



## A Better Way To Supplement Needle Count

A practical guide to help OR staff  
manage incorrect needle counts  
effectively and efficiently.



### Save Time

Give surgeons a tool to find lost  
sharps while waiting for X-rays



### Patient Safety

Potentially avoid retained  
surgical sharp events



### Save Money

Enable OR efficiency



### Minimize Risk

Help avoid hospital and  
physician reputation damage



## Manual Search vs. MSF

In a miscount situation, the Melzi Sharps Finder (MSF) is superior to a manual search in determining the presence or absence in less time.<sup>1</sup>

| Ability           | Manual Search | MSF      |
|-------------------|---------------|----------|
| If needle present | 22.2%         | 95.4%    |
| Time to determine | 3.9 mins      | 2.0 mins |

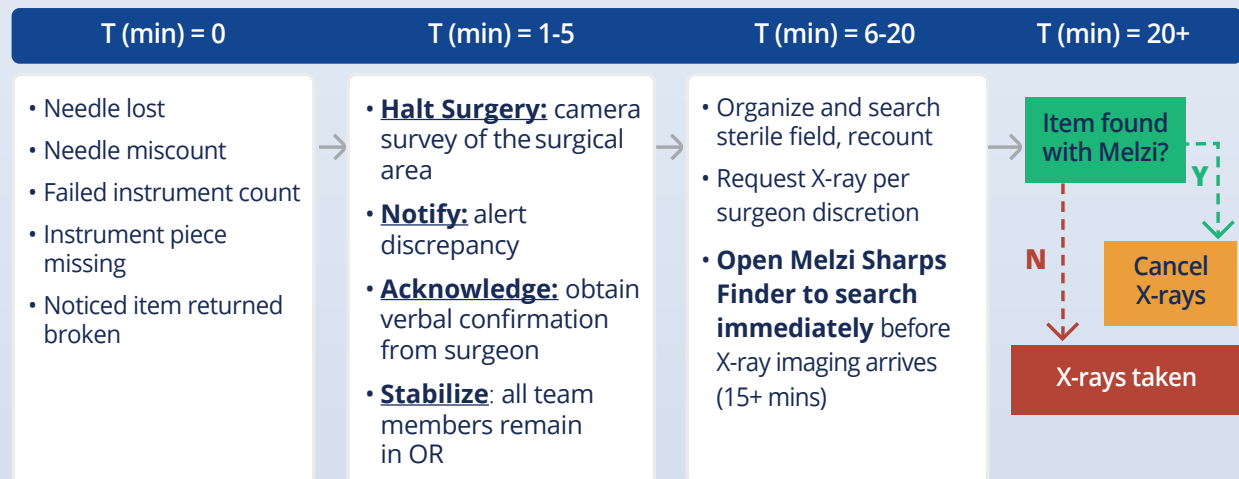
## X-Ray vs. MSF

The MSF can detect needles that are unlikely visible in X-rays, avoiding the need to keep patients under prolonged anesthesia.<sup>2</sup>

|                     | Large      |       |       | Medium              |       |                          | Small |      |      |      |
|---------------------|------------|-------|-------|---------------------|-------|--------------------------|-------|------|------|------|
| Needle size         | 26 mm      | 22 mm | 17 mm | 15 mm               | 13 mm | 11 mm                    | 10 mm | 9 mm | 8 mm | 7 mm |
| X-ray effectiveness | Detectable |       |       | Decreased Detection |       | Ineffective - DO NOT USE |       |      |      |      |
| MSF                 | Detectable |       |       |                     |       |                          |       |      |      |      |

## RSI Prevention Workflow with MSF

Suggested workflow to incorporate the MSF into the RSI prevention workflow.



The long-shaft MSF is leveraged in minimally invasive laparoscopic and robotic procedures via a 5mm trocar, while the short-shaft MSF is ergonomically designed for open surgery.

# Multiphase preclinical assessment of a novel device to locate unintentionally retained surgical sharps: a proof-of-concept study

Hae Sung Kang, Jad Khoraki, Jessie Gie, Dielle Duval, Susan Haynes, Michael Siev, Jay Shah, Fernando Kim, Martin Mangino, Levi Procter, Riccardo Autorino & Samuel Weprin

[Patient Safety in Surgery](#) volume 17, Article number: 10 (2023)

Explore how one recent, multi-institutional peer-reviewed study on [Patient Safety in Surgery](#) reviewed the efficacy of the Melzi Sharps Finder (MSF) in a miscount setting. The MSF is an adjunct OR patient safety tool to locate lost sharps like needles and broken instrument pieces in vivo. Similar to using the sponge detection system, it helps potentially minimize the risk of retained surgical sharp (RSS) events!

## Goals

By mimicking actual miscount events, the study aimed to:

1. Determine the presence/absence of RSS with/without MSF
2. Determine the ability to locate RSS
3. Determine the speed to locate RSS



## Results



**Increased accuracy in determining the presence or absence of RSS**



**Significantly higher success rate in locating the RSS**



**Much faster at locating the RSS**



**Results equivalent to using the C-arm X-ray with a trained radiologist onsite\***

## Key Takeaways

- The MSF outperformed other methods in detecting needle presence, absence, and location in ex-vivo and laparoscopic models.
- The MSF swiftly identifies lost sharps, saving time and eliminating prolonged patient anesthesia, while enabling faster OR turnover.

\*The study compared the use of MSF to a C-arm X-Ray machine with a trained radiologist on-hand to interpret images immediately, an unlikely situation for the average OR. In the average OR, less effective traditional X-Ray technology is called when a miscount occurs, taking an average of an additional 45 minutes.<sup>3</sup>

“We used the Melzi Sharps Finder to search for lost needles a few times, and they were all successful. It has saved us time significantly, avoided X-rays, and decreased stress around a potential RSI event.”

**OR Nurse**

*A University Medical Center with Magnet Designation on East Coast*

“The ease of use makes it easy and safe during an emergency of a lost needle. My residents were able to just open the device and find it without any training.”

**Chief of Staff**

*Urology Surgeon Top Academic Hospital on West Coast*



| VA Ref. No. | DoD Ref. No. | Description         | Length of Shaft                          | Quantity |
|-------------|--------------|---------------------|------------------------------------------|----------|
| CLIN01329   | DLIN4030     | Melzi Sharps Finder | 22cm (Open Procedures)                   | Box of 5 |
| CLIN01328   | DLIN4029     | Melzi Sharps Finder | 45cm (Laparoscopic & Robotic Procedures) | Box of 5 |

1. Kang, H.S., Khoraki, J., Gie, J. et al. Multiphase preclinical assessment of a novel device to locate unintentionally retained surgical sharps: a proof-of-concept study. Patient Saf Surg 17, 10 (2023). <https://doi.org/10.1186/s13037-023-00359-8>
2. J. Adams, Ph.D., J Noel, Ph.D. (2022) Needle Size and Detectability Study. (Available upon request)

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## About Melzi

Melzi is a surgical device company dedicated to creating innovative technologies that improve patient outcomes while reducing hospital expenses. Our premiere product, the Melzi Sharps Finder (MSF), is a handheld tool that helps OR staff locate lost metallic sharps. The MSF is an ideal solution in case of a needle miscount or when uncountable items like instrument fragments are lost in vivo, supplementing current protocols with advanced detection.



### LEARN MORE:

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