International Journal of Innovative Technologies in Social Science

e-ISSN: 2544-9435

Operating Publisher
SciFormat Publishing Inc.
ISNI: 0000 0005 1449 8214

2734 17 Avenue SW,
Calgary, Alberta, T3E0A7,
Canada
+15878858911
editorial-office@sciformat.ca

ARTICLE TITLE	SURGICAL MANAGEMENT OF FEMALE STRESS URINARY INCONTINENCE: A CONTEMPORARY NARRATIVE REVIEW OF MID-URETHRAL SLINGS, BURCH COLPOSUSPENSION, AUTOLOGOUS FASCIAL SLINGS, AND BULKING AGENTS
DOI	https://doi.org/10.31435/ijitss.3(51).2026.5877
RECEIVED	30 May 2026
ACCEPTED	13 August 2026
PUBLISHED	26 August 2026
LICENSE	The article is licensed under a **Creative Commons Attribution 4.0 International License.**

SURGICAL MANAGEMENT OF FEMALE STRESS URINARY INCONTINENCE: A CONTEMPORARY NARRATIVE REVIEW OF MID-URETHRAL SLINGS, BURCH COLPOSUSPENSION, AUTOLOGOUS FASCIAL SLINGS, AND BULKING AGENTS

Kristian Bjorgen *(Corresponding Author, Email: krystian.bjo@gmail.com)*
Cardinal Stefan Wyszyński University in Warsaw, Warsaw, Poland
ORCID ID: 0009-0008-0225-7439

Lilianna Jasińska
University of Warmia and Mazury in Olsztyn, Olsztyn, Poland
ORCID ID: 0009-0006-0819-8922

Magdalena Roman
Cardinal Stefan Wyszyński University in Warsaw, Warsaw, Poland
ORCID ID: 0009-0004-1261-180X

Martyna Lipiarz
Cardinal Stefan Wyszyński University in Warsaw, Warsaw, Poland
ORCID ID: 0009-0001-3124-9250

Michał Niespodziewański
Cardinal Stefan Wyszyński University in Warsaw, Warsaw, Poland
ORCID ID: 0009-0009-0937-1549

Patrycja Szczygielska
Cardinal Stefan Wyszyński University in Warsaw, Warsaw, Poland
ORCID ID: 0009-0006-2063-3165

Sylwia Hejna
Cardinal Stefan Wyszyński University in Warsaw, Warsaw, Poland
ORCID ID: 0009-0005-6313-3067

Weronika Smutkiewicz
Cardinal Stefan Wyszyński University in Warsaw, Warsaw, Poland
ORCID ID: 0009-0007-4965-1903

Weronika Teterycz
Cardinal Stefan Wyszyński University in Warsaw, Warsaw, Poland
ORCID ID: 0009-0000-7486-458X

Wiktoria Goździejewska
Cardinal Stefan Wyszyński University in Warsaw, Warsaw, Poland
ORCID ID: 0009-0007-5302-1883

ABSTRACT

Introduced at the tail end of the twentieth century, mid-urethral slings (MUS) have established themselves as the premier global paradigm for the surgical correction of stress urinary incontinence (SUI) in women. Longitudinal evidence substantiates that the therapeutic outcomes of MUS align closely with historical benchmarks, including Burch colposuspension and autologous fascial slings. Even though minimally invasive modalities like urethral bulking agents are experiencing a surge in adoption, debates persist regarding the optimal MUS approach; while retropubic techniques offer enhanced long-term robustness especially in complicated presentations featuring intrinsic sphincter deficiency (ISD) or previous treatment failures transobturator tape (TOT) continues to see widespread clinical application due to exceptionally positive patient-reported outcomes.[1] Consequently, selecting the most appropriate surgical route necessitates a careful, individualized risk-benefit assessment, balancing the structural longevity of retropubic procedures against the excellent tolerability and satisfaction rates frequently associated with the transobturator approach in contemporary urogynecological practice. Furthermore, this article focuses on the surgical techniques per se and pathophysiology of stress urinary incontinence to provide a clearer explanation of the various operative procedures.

Methods: This review article was written using a literature review of the PubMed database (2019-2026). It focuses on pathophysiology and surgical management of Female Stress Urinary Incontinence.

KEYWORDS

Colposuspension; Mid-Urethral Sling; Bulking Agents; Autologous Fascial Slings; Stress Urinary Incontinence

CITATION

Ngogi Emmanuel Mahaye. (2026) Policy Development for Effective School Management Amidst Deteriorating Discipline in Secondary Schools in Kwazulu-Natal: Challenges and Strategies. *International Journal of Innovative Technologies in Social Science*. 3(51). doi: 10.31435/ijitss.3(51).2026.2982

1. Introduction

Defined as the accidental escape of urine via the urethral meatus, stress urinary incontinence (SUI) occurs when elevated intra-abdominal pressure typically induced by sudden physical triggers like laughing, coughing, or sneezing overwhelms the bladder's closure mechanism. [6] This phenomenon typically stems from anatomical deficits, namely compromised pelvic floor support or urethral sphincter dysfunction. Although SUI can manifest in men following prostatic interventions, it predominantly affects the female population, with vaginal delivery and prior pelvic operations serving as major predisposing factors. [2] Notably, because a significant social stigma remains attached to bladder control issues, many individuals hesitate to seek medical counsel. Consequently, the condition remains heavily underreported and underdiagnosed globally, even though it profoundly deteriorates patients' overall quality of life. Current operative modalities encompass anti-incontinence techniques such as retropubic urethropexies, autologous fascial slings, periurethral bulking injections, and synthetic midurethral slings (MUS). [5] Crucially, a comprehensive symptomatic assessment must precede any operative intervention.

2. Pathophysiology of stress urinary incontinence

Urinary control is preserved provided that the pressure closing the urethra remains greater than the pressure within the bladder. The overall functionality of this barrier depends on a combination of basal resting urethral pressure and the efficient transfer of intra-abdominal pressure during physical activity. This occlusive force is produced through a synchronized interplay involving the smooth and striated components of the urethral sphincter, the vascular plexus surrounding the urethra, and the mucosal lining. However, advancing age and depleted estrogen levels often trigger a decline in tissue compliance, diminished perfusion, and mucosal atrophy, all of which progressively lower the maximum closure pressure. During periods of increased intra-abdominal strain, the successful transmission of this pressure to the urethra is essential to prevent leakage, a mechanical transfer that relies strictly on the physiologically correct, orthotopic positioning and attachment

of the pelvic floor muscles and the pubourethral ligaments. [7] Following Bonney's 1923 landmark paper, which blamed structural support failure for stress urinary incontinence (SUI), investigation into the root causes of the condition largely stalled for several decades. A major shift in understanding occurred in 1961 when Enhörning demonstrated that under normal conditions, urethral pressure consistently exceeds intravesical pressure during both rest and sudden abdominal impacts. He proposed that a concurrent rise in both areas occurs because abdominal pressure is distributed equally across the bladder, bladder neck, and proximal urethra, thereby reinforcing the sphincter's action. Crucially, this protective dynamic is only effective if the upper urethra remains properly situated above the pelvic floor; in women suffering from SUI, this proximal segment frequently exhibits funneling, effectively becoming absorbed into the bladder anatomy. Furthermore, anatomical distortions near the bladder neck—frequently resulting from pelvic organ prolapse or localized tissue trauma—alter the urethrovesical angle and cause the bladder base to drop. This structural misalignment disrupts normal pressure distribution, ultimately manifesting as incontinence, though impaired pressure transfer can also arise from tissue fibrosis secondary to previous surgical interventions or pelvic radiation, as well as habitual straining, obesity, and pelvic floor muscle laxity. In 1990, Ulmsten and Petros integrated these biomechanical principles into the "integral theory of female urinary incontinence," asserting that both stress and urgency symptoms could stem from a solitary anatomical defect involving a lax vaginal wall. This pioneering concept ultimately paved the way for the subsequent development of the first synthetic midurethral sling (MUS). [3]

3. Surgical Management

3.1 Synthetic Mesh Midurethral Slings

Synthetic midurethral slings have become the most prevalent surgical option for treating female stress urinary incontinence (SUI) due to their impressive success rates and strong safety record. First implemented in the 1990s as a day-case procedure, this technique implants a monofilament polypropylene mesh under the urethra to offer mechanical reinforcement. Major medical organizations, such as the American Urogynecologic Society (AUGS) and the Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction (SUFU), recognize this highly researched anti-incontinence operation as a primary standard of care. [11] Surgeons can utilize three distinct anatomical techniques to insert the sling, all of which are performed as outpatient procedures but necessitate temporary postoperative restrictions on physical activity. The retropubic method guides the mesh behind the pubic bone using a trocar, exiting through the suprapubic skin, whereas the transobturator approach routes the mesh arms through the obturator foramen and muscles to exit at the inner thigh. Alternatively, single-incision slings anchor the mesh directly into the obturator membrane through a solitary incision in the anterior vaginal wall underneath the urethra.

When evaluating therapeutic success within the first year, retropubic and transobturator techniques yield comparable results; [12] however, the retropubic path demonstrate superior long-term outcomes regarding permanent symptom relief and lower rates of secondary interventions. [13] For instance, a massive population-based study involving 92,524 patients revealed that the 10-year reoperation rate for recurrent SUI was merely 2.6% for standard slings, excluding mini-slings. [14] Furthermore, clinical trials indicate that midurethral slings drastically outperform pelvic floor muscle training (PFMT), achieving notably higher 1-year subjective improvement (91% vs. 64%) and cure rates (85% vs. 53%). [15] Each surgical path carries distinct risks that necessitate shared decision-making with the patient. Retropubic slings are more frequently associated with hemorrhage, postoperative voiding dysfunction, or urinary retention, while transobturator slings present higher risks of neurological symptoms and recurrent SUI requiring repeat surgery. [4]

As a minimally invasive alternative to the transobturator method, single-incision "mini-slings" eliminate external groin incisions by securing anchors directly into the obturator membrane via a single anterior vaginal wall incision. Although early versions of these mini-slings performed poorly and were removed from commerce, contemporary generations show long-term noninferiority to standard transobturator slings. [4] It is crucial to distinguish these anti-incontinence slings from transvaginal meshes used for pelvic organ prolapse, which are no longer FDA-approved. Various urological and gynecological associations support the use of polypropylene midurethral slings, and the FDA has affirmed their well-documented 1-year safety profile.[11] Despite this, mesh-related adverse events can still arise, including vaginal mesh exposure, urinary retention, pelvic pain, voiding difficulties, and erosion into the bladder or urethra. Population data from England indicated a 9-year sling removal rate of 3.3% due to these complications,[16] while a US study of 334,601 patients tracked cumulative revision rates for exposure, pain, or retention at 6.9% after 10 years and 7.9% after 15 years. [17]

Although slings dominate the US market for SUI treatment, their appropriateness for women planning future pregnancies is still debated due to fears that childbirth might disrupt the mechanism. Nevertheless, a recent meta-analysis of 381 patients over an average of 9.8 years showed no statistically significant differences in SUI recurrence (RR: 1.02) or reoperation rates (RR: 1.37) between women who gave birth post-surgery and those who did not. [13] Even with these encouraging findings, current medical guidelines still advise delaying the procedure until family planning is complete. Finally, while opting for a midurethral sling as a primary intervention is generally more cost-effective than undergoing PFMT or using a continence pessary, this financial benefit relies heavily on specific willingness-to-pay thresholds, further highlighting the necessity of individualized, patient-focused medical decisions. [4]

3.2 The traditional open Burch colposuspension procedure

Although several technical adaptations have been implemented since the original procedure was described by Burch, the fundamental surgical principles have remained highly standardized. The primary goal of the Burch colposuspension is to relocate the proximal urethra and bladder neck back into the intra-abdominal pressure field behind the pubic bone, which significantly enhances the transfer of pressure during physical strain. [3] Studies by Riss et al. demonstrate that this technique is unique in its ability to increase both the resting urethral closure pressure and the functional length of the urethra, explaining its long-standing track record of success. Additionally, consistent with Burch's initial findings, the elevation simultaneously corrects mild prolapse of the anterior vaginal wall. However, sufficient vaginal elasticity and depth are essential prerequisites for a successful outcome, demanding thorough preoperative evaluation, particularly in women who have undergone previous vaginal operations.

During the operation, a transurethral Foley catheter can be used to dynamically adjust bladder volume. Keeping the bladder partially distended produces a useful visual light reflex at the upper margin of the retropubic space, which helps the surgeon identify the appropriate dissection plane, especially during laparoscopy. [3] Once the space of Retzius is opened, the bladder neck and the adjacent endopelvic fascia of the vagina are isolated, and the bladder is carefully swept medially from the surgical field.

On each side, between two and four sutures preferably non-absorbable are passed through the vaginal wall.[8] Although certain publications, including a review by Smits-Braat, indicate comparable success rates of roughly 87% with either delayed-absorbable or permanent threads, permanent materials remain the conventional choice. The proximal stitches are anchored 2 to 3 cm lateral to the bladder neck, whereas the distal ones are positioned 2 to 3 cm lateral to the upper third of the urethra. These sutures must take a full-thickness bite of the vaginal wall while strictly avoiding the mucosal layer. The free ends are subsequently anchored to the ipsilateral Cooper’s ligament. In order to avoid over-elevation, an assistant pushes the vagina upward by hand while the surgeon ties the knots loosely over Cooper's ligament without putting them under tension; by convention, the distal sutures are tied first. Proper space is confirmed when two fingers can be easily placed between the urethra and the pubic symphysis. To conclude the operation, a routine diagnostic cystoscopy must be performed to rule out any unrecognized bladder or ureteral trauma. [3]

3.2.1 Laparoscopic Burch colposuspension

By avoiding a large abdominal incision, the laparoscopic variant of the Burch colposuspension addresses multiple disadvantages associated with open laparotomy, leading to superior aesthetic results. More generally, utilizing a minimally invasive technique is associated with reduced hospital stays, faster healing, and a swifter return to baseline functioning. A Cochrane systematic review of 22 randomized controlled trials compared the effectiveness of both strategies. Although the majority of evidence points to similar therapeutic success, historical exceptions remain. For example, Su (1997) documented a clear superiority of the open procedure over laparoscopy (97% vs. 73% and 96% vs. 80%). On the other hand, Fatthy (2001) achieved comparable 18-month success rates (88% vs. 85%) by employing an altered laparoscopic approach.

Findings from the Cochrane analysis indicate that the laparoscopic route lowers patient morbidity, curtails blood loss, shortens the time a catheter is needed, alleviates postoperative discomfort, and noticeably decreases the risk of general complications (RR 0.74, 95% CI 0.58–0.96), even though it extends surgical time. [9]

These discrepancies are largely driven by the specific surgical technique applied; the laparoscopic intervention only equals the open standard if it precisely mirrors its methodology. To illustrate, clinical trials demonstrate that applying two paravaginal sutures on each side yields better outcomes than a single-suture technique. Long-term monitoring indicates that subjective efficacy diminishes over time for both approaches, dropping from 67%–71% at half a year to 36%–52% at a decade. Economically, an assessment by Dumville

et al. revealed that while laparoscopy lacks cost-effectiveness during the first 6 months, it yields financial benefits when viewed across a 24-month timeline. [10]

As a result, laparoscopic Burch colposuspension ought to be reserved for practitioners with advanced training and specialized endoscopic skills. Moreover, because of the limited definitive data regarding long-term outcomes, this potential drawback must be thoroughly discussed with patients during preoperative counseling and documented in the informed consent.

3.3 Autologous Fascial Slings

Long before the advent of modern synthetic midurethral slings, autologous pubovaginal slings gained widespread popularity and acceptance during the 1980s. [18] This surgical technique involves harvesting a strip of the patient's own tissue typically from the rectus fascia or fascia lata and placing it beneath the urethra through the retropubic space to offer mechanical stabilization. While long-term success rates are similar between the two approaches, synthetic mesh options have become the dominant choice today, leaving autologous grafts to represent only a small fraction of all incontinence operations. [19] This shift in surgical preference is chiefly driven by the increased morbidity linked to harvesting the patient's fascia. Even so, autologous slings continue to be clinically vital for complex scenarios, including cases involving concurrent urethral diverticulectomy, urethrovaginal fistula repairs, or the removal of eroded synthetic mesh. [20] They also serve as an excellent alternative for patients suffering from stress urinary incontinence paired with a fixed, non-mobile urethra, as well as for individuals who prefer to avoid synthetic foreign materials entirely.

In terms of efficacy, autologous fascial slings yield excellent mid-term results, boasting success rates between 87% and 92% at two to four years after surgery. [4] Moreover, data from a large population-based study involving over 1,200 subjects indicated that the ten-year reoperation rate for recurrent stress urinary incontinence sits at just about 4.5%. [14] Despite these strong outcomes, the practical use of fascial slings is hindered by donor-site complications from the tissue harvest a drawback completely avoided with manufactured synthetic slings. Roughly 10% to 15% of patients encounter graft-site issues such as localized pain, wound infections, seroma formation, or incisional hernias. [21] Furthermore, because this traditional method inherently generates a greater degree of urethral compression, patients face an elevated risk of experiencing postoperative storage lower urinary tract symptoms or needing a subsequent surgical release of the sling. [22]

3.4 Urethral Bulking Agents

As the least invasive procedural option for managing stress urinary incontinence, injecting urethral bulking agents provides a low-risk alternative that minimizes potential morbidity, even though its long-term effectiveness typically falls short of traditional surgical outcomes. This treatment pathway is particularly well-suited for individuals who wish to avoid the extensive recovery times and risks associated with major surgery, those deemed unfit for standard operative interventions, or patients dealing with a return of symptoms after previous anti-incontinence operations. [23]

Performed with the aid of cystoscopic visualization, this method utilizes the precise placement of biomaterials directly into the urethral connective tissues, effectively forming mucosal cushions that assist with urethral closure. The procedure offers excellent clinical flexibility, as it can be safely managed under sedation or conducted routinely right in an outpatient office setting. Practitioners currently have access to a variety of commercial bulking agents cleared by the US Food and Drug Administration (FDA), which feature distinct compositions such as calcium hydroxylapatite (Coaptite), pyrolytic carbon-coated zirconium beads (Durasphere EXP), cross-linked polydimethysiloxane (Macroplastique), and polyacrylamide hydrogel (Bulkamid). Although comprehensive literature reviews suggest that none of these specific biomaterials holds a clear therapeutic advantage over the rest, direct, head-to-head clinical trials comparing their efficacy remain unavailable. [24]

Before choosing this treatment route, patients must be thoroughly advised that they face a higher likelihood of needing additional follow-up procedures for their incontinence when compared to individuals who choose a urethral sling. On the other hand, the side effects associated with bulking injections are generally mild; over a three-year period, the overall complication rate stands at 24%, which is notably lower than the 44% observed in patients who undergo sling surgery. [25] When adverse events do occur, they most commonly present as painful urination, sudden urinary urgency, localized urinary tract infections, or a temporary inability to empty the bladder completely.

4. Conclusion

The surgical management of female stress urinary incontinence (SUI) relies on a diverse toolkit of procedures, each balancing unique efficacy and complication profiles. Since their introduction in the late 1990s, synthetic mesh mid-urethral slings (MUS) have remained the global gold standard due to their high efficacy, favorable safety profile, and strong backing from prominent national specialty organizations. While retropubic and transobturator approaches demonstrate comparable therapeutic efficacy in the short term, the retropubic route tends to favor long-term success and superior durability, particularly in complex or recurrent cases, despite carrying an increased risk of hemorrhage or postoperative voiding dysfunction. Conversely, transobturator slings remain widely utilized due to high patient satisfaction, though they carry higher rates of neurological symptoms and reoperations for recurrent SUI. Current generations of single-incision "mini-slings" have also emerged as noninferior, less invasive alternatives to the transobturator route. Traditional interventions like the Burch colposuspension—both open and laparoscopic—remain highly reliable options that optimize pressure transmission by repositioning the bladder neck and proximal urethra. Although the laparoscopic approach mitigates open laparotomy drawbacks by shortening hospitalizations and reducing overall complication rates, it demonstrates a statistically significant inferiority to the open method in long-term objective cure rates unless it strictly replicates the open technique. For complex scenarios such as concurrent urethral diverticulectomy, urethrovaginal fistula repair, or synthetic mesh erosion excision autologous fascial slings remain highly relevant and effective. However, their widespread adoption is limited by higher donor-site morbidity from the graft harvest and a greater risk of lower urinary tract symptoms compared to synthetic options. Finally, for patients seeking to avoid invasive surgery, individuals with high surgical risks, or those with recurrent incontinence, urethral bulking agents offer the least invasive alternative. Although bulking agents present a lower risk of severe morbidity and minor complications, patients must be counseled that they yield lower long-term success rates and a higher probability of requiring secondary procedures compared to surgical slings. Ultimately, because long-term success metrics vary across these modalities and depend heavily on individual circumstances, the selection of the optimal surgical approach must be guided by advanced clinical expertise and individualized, shared decision-making with the patient.

REFERENCES

1. Karmakar, D. (2019). Surgical management of urinary stress incontinence—Where are we now? *Best Practice & Research Clinical Obstetrics & Gynaecology, 54*, 31–40. https://doi.org/10.1016/j.bpobgyn.2018.10.003
2. Lugo, T., Leslie, W. S., Mikes, B. A., & Riggs, J. (2026). Stress urinary incontinence. In *StatPearls*. StatPearls Publishing. https://pubmed.ncbi.nlm.nih.gov/30969591/
3. Veit-Rubin, N., Dubuisson, J., Ford, A., Dubuisson, J.-B., Mourad, S., & Digesu, A. (2019). Burch colposuspension. *Neurourology and Urodynamics, 38*(2), 553–562. https://doi.org/10.1002/nau.23905
4. Jefferson, F. A., & Linder, B. J. (2024). Evaluation and management of female stress urinary incontinence. *Mayo Clinic Proceedings, 99*(11), 1802–1814. https://doi.org/10.1016/j.mayocp.2024.07.003
5. American College of Obstetricians and Gynecologists, & American Urogynecologic Society. (2014). Committee Opinion No. 603: Evaluation of uncomplicated stress urinary incontinence in women before surgical treatment. *Obstetrics & Gynecology, 123*(6), 1403–1407. https://doi.org/10.1097/01.AOG.0000450756.24422.38
6. Yang, X., Wang, X., Gao, Z., Li, L., Lin, H., Wang, H., Zhou, H., Tian, D., Zhang, Q., & Shen, J. (2023). The anatomical pathogenesis of stress urinary incontinence in women. *Medicina, 59*(1), 105.
7. Cundiff, G. W. (2004). The pathophysiology of stress urinary incontinence: A historical perspective. *Reviews in Urology, 6*(Suppl. 3), S10–S18. https://pmc.ncbi.nlm.nih.gov/articles/PMC1472864/
8. Alshiek, J., Garcia, B., Minassian, V., Shobeiri, S. A., Al-Mandeel, H., Al-Badr, A., et al. (2015). Burch colposuspension: An up-to-date review. *Female Pelvic Medicine & Reconstructive Surgery, 21*(6), 354–361.
9. Dean, N., Ellis, G., Herbison, G. P., Wilson, D., & Mashayekhi, A. (2017). Laparoscopic colposuspension for urinary incontinence in women. *Cochrane Database of Systematic Reviews, 2017*(7), Article CD002239. https://doi.org/10.1002/14651858.CD002239.pub4
10. Dumville, J. C., Manca, A., Kitchener, H. C., Smith, A. R. B., Nelson, L., & Torgerson, D. J. (2006). Cost-effectiveness analysis of open colposuspension versus laparoscopic colposuspension in the treatment of urodynamic stress incontinence. *BJOG: An International Journal of Obstetrics & Gynaecology, 113*(9), 1014–1022. https://doi.org/10.1111/j.1471-0528.2006.01036.x
11. Goldman, H. B. (2022). Joint position statement on midurethral slings for stress urinary incontinence. *Neurourology and Urodynamics, 41*(1), 31–34. https://doi.org/10.1002/nau.24838
12. Richter, H. E., Albo, M. E., Zyczynski, H. M., Kenton, K., Norton, P. A., Sirls, L. T., Kraus, S. R., Chai, T. C., Lemack, G. E., Dandreo, K. J., Varner, R. E., Menefee, S., Ghetti, C., Brubaker, L., Nygaard, I., Khandwala, S., Rozanski, T. A., Johnson, H., Schaffer, J., . . . Urinary Incontinence Treatment Network. (2010). Retropubic versus transobturator midurethral slings for stress incontinence. *The New England Journal of Medicine, 362*(22), 2066–2076. https://doi.org/10.1056/NEJMoa0912658

13. Kenton, K., Stoddard, A. M., Zyczynski, H., Albo, M., Rickey, L., Norton, P., Wai, C., Kraus, S. R., Sirls, L. T., Kusek, J. W., Litman, H. J., Chang, R. P., & Richter, H. E. (2015). 5-year longitudinal followup after retropubic and transobturator mid urethral slings. *The Journal of Urology, 193*(1), 203–210. https://doi.org/10.1016/j.juro.2014.08.089
14. Muller, P., Gurol-Urganci, I., van der Meulen, J., Thakar, R., & Jha, S. (2021). Risk of reoperation 10 years after surgical treatment for stress urinary incontinence: A national population-based cohort study. *American Journal of Obstetrics and Gynecology, 225*(6), 645.e1–645.e14. https://doi.org/10.1016/j.ajog.2021.08.059
15. Labrie, J., Berghmans, B. L. C. M., Fischer, K., Milani, A. L., van der Wijk, I., Smalbraak, D. J. C., Vollebregt, A., Schellart, R. P., Graziosi, G. C. M., van der Ploeg, J. M., Brouns, J. F. G. M., Tiersma, E. S. M., Groenendijk, A. G., Scholten, P., Mol, B. W., & Blokhuis, E. E. (2013). Surgery versus physiotherapy for stress urinary incontinence. *The New England Journal of Medicine, 369*(12), 1124–1133. https://doi.org/10.1056/NEJMoa1210627
16. Gurol-Urganci, I., Geary, R. S., Mamza, J. B., Duckett, J., El-Hamamsy, D., Dolan, L., Tincello, D. G., & van der Meulen, J. (2018). Long-term rate of mesh sling removal following midurethral mesh sling insertion among women with stress urinary incontinence. *JAMA, 320*(16), 1659–1669. https://doi.org/10.1001/jama.2018.14997
17. Dejene, S. Z., Funk, M. J., Pate, V., & Wu, J. M. (2022). Long-term outcomes after midurethral mesh sling surgery for stress urinary incontinence. *Female Pelvic Medicine & Reconstructive Surgery, 28*(4), 188–193. https://doi.org/10.1097/SPV.0000000000001094
18. McGuire, E. J., Bennett, C. J., Konnak, J. A., Sonda, L. P., & Savastano, J. A. (1987). Experience with pubovaginal slings for urinary incontinence at the University of Michigan. *The Journal of Urology, 138*(3), 525–526. https://doi.org/10.1016/S0022-5347(17)43246-0
19. Bretschneider, C. E., Geynisman-Tan, J., Mueller, M. G., Collins, A. S., Lewicky-Gaupp, C., & Kenton, K. (2021). Rates of sling procedures and revisions—A National Surgical Quality Improvement Program database study. *Female Pelvic Medicine & Reconstructive Surgery, 27*(6), e559–e562. https://doi.org/10.1097/SPV.0000000000000995
20. Kobashi, K. C., Albo, M. E., Dmochowski, R. R., Arts, D. A., Goldman, H. B., Gomelsky, A., Kraus, S. R., Sandhu, J. S., Shepler, T., Treadwell, J. R., Vasavada, S., & Lemack, G. E. (2017). Surgical treatment of female stress urinary incontinence: AUA/SUFU guideline. *The Journal of Urology, 198*(4), 875–883. https://doi.org/10.1016/j.juro.2017.06.061
21. Sharma, J. B., Deoghare, M. K., Bhatla, N., Kachhawa, G., Mahey, R., & Kumari, R. (2020). A comparative study of autologous rectus fascia pubovaginal sling surgery and synthetic transobturator vaginal tape procedure in treatment of women with urodynamic stress urinary incontinence. *European Journal of Obstetrics & Gynecology and Reproductive Biology, 252*, 349–354. https://doi.org/10.1016/j.ejogrb.2020.06.062
22. Fusco, F., Abdel-Fattah, M., Chapple, C. R., Creta, M., La Falce, S., Waltregny, D., & Novara, G. (2017). Updated systematic review and meta-analysis of the comparative data on colposuspensions, pubovaginal slings, and midurethral tapes in the surgical treatment of female stress urinary incontinence. *European Urology, 72*(4), 567–591. https://doi.org/10.1016/j.eururo.2017.04.026
23. Braga, A., Caccia, G., Papadia, A., Treglia, G., Castronovo, F., Salvatore, S., Torella, M., Ghezzi, F., & Serati, M. (2022). Urethral bulking agents for the treatment of recurrent stress urinary incontinence: A systematic review and meta-analysis. *Maturitas, 163*, 28–37. https://doi.org/10.1016/j.maturitas.2022.05.007
24. Hoe, V., Haller, B., Yao, H. H., & O'Connell, H. E. (2021). Urethral bulking agents for the treatment of stress urinary incontinence in women: A systematic review. *Neurourology and Urodynamics, 40*(6), 1349–1388. https://doi.org/10.1002/nau.24696
25. Itkonen Freitas, A. M., Isaksson, C., Rahkola-Soisalo, P., Tulokas, S., Mentula, M., & Mikkola, T. S. (2022). Tension-free vaginal tape and polyacrylamide hydrogel injection for primary stress urinary incontinence: 3-year followup from a randomized clinical trial. *The Journal of Urology, 208*(3), 658–667. https://doi.org/10.1097/JU.0000000000002720