

## A new technique for measurement of pharyngeal pH: normal values and discriminating pH threshold

Normal Values for 24 -h Pharyngeal pH Monitoring in the Upright Position at Different pH Thresholds (n=55)

	25th percentile	Median	75th percentile	95th percentile
pH < 6.5 % Time	0.074	1.32	8.42	32.9
pH < 6.0 % Time	0.0	0.17	0.65	6.29
pH < 5.5 % Time	0.0	0.0	0.0	0.13
pH < 5.0 % Time	0.0	0.0	0.0	0.021

Normal Values for 24 -h Pharyngeal pH Monitoring in the Supine Position at Different pH Thresholds (n=55)

	25th percentile	Median	75th percentile	95th percentile
pH < 6.5 % Time	1.9	23	60.7	77.9
pH < 6.0 % Time	0.0	3.51	22.8	55.1
pH < 5.5 % Time	0.0	0.0	5.07	23.9
pH < 5.0 % Time	0.0	0.0	0.0	5.15

Applying the data from the USC normal values at progressive pH levels provides guidance on what thresholds constitute excessive acid exposure.<sup>i</sup> Pepsin is active to levels slightly above pH 6.5. Although pepsin is inactive at pH 6.5 and above, it remains stable until pH 8.0 and can be reactivated when the pH is reduced. Pepsin is stable for at least 24 hours at pH 7.0, 37°C and retains 79%–11% of its original activity after re-acidification at pH 3.0.<sup>ii</sup>

<sup>i</sup> Ayazi S, Lipham J, Hagen J, et al. A new technique for measurement of pharyngeal pH: normal values and discriminating pH threshold. J Gastrointest Surg. 2009;13:1422–1429

<sup>ii</sup> Johnston N., Dettmar P., Bishwokarma B., Lively M., Koufman J. (2007a) Activity/stability of human pepsin: implications for reflux attributed laryngeal disease. Laryngoscope 117: 1036–1039

