Sutureless Connector (‘SC’) Intrathecal Catheters
(Models 8709SC, 8731SC, 8596SC, 8578)

Recommendations for Patency Verification

If there are any questions related to the patency of the catheter-pump connection, a contrast medium may be used with fluoroscopy to verify flow from the pump to the catheter.

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<th>Warnings Associated with Performing a Catheter Contrast Study</th>
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<td>(For complete warnings and precautions, refer to the Medtronic Catheter Access Port Kit Technical Manual)</td>
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**Contrast Medium**
- When injecting contrast medium into the intraspinal space: Use only contrast medium indicated for intraspinal use. Using non-indicated medium can result in adverse events including, but not limited to, extreme pain, cramps, seizures, and death.
- Before injecting contrast medium or any fluids through the catheter access port, aspirate approximately 1 - 2 mL from the catheter (unless contraindicated). A significant amount of drug may be present in the catheter access port and catheter. Failure to remove the drug during catheter access port injections can result in a clinically significant or fatal drug overdose.

**Injection Error**
- Be certain you are accessing the correct port when injecting fluids into the reservoir fill port or accessing the catheter access port of an implanted pump.
- ALWAYS:
  - Identify the pump model and reservoir volume;
  - Identify the location of the reservoir fill port and catheter access port.
  - Use the instructions, needles, and other accessories provided in the appropriate kit
  - Verify the location of the correct port during needle insertion, using other medical procedures as appropriate
  - Refer to the appropriate drug labeling for indications, contraindications, warnings, precautions, adverse events, and dosage and administration information. Improper injection into the pump pocket or catheter access port can result in significant tissue damage or a clinically significant or fatal drug underdose or overdose.

**Catheter Contrast Study**
- Only use a Medtronic catheter access port (CAP) kit to access the catheter access port septum. NOTE: For complete instructions, warnings, and precautions, refer to the Catheter Access Port Procedure in the appropriate catheter access port kit technical manual.
  - Part Number 8540: SynchroMed Catheter Access Port Kit
  - Part Number 8543: IsoMed Catheter Access Port Kit
• Prepare a 10 mL syringe with 5 mL of water-soluble, preservative-free, radiopaque contrast solution labeled for intraspinal use. Omnipaque®¹ (for intrathecal use) is an example of a commonly used contrast solution.

• Using sterile procedures, assemble the needle, extension tubing, and empty syringe (Figure 1).

![Diagram of needle and syringe assembly](image)

• Close the clamp and gently insert the needle into the catheter access port septum until the needle touches the needle stop.

• Open the clamp and aspirate approximately 1-2 mL of fluid from the catheter access port to ensure removal of drug from the catheter access port and catheter. If a complete occlusion has occurred, aspiration from the catheter access port may be impossible. If partial occlusion has occurred, aspiration may be difficult. If drug cannot be aspirated from the catheter, carefully consider the possibility of overdose before proceeding with this study.

• Close the clamp and remove the syringe.

  Note: Keep the needle in the catheter access port septum and the clamp closed for the procedure that follows.

• Attach the filter to the syringe containing the prescribed fluid and purge the air from the fluid pathway.

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¹ Omnipaque manufactured by Amersham Health, Princeton, NJ.
• Attach the syringe with the prescribed fluid and filter to the extension tubing set (Figure 2).

• Open the clamp and inject 2-5 mL of imaging solution into the catheter access port using the prepared 10 mL syringe.

• Observe the full length of the catheter and all connections.
  o Radiopaque solution may be detected at the catheter tip or the site of catheter disconnection or leak.
  o The solution will darken the appearance of the catheter on X-ray.
  o For intrathecal catheters, the contrast medium will diffuse rapidly throughout the cerebrospinal fluid.
  o Elevating the head of the X-ray table will enhance the caudal diffusion of the solution.
  o For epidural catheters, the contrast medium will diffuse more slowly and remain localized.
  o If a complete occlusion has occurred, injection of the contrast medium through the access port will be impossible. If a partial occlusion has occurred, injection will be difficult. Be aware that contrast medium injected into a partially occluded catheter may push through the occlusion giving the patient a drug bolus if the catheter was not aspirated.

• Complete the procedure by flushing contrast medium through the catheter access port with 5 mL of sterile, preservative-free 0.9% normal saline.

• Subsequent to a contrast study, if the catheter is found patent, the appropriate priming bolus must be performed per the implant manual to advance the drug to the catheter tip.