

## Weight Loss to Treat Urinary incontinence in Overweight and Obese Women

*A commentary on the original article by Leslee L Subak et al., NEJM 2009;360:481-490*

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### Abstract

Obesity is growing at an alarming rate in the western world and now poses a major health problem that, in turn, is placing a huge financial burden on health services. It causes considerable morbidity and mortality and is associated with a number of medical disorders, including urinary incontinence. At present, the evidence that weight loss is an effective treatment for urinary incontinence remains limited. The recent study by Subak and colleagues is the first large scale randomised controlled trial to look at the effect of weight reduction on urinary incontinence.

However, while women with urinary incontinence who are overweight should be encouraged to lose weight, this should not deter general practitioners from referring patients to secondary care and providing them with a full choice of treatment options. Obese patients should not be denied surgery but be made aware of the higher risks. Future research should focus on the impact of obesity on surgical outcomes for continence surgery, particularly on intraoperative and postoperative complication rates as well as long-term cure rates.

**Keywords:** BMI, obesity, urinary incontinence, weight loss, women

### Author's View

Obesity, defined as BMI greater than or equal to 30kg/m<sup>2</sup>, is a growing problem worldwide, particularly in developed countries. In England, for example, more than one-third of women aged 35–64 years are overweight (BMI 25–30kg/m<sup>2</sup>) and a further quarter are obese.<sup>1</sup> Obesity causes considerable morbidity and mortality, and is associated with a number of medical disorders, including urinary incontinence. The recent study by Subak and colleagues is the first large scale randomised controlled trial (RCT) to look at the effect of weight reduction on urinary incontinence.<sup>2</sup>

Several cross-sectional surveys have shown that obese women are at increased risk for urinary incontinence,<sup>3–8</sup> although many such studies have not differentiated between stress and urge incontinence. One of the largest investigations was the Norwegian EPINCONT Study, in which 6,876 (25%) of 27,936 women who completed the incontinence section of the study questionnaire reported urinary incontinence.<sup>3</sup> Increased BMI was an independent risk factor for all types of incontinence, and was associated with an increased risk of severe incontinence. In a study of morbidly obese women (BMI 40–80kg/m<sup>2</sup>; mean 49.5kg/m<sup>2</sup>), the prevalence of urinary incontinence was 67%.<sup>5</sup> Significant correlation between BMI and intra-abdominal pressure has been demonstrated,<sup>6,7</sup> which indicates that obesity might stress the pelvic floor via a chronic state of increased pressure, resulting in development and recurrence of stress urinary incontinence. Currently, no evidence suggests that detrusor function is

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affected in obese women; therefore, obesity seems to affect only stress, and not urge, incontinence.

Subak and colleagues' study,<sup>2</sup> published in *The New England Journal of Medicine*, takes the story one step further by suggesting that weight reduction should be considered a first-line treatment for overweight and obese women with incontinence. Between July 2004 and April 2006, the investigators recruited 338 women aged over 30 years who had a BMI of 25–50kg/m<sup>2</sup> and who reported at least ten episodes of urinary incontinence in a 7-day period. In this single-blind, randomized, controlled trial (RCT), participants were randomized 2:1 to undergo either an intensive 6-month weight loss program, comprising diet, exercise and behavior modification (n=226), or a structured education program (control group; n=112). At baseline, the participants had a mean BMI of 36kg/m<sup>2</sup>, and a mean weekly total incidence of incontinence episodes of 24.

At 6 months, the weight-loss group had a mean loss of 8.0% body weight from baseline, compared with 1.6% in the control group (P<0.001). The weight-loss group had a mean decrease in the total number of incontinence episodes per week of 47.4%, compared with 28.1% in the control group (P=0.01). This decrease mainly resulted from a decrease in the number of episodes of stress incontinence (57.6% vs 32.7%; P=0.02); the difference in frequency of episodes of urge incontinence was less pronounced (42.4% vs 26.0%; P=0.14). The proportion of women who achieved a reduction in number of incontinence episodes of at least 70% was much greater in the weight-loss group than in the control group (41% vs 22%; P<0.001). In addition, the intervention group perceived a greater decrease in the number of incontinence episodes (assessed from diaries detailing the number of episodes and type of incontinence), and a lower volume of urine loss (determined by weighing pads), than did the control group. They regarded their incontinence as less of a problem and reported higher satisfaction with treatment.

The limitations of this study are well acknowledged by the authors. They state that selection bias might have occurred, as participants were selected on the basis of their ability to adhere to the behavioral weight loss intervention, although specific inclusion/exclusion criteria were not detailed, and women with certain medical conditions were excluded. Also, the study was only single-blinded, which might have resulted in reporting bias, as the results were based on participants, who knew which group they were in, self-reporting on their incontinence episodes.

Despite being the first large scale RCT in this field, the paper by Subak et al. is not the first study to suggest that weight loss might improve urinary continence. Several case series<sup>9–11</sup> and two prospective cohort studies<sup>12,13</sup> have reported that surgical weight loss is associated with a significant decrease in the incidence and severity of urinary incontinence. Some smaller RCTs,<sup>14,15</sup> including an earlier paper by Subak,<sup>15</sup> also support the finding that weight loss can be used to treat urinary incontinence.

Given the growing body of evidence to suggest that weight loss might improve urinary continence, should health care professionals be promoting this intervention as the first-line treatment for incontinence in overweight women? Undoubtedly, they should. In the UK, current guidelines on the treatment of urinary incontinence state that women with a BMI >30kg/m<sup>2</sup> should be “advised to lose weight”.<sup>16</sup> The benefits of using weight loss as a first-line treatment for incontinence might be far reaching. Not only is this intervention safe but it would also reduce the incidence of morbidity and mortality associated with obesity. Any steps to reduce obesity in the Western world would benefit over-stretched health services. In

addition, if we take the stance that obesity is the cause of urinary incontinence, then by encouraging weight loss we are treating the etiology instead of just managing symptoms. Finally, even if first-line treatment with weight loss is unsuccessful, this intervention makes subsequent surgery, if indicated, technically easier and potentially safer.

At present, the evidence that weight loss is an effective treatment for urinary incontinence remains limited. Epidemiological studies all seem to suggest that obesity is a risk factor for incontinence but Subak and colleagues' study is the first large RCT which supports weight loss as treatment for this condition. In addition, dietary and exercise treatment of obesity is often unsuccessful in the long-term, with fewer than 10% of patients maintaining their lower weight after a decade.<sup>10</sup> Currently, women with urinary incontinence who are overweight can be encouraged to lose weight; however, this should not deter general practitioners from referring patients to secondary care and providing them with a full choice of treatment options. Conservative measures should always be the first-line management of stress urinary incontinence. While obesity tends to increase surgical and anesthetic risks, patients should not be denied surgery solely as a result of their weight; however, they should be made aware of the higher surgical risks associated with obesity. New minimally invasive surgical techniques might make surgical risks acceptable for obese patients.<sup>17-19</sup> To date, little is known about the impact of obesity on the outcome of surgical continence procedures. Future research should be focused on this area.

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