

Evidence Table; Clean Intermittent Catheterisation Nursing Clinical Guideline

Reference	Evidence Level (I-VII)	Key findings, outcomes or recommendations
<p>Chaudhry, R., et al. (2017). Risk Factors Associated With Recurrent Urinary Tract Infection in Neurogenic Bladders Managed by Clean Intermittent Catheterization. <i>Urology</i> 102: 213-218</p>	<p>Retrospective analysis chart review IV</p>	<ul style="list-style-type: none"> - A 6-year retrospective chart review of patients who perform CIC 8months to 58 years; 194 patients: 147(75%) no UTI or infrequent, 48(25%) had frequent UTI. -Younger age was a significant predictor for frequent UTI's -Low bladder compliance trended toward frequent UTI's but did not reach statistical significance -Larger multicentre studies will be required to allow more robust statistical analysis
<p>DeFoor, W., et al. (2017). Results of a prospective randomized control trial comparing hydrophilic to uncoated catheters in children with neurogenic bladder. <i>Journal of Pediatric Urology</i>, 13(4):373-375</p>	<p>Randomised control trial II</p>	<ul style="list-style-type: none"> - 78 children aged 2-17 years with neurogenic bladder on CIC enrolled for 1 year -In children with neurogenic bladder on CIC, hydrophilic catheters may decrease the risk of UTI's and should be offered as an option to patients and families. -No significant difference were seen in urethral injury, haematuria or difficulty passing the catheters -Some patients found the hydrophilic catheters hard to handle due to slippery coating -A larger multi-centre study may be helpful to confirm findings
<p>Elzeneini, W., et al. (2019). Early start of clean intermittent catheterization versus expectant management in children with spina bifida. <i>Journal of Pediatric Surgery</i> 54:322-325</p>	<p>Retrospective cohort comparison study IV</p>	<ul style="list-style-type: none"> - Compared 114 infants in recent cohort to 126 infants in historical cohort -DMSA scan showed renal scarring in 18.8% of the recent cohort versus 39% of the historical cohort -Significant reduction in scar formation in patients with SB with the routine institution of early CIC , particularly in girls was shown -Recommend IDC then CIC from birth in all patients with SB(depend on availability of continence nurse)
<p>Foster, C. S., et al. (2017) Utility of a routine urinalysis in children who require clean intermittent catheterization. <i>Journal of Pediatric Urology</i> 13(5): 488.e1-488.e5</p>	<p>A cross-sectional study IV</p>	<ul style="list-style-type: none"> - Cross sectional study of 133 children who required CIC. - In children with neurogenic bladder who require CIC, specific routine urinalysis, lack of leukocyte esterase, large leukocyte esterase and nitrate have some utility in differentiating between patients with and without UTI's. -There is a significant need for a better marker of UTI in this unique patient population.

<p>Hakanson, M. (2014). Reuse versus single-use catheters for intermittent catheterisation: what is safe and preferred? Review of current status. <i>Spinal Cord</i>, 52:511-516</p>	<p>Narrative review of all research and other publications</p> <p>VII</p>	<p>-review of literature summarising evidence for single use or reuse of catheters. No consensus on whether catheters should be reused, or how many times or cleaning technique. Concerns that poor cleaning technique increases the risk of infection.</p> <p>- data supports single use hydrophilic catheters to reduce urethral trauma and UTI</p> <p>- Literature supports patient choice</p>
<p>Holland, J.E., et al. (2015) Self-cathing experience journal: Enhancing the patient and family experience in clean intermittent catheterization. <i>Journal of Pediatric Urology</i> 11(4): 187.e181-186</p>	<p>Pilot study</p> <p>VI</p>	<p>-34 families agreed to participate; 9 did not return survey.</p> <p>-The self-cath experience journal appears to be a helpful clinical supplement in promoting healthy coping skills and decreasing a sense of isolation in patients needing CIC</p> <p>-Larger investigations of the journal in the future are needed to both confirm these pilot findings as well as to explore its impact on medical adherence and quality of life.</p>
<p>Kiddo, D., Sawatzky, B., Bascu, C. et al. (2015). Randomized cross-over trial of single hydrophilic coated vs multi use polyvinylchloride catheters to determine incidence of urinary infection in users of intermittent catheterisation. <i>The Journal of Urology</i> 194(1):174-179</p>	<p>Randomised cross-over trial</p> <p>II</p>	<p>-Randomised cross over trial in children with neurogenic bladders- 4 centres, 2 treatment periods of 24 weeks with single use hydrophilic catheters vs multiple use (washed with soap and air dried) polyvinyl chloride catheters</p> <p>-No statistical difference in UTI symptoms or need for antibiotics</p> <p>No statistical difference in comfort or convenience but statistical difference in ease of handling with 40% children disliking hydrophilic product</p> <p>-Parents liked the single use product for the portability</p>

<p>Li, Y., et al. (2018) Application of clean intermittent catheterization for neurogenic bladder in infants less than 1 year old. <i>Neurorehabilitation</i> 42(4): 377-382</p>	<p>Retrospective analysis IV</p>	<p>- 76 infants with neurogenic bladder were divided into early CIC <1 year and late CIC >3 years old -Early CIC play an important role in preserving bladder function and preventing UTI's and renal deterioration in infants with neurogenic bladder especially in the first year of life.</p>
<p>Our Lady's Children's Hospital Crumlin (2015). <i>Nursing Practice Guideline on Clean Intermittent Catherisation.</i></p>	<p>Clinical guideline VII</p>	<p>-Outline of definition of terms, indications, contraindications and complications of CIC -Cover cleaning and step by step CIC for male and female catheterisation -Includes consideration of nursing scope of practice and protecting the privacy and dignity of the child</p>
<p>Prieta,J., Murphy, C., Moore, k. & Fader, M. (2014). Intermittent catheterisation for long-term bladder management (Review). <i>The Chochrane Database of Systematic Reviews.9.</i></p>	<p>Systemic Review I</p>	<p>-A review of 31 randomised control trials or randomised cross-over trials comparing catheter designs, catheterisation techniques or strategies used for clean intermittent catheterisation -Conclusions: no evidence that incidence of UTI affected by: clean or aseptic technique, type of catheter, single or multiple use catheter, self-catheterisation or carer catheterisation -No studies looked at cost –effectiveness</p>
<p>Seth, J., Haslam, C. & Panicker, J. (2014). Ensuring patient adherence to clean intermittent self-catheterization. <i>Preference and Adherence, 8, 191-198</i></p>	<p>Literature review VII</p>	<p>-CIC gold standard for management of urinary retention -Most individuals can self catheterise, and most find it quick and easy, yet there are poor adherence rates in long term -The majority of individuals have at least one practical barrier to CIC- including access to a public toilet, difficult positioning and difficulty with dexterity - There are psychological factors to poor adherence including embarrassment and lack of confidence and issues of stigma - Catheter comfort and ease is important - Supportive education and follow up is important, including information on troubleshooting.</p>

<p>Zlatev, D. V., et al. (2016). How many spinal cord injury patients can catheterise their own bladder? The epidemiology of upper extremity function as it affects bladder management. <i>Spinal Cord</i> 54(4): 287- 291</p>	<p>Retrospective analysis</p> <p>IV</p>	<ul style="list-style-type: none"> - Data assessed for the years 2006-2012 from the National Spinal Cord Injury Database -CIC may not be feasible from functional or social standpoint -Inadequate upper extremities function is a significant barrier to a patient adopting of CIC and might have a prominent role in his “dropout” -CIC dropout may be in part because of patient physical inability to independently perform CIC -Increase in BMI does not significantly affect CIC adoption in men while women were significantly affected -Future follow up will be needed to further validate data.
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