

Alzheimer project documentation

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Patient Information

Patient ID

- **PatientID:** A unique identifier assigned to each patient (4751 to 6900).

Demographic Details

- **Age:** The age of the patients ranges from 60 to 90 years.
- **Gender:** Gender of the patients, where 0 represents Male and 1 represents Female.
- **Ethnicity:** The ethnicity of the patients, coded as follows:
 - 0: Caucasian
 - 1: African American
 - 2: Asian
 - 3: Other
- **EducationLevel:** The education level of the patients, coded as follows:
 - 0: None

- 1: High School
- 2: Bachelor's
- 3: Higher

Lifestyle Factors

- **BMI:** Body Mass Index of the patients, ranging from 15 to 40.
- **Smoking:** Smoking status, where 0 indicates No and 1 indicates Yes.
- **Alcohol Consumption:** Weekly alcohol consumption in units, ranging from 0 to 20.
- **Physical Activity:** Weekly physical activity in hours, ranging from 0 to 10.
- **Diet Quality:** Diet quality score, ranging from 0 to 10.
- **Sleep Quality:** Sleep quality score, ranging from 4 to 10.

Medical History

- **FamilyHistoryAlzheimers:** Family history of Alzheimer's Disease, where 0 indicates No and 1 indicates Yes.
- **Cardiovascular Disease:** Presence of cardiovascular disease, where 0 indicates No and 1 indicates Yes.
- **Diabetes:** Presence of diabetes, where 0 indicates No and 1 indicates Yes.
- **Depression:** Presence of depression, where 0 indicates No and 1 indicates Yes.
- **Head Injury:** History of head injury, where 0 indicates No and 1 indicates Yes.
- **Hypertension:** Presence of hypertension, where 0 indicates No and 1 indicates Yes.

Clinical Measurements

- **Systolic:** Systolic blood pressure, ranging from 90 to 180 mmHg.
- **Diastolic:** Diastolic blood pressure, ranging from 60 to 120 mmHg.
- **Cholesterol Total:** Total cholesterol levels, ranging from 150 to 300 mg/dL.
- **Cholesterol:** Low-density lipoprotein cholesterol levels, ranging from 50 to 200 mg/dL.
- **Cholesterol:** High-density lipoprotein cholesterol levels, ranging from 20 to 100 mg/dL.
- **Cholesterol Triglycerides:** Triglycerides levels, ranging from 50 to 400 mg/dL.

Cognitive and Functional Assessments

- **MMSE:** Mini-Mental State Examination score, ranging from 0 to 30. Lower scores indicate cognitive impairment.

- **Functional Assessment:** Functional assessment score, ranging from 0 to 10. Lower scores indicate greater impairment.
- **Memory Complaints:** Presence of memory complaints, where 0 indicates No and 1 indicates Yes.
- **BehavioralProblems:** Presence of behavioural problems, where 0 indicates No and 1 indicates Yes.
- **ADL:** Activities of Daily Living score, ranging from 0 to 10. Lower scores indicate greater impairment.

Symptoms

- **Confusion:** Presence of confusion, where 0 indicates No and 1 indicates Yes.
- **Disorientation:** Presence of disorientation, where 0 indicates No and 1 indicates Yes.
- **Personality Changes:** Presence of personality changes, where 0 indicates No and 1 indicates Yes.
- **DifficultyCompletingTasks:** Presence of difficulty completing tasks, where 0 indicates No and 1 indicates Yes.
- **Forgetfulness:** Presence of forgetfulness, where 0 indicates No and 1 indicates Yes.

Diagnosis Information

- **Diagnosis:** Diagnosis status for Alzheimer's Disease, where 0 indicates No and 1 indicates Yes.

Confidential Information

- **Doctor In Charge:** This column contains confidential information about the doctor in charge, with "XXXConfid" as the value for all patients.

Questions:

1. Demographic Details:

- What is the probability that a randomly selected patient is Female?
- Given that a patient is African American, what is the probability that they have a Bachelor's degree or higher?

2. Lifestyle Factors:

- What is the probability that a patient has a BMI greater than 25?
- If a patient is a smoker, what is the probability that they also consume alcohol?

3. Medical History:

- What is the probability that a patient has a family history of Alzheimer's Disease and also has hypertension?
- If a patient has depression, what is the probability that they also have diabetes?

4. Clinical Measurements:

- What is the probability that a patient has systolic blood pressure between 120 and 140 mmHg?
- Given that a patient has LDL cholesterol levels above 130 mg/dL, what is the probability that their HDL cholesterol levels are below 40 mg/dL?

5. Cognitive and Functional Assessments:

- What is the probability that a patient has a MMSE score below 25?
- If a patient has memory complaints, what is the probability that they also have behavioural problems?

6. Symptoms:

- What is the probability that a patient experiences confusion and disorientation?
- Given that a patient has difficulty completing tasks, what is the probability that they also have personality changes?

These questions can help you explore relationships and probabilities within your dataset, providing insights into various aspects of patient characteristics and health outcomes. Adjust the questions based on specific hypotheses or areas of interest in your analysis.