

# ***CaTHSTiX*<sup>TM</sup> Catheter Stabilizer System**

A Novel Securement System for Catheters — Instantly Engage & Disengage for Clinical Flexibility, Enhanced Safety, and Broad Applicability

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The logo for Kusmo, featuring the word "Kusmo" in a blue, sans-serif font. A red horizontal line is positioned above the letters "u" and "s", starting from the top of the "u" and extending to the right, ending above the "o".

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## Executive Summary

Catheter securement remains a critical element of safe, effective vascular access and procedural catheter management. Despite the wide availability of securement devices, challenges remain: inadequate longitudinal fixation, limited catheter size range, inability to re-adjust after initial fixation, and operator workflow inefficiencies. The *CaTHSTiX* system from Kusmo addresses these needs by delivering a low-profile stabilizer that enables instantaneous securement and unsecured repositioning, supports sutures if desired, accommodates catheters 4 Fr–13 Fr, and is compatible across diagnostic, interventional, central line, PICC, paracentesis and small chest tube applications. The *CaTHSTiX* system is designed in alignment with CDC and Infusion Nurses Society (INS) recommendations supporting sutureless securement, minimization of catheter movement, and preservation of dressing integrity.

*CaTHSTiX* uses a proprietary Borst Touhy–mechanism clamp on the catheter combined with a hook-and-loop substrate for rapid fix to the patient’s skin or surgical field, and provides a suture groove enabling optional suture fixation without sacrificing repositioning flexibility. Our internal data demonstrate resistance to blood exposure, strong longitudinal stabling, low peel force (advantageous for rapid re-engagement), and compatibility with occlusive dressing overlays when higher peel/lateral forces are required.

Compared with current market solutions — such as the StatLock Stabilization Device, StatLock PICC Plus, and the CathSecure Plus Device (and other systems such as the hook-based Securecath) — *CaTHSTiX* offers a broader size range, suture-flexibility, rapid re-access workflow and lower profile footprint. Moreover, in interventional and electrophysiology settings, *CaTHSTiX* facilitates operator distancing during fluoroscopy (leveraging the inverse-square law to reduce radiation exposure) by allowing catheter manipulation while secured remotely.

This white paper presents: the clinical background, technology overview, comparative advantages vs. competitor securement devices, applications across specialties, operator workflow and safety benefits (including radiation exposure reduction), and evidence context.

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# 1. Clinical Background & Unmet Need

Securing catheters—whether peripheral, central, arterial, interventional or indwelling—is foundational to safe patient care. Catheter dislodgement, migration, and skin-traction complications remain frequent. For example, a quality-improvement project using the StatLock device for PICCs in pediatric cardiology patients found catheter dislodgements in 30.8 % of the StatLock group versus 59.3 % in a tape/suture historical control ( $P = .035$ )<sup>1</sup>. [AACN Journals](#)

Meta-analysis data on StatLock for PICCs indicate that Securing devices reduced dislodgement and unplanned removal, and decreased complications such as skin ulceration, phlebitis, catheter-related bloodstream infection and cellulitis<sup>2</sup>. [PubMed+1](#)

However, certain limitations persist with current devices:

- Many are adhesive only, lacking suture-compatibility when required (e.g., on hairy skin, high-movement zones, or when maximum mechanical security is desired).
- Some devices support only a limited catheter size range and may not accommodate both small diagnostic/interventional catheters and larger lumen central/PICC lines.
- Once fixed, repositioning may require device removal or reapplication, slowing workflow in dynamic interventional procedures.
- Some devices (e.g., hook-based anchors) introduce risk of skin trauma.
- In the fluoroscopy/interventional suite environment, securement systems must permit rapid device repositioning while reducing operator radiation exposure.

Thus, there is a need for a flexible, broad-spectrum catheter stabilizer that allows: instantaneous securement/unsecurement, optional suture fixation, broad catheter size compatibility, minimal footprint, rapid repositioning, and support for interventional workflow (including radiation-safety benefits). *CaTHSTiX* is designed to meet this need.

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## 2. Product Technology: *CaTHSTiX* System

### 2.1 Design Overview

The *CaTHSTiX* system comprises:

- A catheter-mounted stabilizer mechanism using a Borst Touhy clamp approach: the catheter is held by a precisely engineered clamp which grips securely yet allows release



and repositioning by the operator without disturbing the catheter path or the fixation to the skin.

- A hook-and-loop (Velcro-type) substrate adhered to the patient's skin or surgical field for rapid anchoring of the clamp.
- A suture groove integrated into the clamp-base to permit optional suture anchoring of both the device and catheter (especially useful in patients with excess hair, high motion, or when additional mechanical security is needed).
- Compatibility across catheter sizes from 4 French to 13 French.
- A low-profile footprint designed to minimize adhesive base area, reduce interference with occlusive dressings, and avoid bulky taping assemblies.
- Demonstrated resistance to blood contamination (in-house "Blood and *CaTHSTiX*" tutorial on website).
- The system allows rapid re-engagement of the catheter (low peel force) while retaining strong longitudinal securement when the clamp is engaged. If higher peel/lateral forces are desired, the *CaTHSTiX*/clamp assembly can be overlaid with an occlusive dressing, so that the combination provides both strong longitudinal (via clamp) and lateral/peel stability (via dressing).

Figure #1:



Figure #1 depicts the *CaTHSTiX* assembly and catheter aligned for insertion into the orifice.

Figure #2:

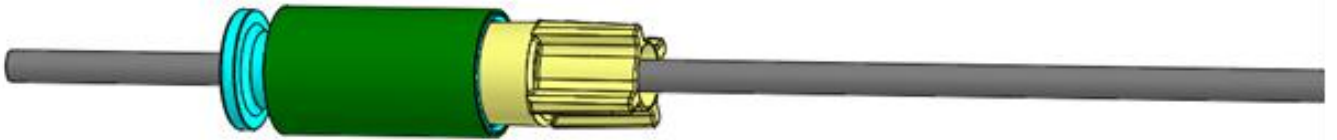


Figure #2 demonstrates the catheter within the *CaTHSTiX* assembly. The assembly is secured to the catheter by rotating the fins, and the suture groove enables optional fixation for enhanced stability.

Figure #3

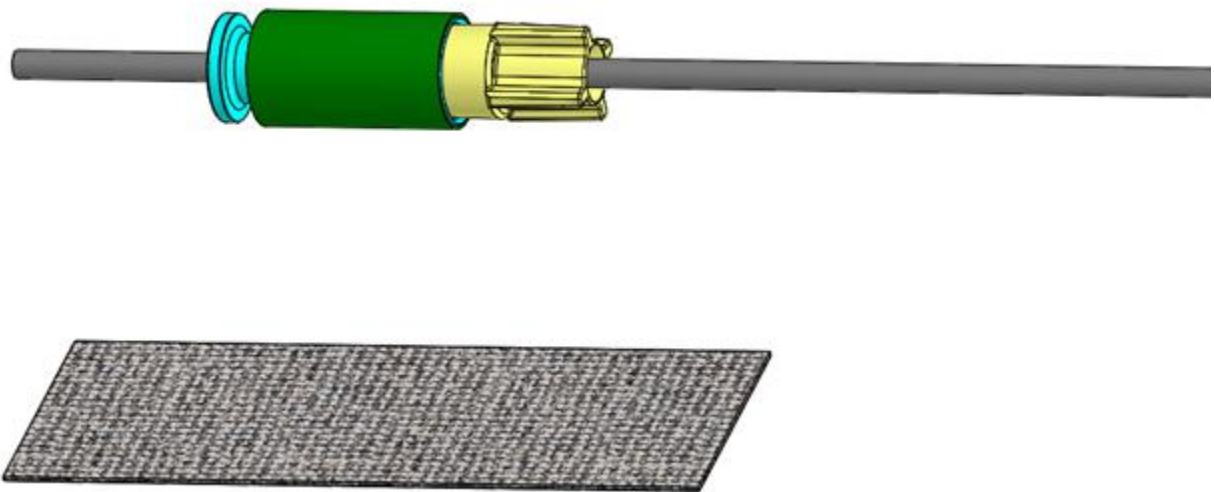


Figure #3 shows the catheter with the *CaTHSTiX* assembly ready to be secured to the attachment pad.

## 2.2 Mechanism & Workflow

1. Insert catheter (diagnostic, interventional, central, PICC, chest tube, paracentesis, arterial line) per standard procedure.
2. Apply the adhesive hook-and-loop substrate patch to skin or surgical field adjacent to insertion site.
3. Slide the catheter through the clamp mechanism and engage the Borst Touhy clamp to secure the catheter longitudinally.
4. If desired, tie a suture through the groove to both clamp and device, anchoring to skin or underlying securement.
5. If higher lateral/peel security is required (e.g., for long-term indwelling catheter), overlay an occlusive dressing covering the *CaTHSTiX* assembly and catheter exit site. The dressing adds lateral stability but still allows the clamp to manage longitudinal forces.
6. To reposition or remove the catheter, disengage the clamp (or release the loop patch) without needing to undo sutures (sutures remain intact) and reposition the catheter; re-clamp as needed. This allows rapid re-access in interventional workflows.
7. Removal: release clamp, peel substrate, and dispose per standard protocols. The low adhesive footprint ensure minimal skin trauma and efficient workflow.

## 2.3 Key Performance Features

- **Broad size compatibility** – supports 4 Fr to 13 Fr catheters, covering small diagnostic/interventional catheters through larger central lines and PICCs.
- **Instant secure / unsecured** – the hook-and-loop plus clamp allow rapid engagement/disengagement, enabling dynamic repositioning (e.g., during balloon/stent/wire maneuvers in interventional cardiology or electrophysiology procedures).
- **Optional sutures** – integrates a suture groove enabling suture fixation when clinically indicated, providing flexibility not present in many competing stabilizers.
- **Low-profile footprint** – minimal adhesive base means less surface area on skin, and occlusive dressing can be applied comfortably over the assembly without creating tape “jungle” or interfering with dressing.
- **Reversible repositioning** – allows movement of catheter without needing to remove sutures (if used) or the device, preserving clinical access while maintaining security.
- **Resistance to blood contamination** – in-house demonstration shows device holds secure under exposure to blood.
- **Radiation-safety enhancement** – by supporting secure and fixed catheter manipulation and repositioning while allowing operator distancing, *CaTHSTiX* contributes to radiation exposure reduction via the inverse square law (distance from source reduces exposure

dramatically). As literature shows, doubling distance can reduce dose by  $\sim 1/4$ ; stepping back during bolus-chase angiography reduced exposure by  $\sim 75\%$ <sup>3</sup>. [Lippincott Journals+1](#)

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### 3. Comparative Analysis vs. Current Solutions

To demonstrate *CaTHSTiX*'s value proposition, we compare it to key competitors and highlight differential advantages.

#### 3.1 Competitor: StatLock

The StatLock product line (e.g., StatLock Stabilization Device, StatLock PICC Plus) has been widely adopted and studied. Meta-analysis shows that use of StatLock reduced incidence of catheter dislodgement/unplanned removal and associated complications<sup>2</sup>. [PubMed+1](#) For example, one large multi-hospital study (10,164 patients) found the StatLock device significantly reduced phlebitis by  $\sim 80\%$  and overall complications by  $\sim 67\%$  compared to tape<sup>5</sup>. [Infection Control Today](#)

##### StatLock Advantages:

- Evidence-based performance
- Established market presence

##### StatLock Limitations (addressed by *CaTHSTiX*):

- Adhesive base covers a large area; larger footprint vs *CaTHSTiX* low-profile design.
- The occlusive dressing covers is applied over the catheter–device adhesive backing interface rather than directly on skin, potentially reducing direct skin adherence.
- Many StatLock models do not support optional suture fixation.
- Repositioning after initial fixation may require device removal or full reapplication; less flexible for dynamic interventional workflows.
- Some size limitations: less support for very small (4 Fr) or higher end (13 Fr) catheters across one platform.
- Does not specifically facilitate repositioning during interventional procedures (balloons/stents/wires) or operator radiation distancing.

#### 3.2 Competitor: Securecath (and similar hook-based devices)

The Securecath device (a subcutaneously anchored sutureless device) was studied for PICC securement: in a prospective observational study of 30 adult cancer patients over 4,963 catheter days and  $\sim 709$  dressing changes, Securecath had no episodes of PICC dislodgement and lower complications vs traditional devices<sup>7</sup>. [PubMed](#)



### **Securecath Advantages:**

- Strong securement via subcutaneous anchor design.
- Good performance in long-term indwelling catheter settings.

### **Securecath Limitations (addressed by *CaTHSTiX*):**

- The hook or anchoring mechanism penetrates or anchors into skin/subcutaneous tissue — increased potential for trauma, discomfort, and removal complexity.
- Less compatible with dynamic repositioning or re-adjustment (once anchored, catheter is relatively fixed).
- May require trimming or specific sizes; possibly not broad 4 Fr–13 Fr range.
- Larger footprint and more invasive anchor than a skin-surface, hook-and-loop plus clamp system.
- Workflow not optimized for interventional procedures .

### **3.3 Other Devices: GripLok, EZ-Holder (TZ Medical)**

GripLok is a catheter stabilizer noted for having a large footprint and, when covered by an occlusive dressing, can involve a “jumbled mess” of tape and adhesive layers. This complicates dressing changes and may increase skin trauma.

The EZ-Holder from TZ Medical uses a snap-in mechanism (snap to engage, unsnap to remove), supports 5 Fr–9 Fr catheters. While useful for certain applications, it is less seamless for rapid re-engagement and narrower in size range relative to *CaTHSTiX*.

#### **Limitations addressed by *CaTHSTiX*:**

- Encased device for catheter vs GripLok; avoids complex tape/tape-jungle.
- More seamless mechanism than snap-in/snap-out (EZ-Holder) — faster engagement/disengagement.
- Broader catheter size range (4 Fr–13 Fr) vs EZ-Holder’s 5 Fr–9 Fr.
- Optional suture groove allows flexibility not present in many snap/adhesive only systems.
- Optimized for interventional operator workflows (rapid repositioning, less interruption).

### 3.4 Summary Table

Feature	<i>CaTHSTiX</i>	StatLock	Securecath / Hook-anchor	Other (GripLok / EZ-Holder)
Catheter size range	4 Fr–13 Fr	Varies (typically limited)	Good for PICCs (>5 Fr)	EZ-Holder 5 Fr-9 Fr; GripLok large footprint
Instant secure/unsecure & reposition	✓	Limited	Limited	Snap-in/unsnap (EZ) or large tape (GripLok)
Optional suture groove	✓	Generally no	Anchor hook substitute but less optional	No
Low-profile footprint	✓	Larger adhesive area	Anchor is invasive	Footprint large/Tape complex
Support for interventional workflow (catheter repositioning during procedure)	✓	No	No	Less Optimized
Radiation-safety (operator distance) support	✓	Implicit only	No	Less Optimized
Re-engagement without rewriting fixation/sutures	✓	Requires removal/redo	Difficult	Varies
Compatibility with occlusive dressing overlay for enhanced lateral/peel force	✓	Yes but footprint larger	Yes but hook anchor design	Yes but messy/tape heavy

In short, *CaTHSTiX* combines features of suture-compatible, repositionable, broad-sized, low-profile securement into a single system tailored for both routine and high-demand interventional workflows.

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## 4. Applications Across Clinical Settings

### 4.1 Interventional Cardiology & Radiology

In angiography, PCI, stent, balloon and wire-based procedures, frequent catheter repositioning is required. *CaTHSTiX* enables secure grounding of diagnostic and interventional catheters, allowing the operator to engage devices, reposition wires or balloons, walk back from the table (reducing radiation exposure) and return to fine-tune catheter positioning without needing to remove the stabilizer. For example, the system supports radial and femoral interventional catheters in the 4 Fr–13 Fr range.

### 4.2 Electrophysiology

For EP procedures (e.g., His bundle, coronary sinus catheters, intracardiac echocardiography [ICE] catheters), torque control and positional stability are critical. *CaTHSTiX* can secure the catheter shaft while still enabling fine adjustments and repositioning without complete refixation. This is useful when securing intracardiac ultrasound catheters for stable echo windows during trans-septal punctures or mapping procedures. The suture groove is useful when securing temporary pacing wires.

### 4.3 Central Lines, PICC Lines & Intensive Care

In the ICU, central venous lines, PICCs, small chest tubes or long arterial lines benefit from a securement device that permits repositioning without complete device removal. *CaTHSTiX* supports sizes up to 13 Fr, making it applicable for larger central lumens. When overlaid with an occlusive dressing, the combined system provides strong longitudinal and lateral securement, reducing accidental dislodgement in high-motion patients.

### 4.4 Emergency, Anesthesia, Critical Care

In emergent central line placements (ED, OR, ICU, Floors), rapid securement is key. *CaTHSTiX* enables rapid fix of catheters with standard dressing and optional suture backup (e.g., in hairy arms or mobile extremities). The low footprint aids placement in constrained surgical fields or in mobile patients.

### 4.5 Paracentesis and Small Chest Tubes



Small-bore paracentesis catheters or chest tubes (often ~5 Fr–10 Fr) are subject to displacement from patient movement, coughing or shifting. *CaTHSTiX* supports securement with optional suture anchoring and minimal footprint for patient comfort while maintaining reposition capability if drainage ports need adjustment.

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## 5. Operator Safety & Radiation Exposure Reduction

In fluoroscopic and interventional procedures, operator radiation exposure is a recognized risk. One of the key strategies for reducing exposure is “distance” — as defined by the inverse-square law. Specifically: the intensity of radiation exposure decreases by the square of the distance from the source. For example, when distance is doubled, exposure is reduced to one quarter.

[Musculoskeletal Key+1](#)

In practical terms:

- Studies note that at 1 m from the patient (90 degrees to the incident beam) the radiation intensity is ~0.1 % of the beam incident on the patient. [radiologyresearch.org+1](#)
- Another source states that stepping back during bolus-chase angiography reduced exposure by ~75 %<sup>3</sup>. [Lippincott Journals](#)

*CaTHSTiX* supports this safety benefit in two ways:

- Because the catheter is securely anchored yet repositionable, the operator can step away (increase distance) from the radiation source while manipulating tubing, wires or devices with confidence that the catheter base remains stable.
- The low-profile and rapid clamp mechanism reduce time spent manually holding or stabilizing the catheter close to the beam entry site. Less “hands-on” close-to-beam manipulation means less exposure from scattered radiation.

In short, the combination of a secure fix and the ability to step back enhances adherence to the “time, distance, shielding” triad of radiation safety, with a particular emphasis on distance.

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## 6. Economic & Workflow Benefits

### 6.1 Workflow Efficiency

- Instant secure/unsecure reduces time compared to adhesive-only or suture-only fixation.
- Repositioning without device removal reduces downtime in interventional suites.
- Suture groove permits optional fixation without switching devices or adding additional anchors.
- Low footprint and compatibility with occlusive dressings make dressing changes faster and cleaner (less tape/mess) compared with bulkier securement systems.

### 6.2 Cost Considerations

While detailed cost-benefit modelling will depend on hospital purchasing and usage patterns, we can extrapolate from published data. For instance, one large study found that use of StatLock vs tape saved ~\$277,000 annually in one hospital from reduced complications and nursing time<sup>5</sup>.

[Infection Control Today](#)

*CaTHSTiX*'s workflow and safety benefits suggest potential for:

- Reduced catheter dislodgements and restarts (with associated nursing/interventional time savings).
- Reduced skin complications or trauma from large footprint adhesives or skin-penetrating hooks.
- Reduced radiation-related occupational risks (though quantification will require dedicated study).
- Enhanced operator throughput in interventional suites (due to faster repositioning).

### 6.3 Adoption & Training

*CaTHSTiX* is designed for simplicity: the hook-and-loop substrate and clamp mechanism are intuitive, the suture groove is optional (thus not mandatory in all cases), and the device is compatible across multiple specialties. Training time is minimal compared to devices requiring subcutaneous anchoring or complex tape assemblies. This ease of use supports faster adoption and lower learning curve.

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## 7. Evidence Context & Supporting Literature

- Brandon et al. (2014) evaluated StatLock in PICC securement in pediatric cardiology patients: dislodgement was significantly reduced (8/26 in StatLock vs 16/27 in control;  $P = .035$ )<sup>1</sup>. [AACN Journals](#)
- A systematic review and meta-analysis of StatLock for PICCs: Thirteen randomized, controlled trials (1,970 patients) showed lower incidence of dislodgement, unplanned removal, skin ulceration, phlebitis, catheter-related bloodstream infection, cellulitis and greater patient comfort with StatLock compared to tape/sutures<sup>2</sup>. [PubMed](#)
- Schears et al. reported that StatLock vs tape reduced phlebitis complications by ~80%, overall IV therapy complications by ~67% and unscheduled restarts by ~76%<sup>5</sup>. [Infection Control Today](#)
- On radiation safety: Musculoskeletal Key and other sources mathematically explain the inverse-square law in fluoroscopic settings: doubling the distance from the source reduces radiation by a factor of four. [Musculoskeletal Key+1](#)

While no published peer-review study yet exists for *CaTHSTiX* (as this is a launch product), these established data on securement devices and radiation safety provide the evidence context in which *CaTHSTiX* is positioned.

### 7A. Alignment with CDC and INS Guidelines for Catheter Securement (Revised)

#### 7A.1 CDC Recommendations (Intravascular Catheter-Related Infection Prevention)

Guidelines from the Centers for Disease Control and Prevention (CDC) identify catheter stabilization as an important component of preventing catheter-related complications, including catheter-related bloodstream infections (CRBSIs), phlebitis, and mechanical dislodgement.

Key CDC-aligned principles include:



- **Minimize catheter movement at the insertion site (Category IB)**  
Catheter motion contributes to microbial entry, mechanical irritation, and dislodgement risk. Stabilization is strongly recommended to reduce pistoning and traction.
- **Use sutureless securement devices when possible (Category II)**  
The CDC recommends considering sutureless securement devices to reduce:
  - needlestick injury risk
  - local inflammation and infection associated with sutures
- **Maintain dressing integrity (Category IA/IB)**  
Securement approaches should support the application and maintenance of sterile, occlusive dressings over the insertion site.
- **Facilitate site inspection and maintenance (Category IB)**  
Securement systems should allow routine visualization and assessment of the catheter insertion site without unnecessary disruption.

### Relevance to *CaTHSTiX*:

*CaTHSTiX* aligns with CDC recommendations by:

- Providing **strong longitudinal stabilization**, directly supporting Category IB guidance to minimize catheter movement
- Functioning as a **sutureless securement system consistent with CDC Category II recommendations**, while preserving optional suture capability when clinically indicated
- Enabling **full occlusive dressing overlay**, supporting Category IA/IB practices for infection prevention
- Allowing **repositioning without full device removal**, reducing repeated dressing disruption and potential contamination

This hybrid approach enables clinicians to follow CDC guidance while retaining flexibility for higher-risk or high-motion scenarios where supplemental fixation may be appropriate.

## 7A.2 INS Standards of Practice (Infusion Therapy Standards)

The Infusion Nurses Society (INS) Infusion Therapy Standards of Practice provide comprehensive recommendations for vascular access device (VAD) securement, emphasizing safety, durability, and skin integrity.

Core INS recommendations include:

- **Use engineered stabilization devices (ESDs)** rather than tape or sutures alone
- **Prevent catheter migration and dislodgement** through effective stabilization
- **Preserve catheter function and vessel integrity** by minimizing mechanical irritation
- **Ensure securement method is appropriate for catheter type, location, and duration**



- **Allow for dressing changes without disrupting catheter position**
- **Avoid skin damage and medical adhesive–related skin injury (MARSI)**

INS also recognizes that:

- Different clinical scenarios require **variable levels of securement strength**
- Securement systems should support **clinical workflow efficiency**, especially in acute and procedural settings

### **Relevance to *CaTHSTiX*:**

*CaTHSTiX* aligns with INS standards through:

- **Engineered stabilization device (ESD) design**  
The Borst Touhy–based clamp provides controlled, reproducible stabilization beyond tape-based methods.
- **Reduction in catheter migration and dislodgement risk**  
Strong longitudinal fixation supports a primary INS objective.
- **Skin protection and reduced MARSI risk**
  - Low-profile adhesive footprint
  - Reduced adhesive burden and removal frequency
- **Support for dressing integrity and maintenance**  
Designed for use in conjunction with occlusive dressings, consistent with INS recommendations.
- **Adaptability across clinical scenarios**  
Applicable to short-term procedural and long-term indwelling catheters.
- **Repositioning without loss of securement**  
Enables catheter adjustment without full device replacement, aligning with INS emphasis on maintaining catheter stability during care activities.

## **7A.3 Clinical Implications**

By aligning with both CDC and INS recommendations, *CaTHSTiX* supports:

- **Infection prevention strategies**
  - Reduced insertion-site motion
  - Maintained dressing integrity
  - Reduced need for repeated dressing disruption
- **Safety improvements**
  - Reduced needlestick exposure through sutureless securement (CDC Category II)
  - Optional escalation to suture fixation when clinically appropriate
- **Standardization of care**



- Consistent with guideline-based vascular access practices
  - Applicable across multiple catheter types and clinical environments
  - **Improved patient and clinician outcomes**
    - Reduced dislodgement risk
    - Lower skin complication rates
    - Enhanced workflow efficiency
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## 8. Implementation & Use Guidelines

### 8.1 Selection Criteria

*CaTHSTiX* is suitable for securing catheters in the size range 4 Fr–13 Fr across the following use-cases: diagnostic/interventional catheters, central lines, PICC lines, small chest tubes, paracentesis catheters and arterial lines. Operators (interventional cardiologists, interventional radiologists, cardiac electrophysiologists, anesthesiologists, emergency physicians, critical-care physicians, PICC-nurses) can adopt based on procedural type and workflow demands.

### 8.2 Step-by-Step Use

1. Skin preparation: clean insertion site, allow drying per hospital protocol.
2. Apply the hook-and-loop substrate adjacent to the catheter insertion site (firmly adhere to skin or surgical field).
3. Insert catheter and use clamp mechanism to engage the catheter shaft.
4. If desired (e.g., excess hair, high motion zone), tie a suture through the suture groove to fix both clamp and substrate to the skin.
5. For additional lateral/peel stability (especially for long-term indwelling catheters), apply an occlusive dressing over the assembly.
6. Monitor the securement during dressing changes, when repositioning is required: release clamp, reposition catheter as needed, re-clamp.
7. At catheter removal: release clamp and peel off substrate; optionally remove suture if used; dispose per standard protocols.

### 8.3 Best Practices & Tips

- Ensure substrate adhesive is applied to clean, dry skin to maximize adherence.
- If sutures are used, ensure soft tissue clearance and knot security; the suture groove is designed to permit repositioning without removing the suture.
- When used in interventional settings, plan for operator distancing: after clamp fixation, the operator may step back or move during fluoroscopy, reducing radiation exposure.

- When overlaying an occlusive dressing, ensure the dressing covers the full assembly (substrate + clamp + catheter exit) to maximize lateral/peel stability.
  - For hairy skin or high-motion areas (e.g., groin, mobile limb), consider combining suture groove use with occlusive dressing.
  - Document securement device use in the procedural note (device type, size of catheter, use of sutures, dressing type) for quality monitoring (e.g., dislodgement rates, dressing changes, securement-related complications).
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## 9. Conclusion

The *CaTHSTiX* system from Kusmo represents a next-generation catheter stabilizer designed to meet the dual imperatives of secure fixation and workflow flexibility in modern vascular access and interventional care. With its broad size compatibility (4 Fr–13 Fr), instant secure/unsecure mechanism, optional suture groove, low-profile footprint, and support for dynamic procedural workflows, *CaTHSTiX* addresses persistent limitations seen in current securement technologies.

Importantly, *CaTHSTiX* is aligned with established best practices from the Centers for Disease Control and Prevention (CDC) and the Infusion Nurses Society (INS), including:

- **Use of sutureless securement devices to reduce infection and needlestick risk (CDC Category II recommendation)**
- **Minimization of catheter movement** to reduce complications (CDC Category IB principles)
- **Maintenance of sterile, occlusive dressings and site integrity** (CDC Category IA/IB practices)
- **Use of engineered stabilization devices (ESDs)** over tape or sutures alone (INS Standards of Practice)
- **Prevention of catheter migration, dislodgement, and skin injury**, while maintaining site visibility and dressing integrity (INS Standards)

By integrating these guideline-driven principles with novel functionality, *CaTHSTiX* introduces a hybrid securement approach that is both **standards-aligned and clinically adaptable**—functioning as a sutureless system consistent with CDC recommendations, while preserving the ability to incorporate sutures when clinically necessary.

Across interventional cardiology, electrophysiology, interventional radiology, critical care, anesthesia, emergency medicine, and PICC practice, *CaTHSTiX* offers the potential to:

- reduce catheter dislodgement, migration, and associated complications
- improve procedural efficiency through rapid repositioning and re-engagement



- enhance operator safety, including reduced radiation exposure via increased working distance
- minimize skin trauma and adhesive burden through a low-profile design
- streamline dressing changes and overall catheter management workflows

These advantages are achieved within the framework of well-established clinical evidence and guideline recommendations. Rather than redefining standards of care, *CaTHSTiX* enhances how those standards are operationalized—particularly in high-demand procedural environments where both stability and flexibility are required.

Healthcare institutions adopting *CaTHSTiX* may improve alignment with infection-prevention and vascular access best practices while enhancing workflow efficiency and clinician ergonomics. Routine quality monitoring—such as tracking dislodgement rates, dressing integrity, and procedural efficiency—can support ongoing optimization without necessitating entirely new evidence paradigms.

Kusmo remains committed to supporting clinical integration, user training, and continuous refinement to ensure that *CaTHSTiX* delivers meaningful improvements in patient safety, clinician experience, and guideline-aligned care delivery.

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