SpeechDx
Unlocking Alzheimer's Disease through Voice-Based Biomarkers

Alzheimer's Drug Discovery Foundation

# SpeechDx: A Longitudinal Harmonized Speech Dataset for Alzheimer's Disease Biomarker Development

## What if speech could unlock early detection and prediction of Alzheimer's disease?

Early symptoms of Alzheimer's can be subtle and mistaken for normal age-related cognitive changes. While many people and their families may not recognize the signs as indicative of a serious cognitive disorder, early detection or even prediction of future decline can result in better quality of life and more effective treatment for those with Alzheimer's disease.

The key to unlocking early diagnosis of Alzheimer's disease may lie in our speech. Ongoing advances and research have shown that subtle changes in speech patterns may precede noticeable cognitive symptoms. Furthermore, the ubiquity of smartphones, tablets and smart-home devices offers the potential to capture speech data that could be used to predict or monitor cognitive decline passively and securely without the need for a visit to the doctor's office or invasive testing.

### About the SpeechDx Study

- Multi-site, observational study of ~2,000 – 3,000 participants across several global clinical sites for 3 years
- Participants are diverse, well-characterized, and span the brain health spectrum.
- Each participant provides high-quality speech data quarterly that is paired with in-depth clinical and biomarker data and harmonized across SpeechDx partner sites.
- Data will begin to be shared with biomarker development partners starting in 2025

## SpeechDx is working to enable prognostic speech biomarkers

SpeechDx aims to facilitate the development of speech-based biomarkers for Alzheimer's disease and related dementias (ADRD). We are building a broad and deep dataset of speech data across multiple languages collected longitudinally from well-characterized individuals. This initiative will provide researchers with high-quality, longitudinal, harmonized voice and clinical data to develop early and accurate prognostic technology for ADRD.

SpeechDx is an initiative of the Diagnostics Accelerator (DxA), a research initiative dedicated to accelerating the development of affordable and accessible biomarkers to diagnose ADRD. The DxA is a partnership of funders including ADDF Co-Founder Leonard A. Lauder, Bill Gates, Jeff Bezos, MacKenzie Scott, the Dolby family, the Charles and Helen Schwab Foundation, The Association for Frontotemporal Degeneration, among others, to develop novel biomarkers for the early detection of Alzheimer's disease and related dementias.

**Speech-based biomarkers for Alzheimer's disease offer several exciting possibilities:**

- Prediction of future cognitive decline
- Early detection
- Large-scale screening
- Tracking disease progression
- Non-invasive
- Cost-effective
- Personalized medicine

**Using speech data as an early disease biomarker is complex due to:**

- Speech variability (age, gender, etc.)
- Privacy and ethical concerns
- Integration with clinical data
- Validation and clinical utility challenges
- Cultural and language differences

Scan QR code to learn more about becoming a SpeechDx partner

**Visit https://www.alzdiscovery.org/speechdx to learn more**

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