

## A Survey of Silent Aspiration in Duchenne Muscular Dystrophy

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### Abstract

**Introduction:** Studies of oro-pharyngeal dysphagia (OPD) in Duchenne Muscular Dystrophy (DMD) commonly focus on changes in motor physiology. Early identification and prevention of consequences associated with OPD necessitates good sensory awareness which is currently presumed intact. This study considered the clinical evidence for changes in oro-pharyngeal sensation in DMD.

**Method:** We retrospectively examined a series of nine videofluoroscopy (VFS) images from consecutive young adults with DMD showing bedside signs or symptoms of OPD (regardless of aspiration symptoms). Patients underwent standard clinical VFS procedure. Images were reviewed by three blinded Speech and Language Therapists. Response to penetration, aspiration and post-swallow residues were assessed using a priori criteria.

**Results:** Eight out of nine patients displayed radiographic symptoms of OPD evidenced by post-swallow residues in the pharynx and/or material in the airway. One patient aspirated with no reflexive response. Three penetrated with no response. Seven patients had residue remaining in their pharynx they were unaware of.

**Conclusion:** Post-swallow residue, penetration and aspiration have a distinctive set of patient reported symptoms which allow clinicians to identify signs of OPD before florid complications start. This preliminary data calls into question the ability of patients with DMD to reliably self-report symptoms of OPD when reflexive or automatic responses are not obvious due to possible associated changes in sensation. The presence of silent aspiration and undetected post-swallow residues support the high risk nature of this group and may dispute previous claims that aspiration is a relatively rare event and uncommon cause of respiratory exacerbation. Further research is recommended in this area.

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