

## Lifestyle Issues and Prevention of Recurrent UTIs

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Recurrent UTIs (RUTIs) are mostly caused by frequent sexual intercourse, heterosexual lack of circumcision receptive anal intercourse (without a condom), multiple sexual partners (each sex partner shares his/her UGT microbiota with the other), use of spermicide and a new sexual partner, sexual intercourse with addicted partners, sexual intercourse with sex workers, sexual intercourse with online dating friends, sexual intercourse with a new sex partner within less than 2 months [9-20]. Traditional lifestyle factors such as fluid intake and diet are not considered independent risk factors now [15]. UTIs account for nearly 25% of all infections [16]. Sexual intercourse  $\geq 3$  times/week was associated with greater frequency of UTI [21]. Close proximity of the urethral meatus to the anus and shorter urethra, is a likely factor [22-26].

Many other factors have been thought to predispose women to RUTIs, such as voiding patterns pre- and post-coitus, wiping technique, wearing tight undergarments, deferred voiding habits and vaginal douching; nevertheless, there has been no proven association [16]. Although, genital hygiene practices such as frequency of coitus, urinating after coitus, washing genitals pre-coitus, male partner washing genitals pre-coitus, washing genitals postcoitus, taking baths, frequent replacing of underwear and washing genitals from front to back were associated with a reduced frequency of UTIs [27]. Low socioeconomic status, depression, anxiety, inadequate water intake, low educational status, anemia, catheterization, poor personal hygiene, poor access to condoms and other contraceptive devices, spermicide-coated condoms, poor access to qualified healthcare systems, high rate of family disruption, mental disorders are also risk factors [14, 28-45].

Catheter-associated-UTIs are common in more than 80% of all ICU patients with indwelling catheter (more than 1 million such cases found in US) and should be avoided unless there is medically necessity [46-48]. Dietary habits seem to be an important risk factor for UTI recurrence dietary guidance could be a first step toward prevention [42, 43, 46-57]. After anemia, UTIs are the second common complications in pregnant women [58]. The overall prevalence of bacteriuria in pregnant women was reported to be as high as 40% and up to up to 70% of pregnant women develop glycosuria, which encourages bacterial growth in the urine [2, 21, 59-

66]. Preventative measures such as drinking cranberry juice (urinary alkalization), OTC cystitis relief remedies or following certain hygiene behaviors, like wiping the genitals from front to back etc., were some of the measures that was suggested in different studies and also opposed/proven not much effective by other studies [5, 15, 16, 21, 67-76]. However, UTI prevention is necessary as renal scarring, low birth weight, neonatal UTI, premature labor, preterm birth, hypertension, preeclampsia, septic shock, malformation or stillbirth, anorectal malformation and increased incidence of perinatal death are reported in several studies [2, 21, 58, 77-96]. Circumcision, glycemic control in diabetes, avoiding spicy food, certain dairy products, sweet fizzy drinks and alcohol found helpful in individuals susceptible to UTIs [97-102].

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