



## SCIENTIFIC REVIEW

# Reuse vs. Single-use catheters?

A surprisingly high number of patients reuses catheters intended for single-use every day putting them at risk for unnecessary complications. Single-use hydrophilic catheters for intermittent catheterization lower the risk for short- and long-term complications and are a convenient and preferred choice for many patients.

The prevalence of reusing catheters for intermittent catheterization varies between regions and is very often driven by financial issues.

For instance, limitations of resources drive the reuse of catheters in developing countries as described by Kovindha et al.<sup>1</sup> Both reuse of catheters intended for single-use and reuse of catheters intended for multiple uses occur.

Even though not legally supported,<sup>2,3</sup> surprisingly high numbers are reported for the former, as exemplified by for instance Woodbury et al.<sup>4</sup> who reported that almost half of the patients reused plastic catheters intended for single use.

Reuse of catheters is dominant in the community setting while single use is recommended for the hospital setting to avoid the risk of infection.<sup>5,6</sup> Even so significant occurrence of reuse could be seen in the hospital settings as well.<sup>3</sup>

The major risk of reusing catheters intended for single use is that patients are exposed to a catheter with insufficient safety and efficacy performance.

Physical properties of the catheter material may change as reported by Bogaert et al.<sup>7</sup> and there is a risk of introducing unnecessary bacteria contamination due to suboptimal cleaning and re-sterilization as reported by Chan et al.<sup>8</sup>

For these reasons, the majority of plastic catheters, including hydrophilic coated ones, are intended for single use only.

Changed physical conditions are however also associated with catheters intended for multiple use, as exemplified by Kovindha et al.<sup>1</sup> who showed encrustation and increased stiffness of reused silicon catheters.

Single-use hydrophilic catheters were developed in the early eighties to address long-term complications of intermittent catheterization as seen when reusing plastic catheters with add on lubrication.

As reported by Wyndaele and Maes<sup>9</sup> and Perrouin-Verbé et al.<sup>10</sup> the majority of complications related to intermittent catheterization occur after long-term use as a result of damage to the urethral wall from repeated catheterizations.

In contrast, long-term use of single-use hydrophilic catheters are reported to prevent urethral trauma and complications.<sup>11, 12</sup>

Several recent reports support the use of single-use hydrophilic catheters to reduce risk of urological complications such as urinary tract infections (UTI) and hematuria.<sup>5,13-15</sup>

For example, the META-analysis of Li et al. concludes that use of single-use hydrophilic catheters could reduce the risk of UTI by 64% and the risk of hematuria by 43% as compared to non-hydrophilic ones.<sup>14</sup>

Comparing UTI incidences in the literature give further support with figures between 40%-60% reported for single-use hydrophilic catheters<sup>12, 14</sup> as compared to 70%-80% for reused catheters.<sup>1, 4,16,17</sup>

To optimize compliance and to ensure long-term success of intermittent catheterization patients should be able to choose the catheters that best fit their needs and preferences.<sup>5,16, 18</sup>

Good patient compliance is crucial to reducing risk factors for UTI, such as adequate catheterization frequency to maintain low bladder volumes. Chartier-Kastler and Denys<sup>15</sup> report that many patients prefer single-use hydrophilic catheters for being easy to use and comfortable.

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