

# THE VANDERBILT FATIGUE SCALE (VFS) ADMINISTRATION AND SCORING GUIDE

## Application of the VFS's

The VFS's are designed to assess listening-related fatigue in individuals with hearing loss or other communication and learning difficulties (e.g., language disorders, stuttering, reading difficulties, etc.).

This guide describes administration and scoring of the **VFS's for adults (VFS-A)** which are designed to assess listening-related fatigue in adults. There are two versions of the VFS-A.

The **VFS-A-40** is a 40-item scale that provides subscale scores for four domains of listening-related fatigue (Emotional, Social, Cognitive and Physical) and a Total score (overall listening-related fatigue). The four domains were identified as relevant to adults with hearing loss (AHL) via literature review and comments from AHL during focus group sessions that were conducted as part of the development process for the scale.

The **VFS-A-10** is a 10-item scale that provides a single, unidimensional, score reflecting overall (Total) listening-related fatigue. The small number of test items may make the VFS-A-10 useful in research and clinic settings.

The Total score from the VFS-A-40 provides more information, compared to the VFS-A-10, and may be more sensitive to differences between conditions. VFS-A-40 subscale scores may be useful for those interested in the social, cognitive, physical or emotional aspects of listening-related fatigue. However, a factor analysis based on data from 567 respondents (Hornsby, et al., 2021) did not support the concept of listening-related fatigue as a multidimensional construct. All 40 items loaded heavily onto a single factor. Despite this, there may be some cases where domain-specific information is useful. As such the VFS-A-40 allows for calculating a total score as well as subscale scores.

A suite of scales is also available to assess listening-related fatigue in children: 1) VFS-C (child self-report), 2) VFS-P (parent proxy-report) and 3) VFS-T (teacher proxy report). Additional information about these scales can be found here: <https://www.vumc.org/vfs>

## Using the Rating Scale

The respondent may read and answer the questions independently. If there are any concerns regarding a respondents reading abilities the examiner may read items aloud to the respondent.

Respondents should reflect back on the past **WEEK** (or a typical week if the past week has been very unusual) and choose the response that best describes how **often** they have felt or acted a given way during that time period or how strongly they **agree or disagree** with a given statement. Respondents should provide whole number answers (e.g. 1, 3, etc.) associated with one of the above categories. "In-between" responses cannot be used. Respondents should be encouraged to respond to each question to the best of their ability.

VFS-A-40 and VFS-A-10 items are presented with answer options on a 5-point Likert frequency scale:

<b>ANSWER OPTIONS</b>	Never/ Almost Never (0)	Rarely (1)	Sometimes (2)	Often (3)	Almost Always/ Always (4)
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In addition, a subset of items on the VFS-A-40 asks respondents to rate how strongly they agree/disagree with a given statement using a 5-point Likert agreement scale:

<b>ANSWER OPTIONS</b>	Strongly Disagree (0)	Disagree (1)	Neither Disagree Nor Agree (2)	Agree (3)	Strongly Agree (4)
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## Scoring

The **VFS-A-40** provides a Total and four subscale listening-related fatigue scores.

VFS-A-40 Subscale scores: To calculate Emotional (E), Social (S), Cognitive (C) and Physical (P) subscale scores simply sum the responses for each item in a given category. Subscale scores can range from 0 to 40.

Emotional Subscale Score = Sum of Items 10, 12, 17, 18, 20, 25, 27, 32, 36, 39.

Social Subscale Score = Sum of Items 6, 8, 9, 11, 22, 26, 34, 35, 38, 40.

Cognitive Subscale Score = Sum of Items 1, 2, 3, 7, 13, 14, 28, 29, 33, 37.

Physical Subscale Score = Sum of Items 4, 5, 15, 16, 19, 21, 23, 24, 30, 31.

VFS-A-40 Total Score: = Sum of all subscale scores. Total scores can range from 0 to 160.

The **VFS-A-10** provides a total listening-related fatigue score. The total score is obtained by simply summing the responses to each item on the scales.

## Item Response Theory (IRT) Scoring

Participant responses can also be scored using an IRT (item response theory) approach. IRT scoring is likely most useful for research purposes. We have developed statistical code for calculating IRT scale scores. The code can be implemented in the R statistical computing environment and can be found on the Vanderbilt Fatigue Scale website (<https://www.vumc.org/vfs>).

## Interpretation

The scores provide a qualitative rating of listening-related fatigue. Higher summed scores reflect **greater** listening-related fatigue. Normative data and cut-off scores for identifying respondents who may be at risk for moderate-severe listening-related fatigue, and thus potentially warrant additional follow-up, are under development.

## Contact

Please direct all questions or comments related to the VFS-A to Benjamin Hornsby, PhD., at [ben.hornsby@vumc.org](mailto:ben.hornsby@vumc.org).