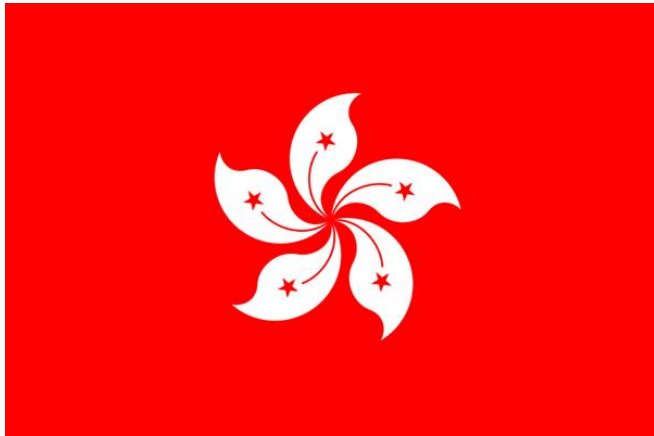




Low Back Pain and Urinary Incontinence

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Background

- Prevalence of LBP in HK
 - 39%: LBP at some time
 - 21%: LBP in the past 12 months

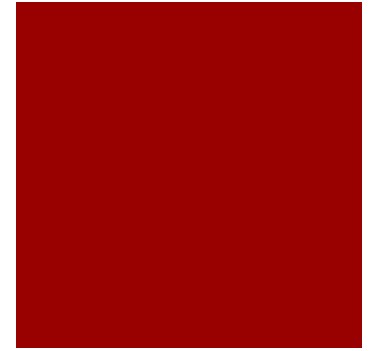
LEUNG (1999)

- Prevalence of Urinary Incontinence in HK
 - 28.4% in people > 60 years old

Hospital Authority (2003)

- 33.8% Stress urinary incontinence

Pang et.al. (2005)



Background (cont'd)

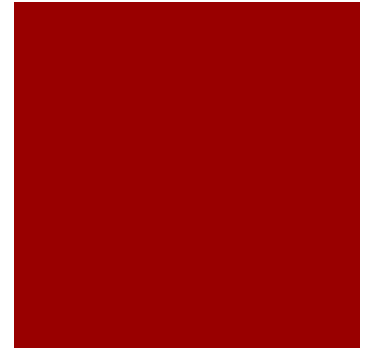
- Sweden study: 200 women with LBP answered the questionnaire
- 78% of women with LBP reported Urinary incontinence
- LBP and PFM dysfunction (inability to interrupt the urine flow) may be risk factors for Urinary incontinence

Eliasson K. et al (2008)



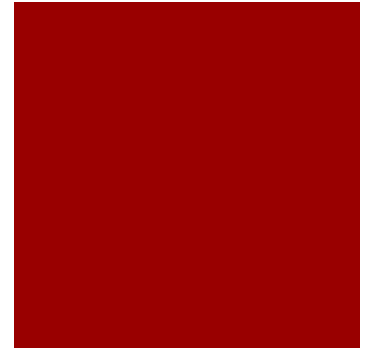
Hypothesis

- There is high prevalence of urinary incontinence symptoms in women with low back pain



Objective

- To investigate the prevalence of urinary incontinence symptoms in women with LBP
- To investigate the association between urinary incontinence and LBP
- To generate a primary data in Chinese population



Study Design

- Cross sectional study
- June 2011
- Kwong Wah Hospital Physiotherapy Out-patient Department
- Low back pain and urinary incontinence questionnaire



GUM LABEL

Subject No: _____

日期: _____

失禁與腰痛問卷調查

體重: kg (請圈出適當選擇)
身高: cm (請圈出適當選擇)

教育程度: 小學 / 中學 / 大學 / 其他
生育紀錄: 懷孕 次 / 生育 次

失禁症狀(請圈出適當選擇)

尿頻: 是/ 否 每天 次
壓迫性失禁: 是/ 否 活動包括: 咳嗽 / 打嗝 / 其他:
迫切性失禁: 是/ 否

以上的症狀持續多久? 大概: 年

腰痛症狀

你有否重覆或連續的腰痛, 而症狀持續一星期或以上? 是/ 否

症狀簡述

集中腰部痛楚 影響步行 (最多可行 分鐘)
痛楚伸延至腿部

請量度你的痛楚程度 (0 代表完全不痛, 10 代表要即時去急症室)
0 1 2 3 4 5 6 7 8 9 10

以上的腰部症狀持續多久? 大概: 年

你曾經因為腰痛而跌倒嗎? 有/ 沒有
最近一次跌倒於: _____

你認為腰痛轉差的時候, 失禁的症狀會比較嚴重嗎? 是/ 否

謝謝你的參與!

廣華醫院物理治療部

Low back pain and urinary incontinence questionnaire



- Recent urinary incontinence symptoms
 - Frequent voiding
 - Stress urinary incontinence
 - Urge incontinence
- low back pain symptoms
 - Central back pain
 - Sciatica

Subjects Recruitment

- Musculoskeletal patients in physiotherapy department
- 200 patients were recruited
- Female
- Exclusion criteria:
 - Pregnant
 - Previous spinal, pelvic floor or abdominal surgery



Demographic Data



	Age	BMI	Edu level	Parity Hx
Mean	53.59	23.8485		
(Range)	(26-85)	(17.53-40.16)		
Mode			2 (secondary)	2

Demographic & socio economic characteristics of study samples



		Sample Number (N=200)	(%)
Age	<45	46	23%
	45 or above	154	77%
BMI	<18.5	9	4.5%
	18.5-22.9	82	41%
	≥ 23 (Overwt)	109	54.5%

Demographic & socio economic characteristics & study samples



		Sample Number (N=200)	(%)
Education Level	Illiterate	15	7.5%
	Primary	67	33.5%
	Secondary	87	43.5%
	Tertiary or above	31	15.5%
Parity History	0	33	16.5%
	1-2	110	55%
	>2	57	28.5%

Data Analysis

Odds Ratio (OR) estimates for potential Risk Factors



		Incontinence		OR	95% CI
		No	Yes		
Age	<45	25	21	2.205	1.130-4.299
	45 or above	54	100		
BMI	<18.5	1	8	0.152	0.018-1.271
	18.5 – 22.9	37	45	Reference	---
	≥23 (Overwt)	41	68	1.364	0.762-1.685

NB. Figures in bold & red indicate statistical significance

Data Analysis

Results of Chi Square test to show the association of various possible risk factors ($p=0.05$)



		Incontinence		Chi Square	P (2-sided)
		No	Yes		
Age	<45	25	21	5.511 (df=1)	0.019
	45 or above	54	100		
BMI	<18.5	1	8	4.282 (df=2)	0.118
	18.5-22.9	37	45		
	≥ 23	41	68		

NB. Figures in bold & red indicate statistical significance

LBP and Incontinence



		Incontinence		Total
		No	Yes	
LBP	No	53 (26.5%)	28(14%)	81 (40.5%)
	Yes	26(13%)	93(46.5%)	119(59.5%)
	Total	79(39.5%)	121(60.5%)	200 (100%)

LBP and Incontinence

Odds Ratio (OR) estimates
Results of Chi Square test ($p=0.05$)



		Incontinence		OR	95% CI	Chi Square	P (2-sided)
		No	Yes				
LBP	No	53	28	6.771	3.601-12.731	38.308 (df=1)	0.000
	Yes	26	93				

LBP & Age

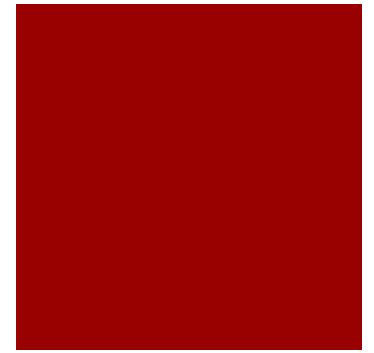


		Incontinence		OR	95% CI	Chi Square	P (2-sided)
		No	Yes				
LBP (<45 y/o)	No	17	7	4.250	1.234-14.637	5.497 (df=1)	0.019
	Yes	8	14				
LBP (≥45 y/o)	No	36	21	7.524	3.580-15.813	31.367 (df=1)	0.000
	Yes	18	79				

Conclusion

- Prevalence of UI was 78% in women with recurrent LBP (93 out of 119 patients with LBP have UI as well)
- Women with low back pain is associated with 6.771 times higher chance of getting urinary incontinence to those without low back pain





WHY

Discussion

- Unclear association between LBP and urinary incontinence
- ? UI symptoms cured or improved after surgery reduced back pain

Eisenstein S.M. (1994)



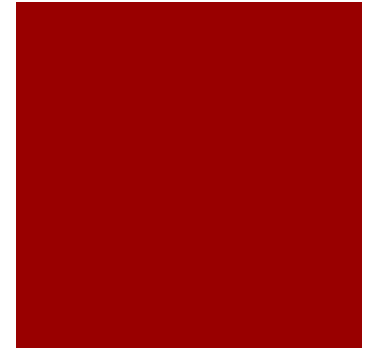
Discussion (cont'd)

- Close relationship between pelvic floor muscles and abdominal muscles
- EMG of PFM increase with contraction of abdominal muscles

Ruth R. et al. (2001)

- Ineffective PFM contraction when abdominal muscle relax

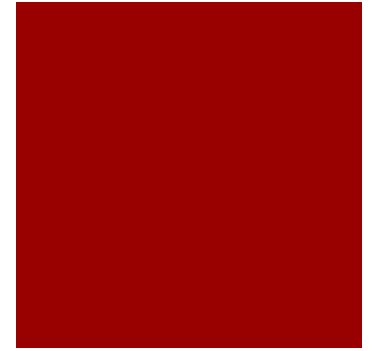
P. Neumann and V. Gill (2002)



Discussion (cont'd)

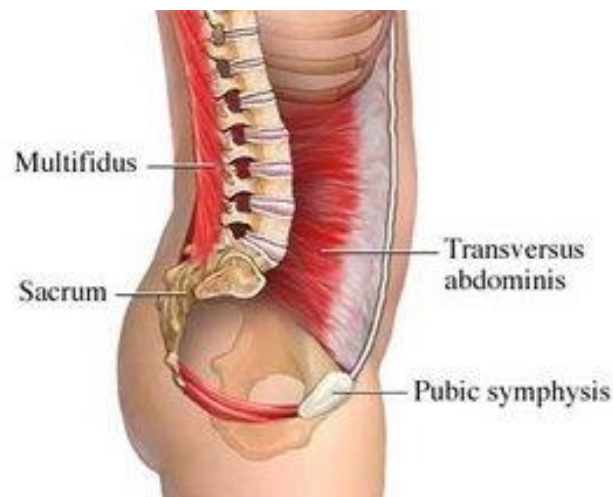
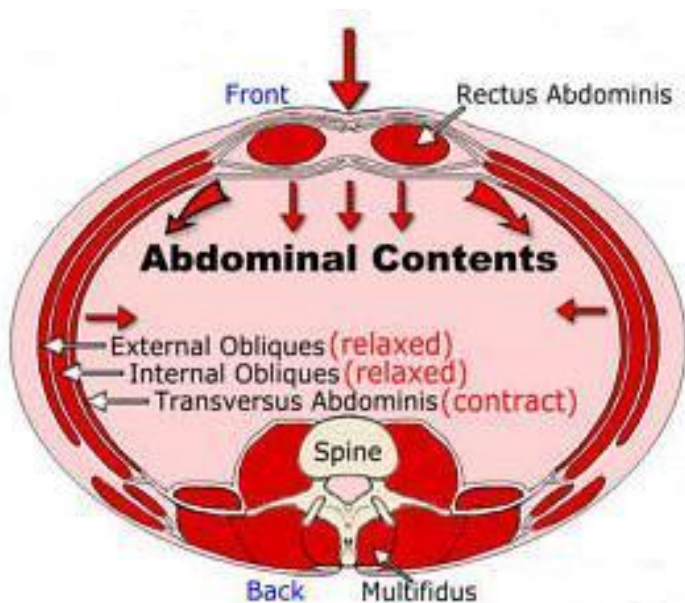
- Women with disorders of continence and respiration have a significantly higher prevalence of back pain
- Postural function of diaphragm, abdominal and pelvic floor muscles is reduced by incontinence

Smith et al. (2006)



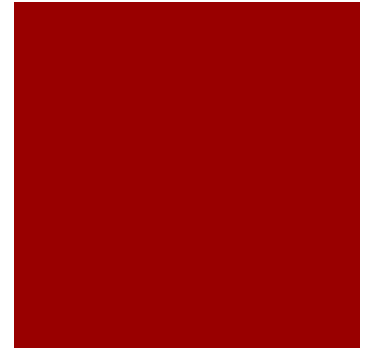
Discussion (cont'd)

Functional unit of local stabilization: transverse abdominus, diaphragm and lumbar multifidus and pelvic floor



Discussion (cont'd)

- Strengthen and develop the core body muscles
- **Stabilize the spine**
- Prevent or minimize low back pain





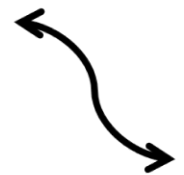
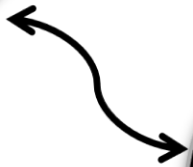
LOW
BACK
PAIN

CORE
MUSCLE
DYSFX

PELVIC
FLOOR
MUSCLE
DYSFX

URINARY
INCON-
TINENCE

? Interchangeable
sequence



Discussion (cont'd)

- Women with stress urinary incontinence demonstrates decreased balance ability when compared to continent women
- ? Compromised balance increased fall risk

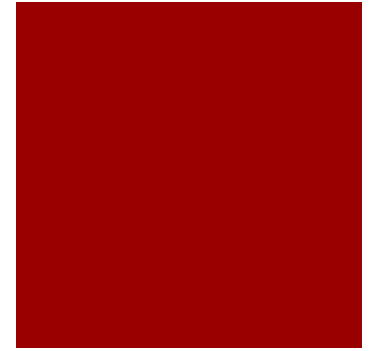
Smith M.D. et al (2007)



Discussion (cont'd)

- Increased PFM and abdominal muscle activity with postural perturbations in women with incontinence
- Incorporate training of control and coordination of abdominal muscle for incontinence patients

Smith M.D. et al. (2007)



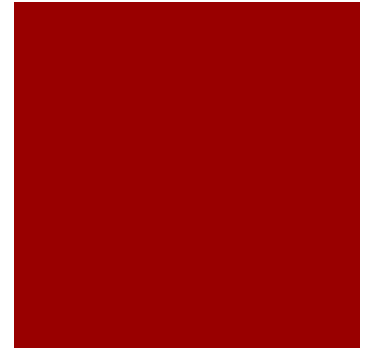
Clinical Implication

- Rehabilitation of Urinary incontinence patients (frequent voiding, stress urinary incontinence, urge incontinence) may require core muscles rehabilitation or back rehabilitation in addition to pelvic floor muscle training
- Co-existing LBP problems should be addressed and appropriate treatment should be given
- Treating patients with LBP should be aware of possible leakage problems within this patient group



Future

- Larger sample size
- Cohort studies



Acknowledgments

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- The **women** who provided the survey data



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THANK YOU