Cook Spectrum®:
a compendium of evidence

Providing proven protection against CRBSIs.¹


² O’Grady NP, Alexander M, Burns LA, et al. Guidelines for the prevention of intravascular catheter-related infections, 2011. Centers for Disease Control and Prevention website. www.cdc.gov/infectioncontrol/pdf/bsi-guidelines.pdf. Updated February 15, 2017. Accessed July 6, 2017. The 1A recommendation from the Centers for Disease Control and Prevention (CDC) is to “Use a chlorhexidine/silver sulfadiazine or minocycline/ rifampin-impregnated CVC in patients whose catheter is expected to remain in place >5 days if, after successful implementation of a comprehensive strategy to reduce rates of CLABSI, the CLABSI rate is not decreasing.”
Providing proven protection against CRBSIs.¹

The science and efficacy of minocycline+rifampin catheters.

This compendium of studies organizes the vast body of research investigating and supporting Cook Spectrum into manageable sections that are easy to understand and quickly reference.

Full-text versions of five of the most commonly requested studies are conveniently included in this booklet (1, 2, 4, 5, 25). If you require any additional resources, please contact your Cook Medical sales representative.

To learn more about Cook Spectrum technology, contact us at spectrum@cookmedical.com.

Spectrum efficacy

1. Effectiveness of minocycline and rifampin vs chlorhexidine and silver sulfadiazine-impregnated central venous catheters in preventing central line-associated bloodstream infection in a high-volume academic intensive care unit: a before and after trial.
   [ncbi.nlm.nih.gov/pubmed/26199017](ncbi.nlm.nih.gov/pubmed/26199017)

2. Novel approach using antimicrobial catheters to improve the management of central line-associated bloodstream infections in cancer patients.

3. The clinical effectiveness of central venous catheters treated with anti-infective agents in preventing catheter-related bloodstream infections: a systematic review.
   Hockenhull JC, Dwan KM, Smith GW, et al.
   [ncbi.nlm.nih.gov/pubmed/19114884](ncbi.nlm.nih.gov/pubmed/19114884)

4. A systematic review comparing the relative effectiveness of antimicrobial-coated catheters in intensive care units.
   [ncbi.nlm.nih.gov/pubmed/18313512](ncbi.nlm.nih.gov/pubmed/18313512)

5. Antimicrobial central venous catheters in adults: a systematic review and meta-analysis.
   Casey AL, Mermel LA, Nightingale P, et al.
   [ncbi.nlm.nih.gov/pubmed/19022192](ncbi.nlm.nih.gov/pubmed/19022192)

   Gilbert RE, Harden M.
   [ncbi.nlm.nih.gov/pubmed/18448967](ncbi.nlm.nih.gov/pubmed/18448967)

   Falagas ME, Fragoulis K, Bliziotis IA, et al.
   [jac.oxfordjournals.org/content/59/3/359.full](jac.oxfordjournals.org/content/59/3/359.full)

8. Comparative in vitro efficacies and antimicrobial durabilities of novel antimicrobial central venous catheters.
   [ncbi.nlm.nih.gov/pmc/articles/PMC1610097](ncbi.nlm.nih.gov/pmc/articles/PMC1610097)
   Still J, Law E, Friedman B, et al.
   ncbi.nlm.nih.gov/pubmed/11549193

10. A comparison of two antimicrobial-impregnated central venous catheters.
    Darouiche RO, Raad II, Heard SO, et al.
    nejm.org/doi/full/10.1056/NEJM199901073400101

11. The evolving technology of venous access.
    Wenzel RP, Edmond MB.
    ncbi.nlm.nih.gov/pubmed/9878645

12. The ex vivo antimicrobial activity and colonization rate of two antimicrobial-bonded central venous catheters.
    ncbi.nlm.nih.gov/pubmed/10397217

13. Antimicrobial durability and rare ultrastructural colonization of indwelling central catheters coated with minocycline and rifampin.
    ncbi.nlm.nih.gov/pubmed/9468157

14. Central venous catheters coated with minocycline and rifampin for the prevention of catheter-related colonization and bloodstream infections: a randomized, double-blind trial.
    annals.org/article.aspx?articleid=710759

Spectrum science

15. Anti-adherence activity and antimicrobial durability of anti-infective coated catheters against multidrug-resistant bacteria.
    jac.oxfordjournals.org/content/62/4/746

16. The broad-spectrum activity and efficacy of catheters coated with minocycline and rifampin.
    jstor.org/stable/30126138

17. Antibiotics and prevention of microbial colonization of catheters.
    ncbi.nlm.nih.gov/pmc/articles/PMC162954

Spectrum cost effectiveness


Spectrum and antibiotic resistance

*Infection Control and Hospital Epidemiology.* 2003;24(12):961-963. 
[ncbi.nlm.nih.gov/pubmed/14700414](ncbi.nlm.nih.gov/pubmed/14700414)

27. New technology for reducing infection and resistance in the ICU. 
Crnich CJ, Maki DG. 

28. Comparison of an untreated vs. silver/chlorhexidine vs. rifampin/minocycline central venous catheter in reducing catheter-related bloodstream infections. 
Brooks K, Dauenhauer S, Nelson M. 
Abstract presented at: APIC 28th Annual Educational Conference and International Meeting; June 10-14, 2001; Seattle, WA. 
No online source.

Spectrum long-term silicone

29. Comparison of antimicrobial impregnation with tunneling of long-term central venous catheters: a randomized controlled trial. 
Darouiche RO, Berger DH, Khardori N, et al. 
[ncbi.nlm.nih.gov/pmc/articles/PMC1357724](ncbi.nlm.nih.gov/pmc/articles/PMC1357724)

Hanna H, Benjamin R, Chatzinikolaou I, et al. 
[ncbi.nlm.nih.gov/pubmed/15284269](ncbi.nlm.nih.gov/pubmed/15284269)
COOK SPECTRUM® “TURBO-JECT®” PERIPHERALLY INSERTED CENTRAL VENOUS CATHETERS WITH MICROPUNCTURE® PEEL-AWAY® INTRODUCTORS

CAUTION: U.S. federal law restricts this device to sale by or on the order of a physician (or properly licensed practitioner).

INTENDED USE: Cook Spectrum Turbo-Ject Peripherally Inserted CentralVenous Catheter (PICC) Sets are intended for short- or long-term use for venous pressure monitoring, blood sampling, administration of drugs and fluids, and for use with power injectors for delivery of contrast in CT studies. The catheter is impregnated with the antibiotic min cyclohexylamine and rifampin to help provide protection against catheter-related bloodstream infections (CRBSI). The Cook Spectrum Turbo-Ject PICC is indicated for multiple injections of contrast media through a power injector. The maximum pressure limit setting for Power Injectors used with the Spectrum Turbo-Ject PICC may not exceed 325 psi and the flow rate may not exceed the maximum flow rate indicated, as shown in the complete INSTRUCTIONS FOR USE.

CONTRAINDICATIONS: A history or history of allergy to tetracyclines (including minocycline) or rifampin. NOTE: Because the Cook Spectrum Turbo-Ject Peripherally Inserted Central Venous Catheter is impregnated with a combination of the antimicrobial agents minocycline (a derivative of tetracycline) and rifampin (a derivative of rifamycin B), the contraindications, warnings, and precautions regarding use of these antimicrobial agents apply and should be adhered to for use of this device, although systemic levels of minocycline and rifampin in patients receiving this device are highly unlikely to result from their use. Minocycline and rifampin are agents that do not induce any drug resistance except a possible teratogenic effect in pregnant women. We therefore do not recommend the use of Spectrum or Spectrum Glide catheters in pregnant women.

WARNINGS: Peripherally Inserted Central Venous Catheters play an important role in treatment of critically ill patients. However, catheter tips can erode or perforate vascular walls. Extensive caution must be used in placement and monitoring of catheters. - Catheter tip position should be verified by X-ray and monitored on a routine basis. Periodic lateral view X-ray is suggested to assess tip location in relation to vessel neck. Tip position should appear to be parallel to vessel wall (Reference 1). The safe and effective use of Spectrum Turbo-Ject PICC lines with power injector pressures set above 325 psi has not been established. - Do not power inject if maximum injection rate cannot be verified to meet limit printed on catheter hub or extension tube. - To safely use Spectrum Turbo-Ject PICC lines with a power injector, the technician/health care professional must verify prior to use that the maximum pressure limit is set at or below 325 psi and that the maximum flow rate is at or below that which is listed on the catheter. Dynamic and static pressure test results are shown in the complete INSTRUCTIONS FOR USE. - Development of a hypersensitivity reaction should be followed by removal of the catheter and appropriate treatment at the discretion of the physician. - In rare cases, hepatotoxicity, systemic lupus erythematosus and exacerbation of hepatitis have been associated with the systemic use of minocycline and/or rifampin. NOTE: The Spectrum Turbo-Ject PICC should not supersede strict aseptic techniques as it relates to catheter placement and maintenance.

PRECAUTIONS: This product is intended for use by physicians trained and experienced in the placement of central venous catheters using percutaneous entry (Seldinger) technique. Standard Seldinger technique for placement of percutaneous vascular access sheaths, catheters and wire guides should be employed during the placement of a central venous catheter. - Select puncture site and length of catheter needed by assessing patient anatomy and condition. - If known flow is impeded, do not force injection of withdrawal of fluids. Notify attending physician immediately. - Patient movement can cause catheter tip displacement. Catheters placed in antecubital fossae have shown tip movement of up to 10 cm with motion of the extremity. - Catheter size should be as small as the use will allow. NOTE: Prior to insertion, the Spectrum Catheter shaft should not be wiped with or immersed in ethyl alcohol, isopropyl alcohol or other alcohols, acetone or other non-polar solvents. These solvents may remove the antimicrobial from the catheter and reduce the catheter’s antimicrobial efficacy. NOTE: Controlled clinical trials of Spectrum PICC catheters in pregnant women, pediatric, and neonatal populations have not been conducted. The benefits of the use of Spectrum PICCs should be weighed against possible risks.

See instructions for use for full product information.

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