

# VFSS Analysis Tools

	What does it tell us?	How is it implemented?	What else should I know?	More resources
<p><b>ASPEKT-C:</b> Analysis of Swallowing Physiology: Events, Kinematics and Timing (Clinical)</p> <p><i>Requires frame-by-frame analysis</i></p>	<p>Pharyngeal physiology, including ROM and timing measures</p> <p>Pathophysiology or treatment targets? Yes, for pharyngeal deficits, but not oral deficits.</p> <p>Severity or normality? Performance on each component for each bolus is categorized as WNL or impaired.</p>	<p><b>Standardization:</b> Check out this <a href="#">step-by-step manual</a>, which includes a protocol for bolus presentations and scoring how-to.</p> <p><b>Ease of use:</b> The ASPEKT-C is a bit more time-consuming than others, but is well worth it! You'll need software like <a href="#">Image J</a> (which is free) to analyze studies.</p> <p><b>Training:</b> The author's <a href="#">lab website</a> has a <a href="#">lot</a> of info, including this <a href="#">YouTube tutorial</a> from Dr. Catriona Steele.</p>	<p>Used with IDDSI Levels 0 through 4.</p> <p>The ASPEKT-C has been studied with several populations and has <a href="#">healthy reference values</a>.</p> <p>This version was developed specifically for practicing clinicians with time constraints. The <a href="#">FULL ASPEKT Method</a> is available for more comprehensive analysis to assess many more physiologic components and might be useful if your team is hoping to publish research with VFSS data.</p>	<p>Scoring form, treatment planning flow sheet, VFSS best practice reference sheet, and manual: All located <a href="#">here</a></p> <p>Research and reference values: Archived on the lab website <a href="#">here</a></p>
<p><b>DIGEST:</b> Dynamic Imaging Grade of Swallowing Toxicity</p>	<p>Swallowing efficiency (pharyngeal residue) and safety (degree of airway invasion)</p> <p>Pathophysiology or treatment targets? No.</p> <p>Severity or normality? Yes. The total score ranges from 0 (normal) to 4 (life-threatening)</p>	<p><b>Standardization:</b>The authors suggest using a standard protocol like the one from <a href="#">MBSImP</a>.</p> <p><b>Ease of use:</b> Easy to learn and score. Uses the PAS, which many SLPs are familiar with. You just need buy-in from your team to standardize your bolus presentations.</p> <p><b>Training:</b> The DIGEST should be easy to score and use with any protocol, but you can still find courses <a href="#">like this one</a>.</p>	<p>It's validated for IDDSI Levels 0, 4, and 7, but many clinicians report use with all IDDSI textures.</p> <p>The DIGEST provides a safety score, an efficiency score, and a total score based on the entire VFSS.</p> <p><a href="#">DIGEST</a> isn't intended to measure the "biomechanical, kinematic, physiologic, and temporal parameters of the swallow." Instead, it's meant to quickly grade pharyngeal swallow function, useful in making broader treatment decisions with patients with head/neck cancer, etc.</p>	<p>Scoring form: <a href="#">here</a>. In <a href="#">2022</a> the authors made some changes to the scoring (but not a new form), which we explain in detail <a href="#">here</a></p> <p>More info: <a href="#">here</a> and <a href="#">here</a></p> <p>FEES Adaptation: <a href="#">here</a></p>

This download accompanies [The Informed SLP's](#) research review "[Tools of the trade: VFSS edition](#)".

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<p><b>DOSS:</b> <b>Dysphagia Outcome and Severity Scale</b></p>	<p>Functional status, oral skills, pharyngeal retention, and airway protection.</p> <p>Pathophysiology or treatment targets? No</p> <p>Severity or normality? Yes. 7 levels ranging from "Normal Swallow" to "Severe Dysphagia"</p>	<p><b>Standardization:</b> You'll need to define terms like mild, moderate, and severe for you and your coworkers, but otherwise, this tool is straightforward.</p> <p><b>Ease of use:</b> This should be quick to use and easy for other disciplines and caregivers to understand, as long as you've standardized terminology with your team.</p> <p><b>Training:</b> None that we could find.</p>	<p>This won't be the tool you reach for to select treatment targets, but since it describes functional status, the DOSS helps caregivers and other staff understand the functional impact of the patient's dysphagia.</p> <p>Some <a href="#">studies</a> have found concerns with reliability, making standardization between you and your fellow SLPs essential.</p> <p>For use with all IDDSI levels.</p>	<p>DOSS ratings (Table 1) and a report format (Table 3): both <a href="#">here</a></p> <p>Research: <a href="#">here</a> and <a href="#">here</a></p>
<p><b>MBSImP:</b> <b>Modified Barium Swallow Impairment Profile</b></p> <p><i>Ability to replay and slow down studies is needed</i></p>	<p>Oral, pharyngeal and proximal esophageal swallowing physiology.</p> <p>Pathophysiology or treatment targets? Yes. Assesses 17 physiologic components in detail.</p> <p>Severity or normality? Sort of. Higher impairment scores mean greater impairment, so you can infer a level of severity.</p>	<p><b>Standardization:</b> Training, study protocol, interpretation, and report format are all standardized.</p> <p><b>Ease of use:</b> It can be a bit time-consuming, but most SLPs are familiar with it, which helps with implementation and comparison between studies. You just need admin support for the time to interpret and write it up.</p> <p><b>Training:</b> You must complete (and renew!) their <a href="#">course</a>, which is also full of info about normal and impaired swallow function.</p>	<p>Many institutions are using the 17 physiologic components as a general outline of what we should comment on in reports, but skipping the scoring part. So analysis isn't standardized, but the reports are still comprehensive in their observations. We've all gotta start somewhere, right?</p> <p>The protocol uses thin, nectar, honey, pudding, and "solid." (Specifically, a Lorna Doone shortbread cookie. Yum.)</p>	<p>Research: <a href="#">here</a>, <a href="#">here</a>, and <a href="#">here</a></p> <p>How to use the results in treatment: <a href="#">here</a></p> <p>Certification course: <a href="#">here</a></p>



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<b>mVDS: Modified Video- fluoroscopic Dysphagia Scale</b>	<p>Subjective assessment of oral &amp; pharyngeal swallowing parameters.</p> <p><b>Pathophysiology or treatment targets?</b> Not really. For example, the tool assesses epiglottic inversion, but not <i>why</i> it might be impaired.</p> <p><b>Severity or normality?</b> A higher score indicates greater diet limitation &amp; more severe dysphagia, but there's no further interpretation guidance.</p>	<p><b>Standardization:</b> The authors of this tool don't tell us if it should be scored based on the entire study, each IDDSI level, or each bolus. There's also no operational definition of the swallowing events you're measuring, so you'd need to explicitly define these things with your coworkers for this tool to be useful.</p> <p><b>Ease of use:</b> The 0-100 score could be intuitive for clinicians and families, but you'll need to do the work to choose your own protocol and definitions for this to be useful.</p> <p><b>Training:</b> None that we could find.</p>	<p>This is a re-design of the VDS (Videofluoroscopic Dysphagia Scale) which was too ambiguous, so it <i>is</i> a step in the right direction. It's just not the easiest to implement or most information-rich tool on this list.</p> <p>You can use the mVDS with any IDDSI level; authors even used it with mixed consistencies.</p>	<p>Research: <a href="#">here</a> and <a href="#">here</a></p> <p>Tool: in Table 1 <a href="#">here</a></p>
<b>Swallowtail</b>	<p>Fully computerized measurements of swallow physiology and bolus movement.</p> <p><b>Pathophysiology or treatment targets?</b> Yes! Fully automated!</p> <p><b>Severity or normality?</b> Includes normative data for comparisons</p>	<p><b>Standardization:</b> There is a standardized procedure (which is important since it's compared to normative data), but there's also a portion in which the SLP can trial their own textures, maneuvers, etc.</p> <p><b>Ease of use:</b> Once you've purchased the software and been trained, analysis is reportedly a breeze.</p> <p><b>Training:</b> Included with the software.</p>	<p>Swallowtail's standard procedure includes thin, nectar, and a Lorna Doone cookie.</p> <p>There are specific software versions for professors and researchers as well.</p>	<p>Research: <a href="#">here</a>, <a href="#">here</a>, and <a href="#">here</a>. The Swallowtail has been used to obtain VFSS ratings in dozens of studies.</p> <p>Purchasing info: <a href="#">here</a></p>



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<p><b>VIP:</b> <b>Video-fluoroscopic Interpretation of Physiology</b></p> <p><i>Requires frame-by-frame analysis</i></p>	<p>Functionality &amp; swallow physiology, with an emphasis on timing of LVC and UES opening.</p> <p><b>Pathophysiology or treatment targets?</b> Definitely. The rating form requires clinicians to determine why airway invasion or residue occurred.</p> <p><b>Severity or normality?</b> Each swallow is rated as normal, functional, or disordered, &amp; supported with rationale. There are normal values for the timing measures, based on <a href="#">this study</a>, but the bolus type and how to use them is unclear.</p>	<p><b>Standardization:</b> The reporting form is standardized and you can create operational definitions of each physiologic event based on the required trainings, but bolus presentations are not standardized.</p> <p><b>Ease of use:</b> The VIP is a spreadsheet-based tool that you can download. You will need the time to complete the required trainings and time to complete frame-by-frame analysis to rate each bolus.</p> <p><b>Training:</b> To access VIP, you have to purchase Tiers 1 &amp; 2 of <a href="#">this training</a>. The required trainings have helpful information on both normal and abnormal swallowing, plus how to calculate the timing measures. However, you are prompted to <a href="#">register for related coursework</a> to fully understand the physiological components measured.</p>	<p>Unlike the other tools here, VIP is not published in a peer-reviewed journal. However, the tool itself is based on well-researched principles of swallowing physiology and the training is comparable to some of the others listed here.</p> <p>The downside is that we don't have VIP-specific information about reliability (<i>do you make the same assessment each time or the same assessment as your coworkers did using the tool?</i>) or validity (<i>how accurately does it describe your patient's dysphagia or predict dysphagia-related outcomes</i>). You'll particularly want to keep the reliability in mind if you're implementing the VIP across your SLP team.</p>	<p><b>Trainings and the tool:</b> All found <a href="#">here</a></p>

