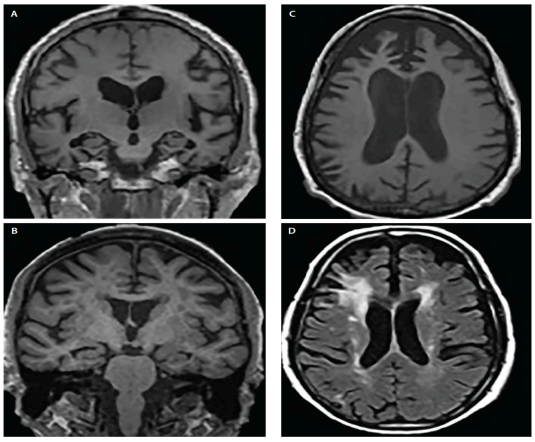

Context

Alzheimer's disease, a leading cause of death in the United States, is projected to affect nearly 14 million people by 2060[2]. As the disease progresses, it causes significant brain atrophy, with neurons deteriorating and brain volume shrinking, which is observable through MRI imaging. MRI scans are essential for detecting these changes and assessing the severity of cognitive decline at different stages, from preclinical to severe[2]. Accurate staging is crucial for clinical trials, such as those for *ALEZOYA*, a new drug developed by Biogen, as the drug's effectiveness depends on administering the correct dosage based on the stage of the disease. To ensure appropriate participant selection and minimize false positives, a classification model using MRI data can be employed to distinguish between different levels of brain impairment. This approach will help identify patients in the appropriate stages for inclusion in the trial, ultimately aiding in the development of *ALEZOYA* as a potential treatment for Alzheimer's.

Task:
You are a recently hired Biotechnologist at Biogen placed on the *ALEZOYA* research and development team. You have been tasked to classify stages of Alztiemers and MCI(very mild impairment), mild impairment, moderate impairment. You are going to present at Alzheimer's Drug Discovery Foundation (ADDF) on how well your model works at classifying Alzteimers patient impairment.

Prompt:
Build a classification model that when fed MRI images can classify them into very mild impairment, mild impairment and moderate impairment. Then, present to Biogen *ALEZOYA* R&D team.

References:

[1]"Clinical Trials | Biogen," *Biogen.com*, 2023. https://www.biogen.com/science-and-innovation/clinical-trials.html (accessed Dec. 09, 2024).

[2]CDC, "About Alzheimer's," *Alzheimer's Disease and Dementia*, 2024. https://www.cdc.gov/alzheimers-dementia/about/alzheimers.html