



INTERMITTENT VS. INDWELLING CATHETERIZATION

Available clinical evidence supports the strategy to always consider intermittent catheterization as the first therapeutic choice, before considering the use of an indwelling catheter. Intermittent catheterization is the first therapeutic choice and is a safer bladder management method than both urethral and suprapubic indwelling catheters. Intermittent catheterization is central to reduce morbidity related to renal failure and neurogenic bladder dysfunction.

Intermittent catheterization is a type of continence management that allows normal bladder dynamics, and has very few contraindications.¹ Indwelling catheters involve more invasive placement, either through the abdominal wall (suprapubic indwelling) or through the urethra (urethral indwelling),²⁻⁴ and has a constant in and out flow leaving a static bladder. Catheter-associated urinary tract infections (UTI) is the most common complication of all catheterization.^{1,3,5,6} The daily increase in UTI risk when using an indwelling catheter is approximately 5% and there is a 3-10% daily bacteriuria incidence.^{2,5,6,7} Intermittent catheters are reported to reduce the risk of infections as compared to indwelling catheters^{5,6,8-10} and as an example a 20% reduction is reported after just short-term post-operative use.^{11,12} Recent research suggests a) that infection rates correlate with an occurrence of multidrug-resistant bacteria, and b) that multidrug-resistant bacteria is more common among users of indwelling catheterization (suprapubic 3.3% and urethral 2.6%) than intermittent catheterization (0.7%).¹³ Other reported complications from catheterization are trauma,^{1-3,14} catheter blockage^{2,14} and recurrent bladder stones¹⁵⁻¹⁸ whereof the two latter are mainly applicable for indwelling catheters. It has also been proposed that indwelling catheters are associated with bladder cancer.^{2,19,20}

Guidelines in the literature identify intermittent catheterization as the first and preferred choice when possible, both for short and long-term bladder management, and it is recommended to completely avoid or minimize use and duration of indwelling catheters. e.g.^{5,6,8,10,21-25} The safety of suprapubic

placement of an indwelling catheter is debated but recently it has been concluded that it is not superior to the urethral route^{3,4,8,26,27} and should only be considered for short-term use^{5,22} when intermittent catheterization is not an option.

Urological complications related to bladder management method have been studied by several authors and intermittent catheterization have been found to reduce risk of upper urinary tract deterioration, enable faster return to normal voiding, shorten hospital stay after surgery, and to improve the possibility of renal recovery.^{7,28-30} It furthermore reduces the risk of bladder stones with approximately 20 times compared with indwelling catheter use.^{3,15,16} In addition, intermittent catheterization, when practiced on demand only, appears to be best practice for bladder management in more general areas, such as women in labor with epidural³¹ and management of post-operative urinary retention.³² It might also be one of the solutions to the problem with indwelling catheter misuse. Inappropriate use of indwelling catheters has been reported to lie somewhere between 24-62%.³³

Although there is a consensus that intermittent catheterization is a better treatment option than an indwelling catheter, it is sometimes still discarded due to the perception that it is an added burden for patients.³⁴ It has however been shown that intermittent catheterization can be successfully taught to a very high proportion of patients (84%)³⁴ and has a high reported preference among users (97-99%).^{11,35} Evidence suggests that patients given the chance would see the benefit, not the burden of intermittent catheter use.

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