Urinary Incontinence Among Female Athletes

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BENEFITS OF EXERCISE

• Reduced risk of cardiovascular disease
• Reduced risk of type 2 diabetes and metabolic syndrome
• Reduced risk for colon and breast cancer
• Increased strength of bones and muscles
• Improved mental health and mood
• Improved ability to perform ADLs and prevent falls
• Increased lifespan

https://www.cdc.gov/physicalactivity/basics/pa-health/index.htm
It is well known that urinary incontinence affects between 10%-55% of women ages 15 to 64 (Bo, 2004). This is highly variable based on age, co-morbidities, institutionalization, etc.
Figure 1
Prevalence of incontinence in general population of females reported in 13 different studies. Young adult, 20% to 30%; Middle age, 30% to 40%; Elderly, 30% to 50%. Reprinted from Sandvik,1 with permission.
Figure 1 shows that the prevalence is relatively low early in life, has a peak around the time of menopause, and then rises steadily between the ages of 60 and 80 years. The prevalence of 10% in 15–19-year-olds and 18% in 20–24-year-olds seems a bit high when one considers the number of young women who actually seek treatment for incontinence. This may be a result of including a large number of young women with “insignificant” or non-bothersome incontinence in the survey.

One might expect that athletic women experience less incontinence because of generally strong musculature. However, 26%-28% elite female athletes experience incontinence during athletics. (Nygaard, Thompson, Sveagalis, Albright, 1994)
For some this goes beyond being a minor inconvenience.

Athletes report feeling embarrassment, anxiety and fear. (Nygaard, Thompson, Svengalis, Albright, 1994)

20% of female athletes stopped participating solely because of incontinence (Nygaard, DeLancey, Arnsdorf & Murphy, 1990)

Stopping exercise can have broad effects on physical and mental health and well-being.
Several studies have demonstrated that the rate of incontinence varies by sport. 

Sports which have high-impact maneuvers and valsalva maneuvers seem to have the highest rates of incontinence (Bo, 2004)
PILOT STUDY

RATE OF INCONTINENCE VARIES BY SPORT

- Trampolinists (80%)
- Gymnastics (67%)
- Tennis (50%)
- Basketball (44%)
- Field hockey (32%)
- Track (26%)
- Softball (6%)
- Golf (0%). (Nygaard, Thompson, Svengalis, Albright, 1994)
Prior studies have focused on adult women.

My clinical work suggests that many adolescent girls with incontinence are avid or elite athletes.

And their incontinence seemed to not be limited to athletics but also occurs during other activities, including laughter and activities of daily living.

This study was designed to investigate this clinical phenomenon.
PILOT STUDY

Four Aims of this study:

1. Determine the prevalence of incontinence among high school female athletes

2. Explore the potential relationship between rates of incontinence and the degree of athleticism

3. Identify any potential patterns that exist among the contexts in which their incontinence exists (during athletics, laughter and ADLs)

4. Explore the relationship between bowel and bladder habits and their incontinence.
METHODS

- IRB approval, parental consent

- Questionnaires were distributed to all members (ages 13-18) of the following local high school teams:
  - field hockey
  - soccer
  - cross country running

- 44/52 athletes returned the survey

- Descriptive statistics were obtained
1. AIM ONE: Determine the prevalence of incontinence among high school female athletes

RESULTS

- 34% experience incontinence during athletics
- 35% experience incontinence during laughter
- 11% experience incontinence during ADLs
- Of those who experience incontinence during athletics, 57% also experience incontinence during laughter
The number of hours/week of athletics affects incontinence.

Summary: 78.6% (n=11) of respondents who reported having athletic incontinence exercise more than 8 hours a week.
AIM TWO: EXPLORE THE POTENTIAL RELATIONSHIP BETWEEN RATES OF INCONTINENCE AND THE DEGREE OF ATHLETICISM

THE NUMBER OF SEASONS OF ATHLETICS AFFECTS INCONTINENCE

Rate of Incontinence Related to Number of Sport Seasons Per Year

- 7% (n=1) for 2 seasons played
- 36% (n=5) for 3 seasons played
- 57% (n=8) for 4 seasons played

% of Participants with athletic incontinence

Number of Seasons Played
THE NUMBER OF SEASONS OF ATHLETICS AFFECTS INCONTINENCE

- 57% of participants with athletic incontinence play four seasons of sport
- 77% of participants with laughter incontinence play four seasons
- 100% of participants with ADL incontinence play four seasons
Bowel patterns present with incontinence

- 79% of the respondents who have any type of incontinence have a firm bowel pattern (Bristol stool scale type 1, 2 or 3)
LIMITATIONS / FUTURE WORK

- Small sample size (44 athletes)
- Comparison to non-athletes is needed
- The sample had a relatively homogenous socioeconomic status
- Not a wide variety of athletic activities (3 sports in this study)
- Questionnaire in the process of being validated
STRENGTHS

- Focus on adolescent female athletes
- Focus on degree of athleticism as it relates to incontinence
- Allowed direct comparison of the various types of incontinence (athletic, laughter, ADL)
CONCLUSIONS

▸ 34% of adolescent female athletes experienced incontinence during athletics.

▸ The more hours per week and the more seasons per year girls are engaged in sports, the higher their rate of incontinence.

▸ Those who experienced incontinence during athletics also experienced it during laughter and to a lesser degree during ADLs.
MAJOR FACTORS THAT INFLUENCE INCONTINENCE

- Increased intra-abdominal pressure (determined by type of athletic activity)
- Force of gravity
- Vulnerability of relatively weaker pelvic floor muscles
- Use of collateral leg muscles (depending on body position)

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REFERENCES


