

# Relevant Anatomy Of Pudendal Nerve And Etiological Factors of Pudendal Neuropathies

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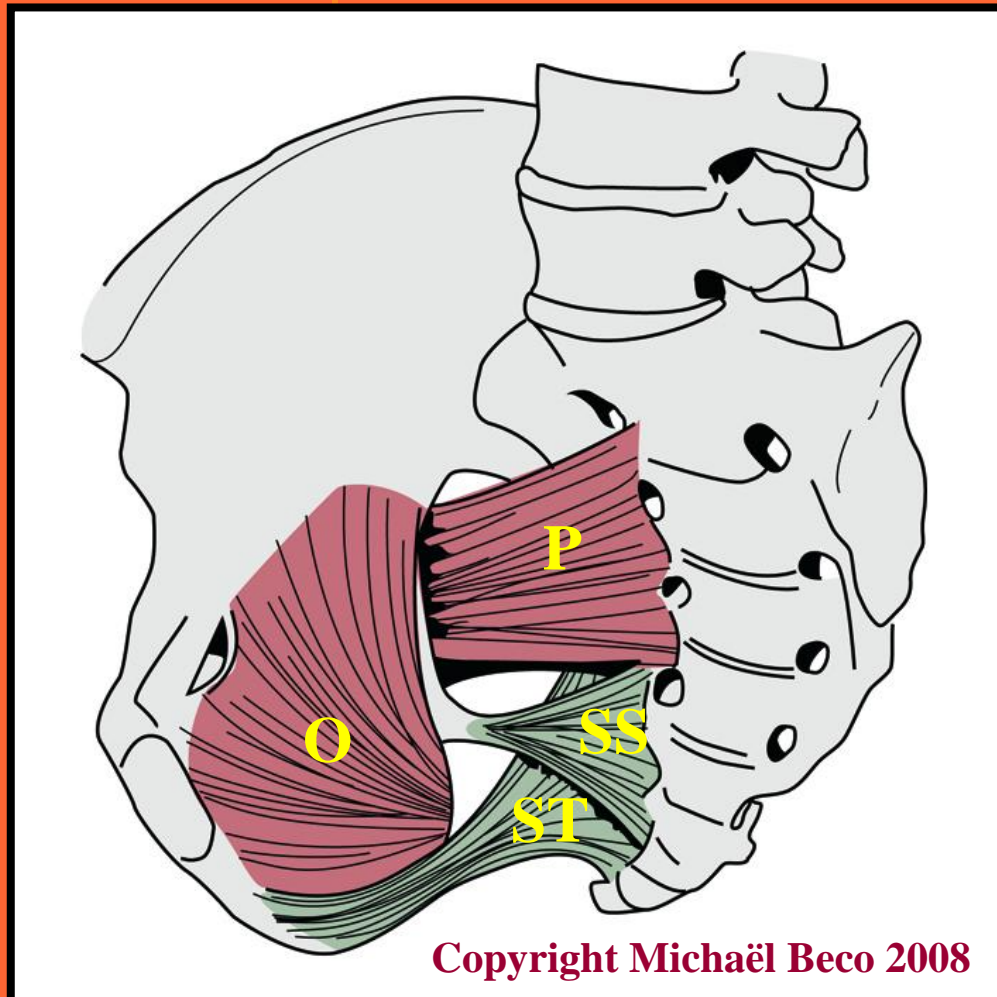
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[www.pudendal.com](http://www.pudendal.com)

ICS – Glasgow (Scotland), August 29th, 2011

# Anatomy of the pudendal nerve

## Lesser sciatic foramen



**SS = Sacro-spinal ligament**

**ST = Sacro-tuberous ligament**

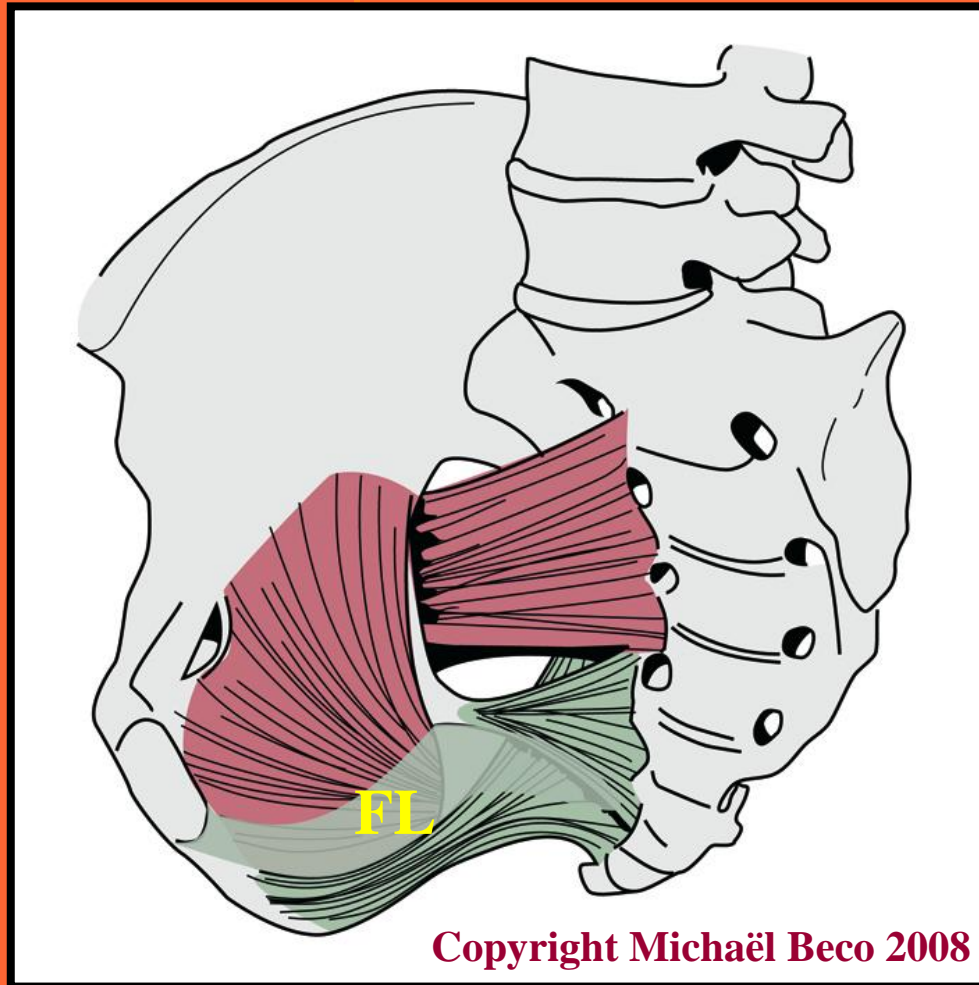
**O = Obturator muscle  
between the 2 ligaments  
(lesser sciatic foramen)**

**P = Piriformis muscle  
(greater sciatic foramen)**

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# Anatomy of the pudendal nerve

## Fascia lunata

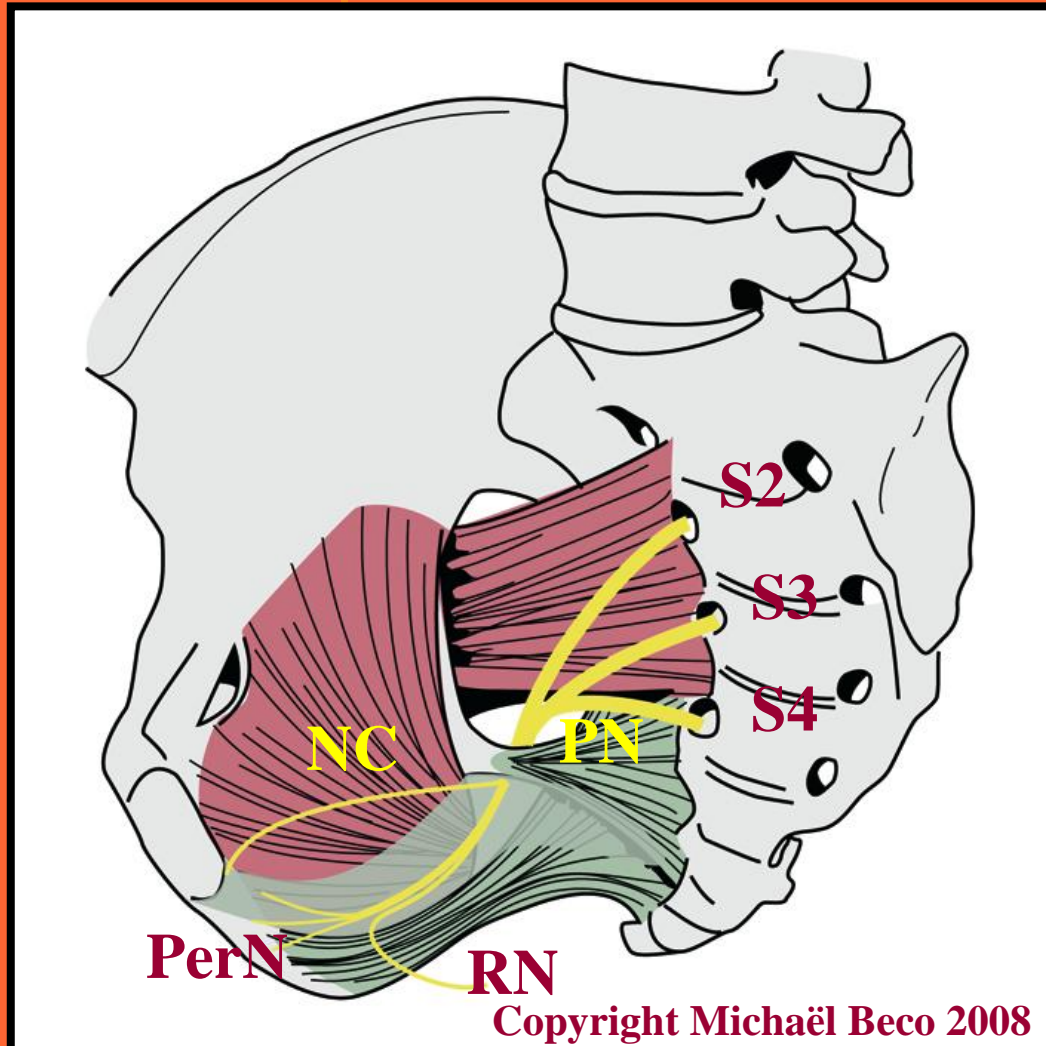


**FL = The fascia lunata closes the lesser sciatic foramen (space between the 2 ligaments)**

Derry DE:  
**Pelvic muscles and fasciae.**  
*Journal of Anatomy and Physiology*  
1907, 42:107-111.

# Anatomy of the pudendal nerve

## Pudendal nerve



**NC = Nerve of the clitoris or penis**

**RN = Rectal nerve sometimes in the sacro-spinal ligament**

**PerN = Perineal nerve: 3 branches**

**PN = Typical fascicular disposition of the pudendal nerve**

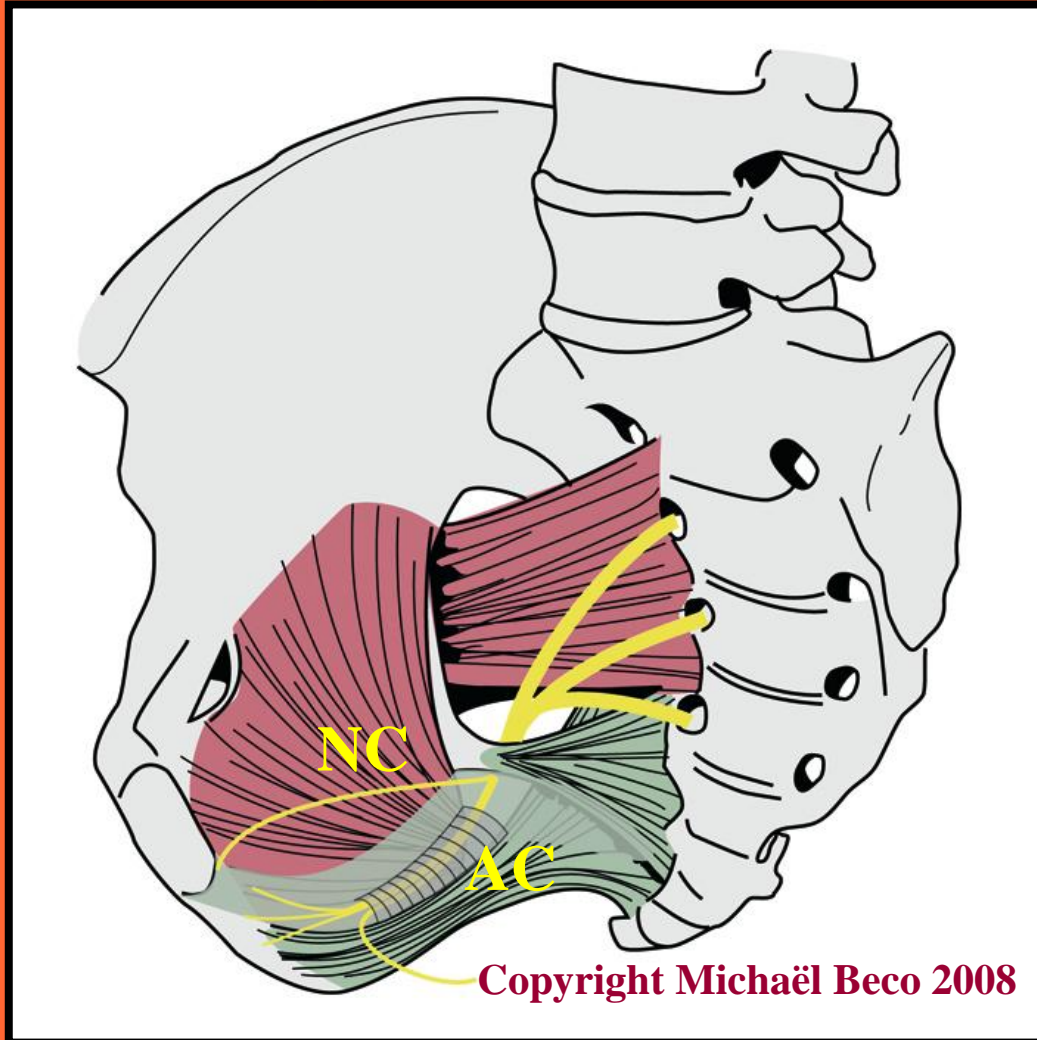
Gustafson KJ, Zelkovic PF, Feng AH, Draper CE, Bodner DR, Grill WM:

**Fascicular anatomy and surgical access of the human pudendal nerve.**

*World J Urol* 2005, 23(6):411-418.

# Anatomy of the pudendal nerve

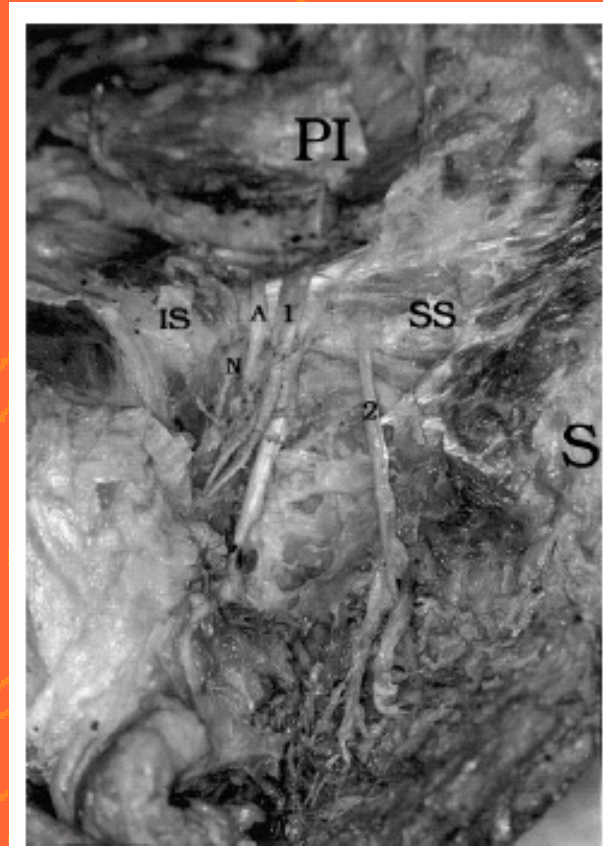
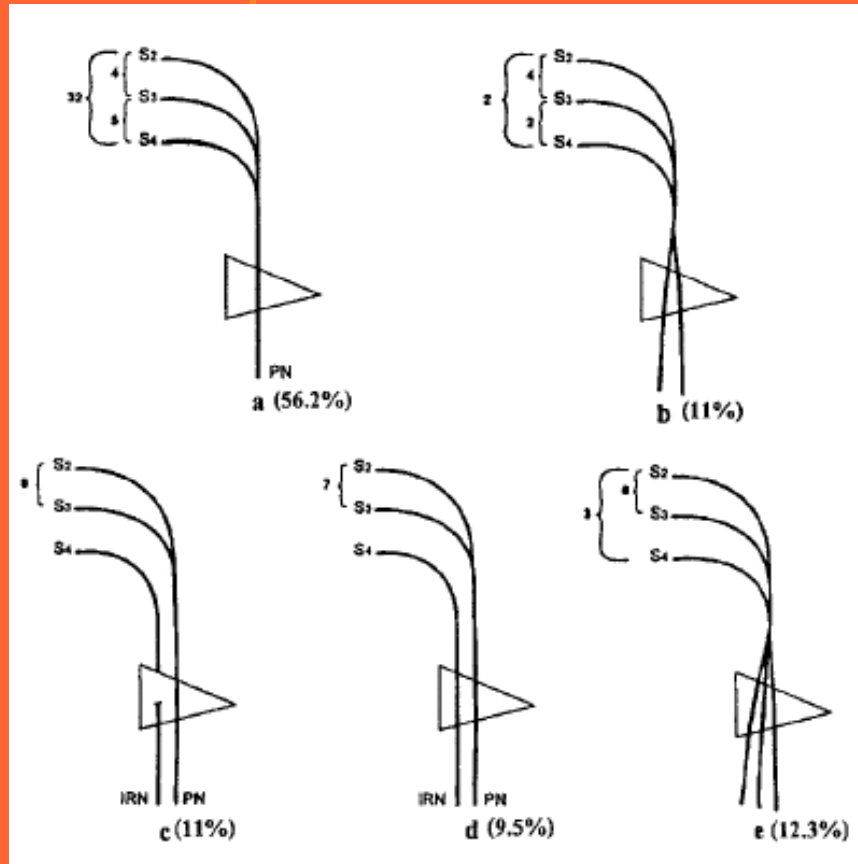
## Alcock's or pudendal canal



NC = Nerve of the clitoris or penis NOT in the Alcock's canal (AC)

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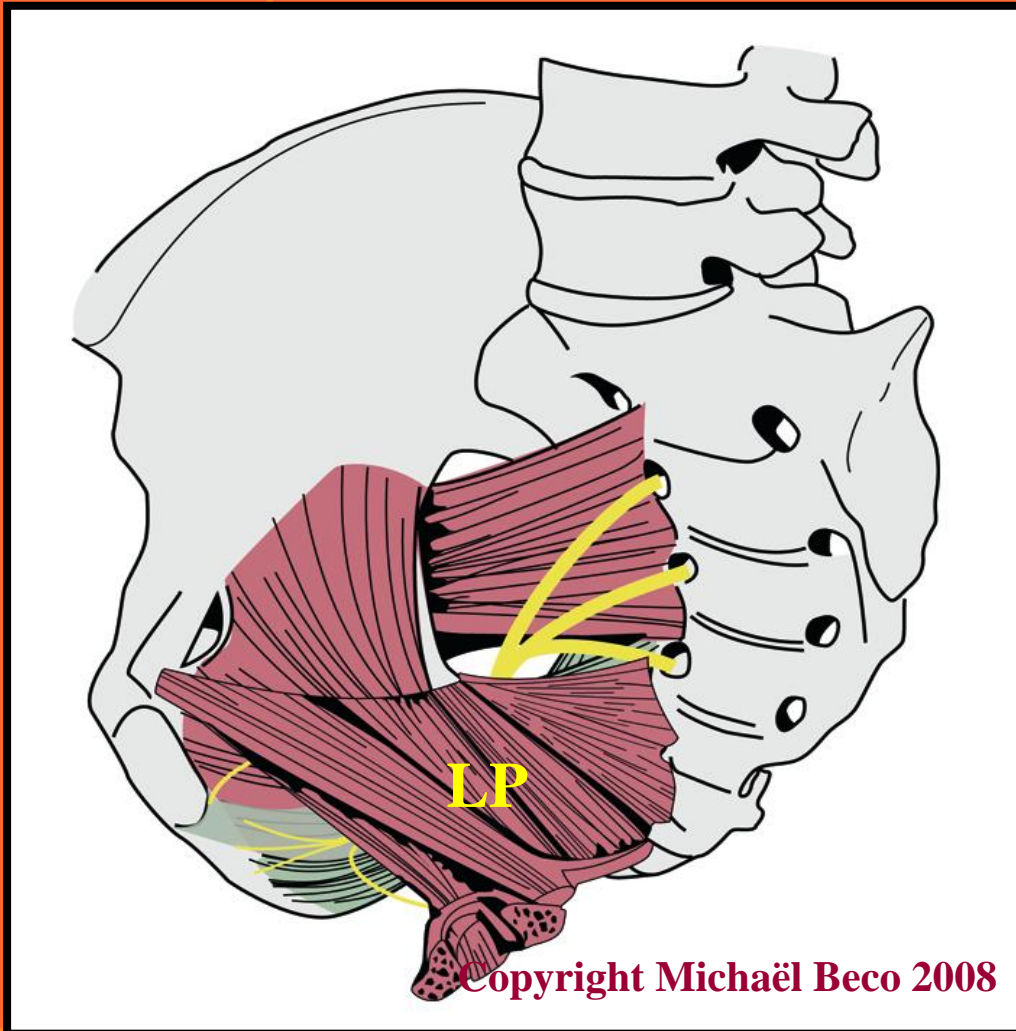
# Rectal nerve passing through the sacro-spinal ligament in 11% of the cases



Mahakkanukrauh P, Surin P, Vaidhayakarn P  
**Anatomical study of the pudendal nerve adjacent to the sacrospinous ligament.**  
*Clin Anat* 2005, **18**(3):200-205.

# Anatomy of the pudendal nerve

## Levator plate and puborectalis



90 % of the pudendal nerve is under the levator plate (LP)

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# Which name ??

Pudendal neuropathy

Pudendal nerve entrapment  
(entrapment only)

Pudendal canal syndrome  
(Alcock's canal only)

Pudendal neuralgia  
(pain only)



# The symptoms

Pee pee,

Poo poo,

Sex,

Think « pudendal nerve »

# Pudendal neuropathy

## Three clinical signs

1. Perineal hypo or hyperesthesia (pinprick)
2. Painful pudendal nerve during rectal examination
3. Painful « skin rolling test » of the perineal skin

**Neurological troubles + Gynaecological position  
=> very late diagnosis !!!!!**

# Pinprick sensibility test

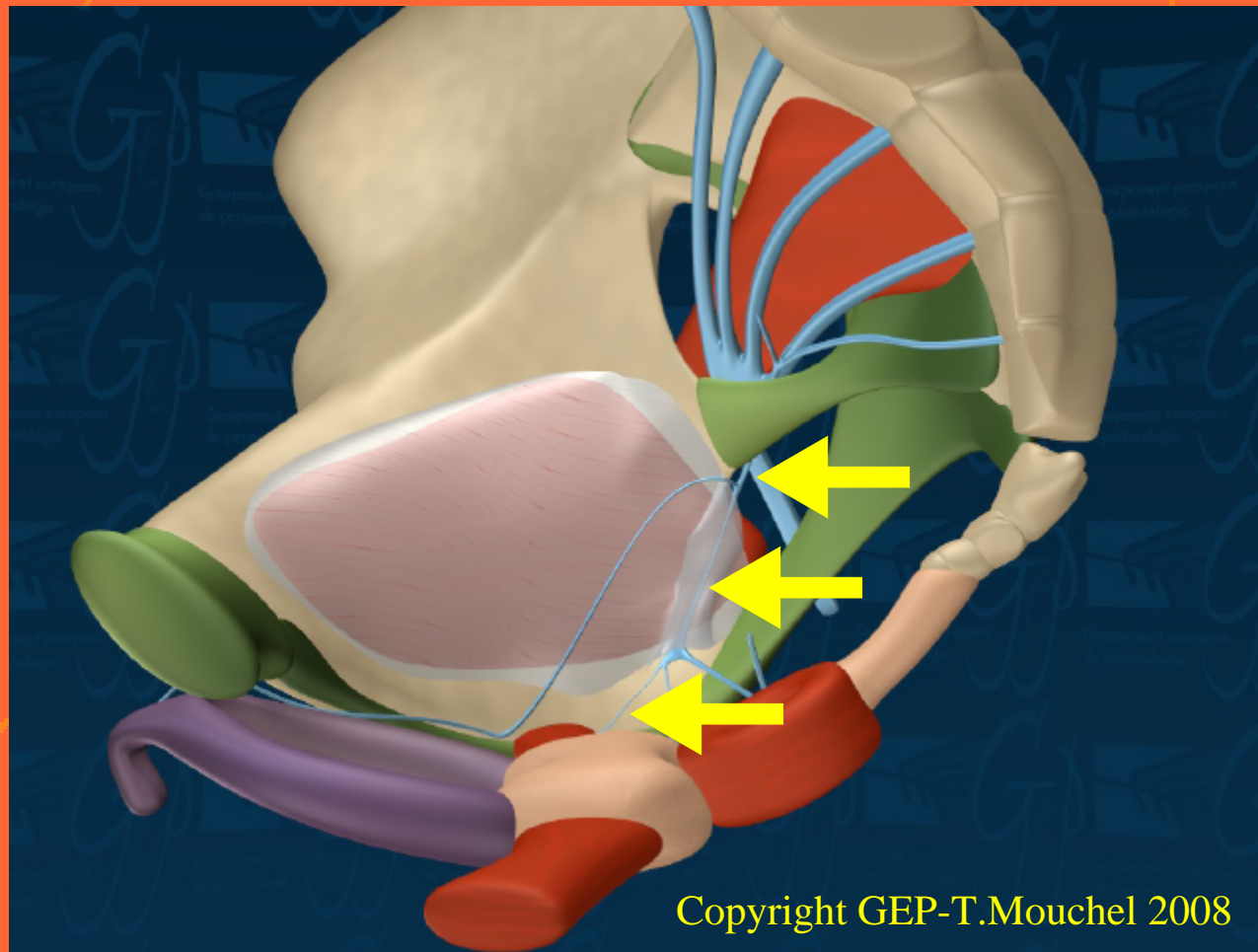


Vulvar



Para-Anal

# Painful pudendal nerve



# Skin Rolling Test



## Validation of the 3 clinical signs of pudendal neuropathy (prevalence 20%)

Test	Sens	Spec	PPV	NPV	OR	95%CI OR
Abnormal sensibility	0.57	0.77	0.38	0.88	<b>4.42</b>	1.99 - 9.82
Painful pudendal nerve	<b>0.70</b>	0.71	0.37	0.90	<b>5.52</b>	2.51 - 12.15
Painful skin rolling test	0.55	<b>0.84</b>	0.47	0.89	<b>6.56</b>	2.74 - 15.68
The 3 (3 neg versus 3 pos)	0.68	<b>0.89</b>	0.60	0.92	<b>16,97</b>	4.68 - 61.51

Beco J, Climov D, Bex M

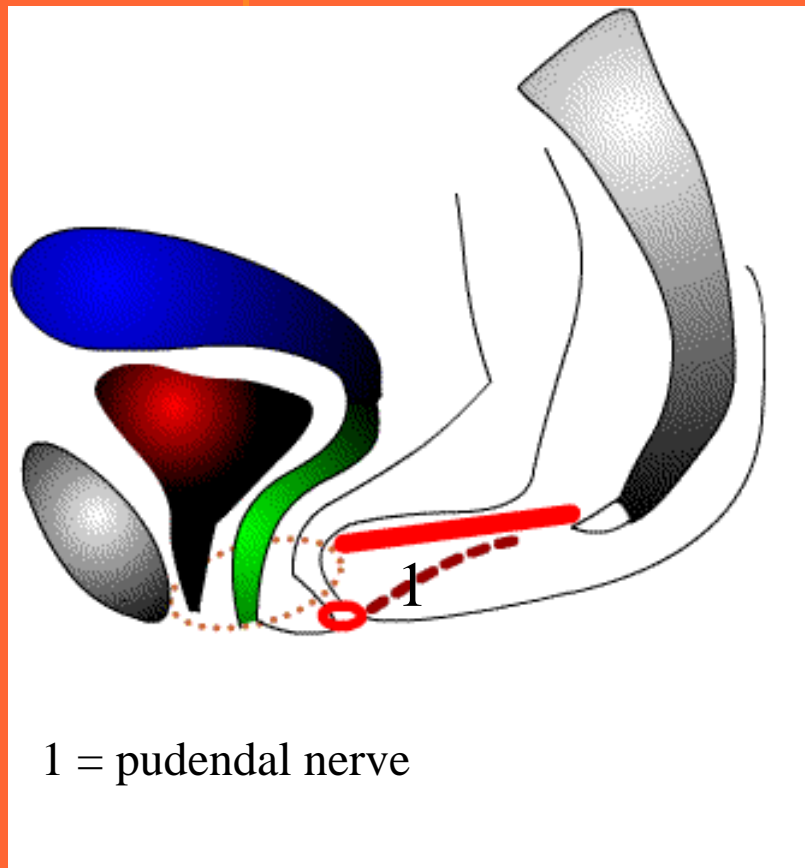
**Pudendal nerve decompression in perineology : a case series.**

*BMC Surg* 2004, 4(1):15.

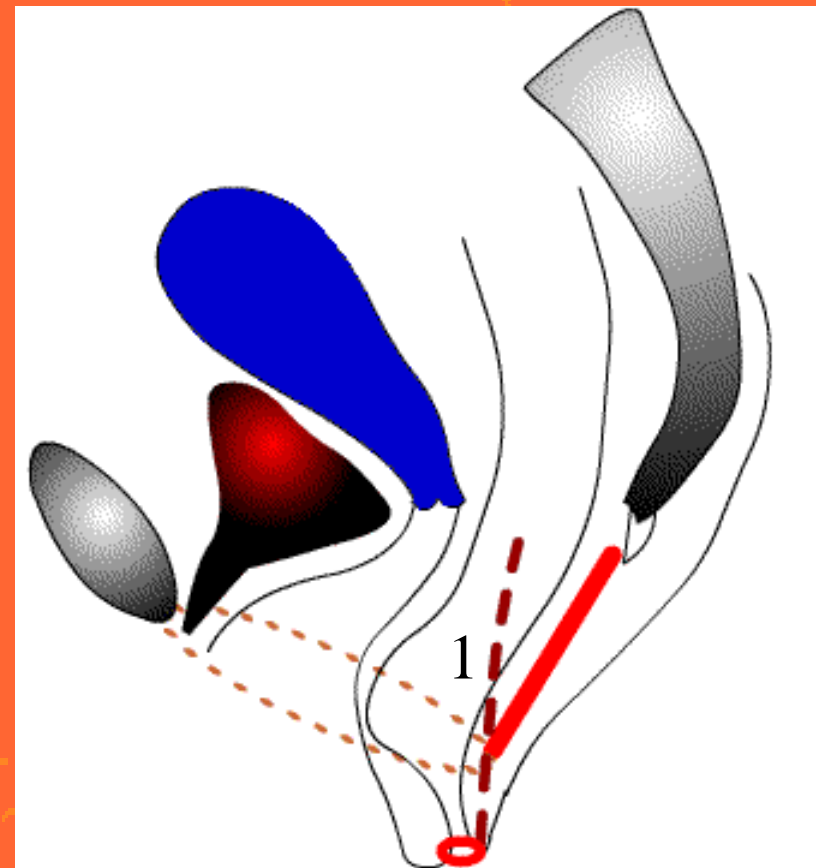
# Etiology

<b>Distortion of the « chassis »</b>	<b>Repetitive trauma</b>
<ol style="list-style-type: none"><li>1. Fall on the coccyx</li><li>2. Impact on the spine or on the pelvis (car or motorbike accident...)</li><li>3. Heavy lifting in squatting position</li><li>4. Heavy osteopathic manipulation</li><li>5. Traction for lower limbs during orthopedic surgery</li></ol>	<ol style="list-style-type: none"><li>1. Job with long time sitting or wrong sitting position (pianist, programmer...)</li><li>2. Biking</li><li>3. Long car or airplane travels</li></ol>
<b>Traction on the nerves</b>	<b>Muscles, surgeons and others</b>
<ol style="list-style-type: none"><li>1. Dyschesia and DPS</li><li>2. Childbirth</li><li>3. Vaginal surgery (retractors)</li></ol>	<ol style="list-style-type: none"><li>1. Obturator or piriformis compression</li><li>2. Direct lesion: prolapse surgery, trauma...</li><li>3. Polyneuropathy (diabetes, alcool..)</li></ol>

# Pudendal neuropathy and Descending Perineum Syndrome



Normal



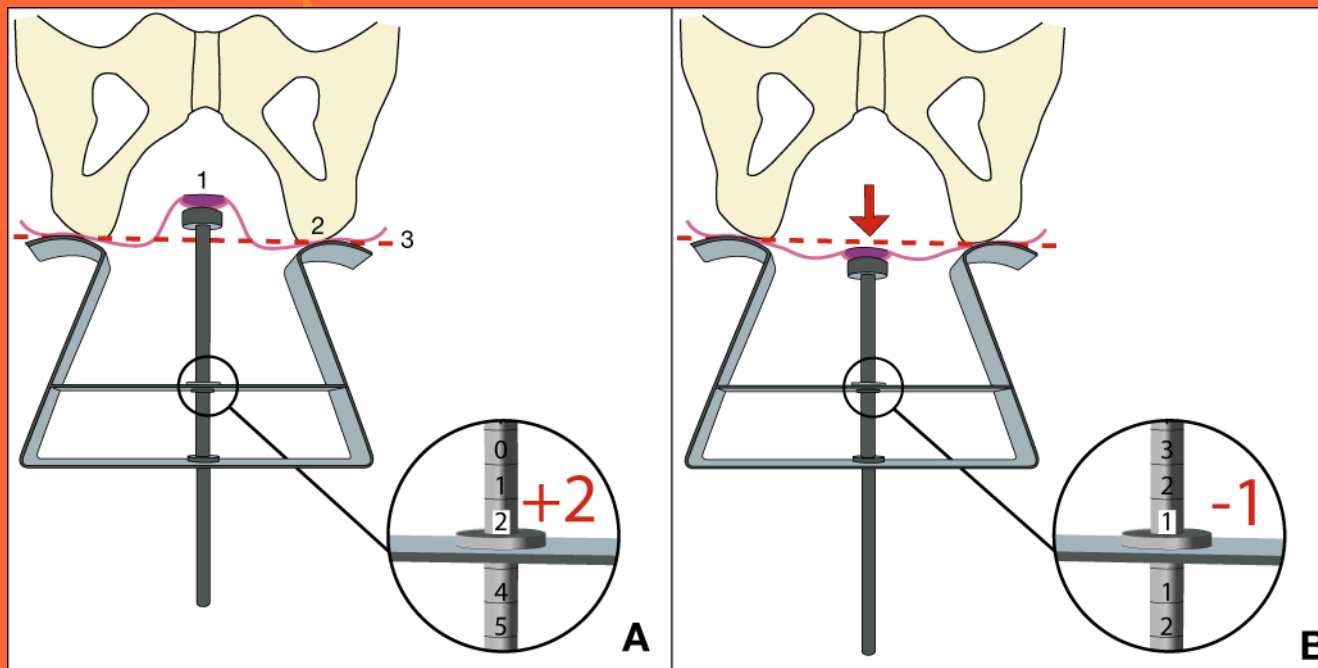
Descending Perineum



# Perineocaliper



# Measure of perineal descent with the Perineocaliper <sup>®</sup>



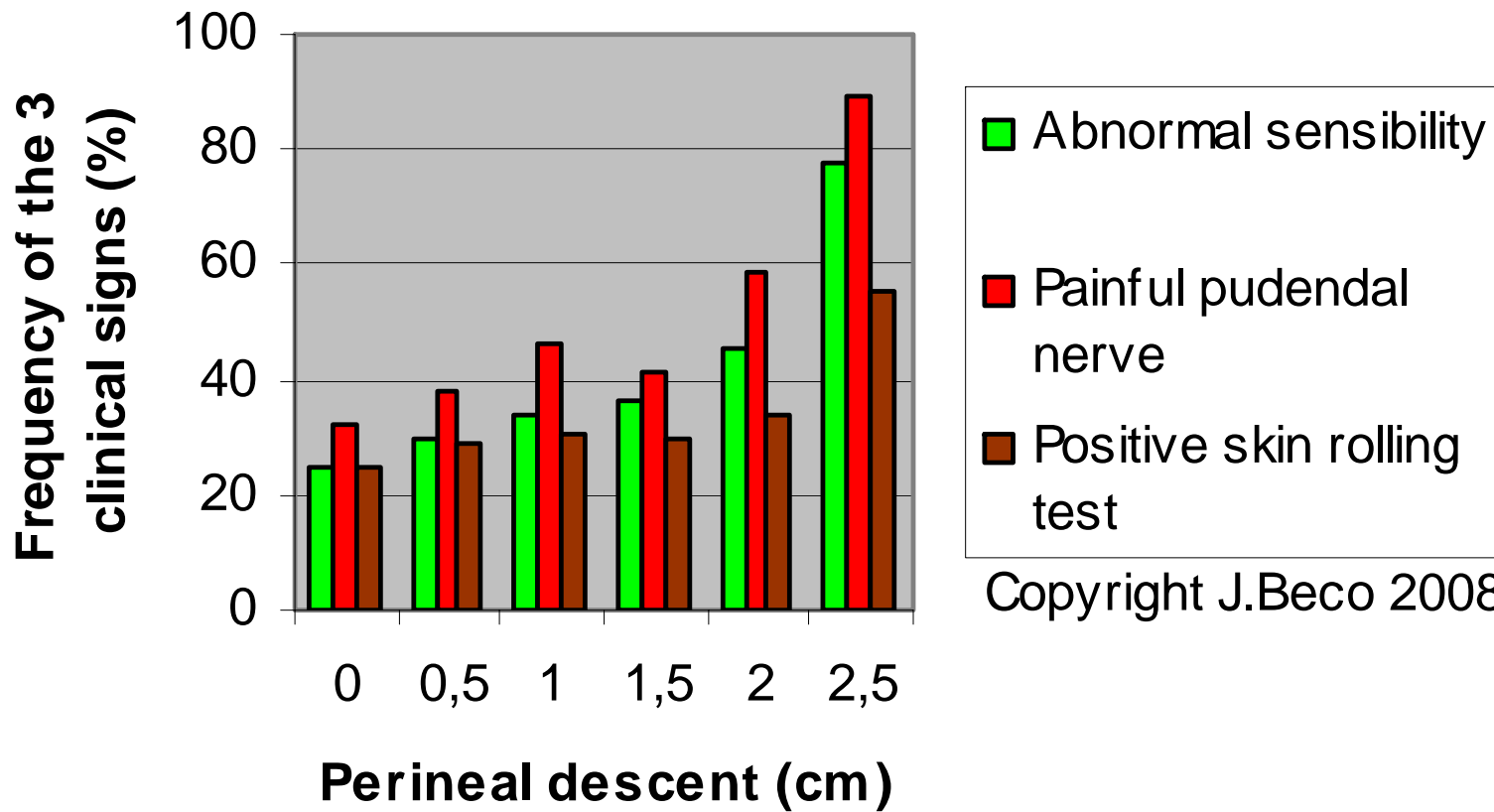
1 = anal margin  
2 = ischial  
tuberosity  
3 = reference  
level

Beco J.:

Interest of retro-anal levator plate myorrhaphy in selected cases of descending perineum syndrome with positive anti-sagging test.

*BMC Surg* 2008, 8(1):13.

**Frequency of the 3 clinical signs of pudendal neuropathy according to the perineal descent measured with a perineocaliper (n=820)**



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# Pudendal neuropathy and pelvic trauma

Studied population: 576 patients from the perineology consultation

Groupe 1: 291 patients with an history of fall on the coccyx or pelvic trauma (car accident...). Most of them without any visible lesion on imaging.

Groupe 2: 285 patients without any history of trauma

# Pudendal neuropathy and pelvic trauma

	Without pelvic trauma	Percentages	With pelvic trauma	Percentages	Z-test (p values)
<b>Dysuria</b>	90/268	33.58	114/282	40.42	0.0483
<b>Stress incontinence</b>	85/269	31.59	110/286	38.46	0.0453
<b>Dyspareunia</b>	91/285	31.92	113/291	38.83	0.0417
<b>Frequency</b>	67/267	25.09	92/285	32.28	0.0312
<b>Anal Incontinence</b>	75/268	27.98	106/284	37.32	0.0097
<b>Cystalgia</b>	64/276	23.18	94/288	32.63	0.0062
<b>Perineal pain</b>	178/261	68.19	222/283	78.44	0.0034
<b>Urge incontinence</b>	52/267	19.47	88/286	30.07	0.001
<b>Positive skin rolling</b>	134/285	47.01	182/291	62.54	0.0001
<b>Proctalgia fugax</b>	49/274	17.88	93/283	32.86	<0.0001
<b>3 POSITIVE clinical signs</b>	73/285	25.61	128/291	43.98	<0.0001
<b>3 NEGATIVE clinical signs</b>	87/285	30.52	35/291	12.02	<0.0001

**More information :**

<http://www.pudendal.com>