Early Spark

`

Cognitive Assessment Report

Overview

This report presents a cognitive assessment based on several digital tasks and speech/sentiment analysis performed on a short audio sample. The assessment includes measures of executive function (Stroop Colour), memory (Memory Game, Image Recall), and linguistic features extracted from the provided speech sample. These metrics are analyzed to provide a preliminary overview of cognitive performance.

Metrics Explanation

* Stroop Colour: This task measures executive function, specifically the ability to inhibit cognitive interference. The score reflects the time taken or accuracy achieved when naming the color of a written word, where the word itself names a different color (e.g., the word "blue" printed in red).

* Memory Game: This task assesses short-term and working memory. The score reflects performance on a memory matching game.

* Image Recall: This task assesses visual memory and recall ability. The score reflects the number of images successfully recalled after a delay.

* Speech Metrics: These metrics quantify various aspects of speech, including timing (Total time, Total pause time), fluency (Pause density, Speech fluency), and lexical characteristics (Repeated words, Filler words, Unique words, Lexical diversity).

* Sentiment Analysis: This analysis identifies the emotional tone expressed in the speech sample, categorizing it as positive, negative, or neutral. The weighted score provides a more granular measure of overall sentiment.

Memory Game Analysis

The memory game score is 1. This suggests very poor performance on the memory matching task. This could indicate difficulties with short-term memory, attention, or visual processing. However, without knowing the specific scoring system used in the game (e.g., number of attempts, time taken), it is difficult to provide a more precise interpretation.

Image Recall

The image recall score is 3. This reflects a low number of images recalled. This could point to challenges with visual encoding, storage, or retrieval. Further assessment with standardized memory tests is recommended.

Stroop Colour

The Stroop Colour score is 43. The interpretation of this score depends on the specific scoring method used

(e.g., time to completion, number of errors). Generally, a lower score indicates better performance on the Stroop task, reflecting a stronger ability to inhibit cognitive interference. Without the specific scoring details, the meaning of a score of 43 is ambiguous. Based on internet search results, a T-score above 40 is considered within a "normal" range, but this is highly dependent on the normative data and population. It could be within normal range, or indicative of cognitive slowing or difficulties with attention and executive function if errors were high or completion time was long.

Speech Analysis

The speech analysis reveals the following:

* Total Time: 3.04 seconds. This is a very short duration of speech.
* Total Pause Time: 3.04 seconds. The entire duration is reported as pause time.
* Pause Density: 50.0%. This is a high pause density, which can sometimes be indicative of language retrieval difficulties or hesitancy in speech. However, the value seems incorrect, since the total time and total pause time are equal.
* Repeated Words: 4.0. There were 4 repeated words. This might suggest difficulty in generating novel speech, or perseveration.
* Filler Words: 0.0. No filler words were detected.
* Filler Frequency: 0.0%. This is consistent with the absence of filler words.
* Unique Words: 1.0. Only one unique word was used.
* Lexical Diversity: 16.6667%. This is a very low lexical diversity score, indicating a limited vocabulary or repetitive speech patterns.
* Speech Fluency: 67.33 words/sec. This unusually high value should be interpreted with caution due to the shortness of the analyzed audio and the presence of pauses. Furthermore, a fluency score this high is implausible given the total time and the lexical diversity. The repeated "rein" 5 times accounts for the majority of this.

The transcript "Schuh, rein, rein, rein, rein, rein." confirms the repetitive nature of the speech. The short duration, high pause density, repeated words, and low lexical diversity suggest potential difficulties with language production, word-finding, or fluency.

Sentiment Analysis

The sentiment analysis indicates a "neutral" sentiment. The weighted score of 60.637 further reinforces this classification. The probabilities indicate a very high confidence in the neutrality of the sample. The speech sample itself, consisting of repetitive, simple words, doesn't convey any particular emotion.

Heuristic Cognitive Risk Assessment

Based on these limited metrics, there are some signals of concern. The very low scores on the memory game and image recall, combined with the limited lexical diversity, high pause density (although likely inaccurate), and repetitive nature of the speech, suggest possible cognitive impairment. The Stroop score needs more context

for accurate assessment. It is important to emphasize that this is a preliminary assessment and further investigation is warranted.

Integrated Interpretation

The results of the cognitive tasks and speech analysis paint a complex picture. The low scores on the memory tasks, repetitive speech, and limited vocabulary raise concerns about possible cognitive impairment. The Stroop score requires further context. The neutral sentiment suggests the speech lacks emotional valence. The speech metrics, particularly the high pause density and low lexical diversity, are the most concerning. These findings, taken together, warrant further clinical evaluation to determine the underlying cause of these cognitive and linguistic features.

Recommendations

1. Comprehensive Neuropsychological Evaluation: A full neuropsychological evaluation is strongly recommended. This should include standardized tests of memory, attention, executive function, language, and visuospatial abilities.
2. Neurological Consultation: A consultation with a neurologist is recommended to rule out any underlying neurological conditions that may be contributing to the observed cognitive and linguistic changes.
3. Speech and Language Assessment: A referral to a speech-language pathologist for a comprehensive evaluation of speech fluency, language production, and word-finding abilities is recommended.
4. Review of Medical History and Medications: A thorough review of the individual's medical history and current medications is essential to identify any potential contributing factors.

It is a test done by AI; if the score is too high it is suggested to consult a doctor immediately, if not then also it is better to meet a doctor.

`

IMPORTANT DISCLAIMER

It is a test done by AI; if the score is too high it is suggested to consult a doctor immediately, if not then also it is better to meet a doctor.