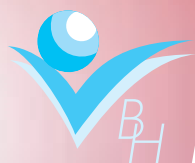
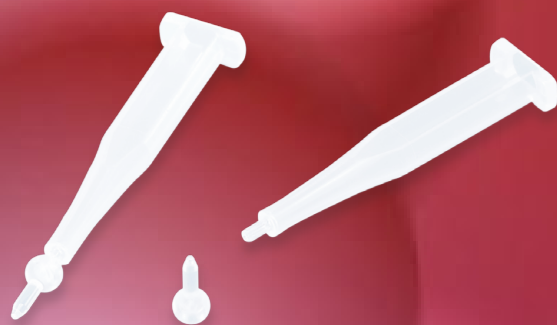


Your Partner in Nephrology



BioHoleTM *Needle System*

*Buttonhole Device and
Dull A.V. Fistula Needle*





NIPRO BIOHOLE™ NEEDLE SYSTEM

BENEFITS AND FEATURES OF NIPRO BIOHOLE™ BUTTONHOLE DEVICE

The time until a fixed puncture route is established is much shorter with this method than with the standard method using a sharp needle: 14 days using Nipro Biohole™ ButtonHole device, against 2-3 months with the original method.*

- No restriction in the normal activities of daily living for the patient.
- Reduction of bleeding time.
- The method is safe and effective.
- Timesaving method for creation of the tunnel in non self-cannulating patient.

BENEFITS AND FEATURES OF NIPRO BIOHOLE™ DULL A.V. FISTULA NEEDLES

The Nipro BioHole™ Needle System forms an excellent combination with the buttonhole puncture method. NIPRO BIOHOLE™ Dull A.V. Fistula needle is less sharp than a standard AVF needle.

Using the Nipro BioHole™ Needle System in combination with the buttonhole puncture method results in -

- A reduction of bleeding time.
- Minimum penetration force means less pain to patients.
- An extension of the life the vascular access.
- A reduction of missed punctures.

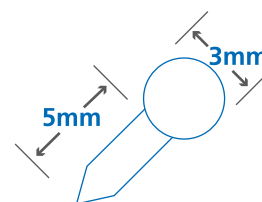


Fig.1.* The indwelling polycarbonate peg. The peg is 5mm in length, and the diameter of its penetrating portion is the same as that of the puncture needle. Its tip is dull, and a spherical stopper (3mm diameter) is provided on the opposite end.

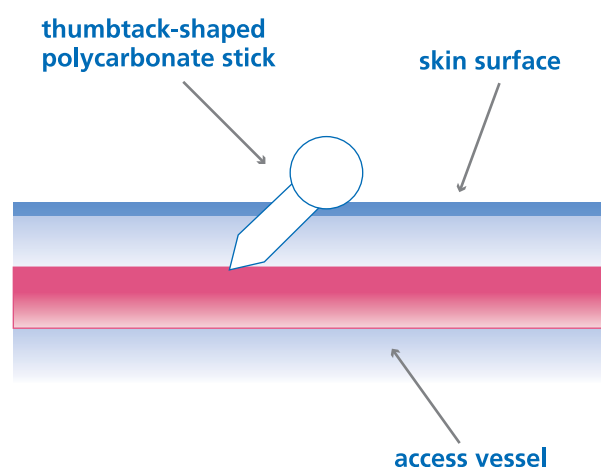


Fig.2.* After withdrawing a puncture needle and stopping bleeding at the end of a standard haemodialysis, the newly developed thumbtack-shaped polycarbonate peg is thrust toward the access vessel along the path of the puncture needle just removed. The peg is short enough so that its tip does not reach the access vessel wall.

NEEDLE GAUGE	NEEDLE LENGTH	TUBE LENGTH	WING	BACK-EYE	CLUMP
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NIPRO BIOHOLE™ DULL A.V. FISTULA NEEDLE

14G	1" (25mm)	300mm or 400mm	Fixed or Turnable	Yes	Yes
15G	1" (25mm)	300mm or 400mm	Fixed or Turnable	Yes	Yes
16G	1" (25mm)	300mm or 400mm	Fixed or Turnable	Yes	Yes
17G	1" (25mm)	300mm or 400mm	Fixed or Turnable	Yes	Yes

NIPRO BIOHOLE™ BUTTONHOLE DEVICE

16G	5mm				
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* Reference: Toma. S., et al. A timesaving method to create a fixed puncture route for the buttonhole technique. Nephrol Dial. Transplant (2003);18:2118-2121