

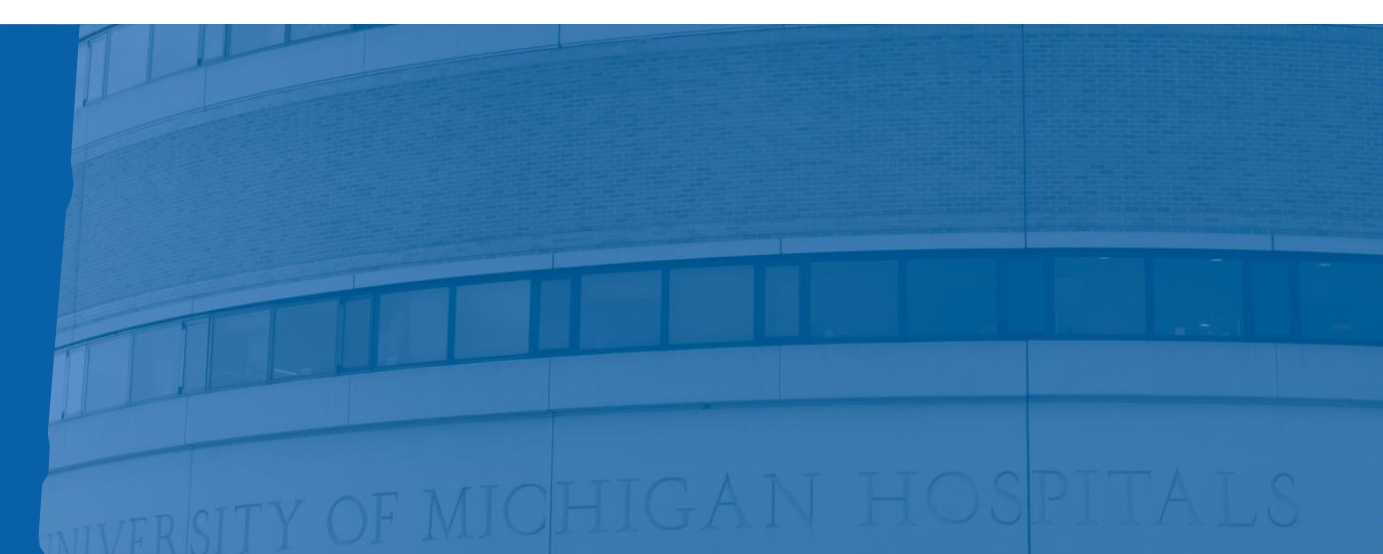


University of Michigan Health System

Effects of Age and Gender in Anorectal Manometry Related with Fecal Incontinence

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BACKGROUND

- Differences exist in anorectal function and anatomy between genders
- Changes in anorectal function and anatomy occur with aging
- Anorectal Manometry (ARM) is a non-invasive method used to assess anorectal physiology
- The effects of age and gender on ARM parameters in fecal incontinence are inconsistent

AIMS

- Assess anorectal function and sensation in individuals with fecal incontinence
- Stratify ARM pressure and sensation parameters by age and gender

METHODS

- Retrospective chart review of all ARM studies performed at the University of Michigan Gastro-Intestinal Physiology Laboratory from 2002-2007
 - 99% of studies performed by the same technician
 - 97% of studies interpreted by the same physician
- 354 ARM studies assessing fecal incontinence

STATISTICAL ANALYSIS

- Comparisons of normally distributed variables were made using a Student's t-test
- Comparisons of categorical data were made using the chi-square test

RESULTS

ARM Parameters Based on Gender In Young and Elderly Adults with Fecal Incontinence

	AGE < 60			AGE ≥ 60		
	WOMEN (n = 142)	MEN (n = 29)	p-Value	WOMEN (n = 140)	MEN (n = 73)	p-Value
Anal Sphincter Length (cm)	3.759	4.0462	0.2259	3.6329	3.7895	0.5307
Resting Sphincter Pressure (mm Hg)	56.113	72.931	0.0053	52.936	60.581	0.1025
Maximum Squeeze Pressure (mm Hg)	89.489	145.34	<0.0001	89.388	134.3	<0.0001
Threshold Volume (ml)	50.977	47.407	0.5926	52.336	54.419	0.7301
Urge Volume (ml)	91.374	106.3	0.1250	95.746	100.95	0.5305
Maximum Tolerated Volume (ml)	144.62	170.74	0.0606	149	162.44	0.2014

ARM Parameters Based on Age in Men and Women Adults with Fecal Incontinence

	WOMEN			MEN		
	AGE <60 (n = 142)	AGE ≥ 60 (n = 140)	p-Value	AGE <60 (n = 29)	AGE ≥ 60 (n = 73)	p-Value
Anal Sphincter Length (cm)	3.759	3.6329	0.4058	4.0462	3.7895	0.4575
Resting Sphincter Pressure (mm Hg)	56.113	52.936	0.3344	72.931	60.581	0.0970
Maximum Squeeze Pressure (mm Hg)	89.489	89.388	0.9842	145.34	134.3	0.4524
Threshold Volume (ml)	50.977	52.336	0.7369	47.407	54.419	0.4066
Urge Volume (ml)	91.374	95.746	0.4289	106.3	100.95	0.6929
Maximum Tolerated Volume (ml)	144.62	149	0.5601	170.74	162.44	0.6434

SUMMARY

Effects of gender on ARM parameters in Fecal Incontinence:

- Significantly lower resting sphincter tone in young women compared to young men
- Significantly lower maximum squeeze pressure in young women compared to young men
- Significantly lower maximum squeeze pressure in older women compared to older men
- Trend towards lower maximum tolerated volume in young women compared to young men

Effects of age on ARM parameters in Fecal Incontinence:

- No age related differences regarding anal sphincter length, tone or strength in men or women
- No age related differences regarding rectal sensation in men or women

CONCLUSIONS

- Differences in anal sphincter parameters suggest differences in the pathophysiology of fecal incontinence in female versus male patients
- No age-based differences in anal sphincter parameters or rectal sensation in men or women with fecal incontinence
- Our data suggest that gender should be taken into consideration when interpreting ARM results for fecal incontinence