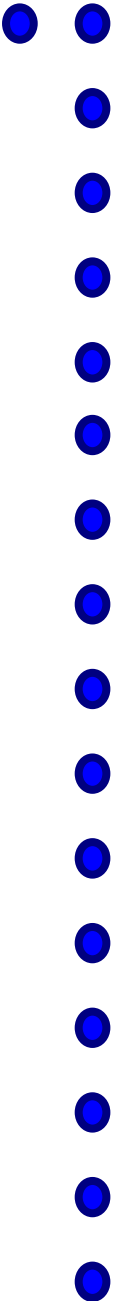
Remove the paper backing from the Shadow Guide™.



# Applying Shadow Guide™ to the Transducer



**Pull the Shadow Guide™ over the footprint of the transducer so that it is evenly applied to the scanning surface.**



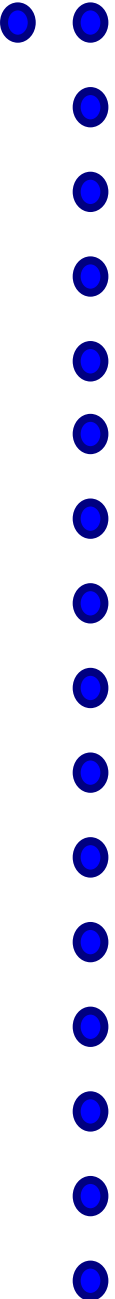
# Applying Shadow Guide™ to the Transducer



**Rub your finger across the scanning surface and edges of the transducer to ensure complete Shadow Guide™ adherence.**

**(Caution: avoid using your finger nails).**

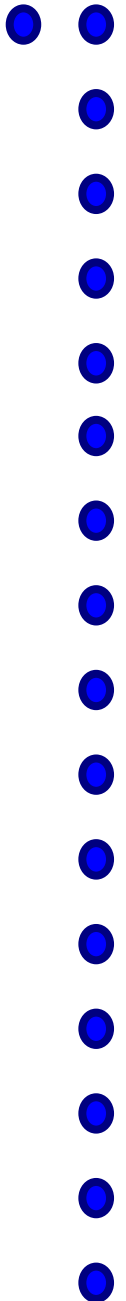
**Check the Shadow Guide™ on the scanning surface of the transducer for wrinkles, air bubbles or areas poorly adhered. If present, try to smooth out problem areas. If unsuccessful, gently pull up Shadow Guide™ and reapply.**



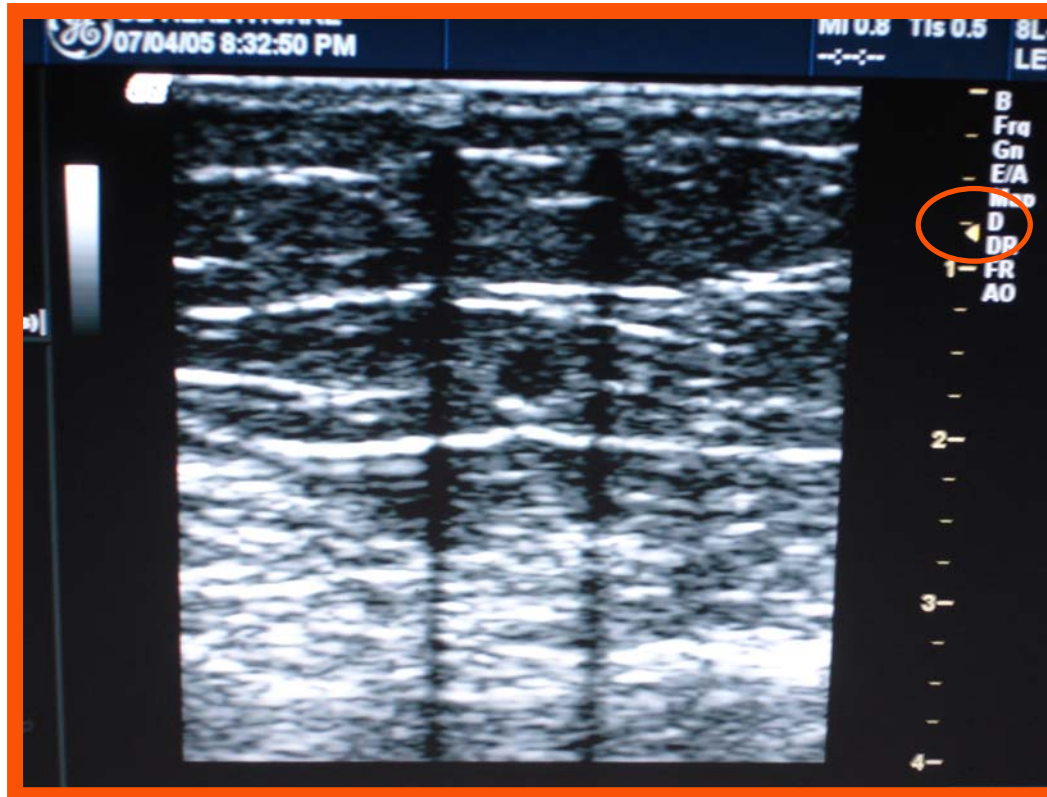
# Applying AiM™ Device to the Transducer



Depress the actuator to extend the ampule tip out of the device body. Remove the clear cap from the ink ampule tip. Discard cap.



# Performing Mapping Procedures with AiM™

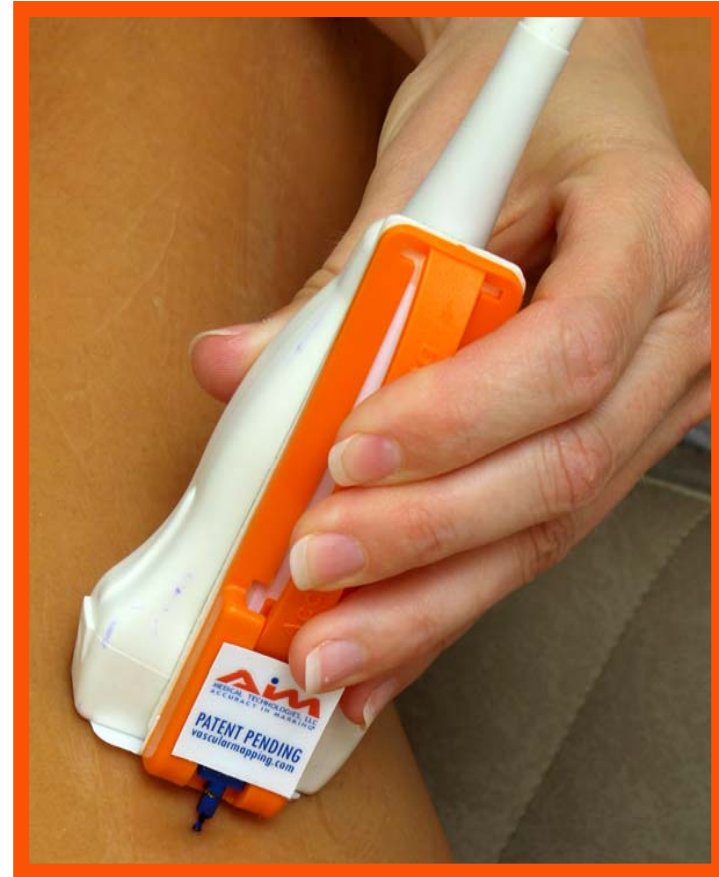


In order to optimize the visualization of the reference lines produced by the Shadow Guide™, it is important to use one focal zone positioned at the near field of the ultrasound image. If using compound imaging mode, turn it off for optimal reference line delineation.

# Performing Mapping Procedures with AiM™

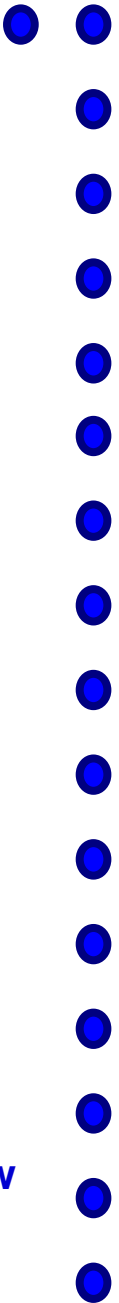


Scanning position - actuator released

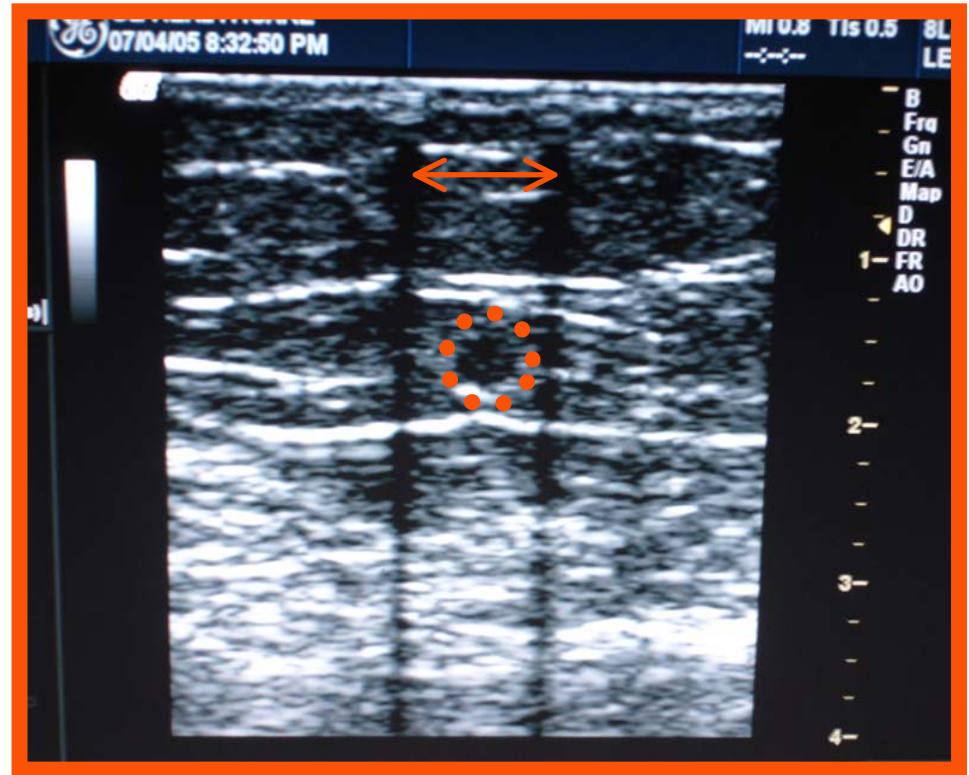


Ink delivery position – actuator depressed

To begin mapping, hold the transducer and AiM™ device in a position that will allow you to comfortably depress the actuator for delivery of ink marks onto the skin.



# Performing Mapping Procedures with AiM™



To ensure delivery of the ink mark accurately over the target vessel location, use a transverse imaging plane to center the target vessel between the 2 reference lines in the image.

# Performing Mapping Procedures with AiM™

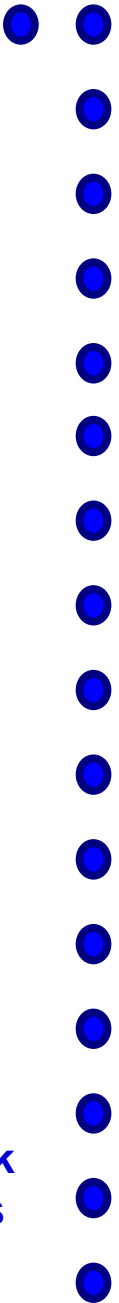


**Actuator Depressed**



**Actuator Released**

**Depress the device actuator then quickly release it in order to deliver an optimal ink mark. The length of time the actuator remains depressed dictates how much ink is delivered. For the best result, quickly release the actuator.**



# Performing Mapping Procedures with AiM™



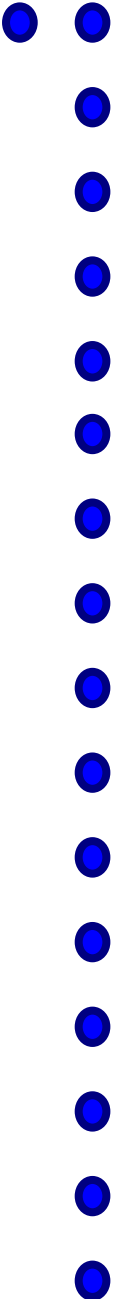
Map the entire length of the target vessel by repeating the steps explained in the previous slide.

\* It is not recommended that you scan back over the previously delivered ink marks. The residual ink in the coupling gel will smear.

# Technical Consideration

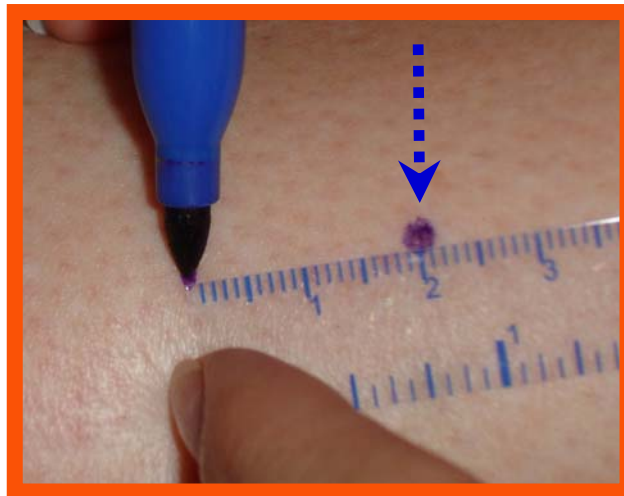
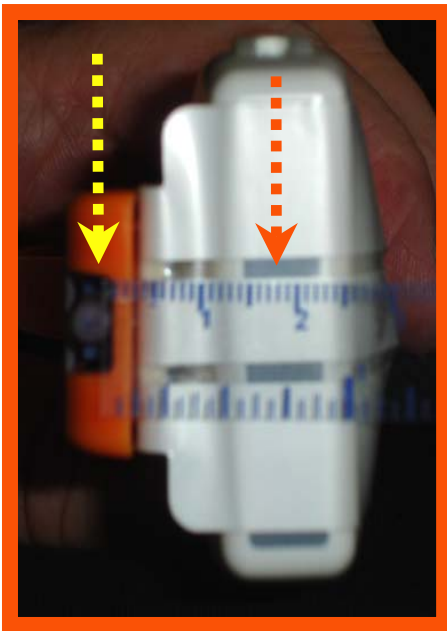


If an excessive amount of coupling gel collects around the ink ampule tip and affects ink mark delivery, remove the excess gel with an **AiM™** towelette.



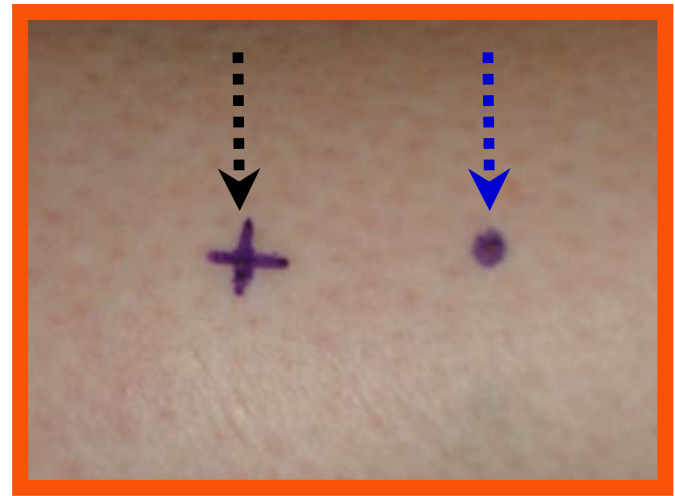
# Accounting for the Offset Distance

To account for the distance of the **AiM™** device being offset from the center of the transducer, measure with a ruler from the tip of the ink ampule to the center of the footprint of the transducer to assess the distance. (1<sup>st</sup> image = 2cm)



--Ampule Tip

--Center of Transducer Footprint



--Initial Ink Mark

--Precise Location of Target Anatomy

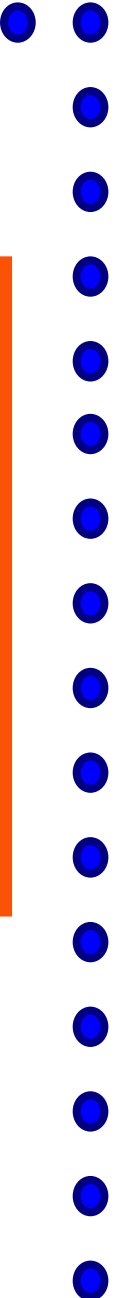
Deliver an ink mark with the **AiM™** at the location of the target anatomy. Remove the gel and residual ink from the skin. Use the **AiM™** ruler to measure the offset distance from the mark, then make an X at that location with the **AiM™** accessory skin marker.

\*You will only need to account for the offset distance when your ink mark needs to be specific in both anatomical planes. For example, perforator localization.

# Performing Mapping Procedures with AiM™



After mapping the length of the target vessel, use the absorbent towelettes included in the AiM™ kit to thoroughly remove the coupling gel and residual ink. It is recommended that you start at the proximal area and wipe in one direction from proximal to distal.



# Performing Mapping Procedures with AiM™



After the coupling gel has been thoroughly removed from the skin, let the skin dry for approximately 2 minutes then use the accessory skin marker to connect the ink marks produced by the AiM™ device.

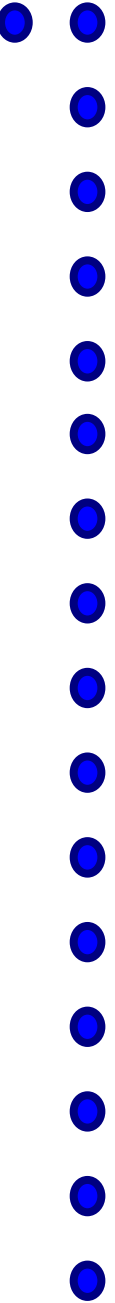
\* Marking on wet skin with the accessory skin marker may cause the ink marks to fade excessively when surgical prep is used.

# Localization of Target Vessels



Use the **AiM™** vinyl ruler to document precise locations of target vessels.

For example: incompetent perforator locations.



**If you have any further questions, you can  
submit inquiries through the “contact us”  
link at**

**[www.soundergonomics.com](http://www.soundergonomics.com)**

**or**

**(877) 417-8151**

**We look forward to serving your vascular  
skin mapping needs.**

**Thank you!**