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Quality of Life and Symptom Sharing Among Women with Athletic Urinary Incontinence

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Author Note

All authors have no known conflict of interest to disclose.

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Abstract

Introduction Women have a 2-3.5 times greater chance of urinary incontinence (UI) during exercise. Some high-impact activities are particularly provocative including gymnastics, trampoline, and volleyball. Athletic UI can cause frustration, worry, and embarrassment for women, negatively influencing their quality of life and sports performance. Methods This secondary analysis aimed to compare UI frequency with the amount of frustration, worry, and embarrassment (F/W/E) experienced by athletic and active women with UI. Data regarding the frequency of UI, management strategies, amount of F/W/E, and demographics from the Active Women’s Incontinence Screening Tool (AWIST) was analyzed. Data analysis was performed in Excel and SPSS. Results A sample of 61 survey responses, who reported UI on the AWIST, were included in analysis. Brisk walking, skiing, and running were the most reported activities. The most common UI management strategies included wearing pads or tampons, worry regarding clothing, and changing place and time of exercise. Women who reported “a lot” of F/W/E had a higher frequency of UI. Two-thirds of participants talked to someone about their urine leaking. Discussion Many athletes and active women who engage in activity experience UI. Most women use management strategies, some even avoiding specific exercises or exercising less often which could have long-term effects on physical health. Clinicians must recognize that women with a greater frequency of UI are more likely to have F/W/E and provide care accordingly. The percentage of participants with UI who discussed symptoms with others was notably higher than previous findings.

Keywords: urinary incontinence, pelvic floor, female athlete, quality of life, women’s health
Quality of Life and Symptom Sharing Among Women with Athletic Urinary Incontinence

Introduction

Background

Female athletes have a 2-3.5 times greater chance of experiencing urinary incontinence (UI) than non-athletes (Bø & Nygaard, 2020; Chisholm et al., 2019). Stress urinary incontinence (SUI) is a “complaint of involuntary loss of urine on effort or physical exertion (e.g., sporting activities), or on sneezing or coughing” (Haylen et al., 2010, p. 7). This involuntary leakage of urine during exercise or activity has been named Athletic UI. Some high-impact activities are particularly provocative, including gymnastics, trampoline, and volleyball (Bø & Nygaard, 2020; Gram & Bø, 2020; Pires et al., 2020). Systematic reviews have reported that approximately 30% of female athletes have Athletic UI, ranging from low rates (0%) in low-impact activities like golf to high rates (80%) in high-impact activities like gymnastics and trampoline (Almousa & Bandin Van Loon, 2019; de Mattos et al., 2018; Rebullido et al., 2021). In the last five years, there has been a substantial increase in research in this area.

Athletic UI can cause frustration, worry, and embarrassment for female athletes and active women. Previous studies have reported visible leakage to be bothersome for athletes, especially in gymnastics and other high-impact sports where uniforms provide minimal coverage during different positions and body maneuvers (Gram & Bø, 2020). Gram & Bø (2020) found that among 107 female rhythmic gymnasts, 29.4% of athletes were afraid of visible leakage and UI had a 70.6% influence on sports performance. Skaug et al. (2021) found that among 319 gymnasts and cheerleaders, greater than 60% reported urine leakage that led to embarrassment. For many, Athletic UI has a detrimental effect on both quality of life and sports performance,
summarized by a participant in Wikander et al.’s (2021) study, saying, “It sucks having this issue, it affects my confidence, security, and potential of missing or making lifts” (p. 5).

Though some studies have found no or minimal impact on social and sexual aspects of quality of life, most studies agree that Athletic UI affects sports performance and participation, and some athletes may even quit participation in sports and exercise altogether (de Mattos Lourenco et al., 2018; Gram & Bø, 2020; Sandwith & Robert, 2021; Velázquez-Saornil et al., 2021). UI symptoms have been reported to adversely affect sports performance in 39-82.6% of female athletes and active women (Dakic et al., 2021; Skaug et al., 2021; Velázquez-Saornil et al., 2021). Dakic et al. (2021) reported that urine leaking negatively affected exercise participation for one in two women, while Skaug et al. (2021) found that one out of every five athletes with SUI would occasionally avoid training and specific exercises due to leakage.

Physical activity and exercise are known to improve health and reduce the risk of developing many chronic diseases, such as hypertension, diabetes, and hypercholesterolemia. If Athletic UI causes women to exercise less or stop exercising, the significant benefits of exercise are lost. Though prevention and management strategies exist, studies have shown that many women do not discuss urine leaking with others or report it to coaches or other healthcare professionals (Almousa & Bandin Van Loon, 2019; de Mattos Lourenco et al., 2018; Gram & Bø, 2020). Increased awareness of Athletic UI among female athletes, active women, coaches, and healthcare personnel, including knowledge regarding symptom sharing, prevention, and management strategies, is an area of considerable need (Gram & Bø, 2020; Skaug et al., 2021).

Female athletes and active women should feel supported by healthcare professionals, coaches, athletic trainers, and other personnel who provide them with the tools they need to optimize their health, sports performance, and well-being. Consistent with this approach, we
utilized Pender’s Health Promotion Model as a theoretical framework, which portrays health as a positive dynamic state as opposed to merely the absence of disease. This framework includes individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcomes with the end goal of health-promoting behaviors that result in better health, increased functional ability, and improved quality of life (Petiprin, 2020). This health promotion model is driven through nursing action and health education. Increasing awareness of Athletic UI, while combatting stigma and refuting the belief that UI during exercise is normal or inevitable, may provide athletes and active women with the courage to share their symptoms and receive support. Ultimately, this may lead to decreased frustration, worry, and embarrassment with improved quality of life and functional ability.

Aims

This study aims to examine the relationship between the frequency of Athletic UI among female athletes and active women and the effect on their quality of life and who they discuss their symptoms with (hereafter referred to as “symptom sharing”). We hypothesized that increased frequency of UI is correlated with increased frustration, worry, and embarrassment and minimal symptom sharing.

Methods

AWIST Study

The Active Women’s Incontinence Screening Tool (AWIST) is a 39-item, comprehensive questionnaire about Athletic UI, created to address the gap between the information currently provided by commonly used screening tools and information that is needed by researchers and clinicians to better understand Athletic UI and treat affected women (see Appendix). The development of this tool addressed the critique of Bø and Nygaard (2020), two
leading researchers in this topic area, that the inconsistent use of UI instruments across studies has led to limitations in generalizability. The development of this tool included input from many experts such as competitive and non-competitive female athletes, urologists, urogynecologists, physical therapists, athletic trainers, and instrument development specialists.

The primary study aimed to establish the AWIST’s validity and reliability. A secure link to the questionnaire in RedCap was disseminated on social media beginning in February 2022. Inclusion criteria specified athletic or active females 18 years of age or older, yielding a wide range of participants representing various ages and activity levels. The primary study had an overall questionnaire completion rate of 64%, resulting in a sample population of 118. Survey questions captured the frequency of UI, amount of frustration, worry, and embarrassment (F/W/E), management strategies, symptom sharing, athletics, and demographics, among other variables.

Secondary Analysis

The current study was a secondary analysis of cross-sectional data from the AWIST conducted in March 2022. Of the 118 responses, 61 athletic or active women who reported experiencing UI were included in this analysis. Women who were not active or did not experience UI were excluded from this analysis. Selected survey questions were used to compare the frequency of UI with amount of F/W/E among women. Symptom sharing and prevention/management strategies were also analyzed. Both the Dartmouth-Hitchcock Medical Center and UNH Human Research Ethics Committees deemed that use of this data for secondary analysis was not human subject research, as the current study was conducted from a de-identified database.

Measures and Analysis
Information about UI frequency, F/W/E, and symptom sharing was gathered through survey questions. UI was defined by the following question in the AWIST: “How often do you leak urine?” with answers including, “never (=0),” “about once a week or less often (=1),” “two or three times a week (=2),” “about once a day (=3),” “several times a day (=4),” and “all the time (=5).” Amount of F/W/E was assessed with the following question: “How much frustration, worry, or embarrassment does urine leaking cause for you? Select one answer,” with answers including, “none (=0),” “a little (=1),” “some (=2)” or “a lot (=3).” Information regarding symptom sharing was collected through the following question: “Who do you talk to about your urine leaking? Select all that apply,” including answers, “spouse/partner,” “friends,” “family,” “medical providers,” “athletic/personal trainer,” “children,” “no one,” and “other.” Answers were grouped into the following categories: family/friends only (spouse/partner, family, friends, children), healthcare professionals only (medical providers, athletic/personal trainer), both family/friends and healthcare professionals, and no one (see Appendix).

Data analysis was performed using descriptive statistics in Excel and SPSS. A pivot table and ANOVA of frequency were used to aggregate group values and compare the frequency of UI with amount of F/W/E. Findings were reported as percentages and means including standard deviation.

Results

Study Sample

Characteristics of participants are described in Table 1. The average age of participants was 53.3 (22-76) years old and all participants were female. Ethnicity/race was 75.4% (n=46) white. When asked about conditions that could influence UI, 18% (n=11) reported experiencing surgery or trauma to their bladder while only 3.3% (n=2) reported medical conditions related to
their bladder. When asked about obstetric history, 63.9% (n=39) reported that they had given birth. The reported frequency of UI was 1.9 on a scale of 1 to 5 (1=about once a week or less often; 5=all the time).

**Athletics and Exercise**

Respondents participated in a wide range of athletics and exercise and engaged in various amounts of vigorous exercise per week. The three most common activities were brisk walking (39.2%, n=24), running (26.2%, n=16), and skiing (26.2%, n=16). When asked about engagement in vigorous activity, 24.6% (n=15) of participants indicated that they complete 3-4 hours per week while 23% (n=14) indicated that they complete 5-8 hours per week (see Table 2).

**Prevention/Management of UI**

Participants reported the use of various prevention/management strategies to deal with their UI (see Table 2). When asked about strategies used, 36% (n=22) of participants reported wearing pads, tampons, or other collection devices to decrease urine leaking, 29.5% (n=18) of participants reported worrying about what they wear when exercising, and 18% (n=11) reported worrying about where and when they exercise. Regarding changes in exercise habits due to Athletic UI, 14.8% (n=9) of participants avoid specific exercises/movements that cause urine leaking, 11.5% (n=7) avoid exercising in public, 6.6% (n=4) exercise less strenuously, and 9.8% (n=6) exercise less often.

**Symptom Sharing**

When asked who they share their symptoms with, 60.7% (n=37) indicated sharing their symptoms with someone (see Table 3). Of women who share their symptoms, 32.8% (n=20) talk to both family/friends and healthcare professionals, 23% (n=14) talk to family/friends only, and 4.9% (n=3) talk to healthcare providers only. Overall, 39.3% (n=24) of participants do not share
their symptoms with anyone. Of the total sample population, 37.7% (n=23) talk to a healthcare professional about their urine leaking. Trends of symptom sharing are visualized in Figure 1.

**Frequency of UI and Frustration, Worry, & Embarrassment**

Women with “a lot” of F/W/E reported the highest frequency of UI (3.25 +/- 0.96) (see Table 4). Women with “some” F/W/E reported an average UI frequency of 2.60 +/- 1.26, while those with “a little” F/W/E reported a lower average UI frequency of 2.05 +/- 1.10. Participants who reported no F/W/E experienced UI the least frequently with an average of 1.37 +/- 0.69.

Trends in F/W/E with UI are visualized in Figure 2. An ANOVA of frequency of Athletic UI with amount of F/W/E showed a significant association, with increased frequency related to increased F/W/E (M = 1.92, SD = 1.1), F (3,57) = 72.6, p < .001 (p < 0.05 indicates significance).

**Discussion**

Many women experience Athletic UI during exercise. The forces that occur during exercise increase intra-abdominal pressure, overcoming the resistance provided by the pelvic floor, increasing the chance that women will have UI during exercise. The prevalence of Athletic UI varies dramatically from sport to sport, with low rates in low-impact sports such as swimming and golf, and high rates in high-impact sports such as gymnastics, trampoline, and volleyball.

Athletic UI is of great concern for many women, and there can be a significant social stigma surrounding incontinence. It can cause frustration, worry, and embarrassment for female athletes and active women. Visible leaks are bothersome for athletes, especially in gymnastics and other sports where uniforms provide minimal coverage. Exercising in public and knowing they might leak at any moment can make women feel vulnerable.
Concerningly, the frustration, worry, and embarrassment regarding incontinence led some women to avoid exercising in public (n=7, 11.5%), exercise less strenuously (n=4, 6.6%), or exercise less often (n=6, 9.8%). Limiting physical activity due to UI is worrying, as exercise is known to improve health and reduce the risk of developing chronic disease. To reduce this risk, providers should ask about Athletic UI and specifically whether it is leading women to reduce their amount or type of physical exercise. This will allow providers to better support women in improving their overall health.

Most prior studies have shown that women are reluctant to discuss their Athletic UI with others. However, in this recent study of 61 active women, approximately 66% of women reported talking to someone about their incontinence. This is consistent with one other study which found that 73.6% of women spoke to someone (Skaug et al., 2021). Skaug et al. (2021) reported that of 319 gymnasts and cheerleaders with SUI, 26.4% never spoke with others about their symptoms, 57.2% spoke with teammates, 37.8% with friends, and 19.9% with parents, while only 12.5% had spoken with a coach or other professional. In this study, approximately 30% of women reported talking to a coach, athletic trainer, or healthcare professional which is higher than Skaug et al.’s (2021) previously reported 12.5%. These studies, with lower reported discussion with others, had younger samples than the current study. Open discussion with younger athletes may promote increased disclosure and treatment.

The level of frustration, worry, and embarrassment reported by participants was not as high as in previous studies, possibly related to participant age range and frequency of UI. Still, women with increased frequency of UI report more frustration, worry, and embarrassment than women who experience urine leaking less often. This analysis revealed that most women use management strategies such as pads or tampons, while some worry about what they are wearing
and when and where they exercise. Avoiding specific exercises or exercising less often are real impacts of UI for some women, which may have long-term, negative impacts on health and well-being.

**Limitations**

This analysis has several limitations. The data set was gathered cross-sectionally from an instrument (e.g., AWIST) that is still in the validation process. Although initial validation of the AWIST is promising, the validation has not yet been confirmed. In addition, participants represented a large age range, from 22 to 76 years old, with age-related factors potentially influencing findings. It was not specified whether UI occurs during exercise, activities of daily living, or both. This analysis did not control for extraneous variables that could affect Athletic UI, such as the number of vaginal deliveries and medical conditions affecting the bladder.

**Conclusion**

There is a stigma associated with Athletic UI. Talking about Athletic UI helps break down this stigma and hopefully decreases embarrassment for women. Each time an athlete or active woman talks to a healthcare professional, coach, or athletic trainer about her incontinence, they can help support her ability to stay engaged in exercise and self-care, enabling her to obtain the many physical and mental health benefits of regular exercise. Clinicians, coaches, and athletic trainers must start asking women about incontinence and help them connect with skilled nurse practitioners and midwives, physicians, pelvic floor physical therapists, gynecologists, and urologists who can help treat their symptoms and keep them as active and engaged in life as they would like to be.

**Future Directions**
Perhaps an increase in research interest has brought more awareness to Athletic UI, leading more women to share their symptoms with someone. Still, many women are not sharing their symptoms with healthcare professionals who can provide them with support and the means to prevent/manage their Athletic UI. Larger studies investigating who women share their symptoms with and the reasoning behind symptom sharing are needed to provide insight into how we can increase support for female athletes and active women. Athletic UI must be further analyzed as a potential barrier to women’s participation in sports and physical fitness, along with prevention and management strategies to combat UI and improve overall well-being.

Acknowledgments

I would like to thank Kerry Nolte, PhD, FNP-C and Bridget Linehan, PhD, APRN for providing guidance and support throughout this project, allowing me to pursue my research interests and endeavors.
References


https://doi.org/10.1519/JSC.0000000000004052
Table 1. Survey Participant Demographics and Medical/Obstetric History (n=61)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Range (M)</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>22-76 (53.3)</td>
<td>-</td>
</tr>
<tr>
<td>Height</td>
<td>5’1”-5’10” (5’5”’)</td>
<td>-</td>
</tr>
<tr>
<td>Weight</td>
<td>100-231 lbs. (149.1 lbs.)</td>
<td>-</td>
</tr>
<tr>
<td>Average # of Vaginal Deliveries</td>
<td>0 – 4 (2)</td>
<td>-</td>
</tr>
<tr>
<td>Frequency of Athletic UI*</td>
<td>1-5 (1.9)</td>
<td>-</td>
</tr>
<tr>
<td>Amount of F/W/E**</td>
<td>0-3 (0.9)</td>
<td>-</td>
</tr>
<tr>
<td>Ethnicity/Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>-</td>
<td>46 (75.4)</td>
</tr>
<tr>
<td>Native American/American Indian</td>
<td>-</td>
<td>1 (1.6)</td>
</tr>
<tr>
<td>Other/Unspecified</td>
<td>-</td>
<td>14 (23)</td>
</tr>
<tr>
<td>Surgery/Trauma to Bladder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No surgery/no trauma</td>
<td>-</td>
<td>36 (59)</td>
</tr>
<tr>
<td>Surgery only</td>
<td>-</td>
<td>5 (8.2)</td>
</tr>
<tr>
<td>Trauma only</td>
<td>-</td>
<td>4 (6.6)</td>
</tr>
<tr>
<td>Both surgery/trauma</td>
<td>-</td>
<td>2 (3.3)</td>
</tr>
<tr>
<td>Unspecified</td>
<td>-</td>
<td>14 (23)</td>
</tr>
<tr>
<td>Medical Conditions Increasing UI Risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>-</td>
<td>45 (73.8)</td>
</tr>
<tr>
<td>At least 1 condition present</td>
<td>-</td>
<td>2 (3.3)</td>
</tr>
<tr>
<td>Other/Unspecified</td>
<td>-</td>
<td>14 (23)</td>
</tr>
<tr>
<td>Given Birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-</td>
<td>39 (63.9)</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
<td>8 (13.1)</td>
</tr>
<tr>
<td>Unspecified</td>
<td>-</td>
<td>14 (23)</td>
</tr>
</tbody>
</table>

*Frequency of Athletic UI (1=about once a week or less often, 5=all the time)

**Amount of F/W/E (0=none, 3=a lot)
### Table 2. Amount of Exercise & Athletic UI Management Strategies (n=61)

<table>
<thead>
<tr>
<th>Amount of Vigorous Exercise/Week</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 hours/week</td>
<td>5 (8.2)</td>
</tr>
<tr>
<td>3-4 hours/week</td>
<td>15 (24.6)</td>
</tr>
<tr>
<td>5-8 hours/week</td>
<td>14 (23)</td>
</tr>
<tr>
<td>8-10 hours/week</td>
<td>2 (3.3)</td>
</tr>
<tr>
<td>&gt; 10 hours/week</td>
<td>5 (8.2)</td>
</tr>
<tr>
<td>Unspecified</td>
<td>20 (32.8)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AUI Management Strategies</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pad/tampon/other to decrease leaking</td>
<td>22 (36)</td>
</tr>
<tr>
<td>Worry about clothing when exercising</td>
<td>18 (29.5)</td>
</tr>
<tr>
<td>Worry about where and when you are exercising</td>
<td>11 (18)</td>
</tr>
<tr>
<td>Avoid exercises/movements resulting in UI</td>
<td>9 (14.8)</td>
</tr>
<tr>
<td>Avoid exercising in public</td>
<td>7 (11.5)</td>
</tr>
<tr>
<td>Exercise less often</td>
<td>6 (9.8)</td>
</tr>
<tr>
<td>Exercise less strenuously</td>
<td>4 (6.6)</td>
</tr>
<tr>
<td>None of the above</td>
<td>6 (9.8)</td>
</tr>
<tr>
<td>Unspecified</td>
<td>21 (34.4)</td>
</tr>
<tr>
<td>Talked To</td>
<td>n (%)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Healthcare Professional Only</td>
<td>3 (4.9)</td>
</tr>
<tr>
<td>Family/Friend Only</td>
<td>14 (23)</td>
</tr>
<tr>
<td>Both F/F &amp; HP*</td>
<td>20 (32.8)</td>
</tr>
<tr>
<td>No one</td>
<td>24 (39.3)</td>
</tr>
</tbody>
</table>

* F/F=Family/Friends; HP=Healthcare Professional; F/W/E=Frustration/Worry/Embarrassment
<table>
<thead>
<tr>
<th>Frustration/Worry/Embarrassment</th>
<th>Average UI Frequency</th>
<th>StdDev of UI Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lot</td>
<td>3.25</td>
<td>0.96</td>
</tr>
<tr>
<td>Some</td>
<td>2.60</td>
<td>1.26</td>
</tr>
<tr>
<td>A little</td>
<td>2.05</td>
<td>1.10</td>
</tr>
<tr>
<td>None</td>
<td>1.37</td>
<td>0.69</td>
</tr>
</tbody>
</table>

**Table 4.** Frequency of UI and Level of Frustration, Worry, & Embarrassment (n=61)
Figure 1.

UI Symptom Sharing (n=61)
Figure 2.

Average Frequency of UI by Reported Frustration, Worry, & Embarrassment (n=61)

<table>
<thead>
<tr>
<th>Amount of Frustration, Worry, &amp; Embarrassment</th>
<th>Average Frequency of UI</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1.37</td>
</tr>
<tr>
<td>A little</td>
<td>2.05</td>
</tr>
<tr>
<td>Some</td>
<td>2.6</td>
</tr>
<tr>
<td>A lot</td>
<td>3.25</td>
</tr>
</tbody>
</table>

Average Frequency of UI includes:
- All the time (4)
- Once a day (2)
- Never (0)
Active Women's Incontinence Screening Tool (AWIST)

This survey asks questions about you and some of your body functions. Do your best to answer questions that pertain to you, thinking about how you have been, on average, over the PAST THREE MONTHS. Your answers are anonymous.

I identify as female.

- Yes
- No

Please select one answer

- I am not pregnant
- I am pregnant

I am 18 years of age or older.

- Yes
- No

DARTMOUTH-HITCHCOCK MEDICAL CENTER
Active Women’s Incontinence Screening Tool
RESEARCH PROJECT INFORMATION SHEET

This research project is being conducted by Bridget Linehan, PhD, APRN from the Pediatric Urology Department at Dartmouth-Hitchcock Medical Center. It is a study of the important factors that affect urinary incontinence that occurs during daily life and during exercise.

Your participation is voluntary. Participation involves completion of a questionnaire anonymously online via this link;

If you agree to participate, the questionnaire will ask information about your health. This is not connected to your medical record, and we will not add any information about this research to your medical record.

The information collected will be about your age, the type and amount of activities that you engage in, your fluid intake habits, bowel and bladder habits, and any incontinence that you may experience.

The information collected will be anonymous from the moment that you begin filling out the questionnaire, and your identity cannot be tracked. Thus, no names and other identifying information will be used in any presentation or paper written about this project. Data collected for this study will be maintained until December 31, 2023. The information collected for this study will be used only for purposes of research as stated earlier in this form. Research data may be shared with officials of Dartmouth College, DHMC, and others involved in the oversight of this study as permitted by law.

If you would prefer not to participate in this study, simply close the link and the un-submitted questionnaire will no longer exist.

Questions about this project may be directed to:
Bridget Linehan, PhD, APRN
DHMC Pediatric Urology
1 Medical Center Drive, Lebanon, NH 03756
603 653-9882
Bridget.A.Linehan@Hitchcock.org
**Section 1: About your bladder and bowel symptoms & habits**

1. On a typical day, how much fluid do you drink?
   - [ ] Less than 32 oz (one liter)
   - [ ] Between 32 and 45 oz (1-1.5 liters)
   - [ ] More than 64 oz (2 liters)
   - [ ] More than 96 oz (3 liters)

2. During a typical day, how many times do you urinate (pee) in a toilet? Select one answer.
   - [ ] 1-3 times/day
   - [ ] 4-6 times/day
   - [ ] 7-8 times/day
   - [ ] More than 8 times/day

3. How often do you feel a strong urge to urinate (pee) immediately?
   Select one answer.
   - [ ] Never
   - [ ] Rarely
   - [ ] Occasionally
   - [ ] Almost every time
   - [ ] Every time

4. How often do you typically have a spontaneous bowel movement (poop) without the help of laxatives?
   Select one answer.
   - [ ] Multiple times per day
   - [ ] Daily
   - [ ] Every other day
   - [ ] Less than 3 times per week
   - [ ] Once a week or less often
5 Refer to chart above. Do you have type 1 or 2 stools more than 25% of the time that you attempt to have a bowel movement (poop)?

☐ Yes
☐ No

6 Do you experience any of these more than 25% of the time that you attempt to have a bowel movement (poop)?

Select all that apply.

☐ Straining to pass stool (poop)
☐ Sensation of obstruction/blockage when trying to pass stool (poop)
☐ Sensation of having incompletely evacuated
☐ Need to remove stool manually (with your fingers) or support your pelvic floor or anus while stooling
☐ Rarely have loose stool (except when you have used a laxative)
☐ None of the above

7 How often do you leak urine?

☐ Never
☐ About once a week or less often
☐ Two or three times a week
☐ About once a day
☐ Several times a day
☐ All the time
8. We would like to know how much urine you think leaks. How much urine do you usually leak (whether you wear protection or not)?

- None
- A small amount: a spot on my underwear
- A moderate amount: my underwear is wet and my pants have a wet spot
- A large amount: my pants are soaked

9. When does urine leak? (Please select all that apply).

- Never - urine does not leak
- Leaks before you get to the toilet
- Leaks when you cough or sneeze
- Leaks when you are asleep
- Leaks when you are physically active/exercising
- Leaks when you have finished urinating and are dressed
- Leaks for no obvious reason
- Leaks all the time

10. How long ago did you first notice urine leaking?

- Less than one year ago
- 1-5 years ago
- 6-10 years ago
- More than 10 years ago
- This has been a lifelong problem

11. Do you avoid activities and situations where you expect you may leak urine? Select one answer.

- Yes
- No

12. How much frustration, worry, or embarrassment does urine leaking cause for you? Select one answer.

- None
- A little
- Some
- A lot

13. Who do you talk to about your urine leaking? Select all that apply.

- Spouse/partner
- Friends
- Family
- Medical providers
- Athletic/personal trainer
- Children
- No one
- Other

Please describe other:
14. What methods do you use to manage urine leaking during normal daily activities? Select all that apply.

- [ ] Kegel exercises
- [ ] Wearing a pad, tampon, or other similar product
- [ ] Urinating frequently
- [ ] Limiting fluid intake
- [ ] Avoiding exercise
- [ ] Other
- [ ] None/nothing

Please describe other:

15. Do you ever experience urine leaking during exercise?

- [ ] Yes
- [ ] No

16. How much vigorous exercise (breaking a sweat) do you typically do each week during your most active season? Select one answer.

- [ ] 0-2 hours/week
- [ ] 3-4 hours/week
- [ ] 5-8 hours/week
- [ ] 8-10 hours/week
- [ ] Greater than 10 hours/week

17. Consider your answer above: During which seasons do you maintain that level of vigorous exercise? Select all that apply.

- [ ] Spring
- [ ] Summer
- [ ] Fall
- [ ] Winter
- [ ] N/A
18 What are your primary athletic activities? Select all that apply, or "None of the above".

- X-C running
- Soccer
- Field hockey
- Crew
- Rugby
- Horseback riding
- Sailing
- Lacrosse
- Tennis
- Golf
- Softball
- Track
- Field Events
- Swimming/Diving
- Basketball
- Volleyball
- Squash
- X-C Skiing
- Alpine Skiing
- Hockey
- Fencing
- Weightlifting
- Walking
- Yoga, Pilates
- Bicycling
- Running/Jogging
- Other
- NONE OF THE ABOVE

Please describe other:

19 How often do you have urine leaking during exercise? Select one answer.

- Never
- Rarely
- Occasionally
- Almost every time I exercise
- Every time I exercise

20 We would like to know how much urine you think leaks during exercise. How much urine do you usually leak (whether you wear protection or not)?

- None
- A small amount: a spot on my underwear
- A moderate amount: my underwear is wet and my pants have a wet spot
- A large amount: my pants are soaked
21 During which of the following activities, exercises, or situation do you experience any urine leaking? Select all that apply.

- Running on flat surfaces
- Running down hill
- Crossing the finish line
- Heavy exertion or competition
- When it's hot outside
- Exercising late in the day
- Exercising early in the morning
- Kicking a ball
- Jumping (jump rope, jumping jacks, jump-shots, trampoline)
- Lifting weights
- Lifting heavy items
- Other

Please describe other:

22 Which of the following are things you do, because of urine leaking during exercise? Select all that apply.

- Worry about where and when you exercise
- Worry about what you wear while exercising
- Exercise less often
- Wear a pad, tampon, or other to decrease leaking
- Avoid exercising in public
- Exercise less strenuously
- Avoid exercises/movements that result in leakage
- None of the above
### Section 2: About the pelvic floor

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 How frequently do you have an orgasm? (Think about this year)</td>
<td>- 0-1 times per month</td>
</tr>
<tr>
<td></td>
<td>- 2-4 times per month</td>
</tr>
<tr>
<td></td>
<td>- 5 or more times per month</td>
</tr>
<tr>
<td>24 Do you have pain or discomfort with vaginal penetration?</td>
<td>- 0-1 times per month</td>
</tr>
<tr>
<td></td>
<td>- 2-4 times per month</td>
</tr>
<tr>
<td></td>
<td>- 5 or more times per month</td>
</tr>
<tr>
<td>25 Do you have pain or discomfort in your lower abdomen or genital area?</td>
<td>- 0-1 times per month</td>
</tr>
<tr>
<td></td>
<td>- 2-4 times per month</td>
</tr>
<tr>
<td></td>
<td>- 5 or more times per month</td>
</tr>
<tr>
<td>26 How often do you do Kegel exercises? Select one answer.</td>
<td>- I am not familiar with Kegel exercises</td>
</tr>
<tr>
<td></td>
<td>- Never</td>
</tr>
<tr>
<td></td>
<td>- A few times a month</td>
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<tr>
<td></td>
<td>- A few times a week</td>
</tr>
<tr>
<td></td>
<td>- Daily</td>
</tr>
<tr>
<td>27 Have you ever had a medical provider physically verify that you are doing Kegel exercises effectively? Select one answer.</td>
<td>- Yes</td>
</tr>
<tr>
<td></td>
<td>- No</td>
</tr>
<tr>
<td>28 You may have answered a similar question, but for the purpose of this screening tool development, please tell us again...We would like to know how much urine you think leaks. How much urine do you usually leak (whether you wear protection or not)?</td>
<td>- None</td>
</tr>
<tr>
<td></td>
<td>- A small amount</td>
</tr>
<tr>
<td></td>
<td>- A moderate amount</td>
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<td></td>
<td>- A large amount</td>
</tr>
<tr>
<td>29 Overall, how much does leaking urine interfere with your everyday life?</td>
<td>Please choose a number between 0 (not at all) and 10 (a great deal)</td>
</tr>
<tr>
<td></td>
<td>- 8</td>
</tr>
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<td></td>
<td>- 9</td>
</tr>
<tr>
<td></td>
<td>- 10</td>
</tr>
</tbody>
</table>
Section 3: About you

30 What is the year of your birth? (YYYY)

(YYYY format)

31 What is your ethnicity/race? Select all that apply.

☐ White or Caucasian
☐ African American or Black
☐ Hispanic or Latino
☐ Native American or American Indian
☐ Asian or Pacific Islander
☐ Other

Please describe other:

32 What is your height? (feet & inches OR centimeters)

(please specify)

33 What is your weight? (please specify lbs or kg)

(please specify)

34 What is your menstrual status? Select one answer.

☐ I get my period regularly (about once every month)
☐ I get my period irregularly (it is unpredictable)
☐ I have not started my period yet
☐ I no longer menstruate (I have gone through menopause)

35 Have you ever had surgery or trauma to the bladder, anus, vagina, or pelvic floor? Select one answer.

☐ No surgery and no trauma
☐ Both surgery and trauma
☐ Surgery only
☐ Trauma only

36 Do you have any medical conditions that may affect your risk for incontinence? Select all that apply:

☐ I am currently pregnant
☐ I am transgender
☐ I use a wheelchair or am unable to walk
☐ I depend on the use of a catheter to empty my bladder
☐ I currently have bladder cancer or other illness affecting my bladder
☐ No
☐ Other

Please describe other:
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#### Question 37
Have you ever had a baby? Select one answer.

- ☐ Yes
- ☐ No

#### Question 38
How many babies have you had by vaginal delivery?

#### Question 39
Which of the following did any of your labor and delivery include? Select all that apply.

- ☐ Forceps
- ☐ Vacuum extraction
- ☐ Episiotomy
- ☐ Vaginal tear
- ☐ None of these