

## HOW DO NAÏVE HEALTHY SUBJECTS DESCRIBE BLADDER SENSATIONS DURING A PHYSIOLOGICAL BLADDER FILLING?

### Hypothesis / aims of study

The current views on how people perceive and deal with bladder sensations are largely derived from urodynamic studies. During these invasive studies participants were indirectly told to modify their sensations by asking them to localize all sensations (implicating that there are different sensations) and sometimes ignore a sensation and report its return (making it an episodic pattern). Moreover it is not clear whether the terminology came from the subjects themselves or from the observer. Using "sensation related bladder diaries" we evaluate bladder sensations non-invasively. Unfortunately, this gave us only information on the bladder sensation just before voiding and therefore told us nothing about the way in which the need to void developed. By means of focus group research, we described bladder sensations and its pattern, and developed terminology used by uninitiated healthy volunteers in an interactive focus group feedback system.

### Study design, materials and methods

We arranged three focus group sessions with three different groups, consisting of both male and female participants. The maximum number of participants in one group was 4 in order to achieve utmost discussion and interaction between participants. In total eleven participants joined the sessions. During the first two sessions emerging sensations were discussed and asked to be described in a detailed manner.

To evaluate the pattern of the bladder sensation they were asked to grade their sensation every ten minutes and also whenever they noticed any change. Gradation of the bladder sensation was done by giving the participants an empty graph. In order to describe the characteristics of the sensations, each participant received a form on which, on each timepoint, the sensation could be described using their own terminology. The location of the sensation is also noted for every timepoint using the numbers as given in figure 1. To reduce any bias in interpretation, we deliberately did not provide any terms or description for the sensations. The protocol ended when the participants indicated an absolute need to go to void. At that timepoint they were allowed to void and the voided volume was measured.

Data on terminology and pattern from group 1 was used in the sessions with group 2 to compare the pattern and used terminology. If necessary information was changed or added. The information gathered from group 2 was used in group 3 and again, if necessary, information was changed or added. During this third session an overall summary of the data and our interpretation was presented to the participants for verification and they were asked to comment on this. Participants graded their bladder sensation on an empty graph as done in the previous sessions.

### Results

During the sessions, six of the eleven participants had no sensation in the beginning of the filling cycle directly after the last void. One female and one male participant experienced a tingling feeling just after voiding in the genital area. The other 3 participants could not describe the sensation because it was not intense enough. Further along in the filling phase, all participants described a continuous pattern: they experienced bladder sensation(s) that in time increased in intensity. In daily life, the sensation(s) can be displaced from the mind temporarily, although when asked, the sensations can be addressed at any time.

There are two different bladder sensations: a pressure and a tingling sensation. Five participants described only having a pressure whilst the other participants felt this pressure in combination with the tingling sensation. Figure 2 shows the relationship between type of sensation and bladder volume for two participants. At the end of the filling phase all participants experienced the need to void as a strong pressure from the inside pointing to the genital area as well as to the abdomen. When voiding was postponed for a long time, this pressure could become unpleasant or painful.

The location of the tingling sensation was in the genitalia (number 4 or 5 figure 1). The pressure could be felt either in the lower abdomen (number 2 or 3 figure 1) or in the genital area. Sensations in the upper abdomen were not arising from the bladder but rather from the stomach or bowel.

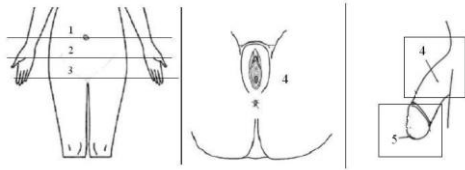
### Interpretation of results

Healthy volunteers describe two different bladder sensations. They experience a pressure in the lower abdomen or in the genitalia. This pressure is, in some cases, accompanied by a tingling sensation in the genitalia. The intensity of both of these sensations develops in a continuous manner.

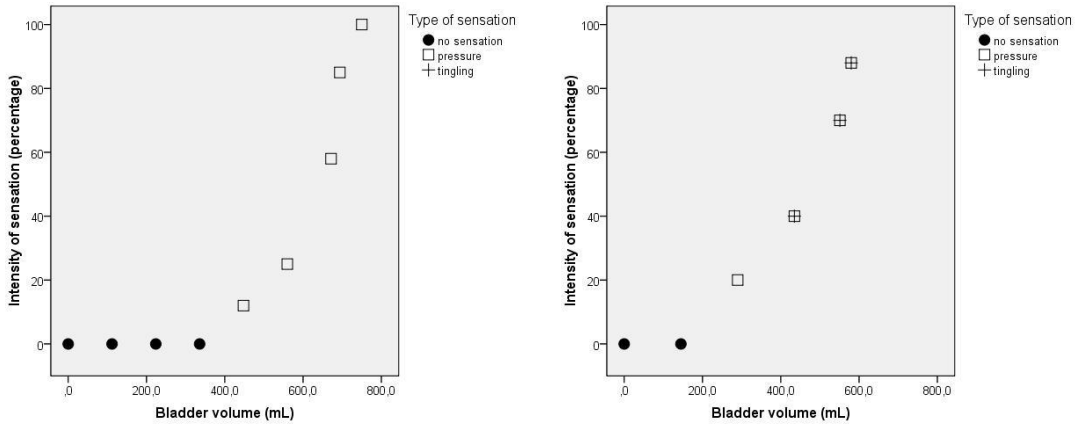
### Concluding message

By means of focus group research it is possible to describe bladder sensations and its pattern, and developed terminology used by uninitiated healthy volunteers. The findings in this study, two types of sensation developing in a continuous manner) are in contrast with the now accepted pattern that there are three bladder sensations (first sensation, first desire, strong desire) developing in an episodic manner.

**Figure 1** showing the different options for describing the location of the sensation. Multiple numbers could be noted at the same time.



**Figure 2** shows the relation between type of sensation and bladder volume for two participants. Each symbol is a timepoint during the session at which the participant graded his/her sensation.



<b>Specify source of funding or grant</b>	<b>The BJU International Collaborative Research award 2007</b>
<b>Is this a clinical trial?</b>	<b>Yes</b>
<b>Is this study registered in a public clinical trials registry?</b>	<b>No</b>
<b>Is this a Randomised Controlled Trial (RCT)?</b>	<b>No</b>
<b>What were the subjects in the study?</b>	<b>HUMAN</b>
<b>Was this study approved by an ethics committee?</b>	<b>Yes</b>
<b>Specify Name of Ethics Committee</b>	<b>The Medical Ethical Committee Maastricht University Medical Centre</b>
<b>Was the Declaration of Helsinki followed?</b>	<b>Yes</b>
<b>Was informed consent obtained from the patients?</b>	<b>Yes</b>