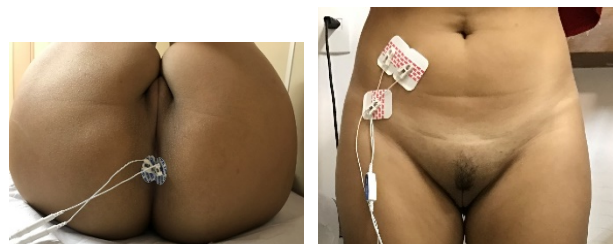


# ELECTRICAL ACTIVITY OF PELVIC FLOOR MUSCLES OF CONTINENT AND INCONTINENT WOMEN IN DIFFERENT POSITIONS: PRELIMINARY RESULTS

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## Hypothesis/ aims of study

The pelvic floor muscles (PFMs) are fundamental for the mechanism of urinary continence, so it is important to measure the electrical activity to evaluate its function (1), especially in different positions. One of the forms of evaluation is electromyography (2). This study aims to compare the electrical activity of PFMs in the supine position and orthostasis of women with urinary incontinence (UI) and without loss



Source: Personal collection  
Positioning of the electrodes

Figure 2

## Materials and methods

Cross-sectional study composed of women with UI and continents. Pregnant and / or obese women were excluded. The evaluation of the myoelectric activation of MPF was performed through a data acquisition system using surface electromyography (EMG) sensors from Miotec® (Figure 1). The electromyograph has the resolution of 16 bits, the maximum sample rate of 2000 samples per second, 8 input channels.



Source: MIOTEC  
Eletromiógrafo New Miotool Uro™, Miotec,  
Porto Alegre - BR

Figure 1

The volunteers were placed in dorsal decubitus, in the position of adapted lithotomy (with hip and knee in flexion superior to 90°). The place for placement of the electrodes was lightly sanded and sanitized with alcohol gel and disposable towel. After drying the region with a disposable towel, a pair of surface electrodes with a distance of 2cm between the centers were placed in the perineal positions of four and ten of an analog clock. (Figure 2) A computerized electromyograph with surface electrodes in the perianal region was used to evaluate basal muscle tone (BT), maximal voluntary contraction (MVC) and mean value of tonic (TC) and phasic (FC) contractions, in the supine and orthostatic positions.

## Results

Twenty women were collected in each group, with mean age of  $47.1 \pm 7.77$  for incontinent and  $43.5 \pm 8.4$  for continent. The supine muscle strength of 3 (3-3) in the incontinent group (IG), and 4 (03-04) for the control group (CG) and the loss of light urine, 6 (3-13) grams in the IG. The values of BT, TC and FC in supine for the IG were, respectively, 3.1 (2.5-8.6), 16.7 (12.6-29.7) and 39.1 (24.2 -53.7), orthostasis were, 4.1 (2.9-8.4), 21.2 (8.8-26.4) and 34.4 (23.6-42.1). In CG, supine and orthostatic values, respectively, were for BT: 10 (4.5-11.3) and 10.5 (6.4-12.2); TC: 35.2 (21.3-52.5) and 35.1 (21.8-51.0), and FC: 37.3 (26.7-62.8) and 33.5 (28, 2-48.5). There was no statistical significance in the intragroup comparison ( $p > 0.05$ ), only in the intergroup evaluation in BT and TC in both positions ( $p < 0.05$ ).

## Concluding message

It can be noticed that there is a decrease in the electrical activity of BT and TC in the IG when compared to the CG, in both positions.

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