Office of Evidence Based Practice (EBP) — Specific Care Question: Should a child with neurogenic bladder with a positive urinary analysis and/or culture receive antibiotic therapy?

Specific Care Question:

In a child with a neurogenic bladder who performs intermittent self-catheterizations and is asymptomatic of a urinary tract infection do they need a routine UA with reflex culture to minimize inappropriate antibiotic use?

Question Originator:

Azadeh Wickham MS, FNP-BC

Clinical Bottom Line:

No evidence was found to answer the question. This identifies a gap in what we know. Projects designed to answer the question are needed.

EBP Scholar's responsible for analyzing the literature:

N. Allen, MS, MLS, RD, LD

Search Strategy and Results:

Search: ("Intermittent Urethral Catheterization" [Mesh] OR Intermittent Self-Catheterization) AND ("urine culture" OR urinalysis[tw] OR "Urinalysis" [Mesh] OR "Urinary Tract Infections" [MAJR]); 70 results; 24 identified for closer review; 2 articles were duplicates, 23 articles review, 0 articles answered the question.

Studies included in this review: none

Studies <u>not</u> included in this review with exclusion rationale:

First Author	Year	Reason for exclusion
Bakke & Digranes	1996	Reported in Norwegian language only
Biardeau & Corcos	2016	Narrative Review
Bonniaud et al.	2008	Reported in French language only
Duffy & Smith	1982	Does not answer the question
Goetz & Klausner	2014	Narrative Review
Hiyama et al.	2015	Does not answer the question
Krebs, Wollner, & Pannek	2016	Does not answer the question
Lapides, Diokno, Silber, & Lowe	1972	Article dated
Lapides, Diokno, Lowe, & Kalish	1973	Article dated
Lapides	1979	Narrative Review
McKibben, Seed, Ross, & Borawski	2015	Narrative Review
Merritt, Erickson, & Opitz	1982	Does not answer the question
Moore, Kelm, Sinclair, & Cadrain	1993	Does not answer the question
Orikasa et al.	1991	Reported in Japanese language only
Perkash & Giroux	1985	Narrative Review



Office of Evidence Based Practice (EBP) — Specific Care Question: Should a child with neurogenic bladder with a positive urinary analysis and/or culture receive antibiotic therapy?

Prieto, Murphy, Moore, & Fader	2014	Does not answer the question
Prieto, Murphy, Moore, & Fader	2015	Does not answer the question
Sutkin, Lowder, & Smith	2009	Does not answer the question
van Gool, de Jong, & Boemers	1991	Reported in German language only
Wyndaele	2002	Narrative Review
Wyndaele et al.	2012	Does not answer the question
Zegers et al.	2011	Does not answer the question
Zegers et al.	2012	Does not answer the question

Method Used for Appraisal and Synthesis:

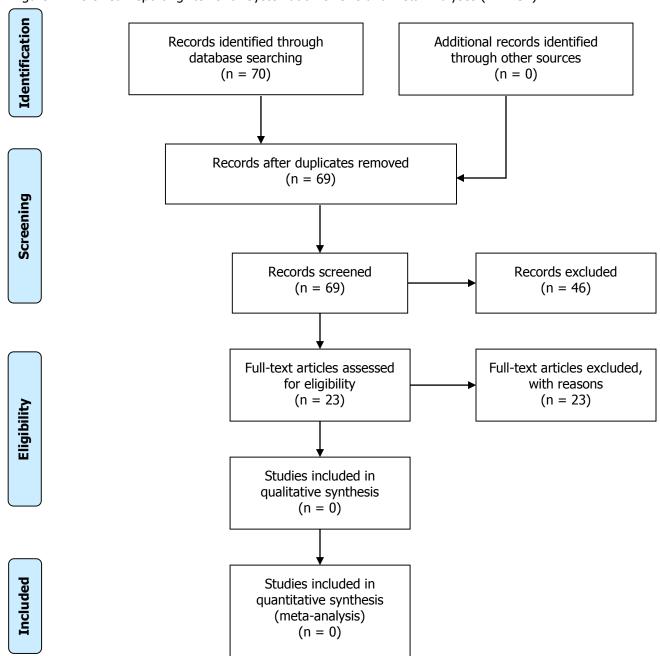
Appraisal and synthesis was not needed as none of the literature answered the question.

Date Developed: 10/11/2017



Office of Evidence Based Practice (EBP) — Specific Care Question: Should a child with neurogenic bladder with a positive urinary analysis and/or culture receive antibiotic therapy?

Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRIMSA)^b



bMoher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit www.prisma-statement.org.



Office of Evidence Based Practice (EBP) — Specific Care Question: Should a child with neurogenic bladder with a positive urinary analysis and/or culture receive antibiotic therapy?

References

- Bakke, A., & Digranes, A. (1996). [Urinary tract infection in patients treated by self-catheterization. A prevalence study of patients using long term-intermittent catheterization]. *Tidsskr Nor Laegeforen, 116*(21), 2552-2555.
- Biardeau, X., & Corcos, J. (2016). Intermittent catheterization in neurologic patients: Update on genitourinary tract infection and urethral trauma. *Ann Phys Rehabil Med*, *59*(2), 125-129. doi:10.1016/j.rehab.2016.02.006
- Bonniaud, V., Lyxuchouky, X., Bevalot, J., Decavel, P., Metton, G., & Parratte, B. (2008). [Inquiry among general practitioners' knowledge regarding clean intermittent self-catheterization]. *Ann Readapt Med Phys*, *51*(9), 729-733. doi:10.1016/j.annrmp.2008.05.002
- Duffy, L., & Smith, A. D. (1982). Nitrofurantoin macrocrystals prevent bacteriuria in intermittent self-catheterization. *Urology*, 20(1), 47-49.
- Goetz, L. L., & Klausner, A. P. (2014). Strategies for prevention of urinary tract infections in neurogenic bladder dysfunction. *Phys Med Rehabil Clin N Am*, 25(3), 605-618, viii. doi:10.1016/j.pmr.2014.04.002
- Hiyama, Y., Takahashi, S., Uehara, T., Hashimoto, J., Nishinaka, K., Kitamura, H., & Masumori, N. (2015). Emergence of antimicrobial-resistant uropathogens isolated from pediatric patients with cystitis on daily clean intermittent catheterization. *J Infect Chemother*, 21(10), 703-706. doi:10.1016/j.jiac.2015.06.006
- Krebs, J., Wollner, J., & Pannek, J. (2016). Risk factors for symptomatic urinary tract infections in individuals with chronic neurogenic lower urinary tract dysfunction. *Spinal Cord*, 54(9), 682-686. doi:10.1038/sc.2015.214
- Lapides, J. (1979). Mechanisms of urinary tract infection. Urology, 14(3), 217-225.
- Lapides, J., Diokno, A. C., Lowe, B. S., & Kalish, M. D. (1973). Followup on unsterile, intermittent self-catheterization. *Trans Am Assoc Genitourin Surg*, 65, 44-50.
- Lapides, J., Diokno, A. C., Silber, S. J., & Lowe, B. S. (1972). Clean, intermittent self-catheterization in the treatment of urinary tract disease. *J Urol*, 107(3), 458-461.
- McKibben, M. J., Seed, P., Ross, S. S., & Borawski, K. M. (2015). Urinary Tract Infection and Neurogenic Bladder. *Urol Clin North Am*, 42(4), 527-536. doi:10.1016/j.ucl.2015.05.006
- Merritt, J. L., Erickson, R. P., & Opitz, J. L. (1982). Bacteriuria during follow-up in patients with spinal cord injury: II Efficacy of antimicrobial suppressants. *Arch Phys Med Rehabil*, 63(9), 413-415.
- Moore, K. N., Kelm, M., Sinclair, O., & Cadrain, G. (1993). Bacteriuria in intermittent catheterization users: the effect of sterile versus clean reused catheters. *Rehabil Nurs*, *18*(5), 306-309.
- Orikasa, S., Imai, Y., Igari, D., Kimura, S., Suzuki, Y., Fukushi, Y., . . . et al. (1991). [Urethral indwelling catheter, intermittent self-catheterization and urinary infection]. *Nihon Hinyokika Gakkai Zasshi*, 82(11), 1807-1816.
- Perkash, I., & Giroux, J. (1985). Prevention, treatment, and management of urinary tract infections in neuropathic bladders. *J Am Paraplegia Soc*, 8(1), 15-17.

Office of Evidence Based Practice (EBP) — Specific Care Question: Should a child with neurogenic bladder with a positive urinary analysis and/or culture receive antibiotic therapy?

- Prieto, J., Murphy, C. L., Moore, K. N., & Fader, M. (2014). Intermittent catheterisation for long-term bladder management. *Cochrane Database Syst Rev*(9), CD006008. doi:10.1002/14651858.CD006008.pub3
- Prieto, J. A., Murphy, C., Moore, K. N., & Fader, M. J. (2015). Intermittent catheterisation for long-term bladder management (abridged cochrane review). *Neurourol Urodyn*, 34(7), 648-653. doi:10.1002/nau.22792
- Sutkin, G., Lowder, J. L., & Smith, K. J. (2009). Prophylactic antibiotics to prevent urinary tract infection during clean intermittent self-catheterization (CISC) for management of voiding dysfunction after prolapse and incontinence surgery: a decision analysis. *Int Urogynecol J Pelvic Floor Dysfunct*, 20(8), 933-938. doi:10.1007/s00192-009-0885-y
- van Gool, J. D., de Jong, T. P., & Boemers, T. M. (1991). [Effect of intermittent catheterization on urinary tract infections and incontinence in children with spina bifida]. *Monatsschr Kinderheilkd*, 139(9), 592-596.
- Wyndaele, J. J. (2002). Complications of intermittent catheterization: their prevention and treatment. *Spinal Cord*, 40(10), 536-541. doi:10.1038/sj.sc.3101348
- Wyndaele, J. J., Brauner, A., Geerlings, S. E., Bela, K., Peter, T., & Bjerklund-Johanson, T. E. (2012). Clean intermittent catheterization and urinary tract infection: review and guide for future research. *BJU Int*, *110*(11 Pt C), E910-917. doi:10.1111/j.1464-410X.2012.11549.x
- Zegers, B., Uiterwaal, C., Kimpen, J., van Gool, J., de Jong, T., Winkler-Seinstra, P., . . . de Jong-de Vos van Steenwijk, C. (2011). Antibiotic prophylaxis for urinary tract infections in children with spina bifida on intermittent catheterization. *J Urol*, 186(6), 2365-2370. doi:10.1016/j.juro.2011.07.108
- Zegers, B. S., Uiterwaal, C. C., Verpoorten, C. C., Christiaens, M. M., Kimpen, J. J., de Jong-de Vos van Steenwijk, C. C., & van Gool, J. J. (2012). Home screening for bacteriuria in children with spina bifida and clean intermittent catheterization. *BMC Infect Dis*, 12, 264. doi:10.1186/1471-2334-12-264