

# TRANSPERINEAL ULTRASOUND MEASUREMENTS OF THE BLADDER NECK AND URETHRA IN PREMENOPAUSAL URINARY INCONTINENT AND CONTINENT WOMEN: A PILOT STUDY

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## Introduction

- RTUS is becoming the “gold standard” for evidence based practice in the physiotherapy treatment of urinary incontinence
- Easily incorporated into the daily practice of the clinician

## Purpose

- To confirm clinical findings of differences in bladder neck to symphysis pubis distance and urethral length in incontinent versus continent subjects
- Also to compare pre and post-treatment measures in incontinent subjects using osteopathic techniques for treatment.

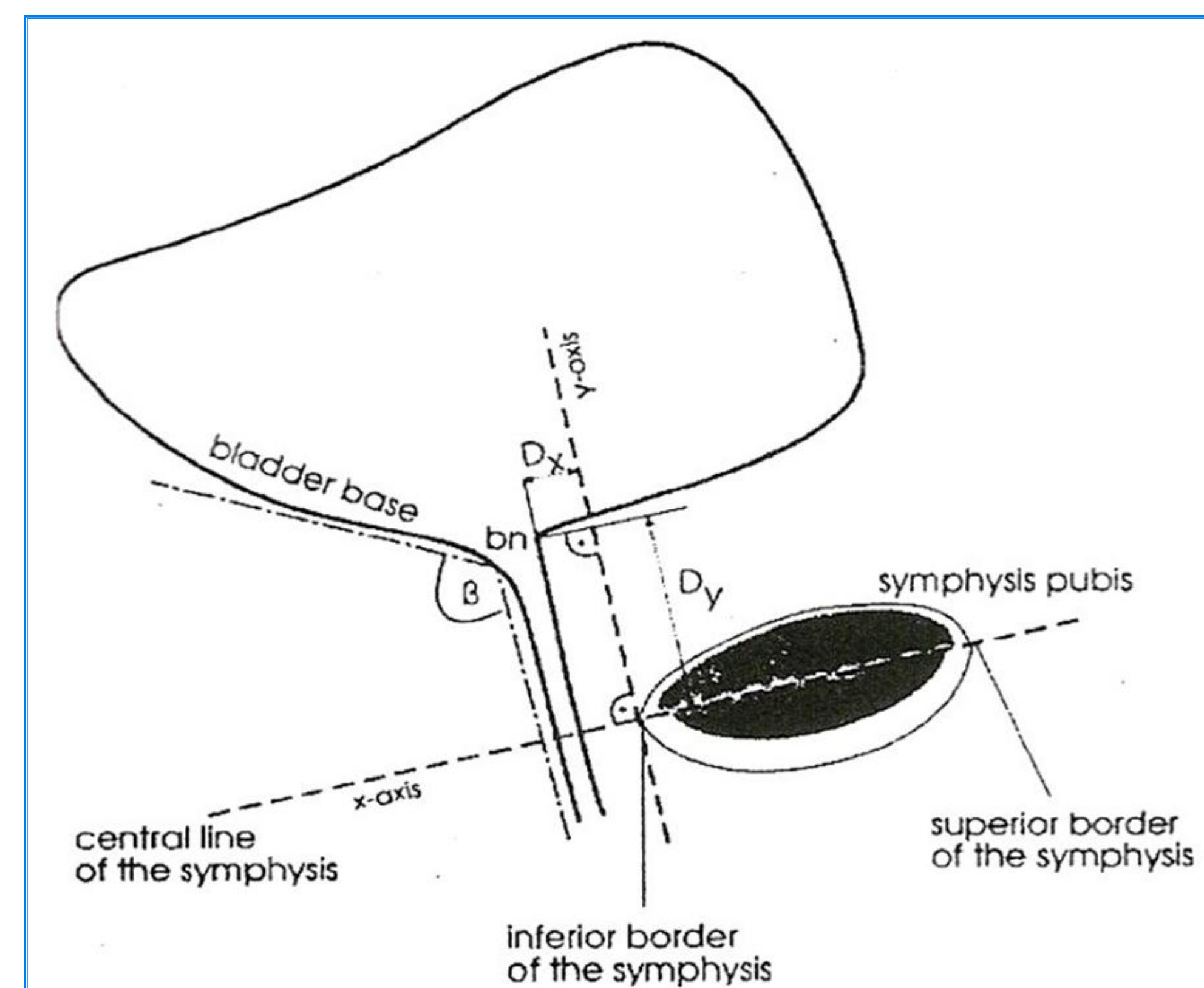
## Participants

- Participants were recruited in Kelowna, B.C., Canada
- Premenopausal between 32-47 years of age
- 8 of 40 incontinent subjects met inclusion and exclusion criteria
- 10 continent subjects were included for comparison

## Methods

- Mixed method pilot study
- Within-group and between-group measures

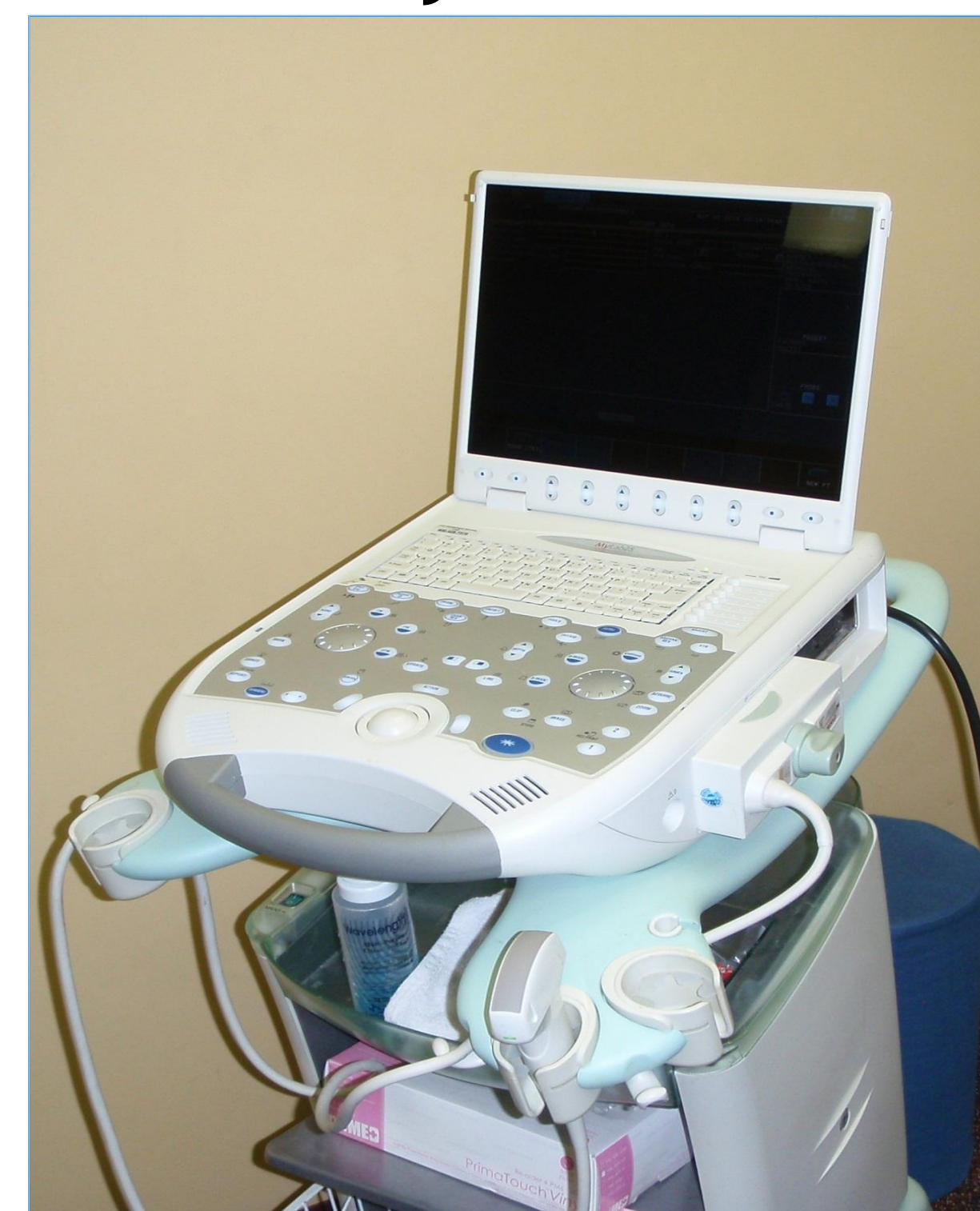
### Rectangular Coordinate System to Measure BN to SP Distance



(Schaer, G., et al 1995)

## Equipment

Esaote MyLab 25 RTUS



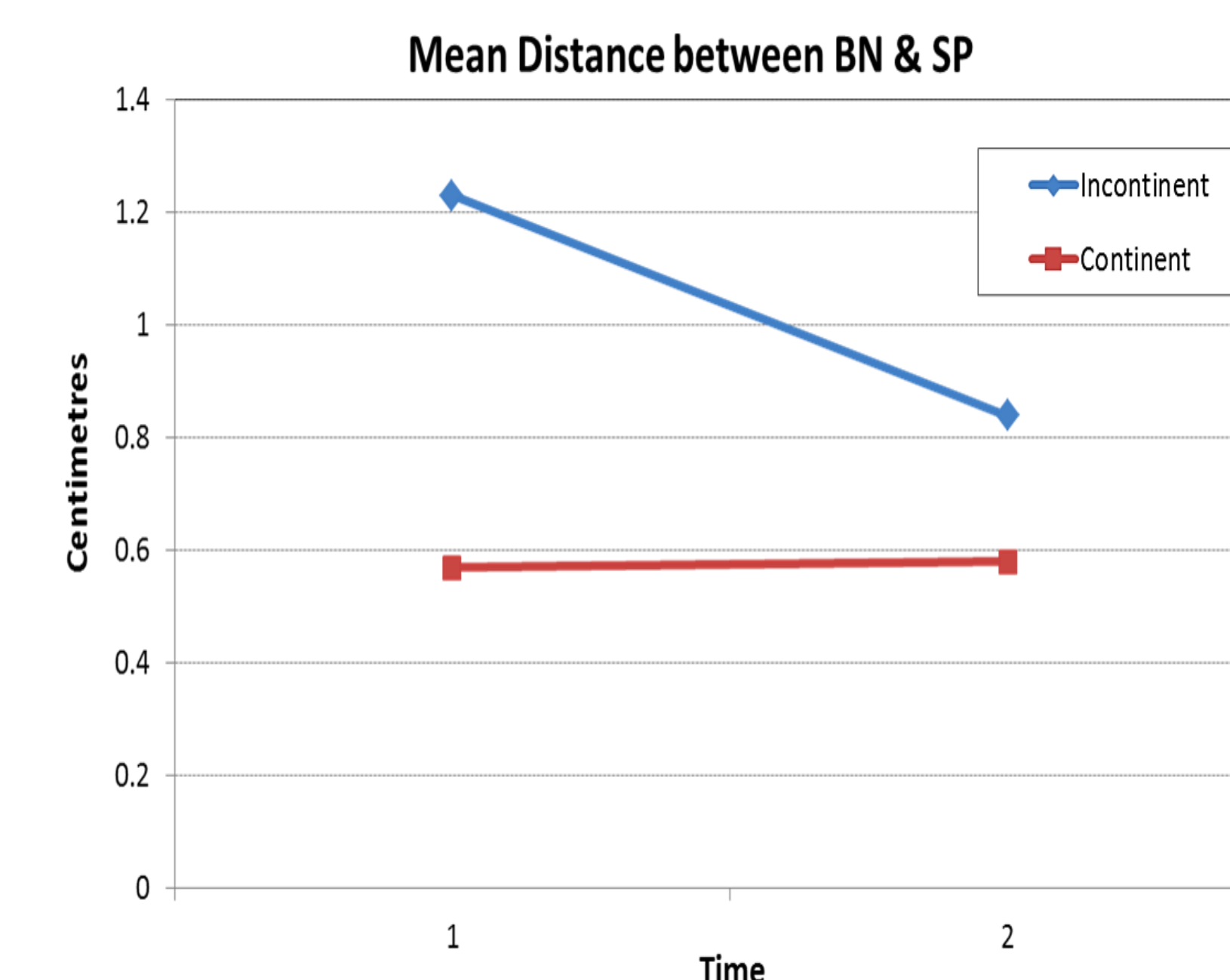
**ImageJ 1.42q** MEASUREMENT SOFTWARE  
Wayne Rasband  
National Institutes of Health, USA  
<http://rsb.info.nih.gov/ij>

## Results

Intratester reliability was .996 for bladder neck to symphysis pubis distance and .984 for urethral length

### Mean Distance between BN & SP

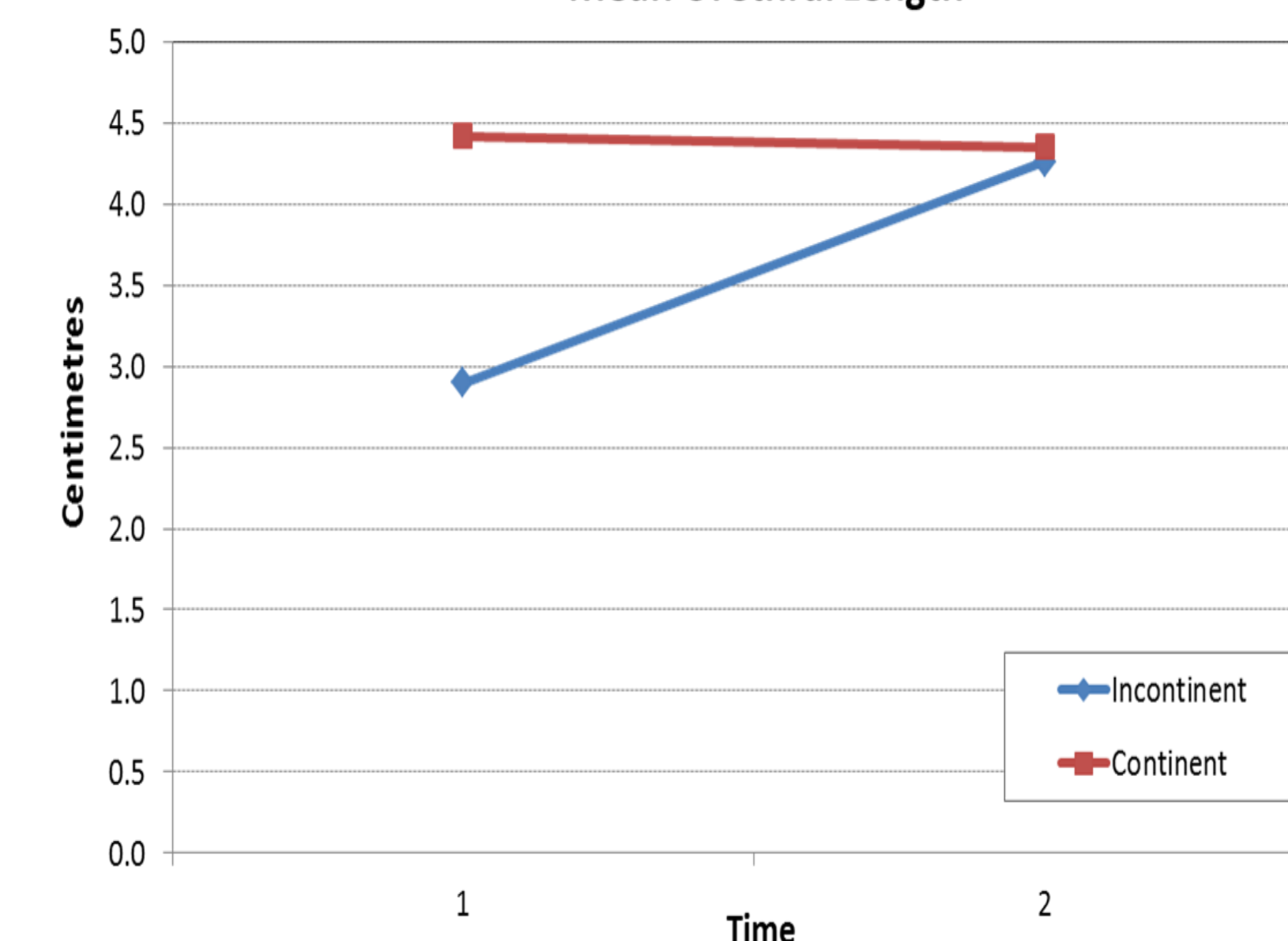
(Bladder Neck & Symphysis Pubis)



Bladder Neck to Symphysis Pubis Distance was statistically significant with  $p < .01$

### Mean Urethral Length (cm)

Mean Urethral Length



Urethral length was statistically significant with  $p < .001$

## Discussion and Conclusions

- A shortened urethra in incontinent women affects the pressure gradient between the urethra and bladder therefore influencing bladder continence ( Barral, 1993; Meschia et al,2006; Minaglia et al, 2009)
- Bladder neck to symphysis pubis distance has been proven to correlate significantly with pelvic floor muscle function (Thompson et al, 2005; Peng et al, 2007)
- Bladder neck to symphysis pubis distance and urethral length can both be normalized with osteopathic manual techniques

## Recommendations

Further research including a full clinical trial with an experimental and control group

## Ethics Approval

Collège d'études Ostéopathiques de Montréal

Chairperson: Michèle Pépin

## Contact Detail

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