

The effect of polydextrose on faecal weight

reference	study design	treatment/intervention	subjects	n	parameter measured/scored	outcome	p
Achour <i>et al</i> (1994)	Sequential design	40-day study period. Days 1 - 8: control period; days 9 - 38 subjects took 3 x 10g (30 g total) polydextrose in fruit juice.	Healthy male volunteers, mean age 27 ± 2 yrs (SD)	7	24-h faecal output over days 5-8, 13-16 and 35-38	Increased, but not significantly, during days 13-16 and 35-38 (in g/day, total weight from 122 (± 46) to 164 (± 53) and 158 (± 61), respectively; dry weight from 29 (± 11) to 38 (± 10) and 40 (± 12), respectively)	=0.06
Endo <i>et al</i> (1991)	Sequential design	Low cholesterol (LC) diet for 2 weeks; followed by high cholesterol (HC) diet for 2 weeks; followed by high cholesterol diet supplemented with polydextrose at 15g/day (HCP) for 2 weeks.	Healthy volunteers (6 male, 2 female; mean age 31.8 ± 6.4 years (SD))	8	Faecal output (stool weight over last 6 days of each dietary period)	faecal output increased during HCP diet compared to HC diet (no specific weights given, only graphic plot of individual data)	<0.05
Hengst <i>et al</i> (2008)	placebo-controlled, randomised intervention study	2-week run-in period (100 g untreated yoghurt/day); followed by 3-week intervention period (100 g yoghurt/day supplemented with 8g polydextrose (PDX) for treatment group or unsupplemented for placebo control group); followed by 3-week washout period (no yoghurt consumed).	healthy volunteers (37 females, 8 males) mean age 24 ± 7 years (SD)	45	stool weight	no significant changes or differences between groups seen (in g/defaecation, from 101.8 (± 47.2) to 102.7 (± 45.7))	NS
Timm <i>et al</i> (2011)	Randomized, double-blind, placebo controlled	3 periods of 10 day treatment with a 2 week wash-out between periods: 20g polydextrose in breakfast cereal and muffin (3 rd period to	Healthy volunteers (18 males, 18 females), ≥ 18 years old, BMI: 18.5-30.	36	5-day wet stool weight	Significant increase (in g, from 623 (± 342) to 830 (± 443))	<0.05

The effect of polydextrose on faecal weight

reference	study design	treatment/intervention	subjects	n	parameter measured/scored	outcome	p
	crossover study	investigate similar effects of soluble corn fibre)					
Tomlin and Read (1988)	Cross-over	10-day control period and 3x10-day test periods: 7g ispaghula/day; 30g polydextrose/day; 30g polydextrose and 2g ispaghula/day.	Healthy, male volunteers	12	Weekly faecal mass	Increased in all treatment groups compared to controls (in kg, from 0.84-1.47 to 1.07-1.97)	<0.05
Tomlin and Read (1988)	Cross-over	10-day control period and 2x10-day test periods: 7g ispaghula/day; 10g polydextrose and 2g ispaghula/day.	Healthy, male volunteers	12	Weekly faecal mass	Increased in both treatment groups compared to controls (in kg, from 1.34-1.87 (av 1.54) to 1.56-1.87 (av 1.65))	<0.05
Vester-Boler et al (2011)	Randomized, double-blind, placebo controlled crossover study	3 periods of 21 day intervention without wash-out: 3 snack bars/day containing a total of 21g polydextrose (3 rd period to investigate similar effects of soluble corn fibre)	Healthy adult men, aged between 20-40 yrs	21	5 Day tot faecal wet weight (g) 5 Day tot faecal dry weight (g) 4 Day tot faecal wet weight (g) 4 Day tot faecal dry weight (g) 4 Day faecal wet weight (g/d) 4 Day faecal dry weight (g/d)	Increase versus control (from 735.2 to 809.0) Increase versus control (from 155.9 to 184.8) Increase versus control (from 593.7 to 693.0) Increase versus control (from 129.2 to 158.3) Increase versus control (from 184.1 to 202.3) Increase versus control (from 39.0 to 46.2)	NS =0.02 NS =0.07 NS =0.02
Zhong (Jie) et al (2000)	placebo-controlled,	Four groups administered 0, 4, 8 and 12 g polydextrose/day	Healthy volunteers: 66 males (mean age	120	3-day faecal output (wet and dry weights), in	faecal wet weight increased in groups receiving 8 and	<0.05 and <0.01

The effect of polydextrose on faecal weight

reference	study design	treatment/intervention	subjects	<i>n</i>	parameter measured/scored	outcome	<i>p</i>
	randomised double-blind	respectively in aqueous solution for 28 days.	32.9y), 54 females (mean age 29.4y).		g/day	<p>12g polydextrose/day compared to baseline (from 101 (\pm13.6) to 128 (\pm27.4) and from 98 (\pm12.5) to 142 (\pm18.3), respectively)</p> <p>faecal wet weight increased in groups receiving 8 and 12g polydextrose/day compared to control (control data 103 (\pm12.3) to 106 (\pm15.9))</p> <p>faecal dry weight increased in groups receiving 8 and 12g polydextrose/day compared to baseline (from 31.5 (\pm7.4) to 41.8 (\pm16.3) and from 29.6 (\pm8.9) to 47.8 (\pm18.2), respectively)</p> <p>faecal dry weight increased in group receiving 12g polydextrose/day compared to control (control data from 32.2 (\pm8.3) to 34.5 (\pm8.8))</p>	<p>respectively</p> <p><0.01</p> <p><0.05 and <0.01 respectively</p> <p><0.01</p>

The effect of polydextrose on faecal weight

REFERENCES

- Achour L, Flourié B, Briet F, Pellier P, Marteau P and Rambaud J-C (1994). Gastrointestinal effects and energy value of polydextrose in healthy non-obese men. *American Journal of Clinical Nutrition* 59, 1362-8
- Endo K, Kumemura M, Nakamura K, Fujisawa T, Suzuki K, Benno Y and Mitsuoka T (1991). Effect of high cholesterol diet and polydextrose supplementation on the micorflora, bacterial enzyme activity, putrefactive products, volatile fatty acid (VFA) profile, weight and pH of the feces in healthy volunteers. *Bifidobacteria Microflora* 10, 1, 53-64
- Hengst C, Ptok S, Roessler A, Fechner A and Jahreis G (2009). Effects of polydextrose supplementation on different faecal parameters in healthy volunteers. *International Journal of Food Sciences and Nutrition* 60, Suppl 5: 96-105.
- Timm D, Thomas W, Boileau T, Williamson-Hughes P, Slavin J (2013). Polydextrose and soluble corn fiber increase five-day fecal weight in healthy men and women. *Journal of Nutrition* 143: 473-478.
- Tomlin J and Read N W (1988). A comparative study of the effects on colon function caused by feeding ispaghula husk and polydextrose. *Alimentary Pharmacology and Therapeutics* (1988), 2, 513-519
- Vester Boler B, Rossoni Sero M, Bauer L, Staeger M, Boileau T, Swanson K, Fahey G (2011). Digestive physiological outcomes related to polydextrose and soluble maize fibre consumption by healthy adult men. *BJN* 106, 1864-1871.
- Zhong J, Luo B-Y, Xiang M-J, Liu H-W, Zhai Z-K, Wang T-S and Craig S A S (2000). Studies on the effects of polydextrose intake on physiologic functions in Chinese people. *American Journal of Clinical Nutrition* (2000), 72, 1503-09