

Online Resource 3. Summary of swallow-respiratory sound interpretation

Characteristics	Respiration at rest, pre-swallow	Swallow	Glottal release	Post swallow respirations
Normal	<ul style="list-style-type: none"> • Tidal respirations (even breathing) 	<ul style="list-style-type: none"> • Crisp, distinct, clear • Quick, coordinated. 	<ul style="list-style-type: none"> • Present 	<ul style="list-style-type: none"> • Expiration post swallow • Return to even breathing (as per pre-swallow)
Abnormal	<ul style="list-style-type: none"> • Breathing throughout oral phase (liquids) • Audible tongue pumping • Quality of sounds (wet, audible secretions) 	<ul style="list-style-type: none"> • Dissociated • Dull • Constricted • Drawn-out • Choking 	<ul style="list-style-type: none"> • Long apnoea • Absent 	<ul style="list-style-type: none"> • Inspiration post swallow • Increased respiratory rate • Gurgling/bubbling • Crackles, wet, audible secretions (liquid vibrating sounds) • Stridor, wheeze • Coughing, throat-clearing



Summarised from previous research:

Bergström et al., *Int. J. Speech. Lang. Pathol.* 2014;16(5):517-28. doi: 10.3109/17549507.2013.855259.

Bergström & Cichero. *Int. J. Speech. Lang. Pathol.* 2021, doi: 10.1080/17549507.2021.1953592.

Frakking et al. *Dysphagia.* 2016;31:738-748. doi: 10.1007/s00455-016-9727-5.

Cichero & Murdoch (Ed). *Dysphagia: foundation, theory and practice.* John Wiley & Sons; 2006. pp 178.

Yamashita et al. *J. Oral Rehabil.* 2014;41:667-674. doi: 10.1111/joor.12184.