

PAJUNK®

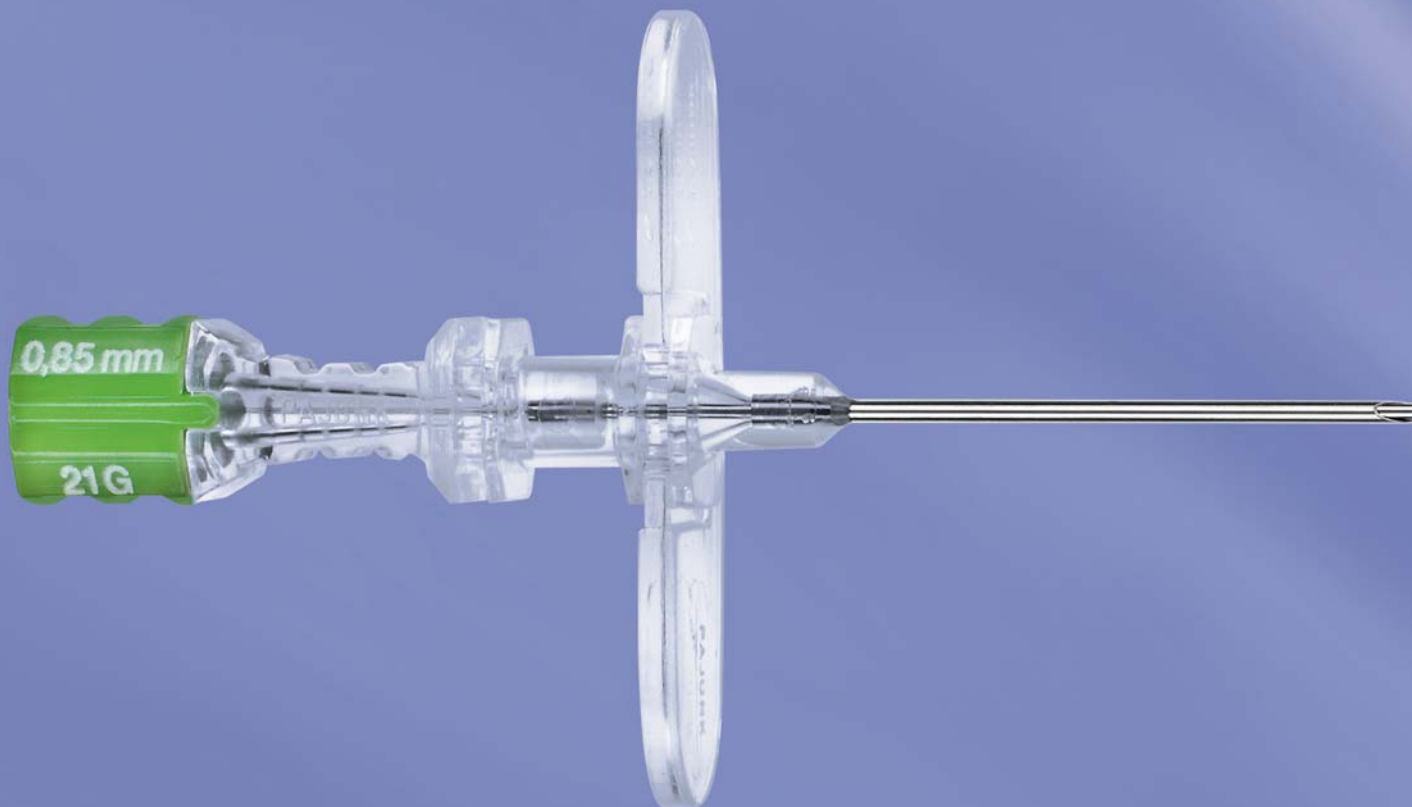
*Lumbar puncture with
SPROTTE® cannulas*

*For atraumatic and
cost-effective puncture*



Lumbar puncture

Atraumatic and cost-effective Diagnostic lumbar puncture with SPROTTE® cannulas



History of lumbar puncture

1890

1890 Invention of the Quincke cannula by H.I. Quincke¹
Lumbar puncture has become an established part of neurological diagnosis since the invention of the Quincke cannula.



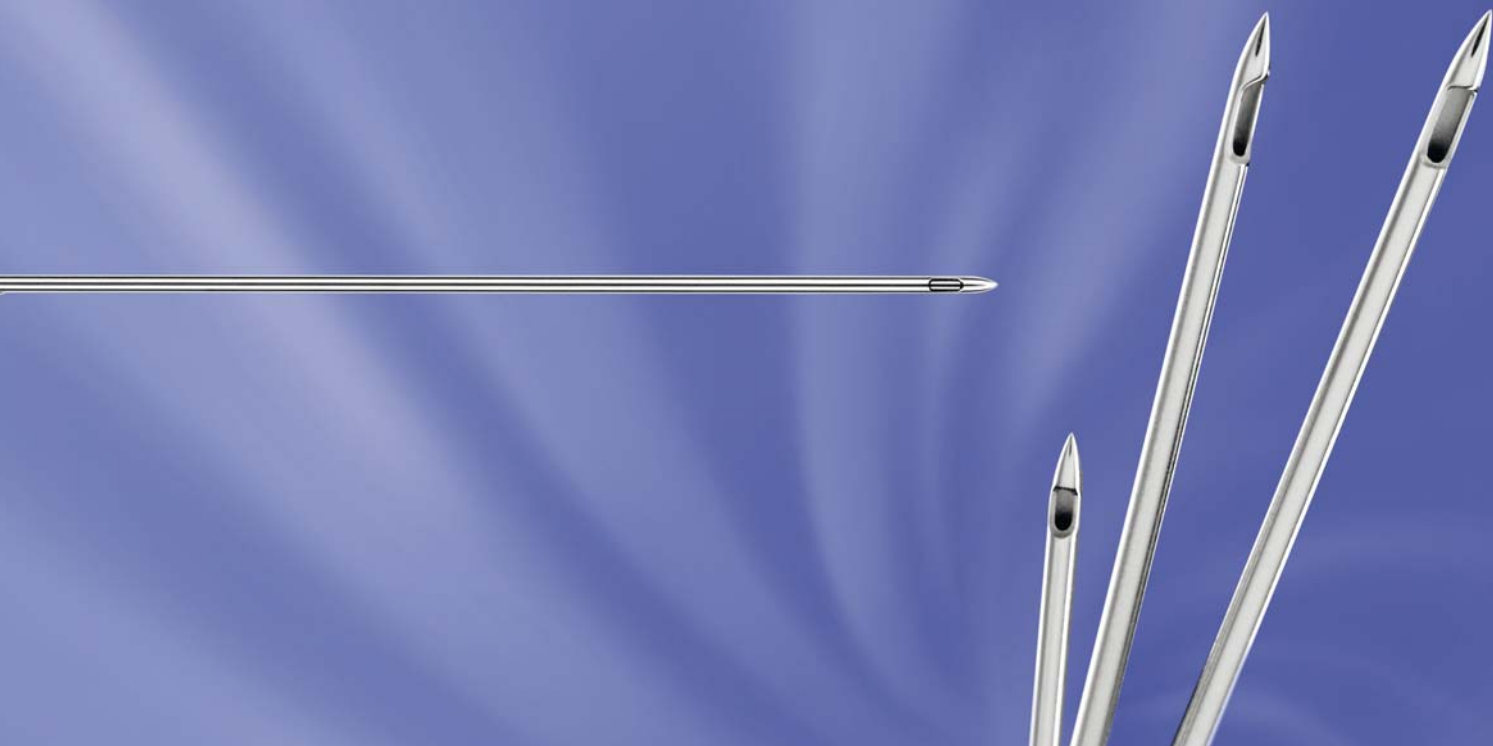
Quincke cannula tip

1979

Market launch of the first atraumatic cannula – a joint development by Prof. Sprotte and PAJUNK® that combines clinical experience with innovative medical technology.



SPROTTE® cannula tip



1991

The first controlled study in uses of diagnostic lumbar puncture is carried out by Jäger et al., and clearly confirms the superiority of atraumatic puncture.²

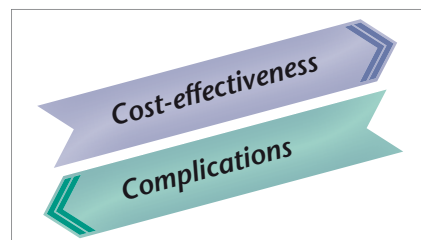
Headaches are ten times less common than with conventional cannulas. The other symptoms of post-lumbar puncture syndrome are not observed at all in patients undergoing atraumatic puncture in this study.

2005

The American Academy of Neurology (AAN) finds that there is now firm scientific evidence of the benefits of atraumatic puncture of the fluid space not only for spinal anaesthesia but also for diagnostic lumbar puncture.³ **(Evidence class 1, recommendation grade A)**

2010

Lavi et al. reach the following conclusion in the light of ample evidence in clinical studies: "Lumbar Puncture: It is time to change the needle."⁴



Atraumatic lumbar puncture

Clear benefits of the SPROTTE[®] cannula

The key feature of the SPROTTE[®] cannula is its unique tip geometry. It enables atraumatic puncture of the ligamentary structures, which makes procedures safer. Its high-quality finish and design developed specifically for the requirements of dural puncture allow optimum fluid flow while at the same time reducing the incidence of post-lumbar puncture headaches. This in turn cuts post-puncture morbidity and improves the efficiency of diagnosis.



Colour-coded hub with size marking

A wide range of cannulas of varying diameters and lengths allows the practitioner to select exactly the right one for the situation. Special designs for paediatrics and overweight patients complete the spectrum.

19 G = 1.10mm

20 G = 0.90mm

21 G = 0.85mm

22 G = 0.70mm



Rapid fluid detection

Fluid fills the smaller interior of the plastic hub more quickly.

➔ Fluid is detected as soon as it enters

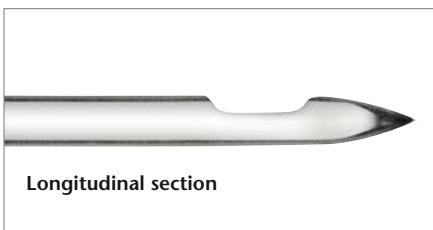


Alternative puncture technique: Local anaesthetic is applied through a fine cannula, and then subcutaneous puncture is performed by inserting a short, sharp introducer in the desired direction. The atraumatic cannula is then passed through the introducer cannula.



Ogive-shaped tip geometry

This is what makes the cannula atraumatic, and also allows the practitioner to sense when he or she is penetrating tissues of varying density.



Longitudinal section

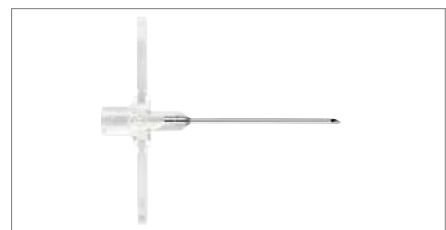
Inner lumen of the cannula

The inner lumen of the cannula is smoother.
 ➔ This enables excellent fluid reflux.



Free fluid flow

The location and size of the lateral eye in the tip of the cannula ensures free fluid flow, even if the opening is partly blocked by arachnoidea.
 ➔ This makes it easier for the user to position the tip of the cannula correctly.



Perfectly matched introducer

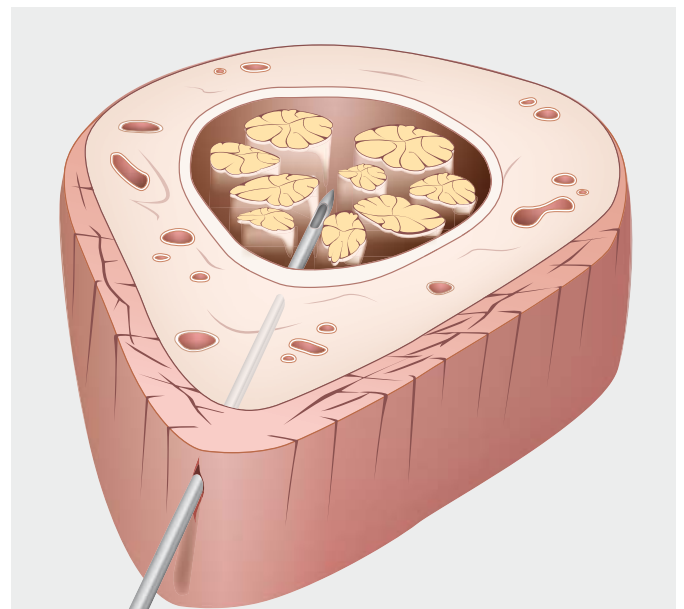
The diameter and length of the introducer are perfectly matched for every cannula size. The inner contours of the introducer hub are designed so that it does not damage the atraumatic tip of the SPROTTE® cannula when it is inserted. The introducer hub only reduces the working length of the spinal cannula by a very small amount.

The original SPROTTE® cannula

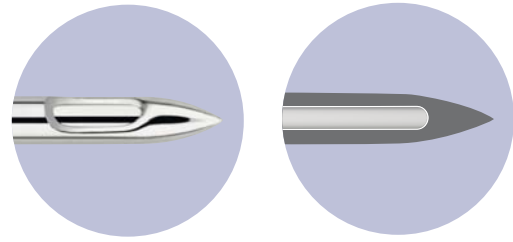
The pioneer of atraumatic puncture

The special quality of the cannula and the tip geometry design are what give the SPROTTE® cannula its atraumatic properties and allow the practitioner to sense when he or she is penetrating tissues of varying density. The closed, ogive-shaped tip of the cannula displaces tissue during puncture rather than cutting it, as is the case with Quincke cannula tips. The lateral eye has rounded edges, and is sealed precisely by the stylet during puncture.

The entire cannula is made of high-quality medical-grade stainless steel. The surfaces are polished and free from burrs. This enables the SPROTTE® cannula to be positioned very accurately, while the smooth inner surface of the cannula optimises fluid reflux.



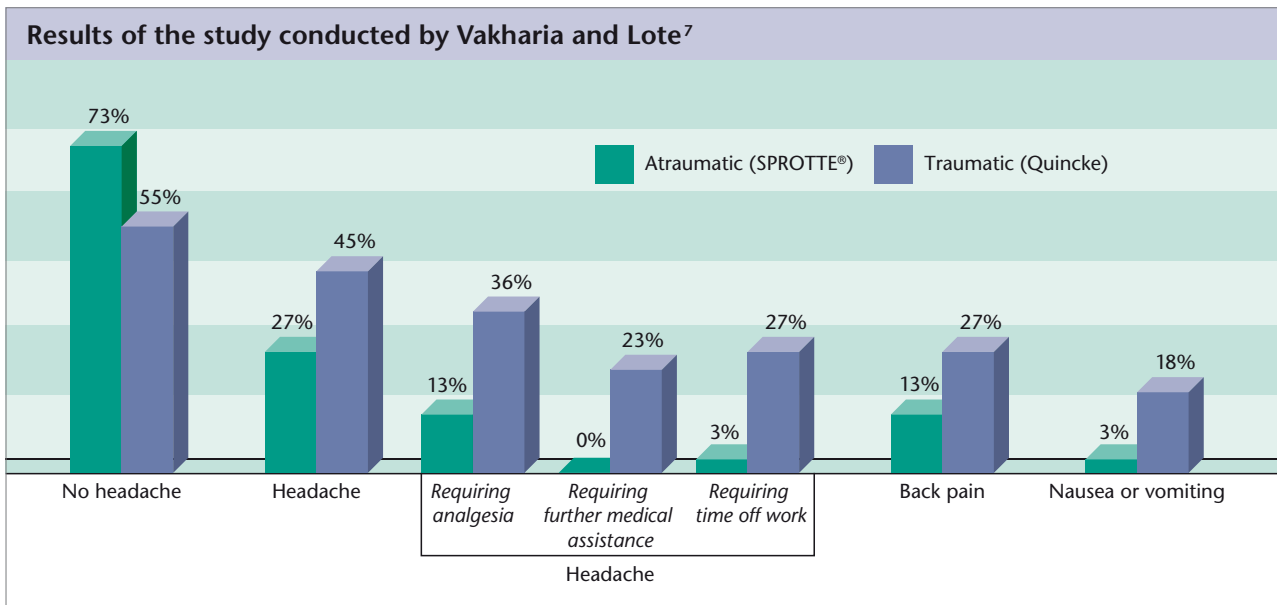
Ogive-shaped tip geometry: The closed, ogive-shaped tip of the cannula displaces tissue during puncture, causing minimal injury.⁵ When the cannula has been withdrawn, the multi-layered dura, consisting of collagens and elastic fibres, closes again.



Lateral eye with rounded edges

The lateral opening of the SPROTTE® cannula is free from burrs and has rounded edges to eliminate trauma. The stylet seals the lateral eye precisely:⁶ Its polished, rounded end prevents friction with the inner tube of the cannula.

➔ This quality feature produces excellent sliding properties and minimises the transfer of foreign bodies and tissue particles into the spinal canal.



All-round superiority

The first independent controlled study of co-morbidities associated with lumbar puncture, carried out in 1991, showed that post-lumbar puncture headache in particular was much less common in patients treated with a SPROTTE® cannula. A recent study conducted by Vakharia and Lote, involving direct comparison, confirmed these findings again.⁷

➔ *The authors concluded that the use of atraumatic lumbar puncture cannulas is safe, involves a small learning curve, and produces reliable outcomes in line with published complication rates.*

Atraumatic puncture cannulas

Decide on a more cost-effective approach

The American Academy of Neurology has already confirmed that atraumatic cannulas are the leading technology for reducing the incidence of post-lumbar puncture headache.⁸ There are also financial benefits to atraumatic cannulas because of the significantly lower rates of side-effects and complications and shorter convalescence times with which they are associated. In view of the large number of cases, the potential savings are enormous once the process and treatment costs are taken into account alongside the purchase costs.⁹

➔ If complications are taken into consideration when assessing the costs, it is clear that significant savings can be made by using atraumatic cannulas like the SPROTTE[®] cannula.⁹



Quincke cannula

cutting



SPROTTE® cannula

atraumatic



As long ago as 2000, the use of a Quincke cannula was mentioned as a risk factor for post-lumbar puncture headache during the 52nd congress of the American Academy of Neurology.¹⁰

Comfort and cost-effectiveness PAJUNK® lumbar puncture sets

Further savings can be made by using pre-assembled PAJUNK® lumbar puncture sets.¹¹



Lumbal set



You will find more information in our brochure „Individual sets in Regional Anaesthesia“

➔ *The evidence of over twenty years of high-quality research confirms that on the grounds of side-effects and cost-effectiveness: It is time to change the needle¹²*

Lumbar puncture

All the information at a glance

SPROTTE®



SPROTTE®



Without introducer

With introducer and detachable plate

| Size | Item no. | Item no. | PU |
|--------------|------------|------------|----|
| 22 G x 90mm | 001151-30C | 321151-30C | 25 |
| 22 G x 103mm | 521151-30C | 341151-30C | 25 |
| 22 G x 120mm | 031151-30C | | 10 |
| 22 G x 120mm | | 331151-30C | 25 |
| 21 G x 90mm | 001151-31A | 321151-31A | 25 |
| 21 G x 103mm | | 341151-31A | 25 |
| 21 G x 120mm | 031151-31A | | 10 |
| 21 G x 120mm | | 331151-31A | 25 |
| 20 G x 90mm | 0001151-31 | 331151-31B | 25 |
| 20 G x 103mm | | 341151-31B | 25 |
| 20 G x 120mm | 0061151-31 | | 10 |
| 20 G x 120mm | | 321151-31B | 25 |
| 19 G x 90mm | | 321151-31C | 25 |

With introducer and detachable plate, extra sharp

| Size | Item no. | Item no. | PU |
|--------------|----------|------------|----|
| 21 G x 90mm | | 421151-31A | 25 |
| 21 G x 120mm | | 431151-31A | 25 |
| 22 G x 90mm | | 421151-30C | 25 |

SPROTTE® IntroDucer

With detachable plate



| Size | Item no. | Cannula size | PU |
|------------|------------|--------------|----|
| 1.0 x 30mm | 001151-30L | 22 G | 25 |
| 1.1 x 30mm | 051151-30L | 21 G | 25 |
| 1.2 x 30mm | 061151-30L | 20 G | 25 |
| 1.3 x 30mm | 091151-30L | 19 G | 25 |

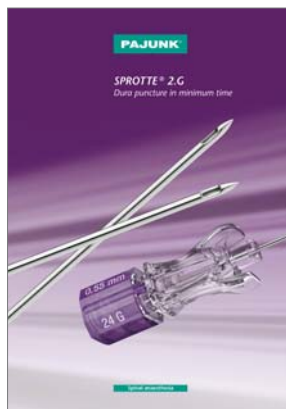
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