ForeKnow

Cognitive Assessment Report

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Overview:

This report presents a cognitive assessment based on a series of tasks designed to evaluate different cognitive domains, including processing speed, memory, and executive function. The assessment incorporates game metrics and speech/sentiment analysis to provide a comprehensive overview of the individual's cognitive status. This report is intended to be shared with a healthcare provider for further clinical evaluation and interpretation.

Metrics Explanation:

* Stroop Colour: Measures the ability to inhibit cognitive interference. A higher score generally indicates better performance.
* Memory Game: Assesses short-term memory and working memory capacity. A higher score indicates better recall ability.
* Image Recall: Evaluates visual memory and recognition. A higher score represents better visual memory performance.
* Speech Metrics: These metrics quantify speech patterns, including pause time, pause density, repeated words, filler words, lexical diversity, and speech fluency. These measures can provide insights into cognitive processing speed, verbal fluency, and potential difficulties in retrieving and formulating language.
* Sentiment Analysis: This analysis evaluates the emotional tone of the speech samples, providing insights into mood and emotional expression.

Memory Game Analysis:

* Score: 4
* Interpretation: The memory game score of 4 suggests a potential area of concern regarding short-term memory and working memory capacity. This score could reflect difficulty in encoding, storing, or retrieving information.
* Considerations: Factors such as attention, motivation, and test anxiety can influence performance on memory tasks. Further evaluation is recommended to determine the underlying cause of the low score.

Image Recall:

* Score: 28
* Interpretation: An image recall score of 28 suggests adequate visual memory and recognition abilities.
* Considerations: Normal visual memory is a vital ability and it is important in the context of other scores

Stroop Colour:

* Score: 190

* Interpretation: The Stroop Colour score of 190 suggests average to above-average performance in cognitive processing speed and the ability to inhibit cognitive interference.

* Considerations: The Stroop test measures executive functions, particularly the ability to suppress automatic responses and focus on relevant information. Factors like attention and concentration can influence the Stroop score.

Speech Analysis:

The speech metrics are analyzed across two audio files.

* Total time: 29.88s (File 1), 21.8s (File 2)

* Total pause time: 27.9s (File 1), 20.22s (File 2)

* Pause density (%): 48.29% (File 1), 48.12% (File 2)

* Interpretation: A high pause density in both files suggests potential hesitations or difficulties in formulating speech. This could be indicative of cognitive slowing or word-finding difficulties.

* Repeated words: 25 (File 1), 20 (File 2)

* Interpretation: The number of repeated words is relatively high, indicating potential difficulty with verbal fluency and may suggest some cognitive effort in speech production.

* Filler words: 0 (File 1), 5 (File 2)

* Interpretation: The presence of 5 filler words in the second file, while not excessively high, could point to moments of hesitation or uncertainty during speech.

* Unique words: 23 (File 1), 11 (File 2)

* Lexical diversity (%): 35.94% (File 1), 24.44% (File 2)

* Interpretation: The lexical diversity is lower in File 2 compared to File 1, indicating a reduced range of vocabulary. This could suggest a narrowing of expressive language abilities.

* Speech fluency (words/sec): 40.72 (File 1), 37.13 (File 2)

* Interpretation: Speech fluency is slightly reduced in the second file.

Sentiment Analysis:

* Sentiment per file: The sentiment analysis indicates a positive sentiment in both files, with weighted scores of 80.52 and 68.70.

* Combined sentiment: The combined sentiment is also positive, with a weighted score of 80.18.

* Interpretation: The consistently positive sentiment suggests a generally positive emotional state. However, sentiment analysis should be interpreted cautiously, as it may not always accurately reflect underlying cognitive processes.

Heuristic Cognitive Risk Assessment:

Based on the provided metrics, particularly the memory game score, the speech analysis findings (high pause

density, repeated words, and reduced lexical diversity in File 2), and considering the individual's age, a moderate level of cognitive risk may be present. Further clinical evaluation is warranted to determine the underlying cause of these findings.

Integrated Interpretation:

The combination of cognitive game scores and speech/sentiment analysis provides a multifaceted view of the individual's cognitive functioning. While the Stroop Colour score indicates adequate executive function and the image recall score is normal, the low memory game score and speech patterns raise some concerns. The high pause density, repeated words, and reduced lexical diversity in File 2, although subtle, could be early indicators of cognitive decline or other underlying conditions. The positive sentiment is a good indicator, but does not rule out cognitive issues.

Recommendations:

1. Consultation with a Healthcare Provider: It is strongly recommended that the individual consult with a healthcare provider for a comprehensive neurological examination and cognitive assessment.
2. Further Cognitive Testing: Additional cognitive tests, such as the Montreal Cognitive Assessment (MoCA) or the Mini-Mental State Examination (MMSE), may be helpful in further evaluating cognitive function.
3. Speech and Language Evaluation: A speech and language evaluation may be beneficial to assess verbal fluency, language comprehension, and speech production skills.
4. Consideration of Other Factors: It is important to consider other factors that may influence cognitive function, such as medical conditions, medications, lifestyle factors, and psychological well-being.

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.