

# Age and Gender Influence the Phenotype of Pelvic Floor Dyssynergia

Ella M. LePage, MD<sup>a</sup>; Aryn E. Kormanis, DO<sup>a</sup>; Hiral S. Patel, MD<sup>a</sup>; Elizabeth T. Jensen, MPH, PhD<sup>b,c</sup>; Richard B. Weinberg, MD<sup>c,d</sup>; Nyree K. Thorne, MD<sup>c</sup>

<sup>a</sup>Internal Medicine Residency Program, Department of Internal Medicine, <sup>b</sup>Department of Epidemiology and Prevention, Division of Public Health Sciences,

<sup>c</sup>Section on Gastroenterology, Department of Internal Medicine, <sup>d</sup>Department of Physiology & Pharmacology

Wake Forest University School of Medicine, Winston-Salem, NC

## INTRODUCTION

- Pelvic floor dyssynergia (PFD) is a common cause of chronic constipation. There are four phenotypes of PFD<sup>1</sup> (Table 1).
- To gain insights into the pathogenesis of PFD, we assessed differences in the clinical characteristics and demographics of PFD phenotypes in patients with chronic constipation.

Phenotype	Description
Type 1	Adequate expulsion force Paradoxical increase in anal sphincter pressure
Type 2	Inadequate expulsion force Paradoxical increase in anal sphincter pressure
Type 3	Adequate expulsion force Incomplete/absent anal sphincter relaxation
Type 4	Inadequate expulsion force Incomplete/absent anal sphincter relaxation

Table 1. Manometric Characteristics of Dyssynergia Phenotypes

## METHODS

- Retrospective cohort study.
- Inclusion criteria: ≥ 18 years old, diagnosed with constipation, and underwent anorectal manometry and a balloon expulsion test between January 1, 2017, to June 30, 2019.
- Clinical characteristics and demographics for dyssynergia phenotypes were analyzed for significance using chi-square and ANOVA statistics.

## RESULTS

- 421 patients in the cohort were diagnosed with constipation and underwent anorectal manometry.
- 323 of the 421 (76.7%) patients were diagnosed with PFD.
- Type 1 dyssynergia was the most common phenotype (n=118, 36.5%), followed by Type 3 (n=98, 30.3%), Type 4 (n=83, 25.7%), and Type 2 (n=24, 7.4%).
- Females diagnosed with Type 1 dyssynergia were significantly older ( $58.5 \pm 1.5$  years,  $p < 0.001$ ) than those diagnosed with Type 3 and Type 4 (Figure 1).
- Type 1 dyssynergia was found to be significantly more frequent in males than females ( $p < 0.001$ ) (Figure 2).

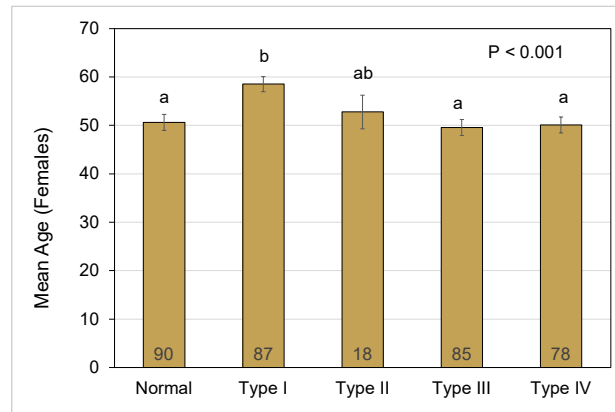


Figure 1. Mean age  $\pm$  S.E. of female patients in each pelvic floor dyssynergia phenotype. Bars are labelled with the number of patients in each type. Bars not sharing a common superscript are significantly different from one another.

## CONCLUSIONS

- Our cohort of 421 patients is the largest study to date of the distribution of pelvic floor dyssynergia phenotypes.
- There were significant differences in gender and age among pelvic floor dyssynergia phenotypes ( $p < 0.001$ ).
- We speculate that male-female anatomic differences impact the gender distribution of PFD phenotypes and that age-related events affecting pelvic floor anatomy may cause Type 1 dyssynergia to be more frequent in older women.

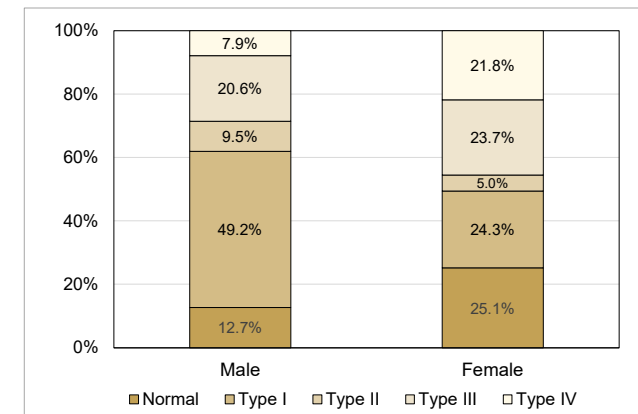


Figure 2. Distribution of pelvic floor dyssynergia phenotypes by gender. There were 63 males and 358 females in the study cohort.

## REFERENCES

1. Rao, S.S., Dyssynergic defecation and biofeedback therapy. *Gastroenterol Clin North Am*, 2008. 37(3): p. 569-86, viii.