

GENERAL GUIDELINES FOR CARBOHYDRATE BREATH TESTING

	CHALLENGE DOSE	SAMPLING INTERVALS	INTERPRETING RESULTS
LACTOSE	Lactose: 1 g/kg body weight up to 25 g dissolved in 8 oz. (250 ml) of water.	Standard: Baseline (0), 60, 120, 180 minutes after the sugar has been ingested or until H ₂ /CH ₄ ppm reach 20/12 over the lowest preceding measure.	POSITIVE: Breath H ₂ level increase of at least 20 ppm over the lowest preceding value within the test period. Breath CH ₄ level increases by at least 12 ppm over the baseline within the test period; combined increase of at least 15 ppm within the test period.
FRUCTOSE	Fructose: 1 g/kg body weight dissolved in 6-8 oz. of water.	Standard: Baseline (0), 60, 90, 120, 180 minutes after the sugar has been ingested.	A breath H ₂ level increase of at least 20 ppm indicates transport impairment. (Note: Fructose malabsorption is reduced by concomitant glucose or sucrose intake).
SUCROSE	Sucrose; 2 g/kg body weight dissolved in 6-8 oz. of water.	Standard: Baseline (0), 20, 40, 60, 80, 100, 120, 140, 160, 180 minutes after sugar has been ingested.	POSITIVE: Breath H ₂ level increase of at least 20 ppm over the lowest preceding value within the test period; Breath CH ₄ level increases by at least 15 ppm over the baseline within the test period; combined increase of at least 15 ppm within the test period.
d-XYLOSE	d-Xylose: 1 g/kg body weight dissolved in 6-8 oz. of water.	Standard: Baseline (0), 20, 40, 60, 80, 100, 120, 140, 160, 180 minutes after sugar has been ingested or until H ₂ + CH ₄ reach 20 over baseline.	d-Xylose: Increase of either H ₂ or CH ₄ level within 40-60 minutes suggests bacterial overgrowth. A later increase suggests impairment of intestinal transport capacity.
SORBITOL	Sorbitol: 0.25-0.50 g/kg body weight dissolved in 6-8 oz. water.	Standard: Baseline (0), 30, 60, 90, 120, 150, 180 minutes after sugar has been ingested.	Breath H ₂ level increase after 60 minutes is NORMAL. An increase of over 30 ppm with cramps indicates sensitivity to sorbitol.
BACTERIAL OVERGROWTH	Lactulose: 10 g dissolved in 6-8 oz. of water; 10 g (15 ml) lactulose syrup	Standard: Baseline (0), 15, 30, 45, 60, 90 minutes after the challenge dose has been taken or until a positive increase of 12-20 H ₂ ppm has been recorded.	POSITIVE: Lactulose: Biphasic pattern in breath H ₂ levels, two peaks with an early increase of at least 12 ppm followed by a second much larger increase after 1 hour. Two peaks may merge as an early plateau.
	Glucose: 70-100 g dissolved in 8 oz. of water; 1 g/kg body weight		POSITIVE: Glucose: An increase of at least 12 ppm breath H ₂ over the baseline value.
INTESTINAL TRANSIT TIME	Lactulose: 0.5 g/kg body weight; 10 g (15 ml) lactulose syrup.	Standard: Beginning 30 minutes after challenge dose, sample every 10 minutes until either H ₂ or CH ₄ corrected value rises 3 ppm over the previous level for at least 3 successive time intervals.	Normal mean for Lactulose testing 70-75 minutes. Note: Lactulose shortens intestinal transit time compared to other tests.