

## **DIGEST-FEES**

Dysphagia is a major concern for head and neck cancer (HNC) patients both during and after treatment. Dysphagia not only affects their quality of life but also increases the risk of pneumonia, dehydration, and malnutrition. To address this issue, a team of researchers has developed a new scale called DIGEST-FEES.

DIGEST-FEES is specifically designed to assess the severity of pharyngeal dysphagia using flexible endoscopic evaluation of swallowing (FEES). This scale provides a comprehensive and standardized measurement of dysphagia severity, taking into account both the safety and efficiency of swallowing.

The **DIGEST-FEES scale is a modification of the existing DIGEST scale**, which is used for assessing dysphagia severity in videofluoroscopic swallowing studies (VFSS). The scale was developed and validated through expert panel consensus and rating of FEES examinations. The DIGEST scale is based on the Common Terminology Criteria for Adverse Events (CTCAE) criteria, a descriptive terminology which can be utilized to rate degrees of severity for adverse events from 1-5 (Grade 1 Mild, Grade 2 Moderate, Grade 3 Severe, Grade 4 Life-threatening or disabling, Grade 5 Death related to adverse event). CTCAE terminology is applicable across all body systems, and any symptom or disease, temporally associated with the use of a medical treatment that may *or may not* be considered related to the medical treatment.

The scale consists of safety and efficiency grades that are determined based on the **frequency & severity of airway invasion** as well as patterns of **post-swallow residue** observed during FEES. These safety & efficiency grades are then combined to derive an overall severity grade ranging from 0 (no dysphagia) to 4 (life-threatening dysphagia). Thus, **DIGEST-FEES has three separate scores: safety, efficiency, and overall severity of pharyngeal dysphagia.**

The study found that DIGEST-FEES demonstrated **good reliability**, with **excellent agreement among raters** for both interrater and intrarater reliability. The scale also showed **validity** by correlating significantly with other measures of dysphagia severity, including **patient-reported outcomes** and objective measures such as **diet level, secretion severity, and pharyngeal residue.**

There is **no gold standard criterion measure for FEES**, which affects the ability to validate the DIGEST-FEES scale. Existing measures for FEES do not provide a standardized and comprehensive assessment of swallowing safety and efficiency at the patient or cohort level. While DIGEST-FEES shows great promise, **further research is needed to validate its performance in larger datasets and different patient populations.** The scale may also benefit from refinement and testing in various clinical settings to ensure its broader applicability.

**DIGEST-FEES offers a reliable and valid tool** that can be used in clinical trials and outcomes research to evaluate the effectiveness of different treatment modalities for HNC and improve

patient care. **By using DIGEST-FEES, healthcare professionals can make more informed decisions regarding treatment planning and interventions for dysphagia.**

In conclusion, DIGEST-FEES is a valuable scale that fills the gap in assessing dysphagia severity in HNC patients undergoing FEES. **Its reliability and validity make it a useful tool for clinicians and researchers involved in the management and study of dysphagia.** By utilizing DIGEST-FEES, **healthcare professionals can better understand and address the swallowing difficulties** faced by HNC patients, ultimately **improving their overall care and quality of life.**

Although the validation study does not establish validity & reliability beyond HNC, this scale has anecdotally been applied to other populations. We feel that given the lack of an existing gold-standard criterion measure for FEES, it is **worthwhile to catalog patterns of dysphagia in our studies by using DIGEST-FEES:** documenting safety, efficiency, and overall severity of pharyngeal dysphagia. Therefore, **you will see these ratings in FEES reports generated by Dynamic Dysphagia Solutions.**

How does this information help you clinically? For example, take a patient who has a DIGEST-FEES score of S3 E0 D3. This would indicate a severe safety impairment and no impairment of efficiency. You as the primary SLP could then use that information to target your treatment towards swallow safety compensation & rehabilitation. Conversely, you may have a patient with severe inefficiency (S1 E3 D3) and only mild safety impairment. That patient would require different, residue-clearance-focused interventions. And if you have a patient who has high impairment scores in both safety & efficiency (S3 E3 D3), you would likely need to use multiple types of interventions to rehabilitate your patient's swallow.

When illustrated this way, it is clear that this scale has utility beyond head & neck cancer, although we continue to eagerly await validation in additional populations. Please don't hesitate to reach out to us with any questions if you're unsure how to interpret the results in your report.

Resources:

Starmer HM, Arrese L, Langmore S, Ma Y, Murray J, Patterson J, Pisegna J, Roe J, Tabor-Gray L, Hutcheson K. Adaptation and Validation of the Dynamic Imaging Grade of Swallowing Toxicity for Flexible Endoscopic Evaluation of Swallowing: DIGEST-FEES. *J Speech Lang Hear Res.* 2021 Jun 4;64(6):1802-1810. doi: 10.1044/2021\_JSLHR-21-00014. Epub 2021 May 25. PMID: 34033498.