Introducing AxoTrack.™

Needle visualization as you've never seen it.

Designed to Get It Right. The First Time.

The new patented AxoTrack™ system with its revolutionary virtual needle technology provides a clear path, straight to the anatomic target, giving clinicians the ability to quickly and more accurately perform needle-guided procedures when using an AxoTrack-equipped ultrasound procedure probe.[1]

The Case for AxoTrack

AxoTrack is specifically designed to perform needle-guided procedures right the first time, every time by providing clear, uninterrupted needle visualization throughout an entire procedure. AxoTrack's proficiency has been repeatedly demonstrated in studies illustrating higher "first attempt success" rates for accurate needle placement. For example, when tested *in vitro*, an AxoTrack-equipped ultrasound probe resulted in successful vascular access on the first stick and first pass 99.3% of the time versus just 37.1% of the time when compared to the standard freehand method for ultrasound-guided central venous access.[1]

The Defining Characteristics of AxoTrack Technology

Ease of Use

The virtual needle display and intuitive point-and-shoot nature of the device make it very easy to use. Studies have confirmed high rates of "first attempt success" for accurate placement with only 15 minutes of training on an AxoTrack-equipped ultrasound probe.[1,4]

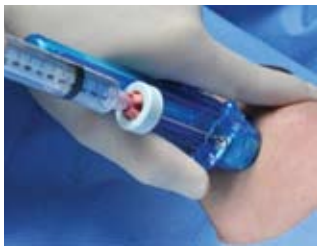
First Pass Success Rate

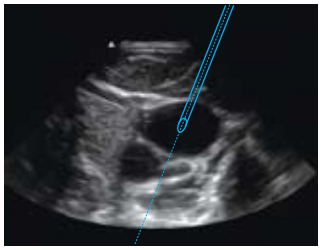
USGIV	Overall*	Subclavian*	Internal Jugular*	Peripheral*
ExactTrack**	99%	98%	100%	100%
Traditional	37%	22%	53%	36%

*p <0.001 ** *Now known as AxoTrack*

Control and Clarity

AxoTrack allows practitioners to see the virtual needle and the entire operative field throughout a procedure. Before starting the procedure, the anatomic target is visualized and aligned with a target line, establishing a clear, safe needle path to the intended target. In real time, the practitioner is able to observe the progress of the needle as it moves along an unobstructed trajectory to the target. This ability to 1) plan the course, 2) plot the trajectory, and 3) clearly see the needle position gives practitioners unprecedented clarity and control.





The AxoTrack system is safe, simple and cost effective.

Substantial Risk Reduction and Cost Savings

AxoTrack's revolutionary needle visualization technology and ergonomic design result in potentially fewer procedural complications such as transfixation or "backwalling" the vessel, arterial puncture and laceration, hematomas, pneumothoraces, and nerve injury. AxoTrack has also been shown to significantly reduce the number of needle passes for vascular access,[1] and studies relate this decrease to a proportionate reduction in central line-associated bloodstream infections (CLABSI).[2] Moreover, the unique capability of AxoTrack to facilitate subclavian vein access further reduces the risk of CLABSI.[3] These improvements along with decreased procedure times[1] and reduced training times[1] are expected to result in improved patient care and significant cost savings to the healthcare system.[5]

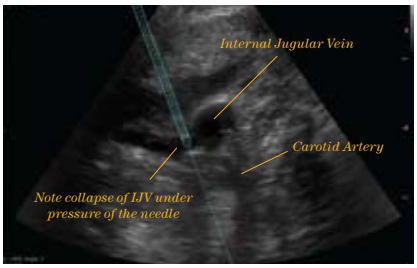
Key Design Features for Needle Control, Accuracy, and Stability

- **Magnetic Position Sensing Array:** Allows real-time visualization of an enhanced virtual needle
- **In-plane Integral Needle Guide:** Ensures needle visualization every moment of the procedure through precise alignment of needle and scan plane
- **Ergonomic Design:** Reinforces control and stability during procedures with intuitive point-and-shoot design
- **Patent-Pending Integral Needle Lock:** Provides precise needle depth control at the critical moment of guidewire passage, drug delivery, or aspiration
- **Patent-Pending Traction Control Rails:** Stabilize the probe by reducing slippage on the body
- **Patent-Pending Beam Coupling Apparatus:** "Pillows" the skin up against the acoustic window and retains gel under the probe face to enhance ultrasound coupling and image quality

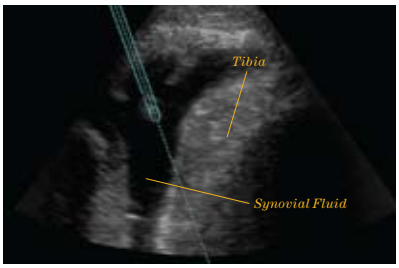
AxoTrack Benefits

- Provides uninterrupted visualization of the virtual needle and operative field throughout an entire procedure
- Provides increased precision and control during delicate procedures[4]
- Reduces the risk of procedural complications[1]
- Greatly simplifies needle-guided procedures
- Extremely easy to learn and operate
- Facilitates optimum site selection, significantly reducing risk
- Facilitates subclavian access - 1/2 the CLABSI compared to internal jugular vein[3]
- Provides a solution for physicians to adhere to AHRQ, NICE, CDC and ABIM best practice guidelines

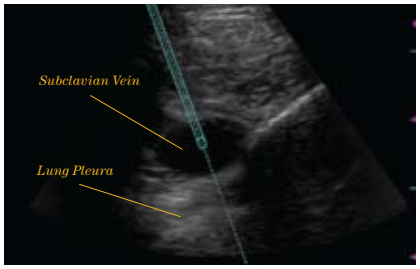
Procedures Using AxoTrack



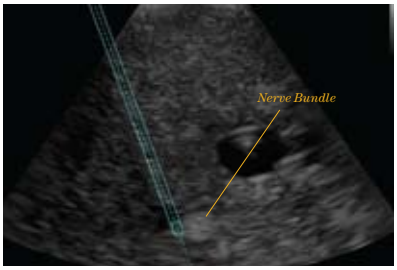
Cannulation of Internal Jugular Vein



Knee Arthrocentesis



Cannulation of Subclavian Vein



Nerve Block

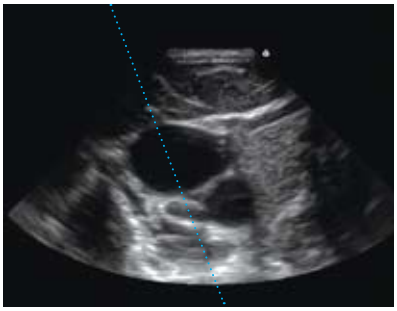
Vascular Access in Three Simple Steps

An AxoTrack-equipped ultrasound probe has an integral needle guide and built-in needle position sensors. Together these allow the system to project on the sonogram an enhanced virtual image of the needle as it moves through the tissue toward and into the imaged target vessel. Once the vessel is cannulated, the needle lock can be activated to stabilize the needle tip in the lumen of the vessel facilitating safe guidewire passage while employing the standard Modified Seldinger Technique. Furthermore, correct guidewire placement is confirmed by observing the guidewire feed out of the needle and into the target vein. This represents a major procedural improvement.

STEP 1

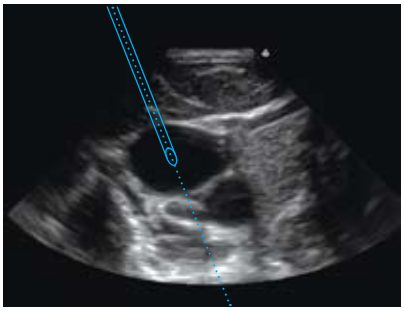
First, visualize the anatomy and select the optimal window for vascular access.

STEP 2



Next, align the on-screen target line with the targeted vessel displayed on the monitor.

STEP 3

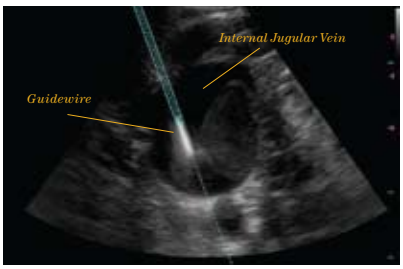


Finally, insert the needle into the needle guide in the ultrasound probe and advance the needle while observing its progress until the vessel is entered.

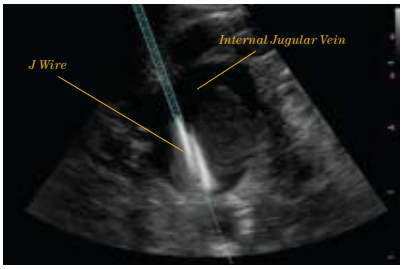
While best practice favors subclavian vein over internal jugular vein to reduce central line-associated bloodstream infections (CLABSI),[3] only AxoTrack-equipped ultrasound probes facilitate real-time ultrasound-guided cannulation of the subclavian vein.

The ergonomic design and point-and-shoot capability of the AxoTrack-equipped ultrasound probe allow the physician to position the probe at the angle of the clavicle and observe a certain, clear, safe path to the subclavian vein, while avoiding the adjacent lung and subclavian artery.

For guidewire passage:



Then activate the needle clamp and pass the guidewire.



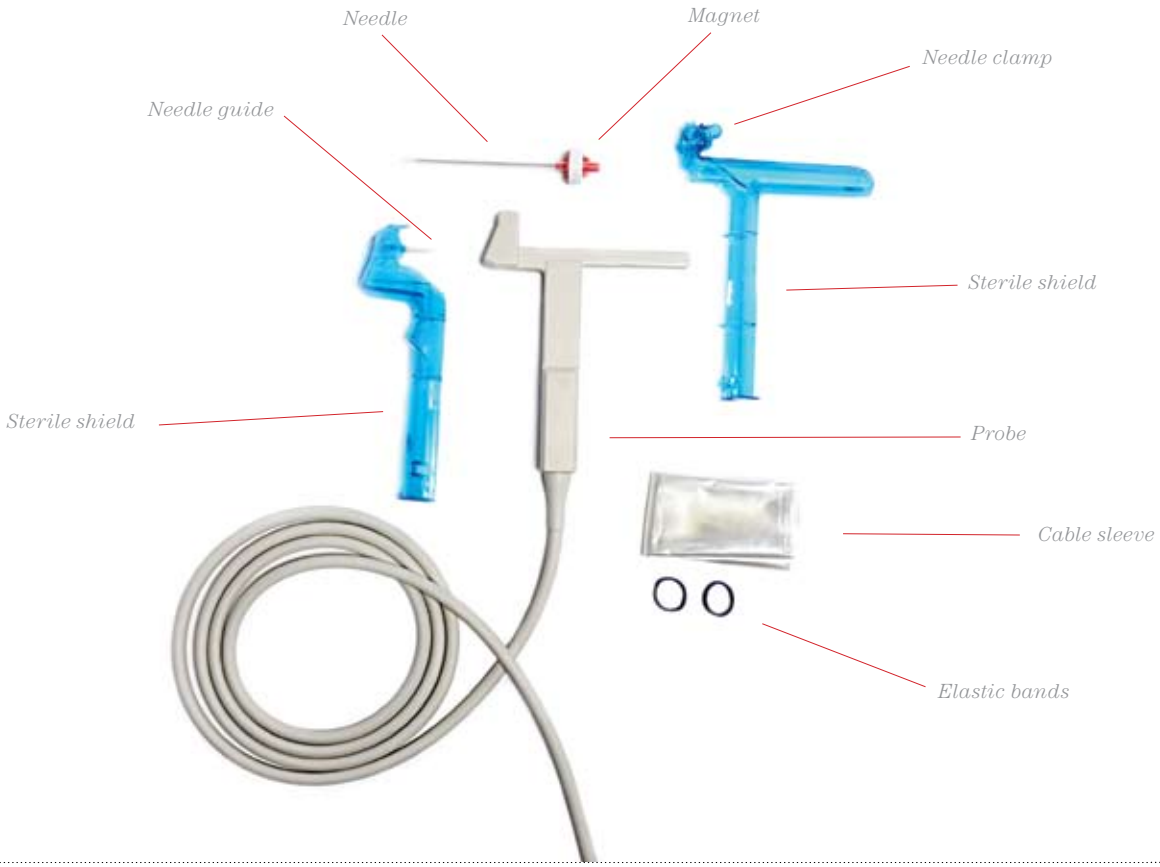
Observe the guidewire feed out of the needle and into the target vein.

Originally designed for vascular access, the unique visualization and guidance capabilities of AxoTrack benefit a broad range of needle-guided procedures, including biopsy, nerve block, cyst aspiration, arthrocentesis, paracentesis and more.

Other Potential AxoTrack Technology Applications

PICC lines
Cyst Aspiration
Fine Needle Aspiration/Biopsy
Paracentesis
Arthrocentesis

AxoTrack can be easily integrated into many ultrasound imaging systems in a straightforward manner through a software upgrade.



AXO TRACK™ BY SOMA

For a complete list of manufacturers offering AxoTrack-equipped probes, visit SomaAccessSystems.com.

1. Ferre, R.M. et al. The Use of a Novel Device Improves Real-Time Ultrasound Guided IV Access. Supplement to Annals of Emergency Medicine, Sept. 2010; 56:3:S74 2. Karakitsos, D, et al "Real-time ultrasound-guided catheterization of the internal jugular vein: a prospective comparison with the landmark technique in critical care patients" Critical Care 2006; in press (Nov. 17). 3. Lorente L et al. Central venous catheter-related infection in a prospective and observational study of 2,595 catheters. Critical Care. 2005, 9:R631-R635. 4. APS/Physiotest Independent Evaluation, Predicate Device Comparison Testing, Palmetto Health Richland, June 15, 2011. 5. MMWR Morb Mortal Wkly Rep. 2002 Aug 9;51(RR10);1-26. Guidelines for the Prevention of Intravascular Catheter-Related Infections.

SOMA™ ACCESS SYSTEMS

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