ICS Teaching Module: Pad Weight Testing in the Evaluation of Urinary Incontinence

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Aims of the pad weight testing

- Qualitative assessment (continent vs incontinent)
- Quantitative assessment (how much)

Principle of the pad weight testing

- weight of the pads before and after test
- weight gain in g = urine loss in mls

Duration of the pad weight test

Short term tests

- 20 min – 2 hrs
- qualitative assessment

Long term tests

- 12 hrs – 72 hrs
- quantitative assessment

ICS pad weight test

- Only 1 hour pad weight test is standardized[1]

0 -15 min:	drinking of 500 ml sodium-free liquid, resting
15 - 45 min:	walking, including stars climbing to one flight up and down
45 - 60 min:	standing up from sitting (10 times) coughing vigorously (10 times) running on the spot (1 min) bending to pick up small object from the floor (5 times) washing hands in running water (1min)

[1]Seventh report on the standardisation of terminology of lower urinary tract function: lower urinary tract rehabilitation techniques. International Continence Society Committee on Standardisation of Terminology. Scand J Urol Nephrol, **26:** 99, 1992

Preparation of the patient

Short term tests

- without retrograde filling
- with retrograde filling[1]
  (200-300 ml)
  (50-75% of the bladder capacity)

Long term tests

- without retrograde filling

Performing the pad weight test

Short term tests

- set of standardized activities

Long term tests

- normal daily activity

The same technique for both men and women is usually used

Cut-off values

Short term tests

- weight gain > 1g[1]

Long term tests

- weight gain > 4g/24hrs[1]

[1]Staskin D, Kelleher C, Bosch R, Coyne K, Cotteril N, Emmanuel A, Yoshida M, Kopp Z: Initial assessment of urinary and faecal incontinence in adult male and female patients. In: Incontinence. Ed.:Abrams P, Cardozo L, Khoury S, Wein A. 4th Ed. Health Publ.Ltd, Paris 2009, pp 333-412

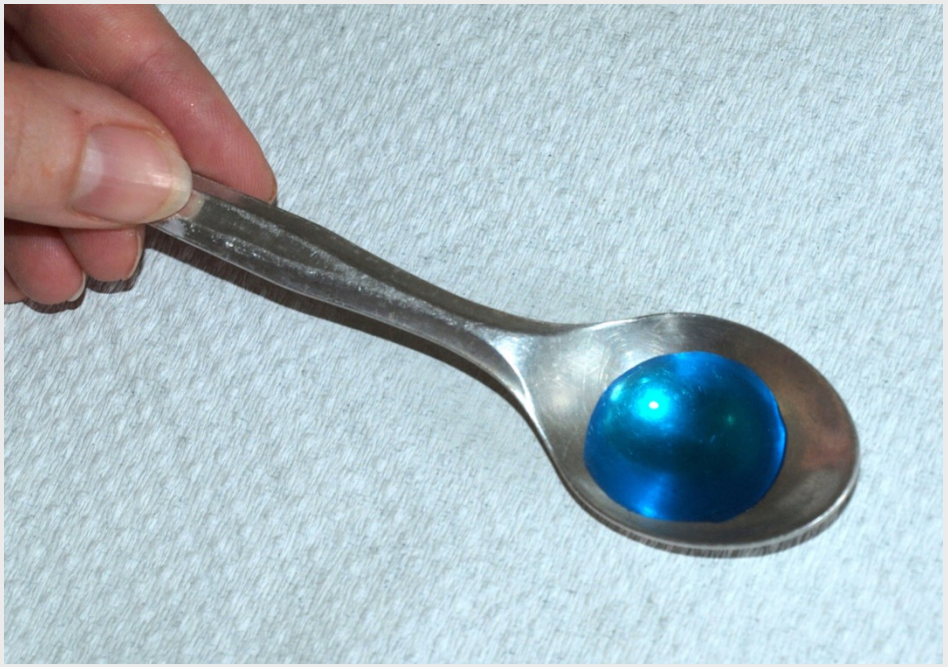
Quantification of the incontinence severity using the pad weight test

	1-hour test	*24-hour test*
Mild incontinence	< 10 mL	< 20 mL
Moderate incontinence	11-50 mL	21-74 mL
Severe incontinence	>50 mL	>75 mL

O´Sullivan R, Karantanis E, Stevermuer TL, et al.: Definition of mild, moderate and severe incontinence on the 24-hour pad test. BJOG 2004; 111: 859-862

Is leak of 1 mL significant?

1 mL of fluid = 25 drops



Is leak of 1 mL of fluid significant?

- 1mL of fluid leaked into the pad
- 1 mL of fluid leaked into the cloth

Is leak of 5 mL of fluid significant?

- 5 mL of fluid absorbed by pad
- 5 mL of fluid leaked into the clothing

Sensitivity and specificity

Short term tests

- sensitivity: 34-83%[1,2]
- specificity: 65-89%[2]

Long term tests

- sensitivity: no sufficient data
- specificity: no sufficient data

[1]Wu, W.Y., Sheu, B. C., Lin, H. H.: Twenty-minute pad test: comparison of infusion of 250 ml of water with strong-desire amount in the bladder in women with stress urinary incontinence. Eur J Obstet Gynecol Reprod Biol, **136:** 121, 2008

[2]Costantini, E., Lazzeri, M., Bini, V. et al.: Sensitivity and specificity of one-hour pad test as a predictive value for female urinary incontinence. Urol Int, **81:** 153, 2008

Limitations

- lack of standardization
- results of the long term tests may be influenced by:
  - fluid intake
  - increased voiding frequency
  - sweating
  - vaginal discharge (up to 7g/24 hrs)[1]
  - patient compliance
- no value in determining incontinence etiology
- weak correlation with the degree of patient´s bother

[1]Karantanis E, O´Sullivan R, Moore KH: The 24-hour pad test in continent women and men: normal values and cyclical alterations. BJOG 2003; 110: 567-571

Clinical conclusions

- pad–test can provide additional information about degree of patient´s incontinence
- easy to perform, inexpensive, risk-free
- could be influenced by many factors, therefore

Outcomes should be interpreted in context of other diagnostic instruments

Recommendation for clinical use of the pad weight test

- detailed instruction and patient motivation are crucial
- use short term test for qualitative evaluation of incontinence
- if retrograde filling is to be used, bladder should be filled to 50-75% of bladder capacity
- use long term test for quantitative evaluation of incontinence
- interpret test results in conjunction with other relevant assessments (self-assessment, questionnaires, physical examination, etc.)
- pad weight test result doesn´t always correlate with patient´s bother