EXPERIENCE GUIDANCE LIKE NEVER BEFORE

TRAX™ NEEDLE TIP TRACKING SYSTEM
EXPANDING THE POSSIBILITIES OF ULTRASOUND INTERVENTIONS
CIVCO's eTRAX™ is a breakthrough technology that enables precise needle tip tracking to expand the capabilities of ultrasound interventions.

eTRAX allows users to clearly visualize the location and orientation of the needle as it advances towards the anatomical target. Featuring a sensor embedded into the needle tip, eTRAX offers a 3D anatomical road map to help physicians navigate through delicate tissues or difficult-to-access targets with greater accuracy and efficiency.

Recent clinical research supports the benefits of eTRAX.

Our study shows the advantage of this new needle guidance modality during needle intervention with a high technical success, high accuracy, short procedure time, low complications rate, and easy operability.¹

— Antoine Hakime, MD, et al. Gustave Roussy Institute Paris, France

Like never before, eTRAX provides safe and easy access to small or difficult-to-access targets and helps improve patient safety and outcomes while minimizing the need for radiation or invasive surgery.

Clinical experience with eTRAX supports:
- Accurate navigation
- Access to difficult anatomy
- Confident outcomes

In addition to biopsies, other therapeutic interventions can be considered, such as cryoablation and radiofrequency.¹ A growing evidence base for electronic tracking technology covers a range of clinical applications:

- Abdomen⁵,⁶
- Kidney³
- Liver¹,²,³
- Pancreas⁶
- Prostate³
- Thyroid⁶

Discover how leading physicians are using eTRAX today.
Clinical studies report a high level of accuracy and safety using eTRAX Needle Tip Tracking.

Easy, fast and safe needle placement.

The consequential positive impact on needle tip localization and needle path prediction have led to increased accuracy of ultrasound (US)-guided electromagnetically tracked biopsies. Such high level of accuracy have permitted easy, fast, and safe needle placement in targeted liver nodules, with a low complication rate, regardless of lesion conspicuity and location or operator experience.

Safe interventions.

Real-time image fusion with ultrasound and electromagnetic needle tracking allow highly accurate and safe intervention in areas that are normally not visualized or are difficult to visualize sonographically, for instance, areas covered by air or hidden behind bone or lesions only seen on CT, MRI, or PET.

When fusing ultrasound with other modalities such as CT, eTRAX helps reach small, difficult targets with precision.

Evidence demonstrates eTRAX provides access to targets normally difficult to visualize under conventional ultrasound.

With eTRAX, the needle tip is clearly marked with ‘N’ on the screen and tracked as it advances toward the target anatomy.

Visibility of needle tip throughout the procedure.

Electromagnetic needle tracking of the needle tip enables continuous visualization of the needle tip during the entire procedure, because the needle tip is electronically marked on screen. For conventional image guided biopsy with mechanical needle guidance the registration of the echoes from the needle tip may be difficult especially in large depths and in areas with overlying air.

Access targets not visible under conventional ultrasound.

We successfully evaluated image fusion using CT and US (ultrasound) and electromagnetic needle tracking for US-guided percutaneous drainage of air-containing cavities with poor US-overview in three patients with severe, complicated postoperative courses. The challenge in all three cases was that the cavities contained air, thus limiting the overview of the cavity and the needle guidance by conventional US.
CONFIDENT OUTCOMES

Reported patient and procedure outcomes demonstrate the clinical utility of eTRAX for a range of procedures.

Reduced procedure times.

EMT significantly reduces needle placement time and the number of needle pullbacks in comparison with conventional methods used for liver biopsy and also seems to make the procedure easier from a technical standpoint.²

| Procedure and Outcome Variable Comparisons between EMT and Free-hand Groups² |
|---------------------------------|-----------------|-----------------|-----------------|
| Variable                        | EMT (n = 30)    | Free-hand (n = 30) | P Value         |
| Needle placement time (seconds) | 45.8 ± 48.1     | 143.2 ± 122.1    | .0001           |
| Mean ± SD                       | 45.8 ± 48.1     | 143.2 ± 122.1    | .0001           |
| Median (range)                  | 30 (5-240)      | 116 (10-420)     | .0001           |
| No. of pullbacks for redirection | 0 (0-3)         | 2 (0-5)          | < .0001         |

SD = standard deviation

Avoid invasive surgical procedures.

The patients were successfully treated by percutaneous US-guided drainage using image fusion (US/CT) and electromagnetic needle tracking. All patients avoided surgery.⁶

High success rates.

Percutaneous biopsies and drainages, even of small lesions involving complex access pathways, can be accomplished with a high success rate by using 3D real-time image fusion together with real-time needle tracking.⁷

REFERENCES


