

## BE-TI Safety Catheter

Fully enclosed puncture system for central venous catheter placement

### Invention

The current method for placing catheters is known as the "Seldinger method" and has been in use without any significant alterations or modifications for around 50 years. In this method, a needle is inserted into the patient's superior vena cava and outflowing blood signals to the physician that puncture has been successful. What follows is a time-consuming procedure consisting of several steps: One hand is used to stop the blood flowing out of the needle while the other hand is used to guide a wire into the cannula. Once this guidewire has been placed inside the patient's body, the cannula is replaced with a dilator, which is immediately withdrawn and itself replaced by a catheter. Once the

catheter is in position, the guidewire is removed. Blood continues to flow uncontrollably between each of these steps.

Rendering of the BE-TI Safety Catheter System.

The **BE-TI Safety Catheter System** makes it possible to place a catheter faster, safer and with considerably less blood loss. The **BE-TI Safety Catheter System** consists of a puncture set with built-in catheter and attached syringe. First, the patient is punctured as per usual. However, with the **BE-TI Safety Catheter System**, the cannula, dilator and catheter form a single unit, making the multitude of steps described above in the current Seldinger method no longer necessary.

Upon successful puncture, blood flows into an attached syringe, which is drawn back along with the cannula and stops inside a safety enclosure. The dilator is already inside the puncture site. The catheter can then be placed without substantial blood loss, cumbersome manipulation or complicated handling. Once the catheter is placed, the introducer is separated from the catheter through a special peel-off process. The catheter is now in its intended position and can be connected.

### Commercial Opportunities

Prototypes have been successfully tested. An investor or partner is needed to manufacture and market the BE-TI safety catheter system.

### Current Status

Patents have been granted in the US and EP, with additional patents pending in the US, EP and IN. Utility models and trademarks have been registered.

An invention of TieSch Medical GmbH & Co. KG.

### Competitive Advantages

- Fully enclosed puncture system prevents bacterial contamination
- No needle, wire, dilator, or catheter handling necessary
- Safety enclosure at needle tip protects users from sharps injuries
- Built-in check valve prevents blood loss and air entry
- Can be placed in almost any body position without the risk of air embolism
- Saves valuable time in emergency situations

### Technology Readiness Level

1 2 3 4 5 6 7 8 9

Technology validated in relevant environment

### Industries

- Medical technology

### Ref. No.

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