TITLE: National Health and Nutrition Examination Survey (NHANES) of Stool Frequency and Consistency in U.S. Adults

AUTHORS (LAST NAME, FIRST NAME): <u>Whitehead, William E.</u>[1]

INSTITUTIONS (ALL): 1. for the Pelvic Floor Disorders Network, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA.

ABSTRACT BODY: Background: Physicians often define constipation by hard or lumpy stool consistency, or <3 stools per week. Diarrhea is defined as loose or watery stools, or >3 stools per day. There is little data on how many meet these definitions and how well the classifications agree. **Aims:** To estimate the prevalence of different stool consistencies and frequencies and the association between consistency and frequency. **Methods:** Subjects in the NHANES survey for 2005-2006 (2229 females and 2079 males ≥20 years) were asked to rate their usual stool consistency using the 7 descriptions from the Bristol Stool Scale (Gut 1994;35:1455), and to report their usual stool frequency. Consistency was categorized as hard/lumpy (Bristol Stool ratings 1-2), normal (3-5), and mushy/watery (6-7). Stool frequency was categorized as <3/week, 3-21/week, and >21/week. NHANES provides weights for each subject's data to obtain estimates for the national population. Means [95% confidence intervals] are reported. A nonparametric correlation was computed between the 2 indices before collapsing them into categories. **Results:** Prevalence estimates for stool consistency and frequency are listed in the table. The correlation between stool consistency and frequency was 0.18 (p=0.0002) for each gender. There was poor agreement between reports of abnormal frequency and abnormal consistency, e.g., only 31% of females with >21 stools/week reported mushy/watery stools, with similar results for males. Females reported hard/lumpy stools (p<0.0001) and <3 stools/week (p<0.0001) more often than males, with no significant differences in mushy/watery stools (p=0.12) or >21 stools/week (p=0.25). **Conclusions:** Frequency and consistency are weakly associated; therefore both should be reported. Subjects may be classified as abnormal on one index but not on the other. *[Supported by NICHD and the NIH Office of Research on Women's Health grants U01 HD41249, U10 HD41250, U10 HD41261, U10 HD41267, U10 HD54136, U10 HD54214, U10 HD54215, and U10 HD54241]*

Percent of subjects (within gender) classified by stool frequency and consistency

	Female				Male			
Consistency	Frequency				Frequency			
	<3/wk	3/wk-21/wk	>21/wk	Total	<3/wk	3/wk-21/wk	>21/wk	Total
Hard or lumpy stools	0.9% [0.5-1.4]	8.1% [7.0-9.1]	0.03%* [0.0-0.1]	9.0% [8.1-9.9]	0.2%* [0.0-0.4]	2.9% [1.9-3.8]	0.1%* [0.0-0.2]	3.1% [2.1-4.2]
Normal	4.2% [3.1-5.2]	79.6% [77.8-81.4]	0.8% [0.4-1.2]	84.5% [82.9-86.1]	0.6% [0.2-0.9]	90.5% [88.3-92.6]	0.9% [0.3-1.6]	92.0% [89.7-94.3]
Mushy or watery stools	0.4%* [0.0-0.7]	5.7% [4.7-6.7]	0.4%* [0.0-0.7]	6.5% [5.5-7.5]	0.04%* [0.0-0.1]	4.2% [2.8-5.7]	0.6% [0.2-1.0]	4.9% [3.2-6.5]
Total	5.5% [4.0-7.0]	93.3% [91.6-95.1]	1.2% [0.6-1.7]	100%	0.8% [0.4-1.2]	97.6% [96.9-98.3]	1.6% [0.8-2.4]	100%

* Sample sizes for these percents are insufficient.