



# One small change can make all the difference

Transition to NRFit™ spinal anaesthesia with BD – your trusted partner in safety

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# Consider the multiple touchpoints of neuraxial devices

From preparation and insertion through to removal, a neuraxial device is likely to be touched by multiple clinicians, with different skill sets, from different departments, and for different clinical reasons.

These multiple touchpoints coupled with universal luer connectors make the risk of an accidental misconnection with devices used for intravenous, enteral or other applications both high and real.

## Wrong route medication errors are more common than you think

- Nearly **2/10,000** anaesthesia cases are reported to result in misconnection error<sup>1,2,3</sup> But the actual number may be much higher.
- Several studies have shown that medication errors of any type are significantly underreported.<sup>4,5,6</sup>
- The results of these misconnections can be catastrophic for both patients and their families.
- With the potential for a patient to receive up to **40** standard luer connection devices in a single hospital visit<sup>7</sup>, errors can happen anytime from procedure through to discharge.<sup>8,9,10</sup>



# A safer standard for spinal anaesthesia

Despite quality training and clinicians' best efforts, misconnection errors can occur when a universal connector is used<sup>11</sup>. The good news? NRFit™ technology, the new standard in spinal anaesthesia products, can help to prevent these errors.

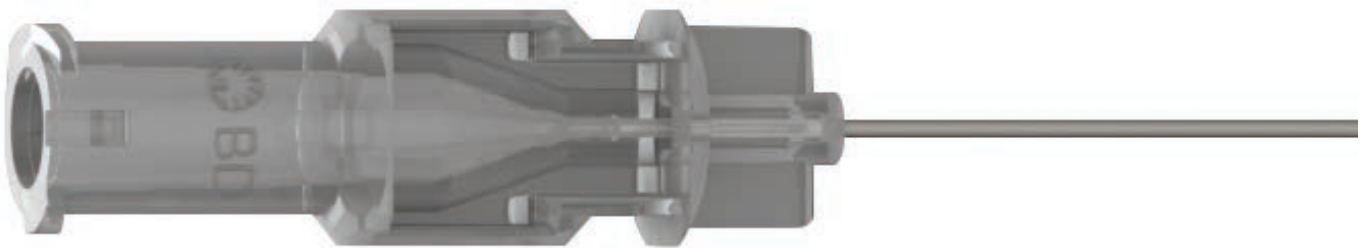
Developed by the International Standards Organization and defined by ISO 80369-6, NRFit™ products feature a unique design that is incompatible with connectors used in other applications such as enteral feeding or intravenous injection. By replacing the universal connector design, care teams can work collaboratively, across shifts, departments and skill sets, while minimizing the risk of misconnections and advancing patient safety.

## Small change, big difference

### **NRFit™ Connections**

Neuraxial-specific design, incompatible with other applications

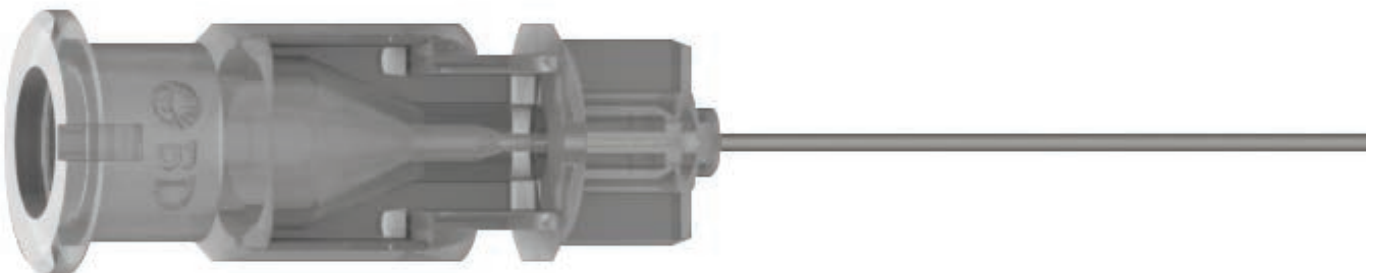
Clear needle hub



### **BD Luer-Lok™ Connections**

Universal design used across numerous applications

Coloured needle hub



# The BD difference is easy to see

From medication preparation to delivery, and everything in between, BD offers the NRFit™ components you need to safely, effectively and efficiently complete a spinal anaesthesia procedure.

**To help you transition to the new standard in safety, all BD® Spinal NRFit™ Products have the following benefits:**

- 1** Incompatible with luer connectors: Unique design for neuraxial use helps to prevent accidental misconnections and improve patient safety.
- 2** Familiar operation: BD product function and usage remains the same with addition of new, safer connection.
- 3** Easily identifiable: BD® Regional Anaesthesia NRFit™ Neuraxial Products have an NRFit™ label and a yellow component on every product and package.



## We've made transitioning to improved safety easier too

While NRFit™ products reduce the risk of misconnections, transitioning to this improved patient safety shouldn't be hard on clinicians or staff. That's why our experienced BD support team is committed to making the transition to NRFit™ devices easy, from procurement to product usage.





PDPH is *"the most common serious complication"*<sup>12</sup>

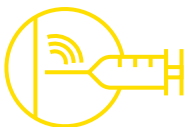
Postdural puncture headache (PDPH) is the most common serious complication resulting from spinal and epidural Anaesthesia and lumbar punctures.<sup>12</sup> PDPH is generally thought to be the result of decreased cerebrospinal fluid (CSF) pressure due to CSF leakage through the dura puncture hole.<sup>12,13</sup> The size and type of spinal needles are two of the most important factors for decreasing the risk of PDPH.<sup>12</sup>

And the best treatment for PDPH is to prevent it in the first place

Studies show that using smaller gauge (25 G) pencil-point needles result in reduced CSF loss and a five-times lower incidence of PDPH compared to larger gauge (22 G) cutting needles.<sup>12</sup> This difference is significant. Using pencil-point needles has also been shown to reduce post-lumbar puncture headache (PLPH) in lumbar puncture and myelogram patients.<sup>14</sup>

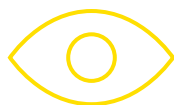
## We offer the BD® Whitacre Spinal NRFit™ Needle

The BD® Whitacre Spinal NRFit™ Needle combines the improved safety of the NRFit™ design with the pioneer of the pencil-point spinal needle<sup>15</sup> to help anaesthesiologist conduct safe spinal anaesthesia procedures.



### Familiarity

Distinctive positive dural click<sup>16</sup> to signal proper needle placement



### Ease of use

Clear hub enables visualisation of CSF to help in placing the needle properly



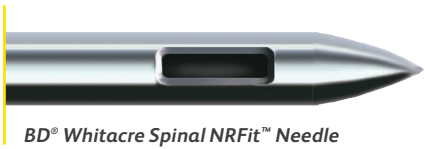
### Tested and trusted

BD® Whitacre Needles are supported by over 25 independently published studies

# BD® Whitacre Spinal NRFit™ Needles

Now ISO 80369-6 compliant to minimise the risk of accidental misconnection with devices used for IV, enteral or other applications.

- Available in 8 sizes ranging from 88.9 mm to 119.1 mm and gauges from 22 G to 27 G.
- Also including the option of thin walls (indicated as TW) for maximised flow through same gauged needles.



| BD® Whitacre Spinal NRFit™ Needles |                                                                                                                  |           |                                                                                                                 |
|------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------|
| Order no.                          | Description                                                                                                      | Order no. | Description                                                                                                     |
| 400978                             |  22 G x 88.9 mm (3 1/2 in.)     | 400221    |  25 G x 119.1 mm (4 11/16 in.) |
| 400979                             |  24 G x 88.9 mm (3 1/2 in.), TW | 400982    |  27 G x 88.9 mm (3 1/2 in.)    |
| 400980                             |  25 G x 88.9 mm (3 1/2 in.)     | 400222    |  27 G x 103.2 mm (4 1/16 in.)  |
| 400220                             |  25 G x 103.2 mm (4 1/16 in.)   | 400223    |  27 G x 119.1 mm (4 11/16 in.) |

## BD® Spinal NRFit™ Needle Sets

BD® Whitacre Spinal Needles and BD® Quincke Spinal Needles with their clear hubs, enable Anaesthesiologists to visualise CSF for proper needle placement.

|                    |                                                                | Sets | 400224 | 400225 | 400226 | 400227 | 400228 | 400229 | 400230 |
|--------------------|----------------------------------------------------------------|------|--------|--------|--------|--------|--------|--------|--------|
| Procedure          |                                                                |      |        |        |        |        |        |        |        |
| Procedure needles  | BD® Whitacre Spinal NRFit™ Needles                             |      |        |        |        |        |        |        |        |
|                    | 25 G x 88.9 mm (3 1/2 in.) BD® Whitacre Spinal NRFit™ Needle   |      |        |        |        |        | ●      |        |        |
|                    | 25 G x 103.2 mm (4 1/16 in.) BD® Whitacre Spinal NRFit™ Needle |      |        |        |        |        |        | ●      |        |
|                    | 27 G x 88.9 mm (3 1/2 in.) BD® Whitacre Spinal NRFit™ Needle   |      |        |        |        | ●      |        |        |        |
|                    | 27 G x 103.2 mm (4 1/16 in.) BD® Whitacre Spinal NRFit™ Needle |      |        |        |        |        |        |        | ●      |
|                    | BD® Quincke Spinal NRFit™ Needles                              |      |        |        |        |        |        |        |        |
|                    | 25 G x 88.9 mm (3 1/2 in.) BD® Quincke Spinal NRFit™ Needle    |      | ●      |        |        |        |        |        |        |
|                    | 26 G x 88.9 mm (3 1/2 in.) BD® Quincke Spinal NRFit™ Needle    |      |        | ●      |        |        |        |        |        |
|                    | 27 G x 88.9 mm (3 1/2 in.) BD® Quincke Spinal NRFit™ Needle    |      |        |        | ●      |        |        |        |        |
|                    |                                                                |      |        |        |        |        |        |        |        |
| Introducer needles | 20 G x 31.8 mm (1 1/4 in.) BD® Spinal Introducer NRFit™ Needle |      | ●      | ●      |        |        | ●      | ●      |        |
|                    | 22 G x 31.8 mm (1 1/4 in.) BD® Spinal Introducer NRFit™ Needle |      |        |        | ●      | ●      |        |        | ●      |

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| BD needle gauge color chart                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 16 G                                                                                | 17 G                                                                                | 18 G                                                                                | 19 G                                                                                | 20 G                                                                                | 21 G                                                                                | 22 G                                                                                | 23 G                                                                                | 24 G                                                                                  | 25 G                                                                                  | 26 G                                                                                  | 27 G                                                                                  |

## BD® Quincke Spinal NRFit™ Needles

- Featuring a stylet and cannula hub key/slot arrangement that facilitates proper needle bevel orientation to aid with insertion.
- Available in 22 sizes with lengths ranging from 76.2 mm to 177.8 mm and gauges from 18 G to 27 G.



BD® Quincke Spinal NRFit™ Needle

| BD® Quincke Spinal NRFit™ Needles |                                                                                                                  |           |                                                                                                                  |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------|
| Order no.                         | Description                                                                                                      | Order no. | Description                                                                                                      |
| 400065                            |  18 G x 76.2 mm (3 in.)         | 400077    |  22 G x 76.2 mm (3 in.)         |
| 400070                            |  18 G x 88.9 mm (3 1/2 in.)     | 400079    |  22 G x 88.9 mm (3 1/2 in.)     |
| 400215                            |  18 G x 152.4 mm (6 in.)        | 400217    |  22 G x 127 mm (5 in.)          |
| 400925                            |  19 G x 76.2 mm (3 in.), TW     | 400218    |  22 G x 177.8 mm (7 in.)        |
| 400926                            |  19 G x 88.9 mm (3 1/2 in.), TW | 400930    |  23 G x 88.9 mm (3 1/2 in.), TW |
| 400927                            |  20 G x 38.1 mm (1 1/2 in.)     | 400086    |  25 G x 50.8 mm (2 in.)         |
| 400928                            |  20 G x 76.2 mm (3 in.)         | 400063    |  25 G x 76.2 mm (3 in.)         |
| 400929                            |  20 G x 88.9 mm (3 1/2 in.)     | 400089    |  25 G x 88.9 mm (3 1/2 in.)     |
| 400216                            |  20 G x 152.4 mm (6 in.)        | 400219    |  25 G x 119.1 mm (4 11/16 in.)  |
| 400072                            |  22 G x 38.1 mm (1 1/2 in.)     | 400931    |  26 G x 88.9 mm (3 1/2 in.)     |
| 400073                            |  22 G x 63.5 mm (2 1/2 in.)     | 400932    |  27 G x 88.9 mm (3 1/2 in.)     |

| BD® Spinal Introducer NRFit™ Needles |                                                                                                                |           |                                                                                                                |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------|
| Order no.                            | Description                                                                                                    | Order no. | Description                                                                                                    |
| 400177*                              |  20 G x 31.8 mm (1 1/4 in.) | 400919**  |  22 G x 31.8 mm (1 1/4 in.) |

\*For use with needles 25 gauge and smaller (25G, 26G, 27G, etc.)

\*\*For use with needles 27 gauge and smaller (27G, 28G, 30G etc.)

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| BD needle gauge color chart                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 16 G                                                                                | 17 G                                                                                | 18 G                                                                                | 19 G                                                                                | 20 G                                                                                | 21 G                                                                                | 22 G                                                                                | 23 G                                                                                | 24 G                                                                                  | 25 G                                                                                  | 26 G                                                                                  | 27 G                                                                                  |



A magnification of the BD® Quincke Spinal NRFit™ Needle Hub

# Medication preparation and delivery

The syringes reduce drug waste compared to BD® Syringes.

BD offers NRFit™ syringes in 3 mL and 5 mL sizes with slip and lock tips for spinal procedures, as well as blunt fill and filter needles for your medication preparation needs. BD® Syringe customers can maintain their current medication preparation practices with BD Syringes NRFit™ Slip and Lok, because the fluid path materials remain the same as BD® Syringes.\*



BD® 5 mL Plastic Syringe NRFit™ Slip (*in hand*)

| BD® Plastic NRFit™ Syringes                    |                                |
|------------------------------------------------|--------------------------------|
| Order no.                                      | Description                    |
| 400050                                         | BD® 3 mL Syringe NRFit™ Lok    |
| 400172                                         | BD® 3 mL Syringe NRFit™ Slip   |
| 400173                                         | BD® 5 mL Syringe NRFit™ Lok    |
| 400051                                         | BD® 5 mL Syringe NRFit™ Slip   |
| BD® Blunt Fill and Blunt Filter NRFit™ Needles |                                |
| Order no.                                      | Description                    |
| 400066                                         | BD® Blunt Filter NRFit™ Needle |
| 400067                                         | BD® Blunt Fill NRFit™ Needle   |

\*BD® Syringes NRFit™ Lok and NRFit™ Slip utilise the same fluid path materials as BD® Syringes manufactured in the U.S so additional drug compatibility testing is not required if you are already using these syringes.

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## To contact customer services:



0800 917 8776

[BDUK\\_CustomerServices@bd.com](mailto:BDUK_CustomerServices@bd.com)



Becton, Dickinson U.K. Limited, 1030 Eskdale Road,  
Winnersh Triangle, Wokingham, RG41 5TS

[bd.com/en-uk](http://bd.com/en-uk)



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