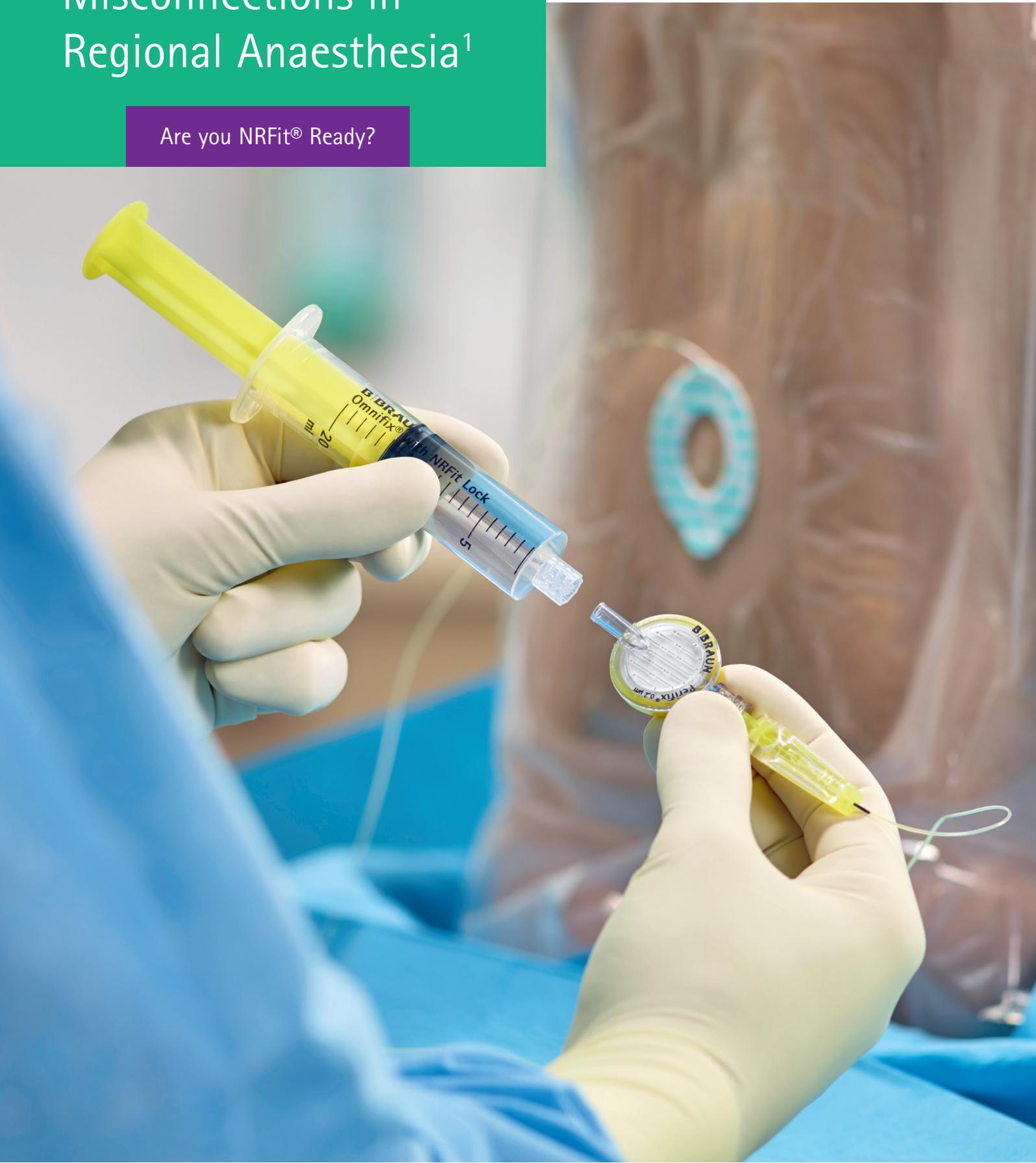




Reducing Risks of Misconnections in Regional Anaesthesia¹

Are you NRFit[®] Ready?



Medical device connectors for Neuraxial & Regional Anaesthesia applications are changing to meet international design standards.

In 2017, the Australian Commission on Safety and Quality in Health Care (the Commission) and the Australian and New Zealand College of Anaesthetists (ANZCA) published a joint statement recommending that medical devices incorporating small-bore connectors be adopted in Australia as part of a global initiative to improve patient safety. Neural, including neuraxial, devices with connectors are required to be compliant with ISO 80369-6: 2016 and safe implementation must be carefully planned.^{1,2,3}

Medication errors during Regional Anaesthesia procedures

The universally compatible Luer connector has been identified as a key element in 'wrong route' medication errors. Luer connectors are widely used for delivery of infusions. Literature shows that any patient having multiple access systems in place are exposed to higher risks of misconnections.⁵

Enhancing patient safety with NRFit®

To reduce the risk of wrong route medication errors the International Organization for Standardization (ISO) has developed standards for small-bore connectors, one being in the field of Neuraxial and Regional Anaesthesia (ISO 80369-6⁴). The name that will be used to identify devices that comply with the ISO 80369-6 standard is:⁴

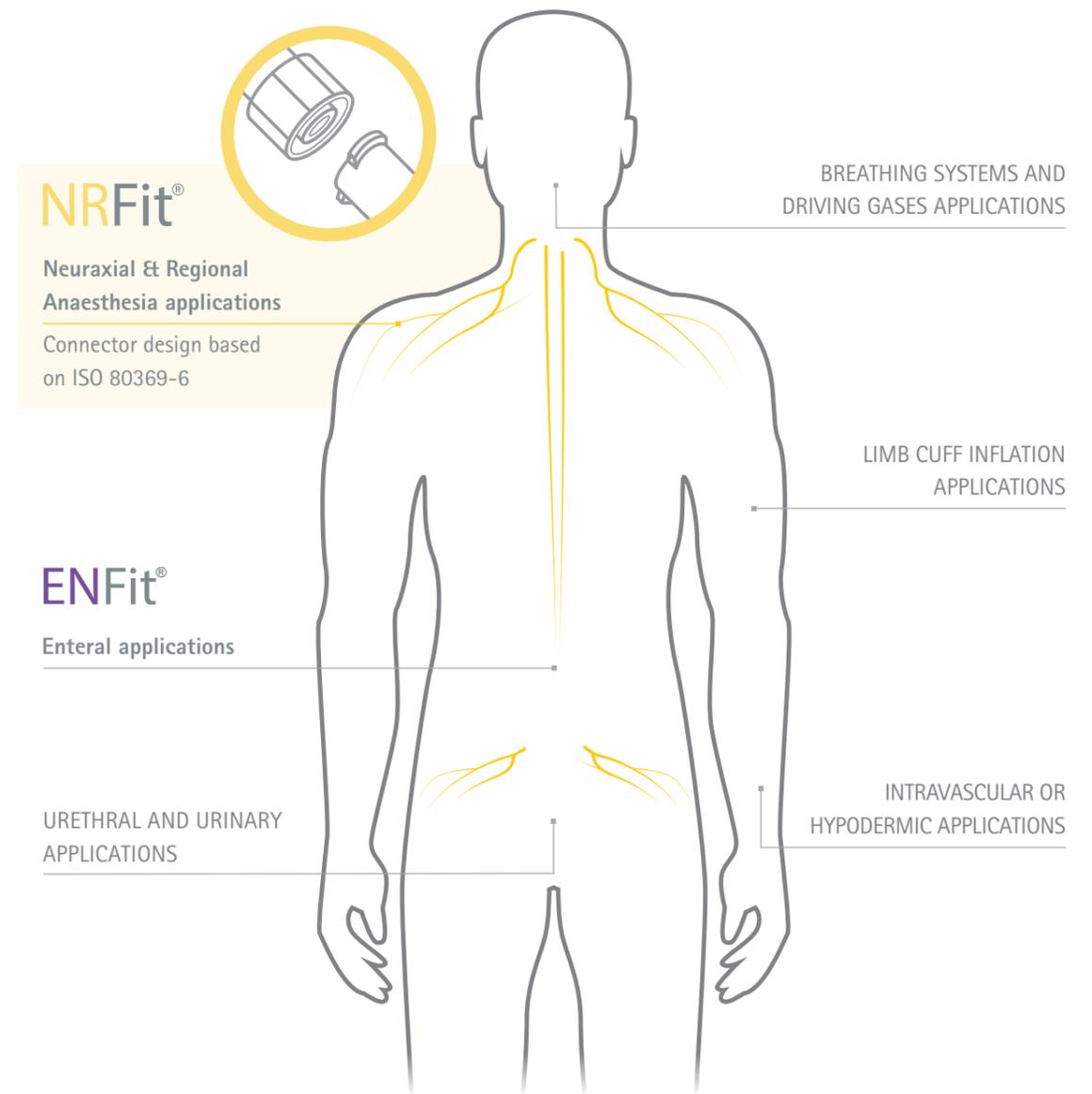
NRFit®

The increasing sensitivity to medication errors in clinical settings is visible in an increasing number of publications on this subject in Pubmed between 2000 and 2014.

ISO 80369-6 in detail

The ISO Standard 'specifies requirements for small-bore connectors intended to be used for connections in Neuraxial applications. Neuraxial applications involve the use of medical devices intended to administer medications to neuraxial sites, wound infiltration anaesthesia delivery, and other Regional Anaesthesia procedures or to monitor or remove cerebro-spinal fluid for therapeutic or diagnostic purposes.'⁶

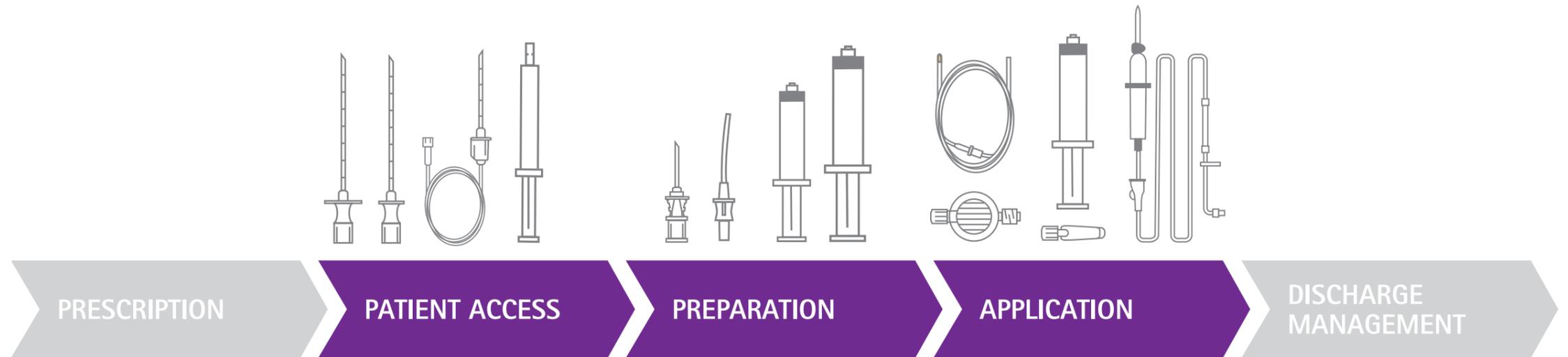
» The International Organization for Standardization (ISO) has identified several medical application areas for which an ISO standard will be developed. These standards are part of the ISO 80369 series. Each standard will provide design and performance specifications for the specific connectors.⁶



Connector Changes in Regional Anaesthesia

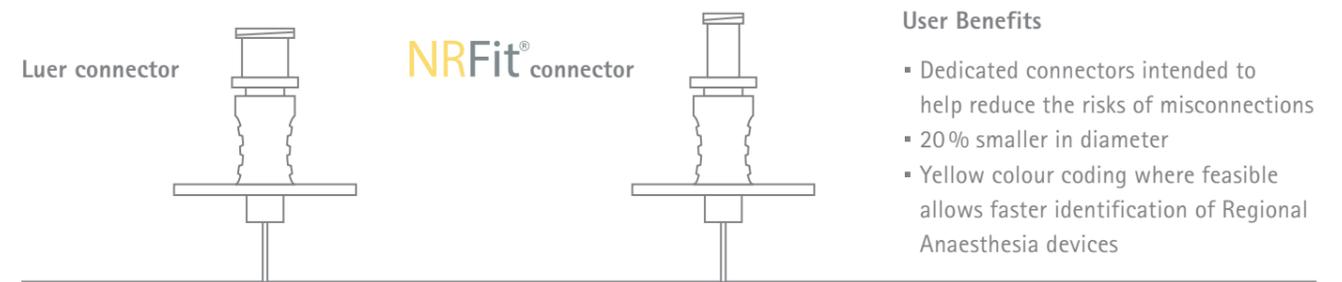
And how it impacts your working process

Observe. Listen. Understand. To find solutions that fit into everyday clinical life, B. Braun conducts a vivid dialogue with customers. Learning the importance of clear structures, we identified five major steps that represent customary therapy processes. Each of these steps is mapped with aligned products that are dedicated towards improving comfort and achieving a higher level of safety for users and for patients.



Regional Anaesthesia products with NRFit® connectors
 In line with the ISO Standard for Neuraxial and Regional Anaesthesia devices, B. Braun has developed a comprehensive portfolio with NRFit® connectors for the corresponding process steps:

PATIENT ACCESS: Spinal, Epidural and PNB needles and LOR syringes
 PREPARATION: Filter needles, straws and syringes
 APPLICATION: Catheters, syringes, filters, catheter connectors, pump disposables



» B. Braun, as a true **System Partner**, helps to stay on top of evolving standards and their realisation across multiple stakeholders, e.g. nurses, pharmacists and anaesthetists. With access to our comprehensive product portfolio in Pain Therapy and through constructive dialogue, our partners benefit from B. Braun's know-how and expertise.

Neuraxial Anaesthesia with NRFit®

Connecting what belongs together



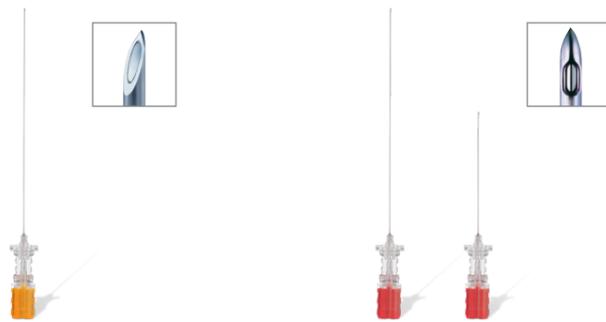
Therapeutic and anaesthetic decisions depend upon a number of factors, including the type and duration of the surgical intervention, patient status and selected postoperative patient management approaches.

Regional Anaesthesia can be divided into central and peripheral techniques. When a local anaesthetic agent is used next to the spinal cord, this is referred to as Neuraxial Anaesthesia. Neuraxial methods include Spinal and Epidural Anaesthesia.



Products with NRFit® connectors

PATIENT ACCESS: SPINAL ANAESTHESIA PRODUCTS



Spinocan®

Spinocan® spinal needles with Quincke bevel provide sharpness for low puncture force. A prism in the spinal needle hub, supports identification of CSF flashback.

Pencan® and Pencan® Paed

Pencan® spinal needles have an atraumatic Pencil point bevel, which helps reduce PDPH.⁷ They are available in adult and paediatric sizes. A prism in the spinal needle hub, supports identification of CSF flashback.

PATIENT ACCESS: EPIDURAL ANAESTHESIA PRODUCTS



Perican®

Perican® epidural needles with Tuohy bevel are available in different sizes. Their polished inner bevel edge helps to reduce the risk of catheter shearing.⁸

PRODUCTS



Perifix® LOR syringe

Perifix® LOR is a dedicated device for the loss of resistance technique in Epidural Anaesthesia. Suitable for air and saline application. Its parabolic graduation helps to differentiate it from conventional syringes.

APPLICATION: EPIDURAL ANAESTHESIA PRODUCTS



Perifix® catheters

Perifix® catheters for Epidural Anaesthesia are available in different versions – Soft Tip and ONE.



Perifix® filter and Perifix® catheter connector

Filters can help to reduce the risk of bacterial infections.⁹ The design of the Perifix® catheter connector and its 'click and ready' mechanism helps to ensure easy use in daily practice.

PRESCRIPTION

PATIENT ACCESS

PREPARATION

APPLICATION

DISCHARGE MANAGEMENT

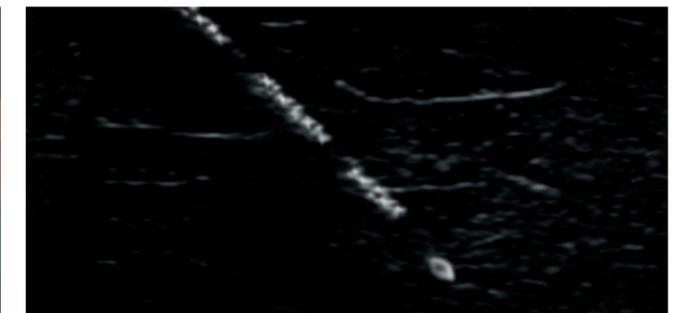
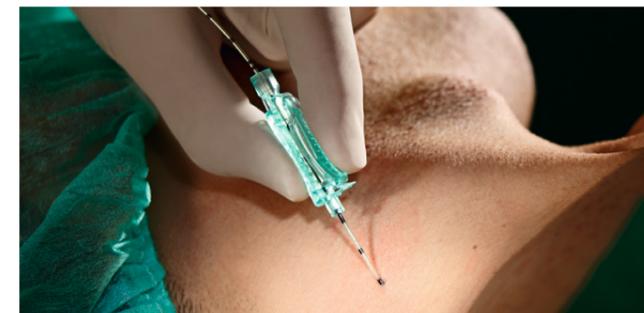
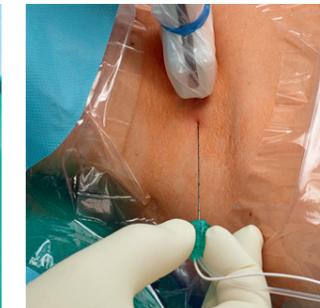
Peripheral Nerve Blocks with NRFit®

Connecting what belongs together



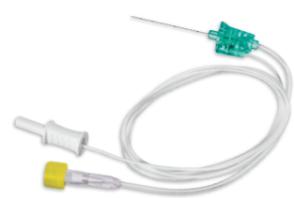
Peripheral and Plexus Nerve Blocks are one of the segments of Regional Anaesthesia, where a local anaesthetic agent is used next to a nerve to provide sensory and motor blockades.

Peripheral nerve blocks can be employed for Anaesthesia and for Postoperative Analgesia in order to support early patient mobilisation and rehabilitation. PNBs are also used in combination with other forms of Anaesthesia and where volatile anaesthetics are contraindicated.



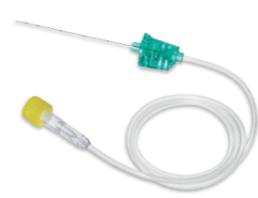
Products with NRFit® connectors

PATIENT ACCESS: SINGLE SHOT PNB PRODUCTS



Stimplex® Ultra 360® needles

Stimplex® Ultra 360® is designed to perform an ultrasound guided peripheral nerve block and nerve stimulation. The 360° X-pattern markings and clear coating results in better ultrasound visualisation and tip identification¹⁰.



Ultraplex® 360 needles

Ultraplex® 360 is a non-stimulating ultrasound needle, equipped with 30° back-cut bevel plus 360° X-shaped markings and a clear coating for better ultrasound visualisation and tip identification from all angles¹⁰, when nerve stimulation is not indicated (e.g. transversus abdominal plane block).

PATIENT ACCESS: CONTINUOUS PNB PRODUCTS



Contiplex® S Ultra 360® needles

Contiplex® S Ultra 360® is a continuous technique needle with a 20° facet bevel, designed to perform ultrasound guided peripheral nerve blocks in combination with nerve stimulation.



Contiplex® Tuohy Ultra 360® needles

Contiplex® Tuohy Ultra 360® is a continuous technique needle with Tuohy bevel, designed to perform ultrasound guided peripheral nerve blocks in combination with nerve stimulation.



Contiplex® C

Contiplex® C is a patented catheter placement system with a catheter-over-needle design. It is designed to help overcome the limitations associated with peripheral catheters, such as complexity of catheter placement, leakage and catheter displacement.

PRESCRIPTION

PATIENT ACCESS

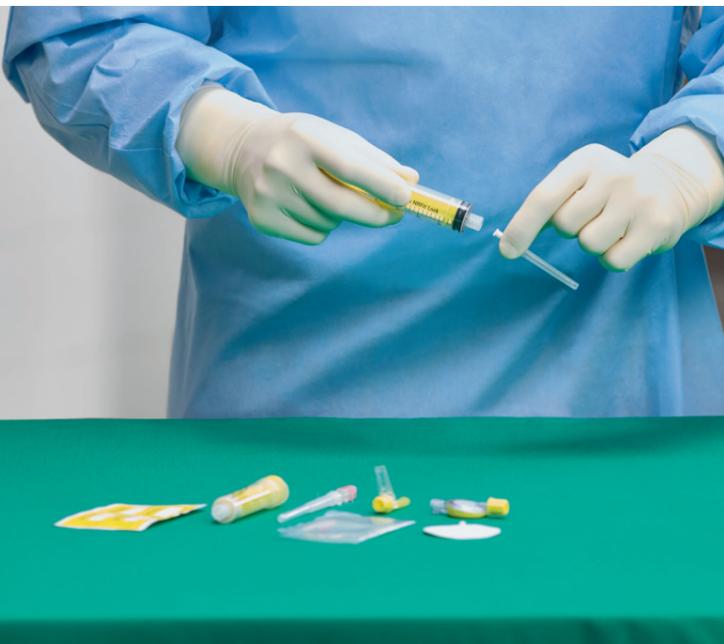
PREPARATION

APPLICATION

DISCHARGE MANAGEMENT

Regional Anaesthesia Accessories and Complementary Portfolio

Connecting what belongs together



Preparation is a fundamental and irreplaceable part of health care practices. B. Braun preparation devices with NRFit® connectors are designed to reduce risks of wrong route medication errors and particulate contamination from the very beginning in Neuraxial and Regional Anaesthesia procedures.



The method of drug application depends on the chosen technique of anaesthesia and on the selected post-operative pain management approach. Different options require dedicated systems. Whether the chosen method of delivery is a bolus or a continuous application, the variety of B. Braun's portfolio ensures flexibility.



The yellow product colour coding of syringes and lines helps to visually differentiate between regular and NRFit® dedicated equipment.

Dedicated pump disposables with NRFit® connectors are pressure resistant and suitable for use with compatible electronic pumps.

Products with NRFit® connectors

PREPARATION: DRAWING-UP DEVICES, FILTER AND CONNECTOR



Sterifix® filter needle

Equipped with a 5 µm filter, Sterifix® filter needle allows for filtering particles during the injection or the withdrawal of medication for Regional Anaesthesia.



Sterifix® filter straws

Sterifix® filter straws for Regional Anaesthesia with a 5 µm integrated filter allow for the withdrawal of solutions whilst filtering particles.



Perifix® filter

Perifix® filters for Regional Anaesthesia are pressure resistant up to 7 bar. In combination with Perifix® PinPad, a self-adhesive fixation device, they can easily be attached to the patient's skin.



Perifix® catheter connector

Perifix® catheter connectors are available in two sizes (19G and 20/24G). A viewing window allows for catheter insertion control to ensure successful connection.

Products with NRFit® connectors

APPLICATION: SYRINGES AND PUMP DISPOSABLES



NRFit® syringe caps and NRFit® stoppers

NRFit® syringe caps are a single sterile solution for storage and/or transport alongside our Omnifix® portfolio. NRFit® stoppers are there to close our NRFit® filter or Perifix® catheter connector.



Omnifix® 1-50 ml

Omnifix® 3-piece syringes are available in a broad range of sizes in NRFit® Slip (1ml-20ml) and NRFit® Lock (3-20ml) formats plus a 50 ml syringe with NRFit® Lock connector can be used in combination with compatible syringe pumps.



Original Perfusor® Line

The Original Perfusor® Line equipped with the NRFit® connector enables compatibility to NRFit® syringes for pump applications. The translucent yellow tubes help to visually differentiate from other lines.



Infusomat® Space Lines

Dedicated Infusomat® Space Lines have a piercing spike and an NRFit® patient connector. The translucent yellow tubes help to visually differentiate from other lines.

PRESCRIPTION

PATIENT ACCESS

PREPARATION

APPLICATION

DISCHARGE MANAGEMENT

Regional Anaesthesia Products with NRFit®

Product specifications

SPINAL NEEDLES

| Spinocan® Quincke | Colour code | Size (G)/ Length (inch) | ø/Length (mm) | Units per box | Code no. (REF) | | |
|---|---|----------------------------|------------------|------------------|-------------------|-------------|--|
|  |  | 29 x 3 1/2" | 0.35 x 88 | 25 | 4501900N-01* | | |
| |  | 27 x 3 1/2" | 0.40 x 88 | | 4503902N-01 | | |
| |  | 26 x 3 1/2" | 0.45 x 88 | | 4502906N-01 | | |
| |  | 25 x 3 1/2" | 0.50 x 88 | | 4505905N-01 | | |
| |  | 22 x 1 1/2" | 0.70 x 40 | | 4507401N-01 | | |
| |  | 22 x 3" | 0.70 x 75 | | 4507754N-01 | | |
| |  | 22 x 3 1/2" | 0.70 x 88 | | 4507908N-01 | | |
| |  | 20 x 3 1/2" | 0.90 x 88 | | 4509900N-01 | | |
| |  | 19 x 3 1/2" | 1.10 x 88 | | 4501195N-01 | | |
| |  | 18 x 3 1/2" | 1.30 x 88 | | 4501390N-01 | | |
| | Long Length | | | | | | |
| |  | 29 x 4 3/4" | 0.35 x 120 | | 25 | 4501918N-01 | |
| |  | 27 x 4 3/4" | 0.40 x 120 | | | 4502140N-01 | |
| |  | 25 x 4 3/4" | 0.50 x 120 | | | 4505913N-01 | |
|  | 22 x 4 3/4" | 0.70 x 120 | 4506090N-01 | | | | |
|  | 22 x 6" | 0.70 x 150 | 4506095N-01 | | | | |

*With Spinal Introducer Needle

| Pencan® Pencil Point | Colour code | Size (G)/ Length (inch) | ø/Length (mm) | Units per box | Code no. (REF) | | |
|---|---|----------------------------|------------------|------------------|-------------------|--------------|--|
|  |  | 27 x 3 1/2" | 0.40 x 88 | 25 | 4502027N-01 | | |
| | | | | | 4502051N-01* | | |
| |  | 25 x 3 1/2" | 0.50 x 88 | | 4502019N-01 | | |
| | | | | | 4502043N-01* | | |
| |  | 22 x 3 1/2" | 0.70 x 88 | | 4502035N-01 | | |
| | Long Length | | | | | | |
| |  | 27 x 4" | 0.40 x 103 | | 25 | 4502124N-01* | |
| |  | 27 x 4 3/4" | 0.40 x 120 | | | 4502132N-01 | |
| |  | 25 x 4" | 0.50 x 103 | | | 4502116N-01* | |
| |  | 25 x 6.1" | 0.50 x 156 | | | 333877N-01 | |

*With Spinal Introducer Needle

SPINAL NEEDLES

| Pencan® Paed Pencil Point | Colour code | Size (G)/ Length (inch) | ø/Length (mm) | Units per box | Code no. (REF) |
|---|---|----------------------------|------------------|------------------|-------------------|
|  |  | 27 x 2" | 0.40 x 50 | 25 | 4502175N-01 |
| |  | 25 x 1" | 0.50 x 25 | | 4502167N-01 |
| |  | 25 x 2" | 0.50 x 50 | | 4502159N-01 |

INTRODUCER (COMPATIBLE WITH BOTH LUER AND NRFIT)

| Spinal Introducer Needles (for Spinocan® and Pencan®) | Colour code | Size (G)/ Length (inch) | ø/Length (mm) | Units per box | Code no. (REF) |
|---|---|----------------------------|------------------|------------------|-------------------|
|  | For Spinal Needles 26 G and 25 G | | | | |
| |  | 20 x 1 3/8" | 0.90 x 35 | 25 | 4505000 |

EPIDURAL NEEDLES

| Perican® Tuohy | Colour code | Size (G)/ Length (inch) | ø/Length (mm) | Units per box | Code no. (REF) | |
|---|---|----------------------------|------------------|------------------|-------------------|--|
|  |  | 18 x 3 1/4" | 1.30 x 80 | 25 | 4512383N-01 | |
| |  | 16 x 3 1/4" | 1.70 x 80 | | 4512782N-01 | |
| | Long Length | | | | | |
| |  | 18 x 4 3/4" | 1.30 x 120 | 25 | 4512453N-01 | |
| |  | 18 x 6" | 1.30 x 150 | | 4512200N-01 | |
| |  | 16 x 4 3/4" | 1.70 x 120 | | 4512785N-01 | |
| |  | 16 x 6" | 1.70 x 150 | | 4512784N-01 | |

| Perican® Paed Tuohy | Colour code | Size (G)/ Length (inch) | ø/Length (mm) | Units per box | Code no. (REF) |
|---|---|----------------------------|------------------|------------------|-------------------|
|  |  | 22 x 2" | 0.73 x 50 | 25 | 4502078N-01 |
| |  | 20 x 2" | 0.9 x 50 | | 4502094N-01 |

Regional Anaesthesia Products with NRFit®

Product specifications

EPIDURAL CATHETERS

| Perifix® catheter | Catheter ø outer/inner/ Length (mm) (G) | Suitable for Perican® Size (G) | Units per box | Code no. (REF) |
|--|---|-----------------------------------|---------------|----------------|
|  | Perifix® Soft Tip catheter (with 3 lateral eyes) | | | |
| | 0.85/0.45/1000 (20) | 18 | 25 | 4515048N-01 |
|  | Perifix® ONE catheter (with 6 lateral eyes) | | | |
| | 1.05/0.60/1000 (19) | 16 | 25 | 45132581N-01 |
| 0.85/0.45/1000 (20) | 18 | 45131501N-01 | | |

ACCESSORIES & COMPLEMENTARY PORTFOLIO

| Sterifix® filter straws | Particle filter (µm) | Length (cm) | Units per box | Code no. (REF) | |
|---|--|----------------------|----------------|----------------|----------------|
|  | 5 | 4.50 | 50 | 4550250N | |
| | 5 | 10 | | 4550200N | |
| Sterifix® filter needle | Size (G) | Particle filter (µm) | Length (cm) | Units per box | Code no. (REF) |
|  | 19 | 5 | 3.80 | 50 | 4550404N |
| Perifix® catheter connector | Size (G) | Units per box | Code no. (REF) | | |
|  | 19 | 50 | 4513801N-01 | | |
| | 20/24 | | 4513800N-01 | | |
| Perifix® filter | Particle filter (µm) | Units per box | Code no. (REF) | | |
|  | 0.20 | 25 | 4515501N-01 | | |
| Perifix® Catheter Fixation | Description | Units per box | Code no. (REF) | | |
|  | Perifix® PinPad Filter Fixation | 25 | 4515510 | | |
| | Perifix® catheter fixation, consisting of a fixation ring and a non-woven cover foil | 25 | 4511200 | | |
| Perifix® non-woven replacement cover foil | 4511201 | | | | |

ACCESSORIES & COMPLEMENTARY PORTFOLIO

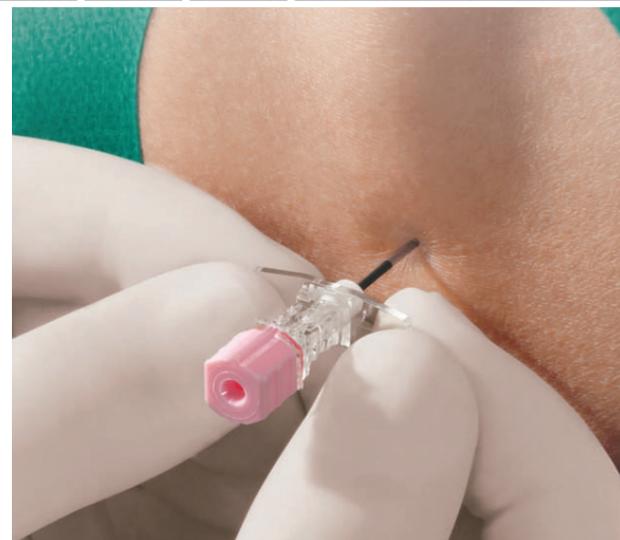
| Infusomat® Space Line | Length (cm) | Units per box | Code no. (REF) | |
|---|-----------------------------------|---------------------|-----------------------|----------------|
|  | 300 | 100 | 8700132SP | |
| Original Perfusor® Line | Length (cm) | Units per box | Code no. (REF) | |
|  | 200 | 25 | 8722865 | |
| Omnifix® | Description | Filling volume (ml) | Units per box | Code no. (REF) |
|  | Slip NRFit® | 1 | 100 | 9164001 |
| | | 3 | | 4616003 |
| | | 5 | | 4616005 |
| | | 10 | | 4616014 |
| | | 20 | | 4616021 |
| | Lock NRFit® | 3 | 100 | 4617003 |
| | | 5 | | 4617006 |
| | | 10 | | 4617014 |
| | | 20 | | 4617021 |
| | | 50 | | 4617508F-01 |
| Perifix® Loss-of-Resistance (LOR) Syringe NRFit® | Description | Units per box | Code no. (REF) NRFit® | |
|  | Perifix® LOR Syringe, Slip NRFit® | 25 | 4637110 | |
| | Perifix® LOR Syringe, Lock NRFit® | | 4638110 | |
| NRFit® syringe caps NRFit® stoppers | Description | Units per box | Code no. (REF) | |
|  | Syringe cap with NRFit® connector | 25 | 4517501N | |
| | Stopper with NRFit® connector | 25 | 4517502N | |

Regional Anaesthesia Products with NRFit®

Product specifications

EPIDURAL ANAESTHESIA SETS

| Legend |  | |  | |  | |  | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|---|--|---------------|-----------------------|--------------|
| | 20G x 2", ø 0.9 x 50 mm | | 18G x 3 1/4", ø 1.3 x 80 mm, | | 18G x 2", ø 1.3 x 50 mm (Paed Set) | | 16G x 3 1/4", ø 1.7 x 80 mm | | | | | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  | * Sterican® needles 25G, 16 mm, ø 0.5 mm 21G, 40 mm, ø 0.8 mm 18G, 40 mm, ø 1.2 mm | | | | | | | | | | |
| Perican® Tuohy needle | Perifix® ONE epidural catheter, 6 lateral eyes | Perifix® Soft Tip epidural catheter, 3 lateral eyes | Perifix® Loss of Resistance syringe | Omnifix® three part syringe, 20 ml, Lock, Sterifix® filter needle | Omnifix® three part syringe, 3 ml, Lock, Sterifix® filter needle | Perifix® Filter 0.2 µm, pressure resistant up to 7 bar | Perifix® catheter connector 19G or 20/24G | Perifix® PinPad filter fixation | Omnifix® three part syringe, 3ml, Luer Lock, 3 Luer hypodermic needles* | Caution: Hypodermic needles (for skin infiltration) stay Luer | | | | | | | | | | | |
| | 50 mm 80 mm | 24G 20G | 20G 19G | | | | | | | | | | | | | | | | | | |
| Set versions | Perican® with NRFit® | | Perifix® ONE with NRFit® | | Perifix® Soft Tip with NRFit® | | Perifix® LOR with NRFit® | | Omnifix® and Sterifix® with NRFit® | | Perifix® Filter with NRFit® | | Perifix® catheter connector with NRFit® | | Perifix® PinPad | | Omnifix® and hypodermic needles with Luer | | Units per box | Code no. (REF) NRFit® | |
| Complete Sets | | | | | | | | | | | | | | | | | | | | | |
| Perifix® Soft Tip 901 | | |  | |  | |  | |  | |  | |  | |  | |  | | | 10 | 4510305N-01 |
| Perifix® ONE 421 | | |  | |  | |  | |  | |  | |  | |  | |  | | | 10 | 45142111N-01 |
| Filter Sets | | | | | | | | | | | | | | | | | | | | | |
| Perifix® 402 Filter Set 16G NRFit | | |  | | |  |  | | | |  | |  | | | | | | | 10 | 4514025N-01 |
| Paediatric Sets | | | | | | | | | | | | | | | | | | | | | |
| Perifix® ONE Paed 18 | | |  | |  | |  | | | |  |  |  |  |  | | | | | 10 | 45120061N-01 |
| Perifix® ONE Paed 20 | | |  | |  | |  | | | |  |  |  |  |  | | | | | 10 | 45120141N-01 |



Adapting to the unique anatomical challenges of each patient, it is important to use the appropriate needle and accessories.

B. Braun focuses on

QUALITY & PRACTICALITY

Regional Anaesthesia Products with NRFit®

Product specifications

SINGLE-SHOT BLOCK NEEDLES

| Ultraplex® 360 | Size (G)/ Length (inch) | ø/Length (mm) | Bevel (°) | Units per box | Code no. (REF) |
|--|----------------------------|------------------|--------------|------------------|-------------------|
|  | 22 x 1 3/8" | 0.70 x 35 | 30 | 25 | 4892603NR-01 |
| | 22 x 2" | 0.70 x 50 | | | 4892605NR-01 |
| | 22 x 3 1/8" | 0.70 x 80 | | | 4892608NR-01 |
| | 20 x 4" | 0.90 x 100 | | | 4892610NR-01 |
| | 20 x 6" | 0.90 x 150 | | | 4892615NR-01 |
| Stimuplex® Ultra 360® | Size (G)/ Length (inch) | ø/Length (mm) | Bevel (°) | Units per box | Code no. (REF) |
|  | 22 x 1 3/8" | 0.70 x 35 | 30 | 25 | 4892503NR-01 |
| | 22 x 2" | 0.70 x 50 | | | 4892505NR-01 |
| | 22 x 3 1/8" | 0.70 x 80 | | | 4892508NR-01 |
| | 20 x 4" | 0.90 x 100 | | | 4892510NR-01 |
| | 20 x 6" | 0.90 x 150 | | | 4892515NR-01 |

ACCESSORIES (COMPATIBLE WITH BOTH LUER AND NRFit®)

| Nerve Stimulation | Description | Units per box | Code no. (REF) |
|---|--|------------------|-------------------|
|  | Stimuplex® HNS 12 Nerve Stimulator for Stimuplex®, Ultraplex® and Contiplex® needles | 1 | 4892098 |
| Nerve Stimulator Accessories and Spare Parts | | Units per box | Code no. (REF) |
| Battery cover for Stimuplex® HNS 12 | | 1 | 4892094 |
| Carrying Case for Stimuplex® HNS 12 | | | 4892095 |
| Test resistor for Stimuplex® HNS 12 | | | 4892096 |
| Knob for special handling | | | 4892283 |
| Stimuplex® Pen for cutaneous nerve mapping | | | 4892099 |
| Electrode Cable for Stimuplex® HNS 11/12 | | | 4892070 |



1 Stimuplex® HNS 12 with SENSE



2 Stimuplex® Pen for cutaneous nerve mapping

B. Braun Nerve Stimulator – Stimuplex® HNS 12 with SENSE

What is SENSE?

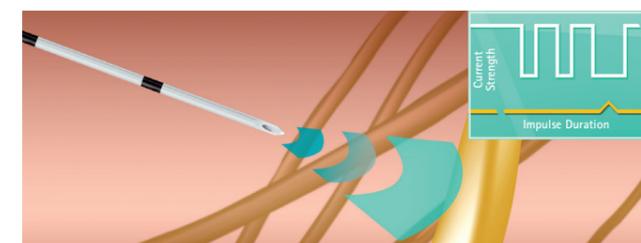
In practice, marginal needle movements often lead to losing the muscle twitch. The SENSE technology (Sequential Electrical Nerve Stimulation) is a sequence of two fixed impulse durations of 0.1 ms along with a third longer impulse duration.¹¹ Most traditional nerve stimulators emit two very short pulses every second. That's because short pulses improve accuracy or specificity when closer to the nerve. The downside is that sensitivity, or the availability to elicit visual feedback at a distance from the nerve, is lost. SENSE technology increases both sensitivity and specificity by adding a third, longer pulse. This results in eliciting a motor response even when the needle is far from or not aimed directly at the nerve and requires less adjustment to the amperage control while retaining visual feedback.

USER BENEFITS

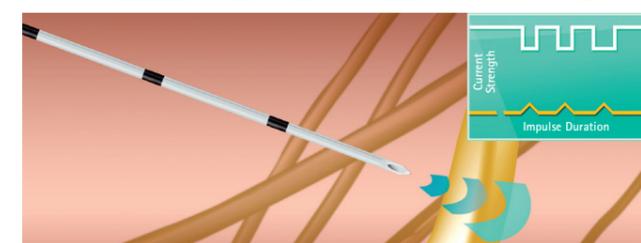
- Stimulation with SENSE-technology designed for more efficient nerve stimulation¹¹
- Menus designed for easy control of sound and other settings
- Acoustic signals inform the user of any relevant deviations



As the needle is advanced, SENSE generates two short and one long pulse. From the alternating sequence of three impulses, the third longer impulse stimulates the nerve already at a distance. One muscle twitch is visible and indicates that the needle is directed to the nerve.



The stimulation needle is further advanced towards the nerve while SENSE maintains the motor response. Current strength adjustments lead to definite reductions of the third impulse.

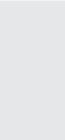
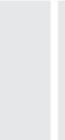
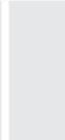
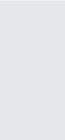
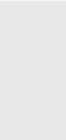


At the threshold level of approximately 0.5 mA three muscle twitches are visible as all three impulses stimulate the nerve.

Regional Anaesthesia Products with NRFit®

Product specifications

SETS FOR CONTINUOUS NERVE BLOCKS

| | | | |  |  |  |  |  |  |  |  |  | | |
|---|-------------------|-------------|-------------|---|---|--|---|---|---|---|---|---|---------------|-----------------------|
| | | | | Contiplex® C | Contiplex® S Ultra 360 | Contiplex® Tuohy Ultra 360 | Contiplex® ONE Catheter (6 lateral openings, closed tip, open tip for Contiplex® C) | 20G Perifix® ONE Catheter (6 lateral eyes, closed tip) | Perifix® Catheter Connector 19G or 20/24G | Perifix® PinPad filter fixation | Perifix® Filter 0.2 µm, Pressure resistant up to 7 bar | Omnifix® syringe 5 ml Caution: Hypodermic needles (for skin infiltration) stay Luer | | |
| Set Specifications | Contiplex® Needle | | | Cannula Bevel (*) | | Tuohy Bevel | Contiplex® ONE Catheter over needle system (mm) | 20G Perifix® ONE Catheter through needle system (mm) | Perifix® Catheter Connector | Perifix® PinPad | Perifix® Filter | Omnifix® | Units per box | Code no. (REF) NRFit® |
| | Size (G) | Size Ø (mm) | Length (mm) | Luer and NRFit® | Luer and NRFit® | Luer and NRFit® | | | | | | | | |
| Contiplex® C Sets | | | | | | | | | | | | | | |
| Contiplex® C | 25 | 0.53 | 190 | 15 | | | 188 | | ■ | ■ | ■ | - | 5 | 4898115NR |
| Contiplex® C | 25 | 0.53 | 190 | 30 | | | 188 | | ■ | ■ | ■ | - | | 4898130NR |
| Contiplex® S Ultra 360® Sets | | | | | | | | | | | | | | |
| Contiplex® S Ultra 360 | 18 | 1.3 | 50 | | 20 | | | 400 | ■ | ■ | ■ | ■ | | 4898650NR-27 |
| Contiplex® S Ultra 360 | 18 | 1.3 | 100 | | 20 | | | 1000 | ■ | ■ | ■ | ■ | 10 | 4898610NR-27 |
| Contiplex® S Ultra 360 | 18 | 1.3 | 150 | | 20 | | | 1000 | ■ | ■ | ■ | ■ | | 4898615NR-27 |
| Contiplex® Tuohy Ultra 360® Sets | | | | | | | | | | | | | | |
| Contiplex® Tuohy Ultra 360 | 18 | 1.3 | 40 | | | ■ | | 400 | ■ | ■ | ■ | ■ | | 4898704NR-01 |
| Contiplex® Tuohy Ultra 360 | 18 | 1.3 | 50 | | | ■ | | 400 | ■ | ■ | ■ | ■ | 10 | 4898705NR-01 |
| Contiplex® Tuohy Ultra 360 | 18 | 1.3 | 100 | | | ■ | | 1000 | ■ | ■ | ■ | ■ | | 4898710NR-01 |
| Contiplex® Tuohy Ultra 360 | 18 | 1.3 | 150 | | | ■ | | 1000 | ■ | ■ | ■ | ■ | | 4898715NR-01 |

REFERENCES

1. Joint statement on neuraxial connectors and ISO80369-6:2016, March 2017 www.safetyandquality.gov.au/wp-content/uploads/2017/06/ANZCA-andCommission-position-statement-on-neuraxial-connectors-2017Mar.pdf
2. Barema: the Association for Anaesthetic and Respiratory Device Suppliers www.barema.org/
3. GEDSA: Global Enteral Device Supplier Association <http://stayconnected.org/neuraxial-nrfit/>
4. Institute for Safe Medication Practices (ISMP), "NRFit: A global "fit" for neuraxial medication safety", 16 July 2020, <https://www.ismp.org/resources/nrfit-global-fit-neuraxial-medication-safety>
5. Kress R. Townley, Jason Lane, Robyn Packer, and Rajnish K. Gupta. Unintentional Infusion of Phenylephrine into the Epidural Space. A&A Case Rep. 2016 Mar 1; 6(5):124-6.
6. <https://www.iso.org/standard/50734.html> (2017-05-23).
7. Vallejo MC, Mandell GL, Sabo DP, Ramanathan S. Postdural puncture headache: a randomized comparison of five spinal needles in obstetric patients. Anesth Analg. 2000 Oct; 91(4):916-20.
7. Read, M.R. (2013). Equipment for Loco-Regional Anaesthesia and Analgesia. In Small Animal Regional Anaesthesia and Analgesia (eds L. Campoy and M.R. Read). <https://doi.org/10.1002/9781118783382.ch5>
8. Bruenke J, Riemann T, Kessler P, et al. Reg Anesth Pain Med Epub ahead of print: [accessed June 13, 2021]. doi:10.1136/rapm-2021-102517
9. B. Braun Internal testing: ETRs JMLY-8ADPR2, NPAK9VRK2K
10. Urmev WF, Grossi P. Use of sequential electrical nerve stimuli (SENS) for location of the sciatic nerve and lumbar plexus. Reg Anesth Pain Med. 2006;31(5):463-9.

B. Braun Australia Pty Ltd | Level 5, 7-9 Irvine Place, Bella Vista NSW 2153, Australia |
Tel: 1800 251 705 | info.au@bbraun.com | www.bbraun.com.au

B. Braun New Zealand | PO Box 37353 Parnell, Auckland 1052, New Zealand |
Customer Care 0800 227 286 | Fax (09) 373 5601 | www.bbraun.co.nz

BAUS HC E0728 08/23 | © 2023 B. Braun Australia Pty Ltd

NRFit® is a federally registered trademark of GEDSA in multiple jurisdictions throughout the world. Used with permission.
ENFit® is a trademark of GEDSA. Used with permission.