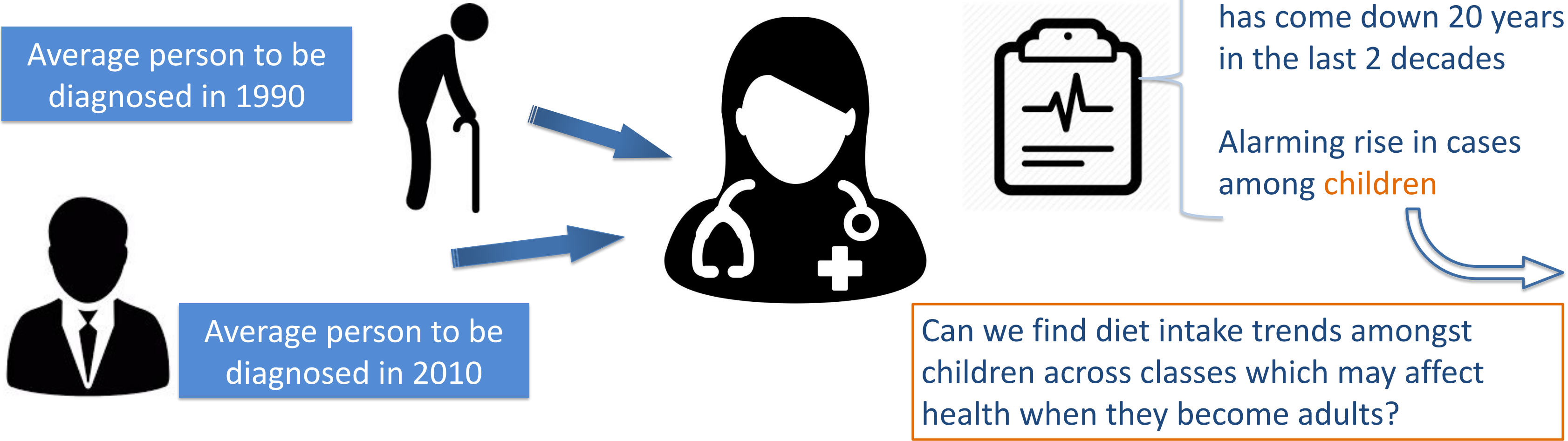


Dietary trends among children from various financial classes

Prakash Dontaraju

March, 2018

Incidence of Diabetes



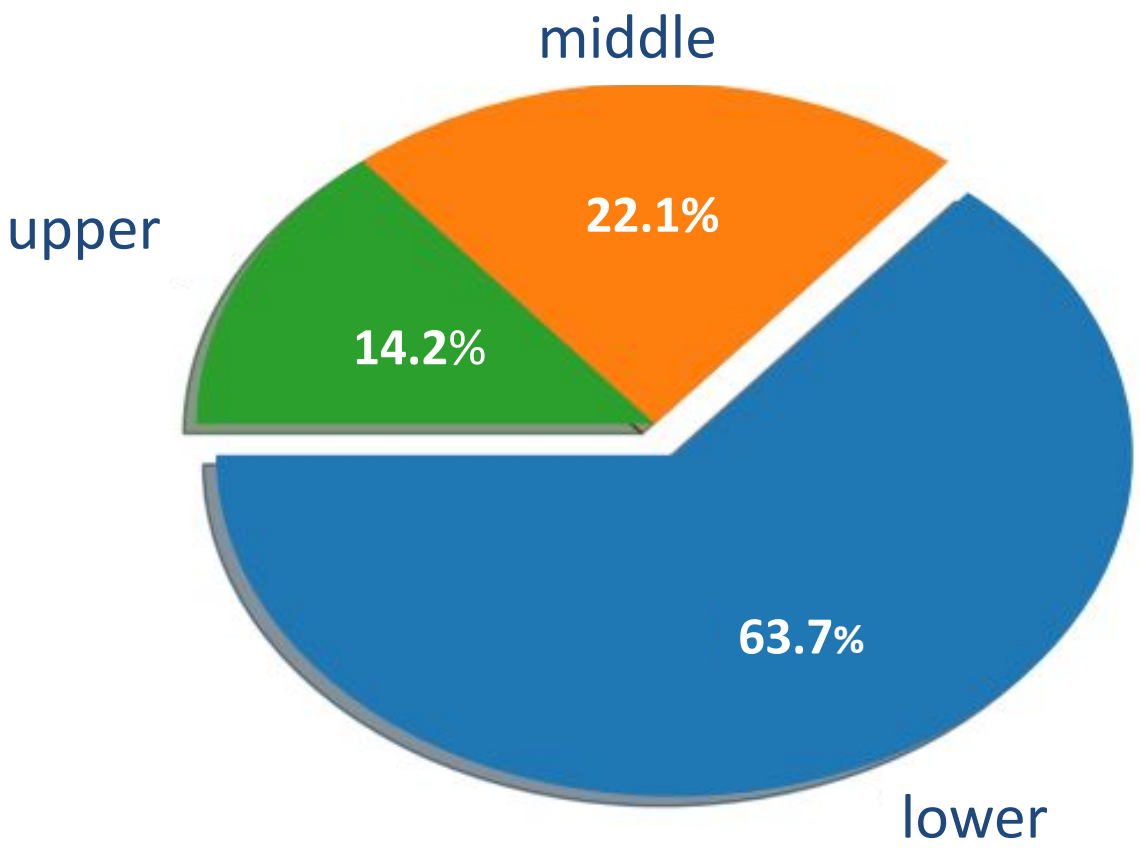
- Changes in lifestyle
- Lack of physical activity
 - Irregular sleeping patterns
 - **Imbalanced Diet**
 - **Macronutrients**
 - **Micronutrients**

Dietary Data:
National Health and Nutrition Examination Survey (NHANES) over 12 years [1999-2011]

Workflow

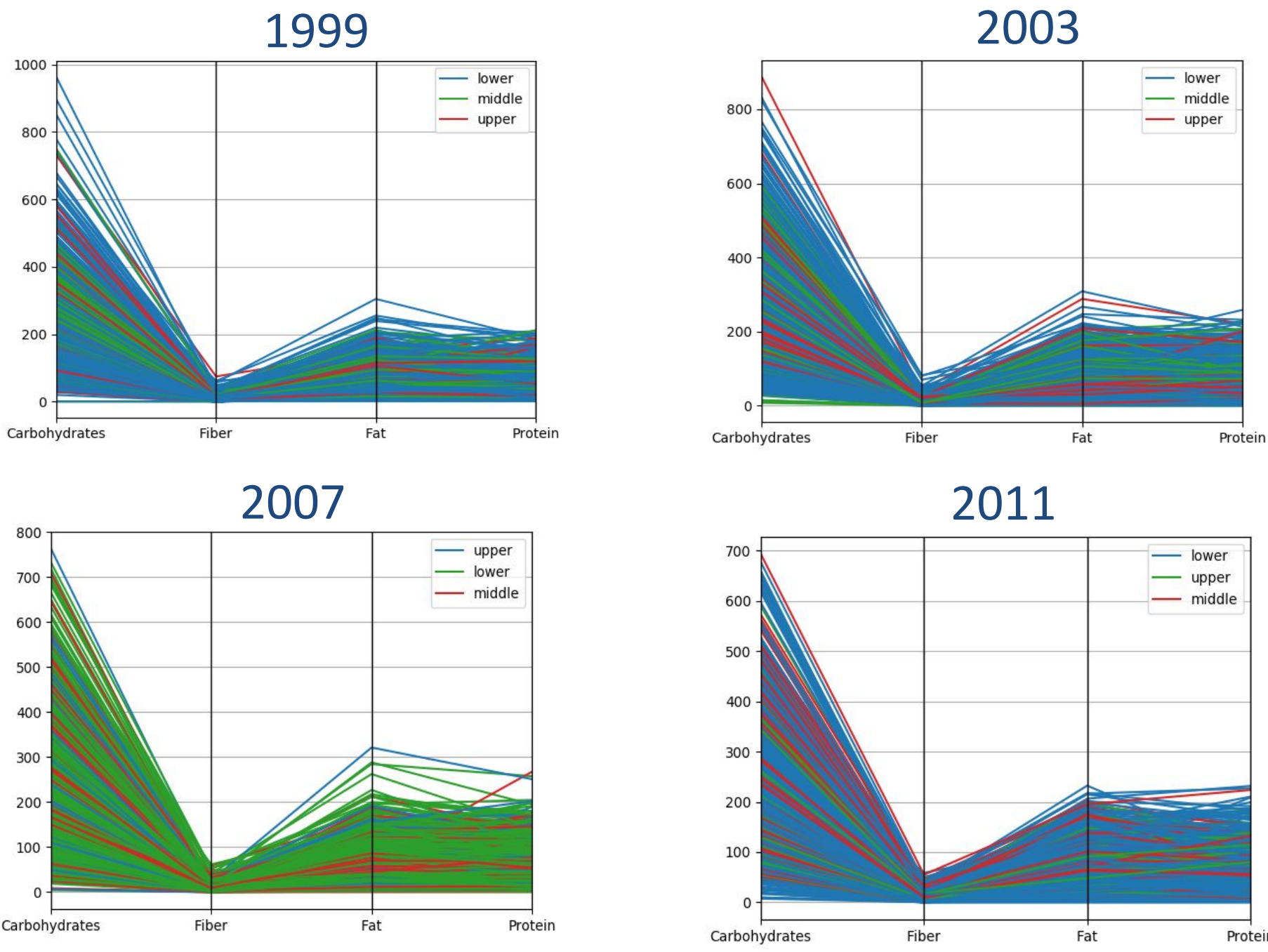


Class Wise Children Distribution



Clustering and Trend Analysis

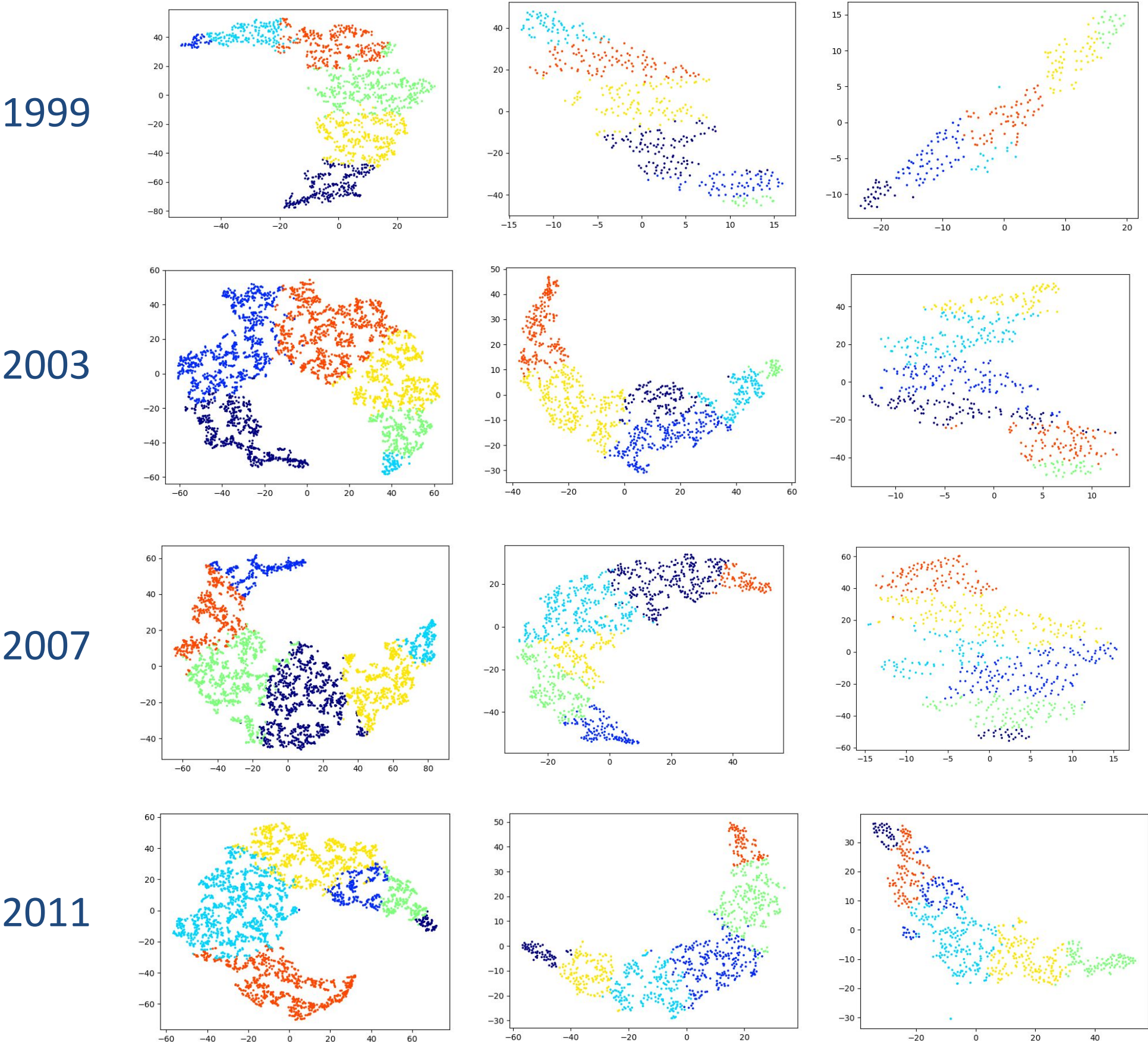
Representation of per day nutrient intake in (g) across classes



- Carbohydrate consumption → significantly high
- Fiber consumption → extremely low
- Average carb consumption per day has been decreasing over the years

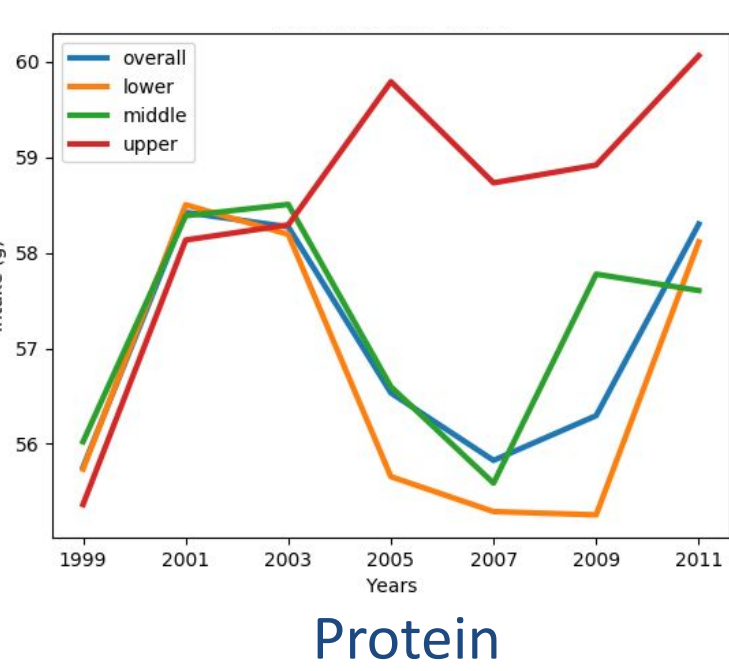
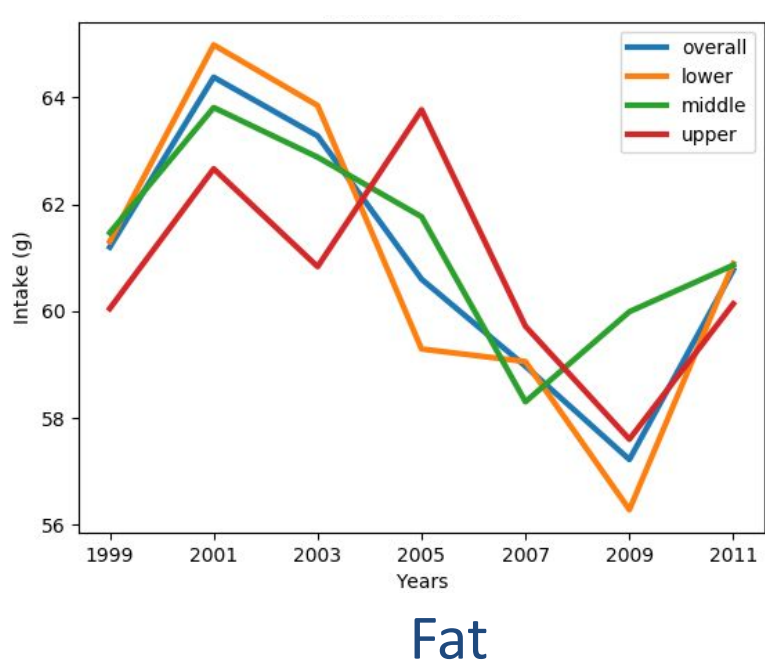
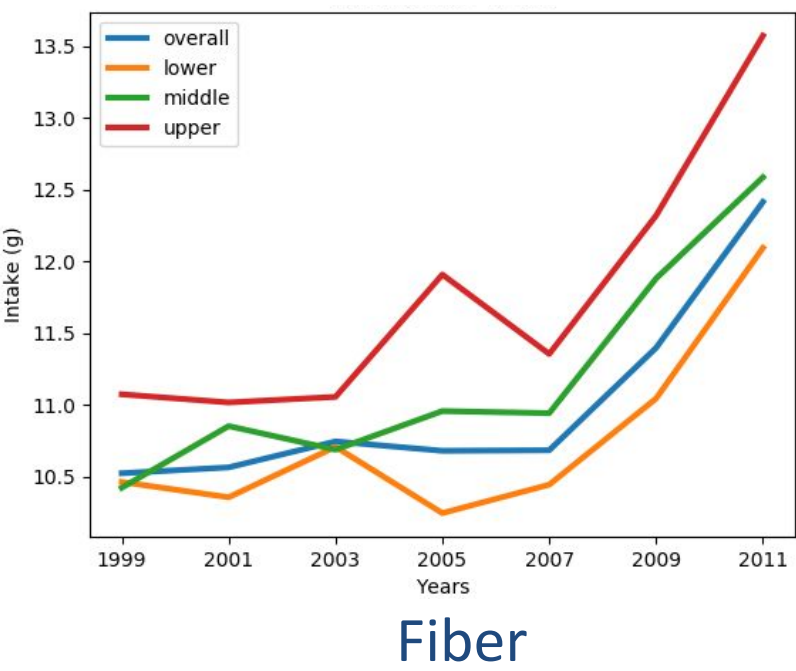
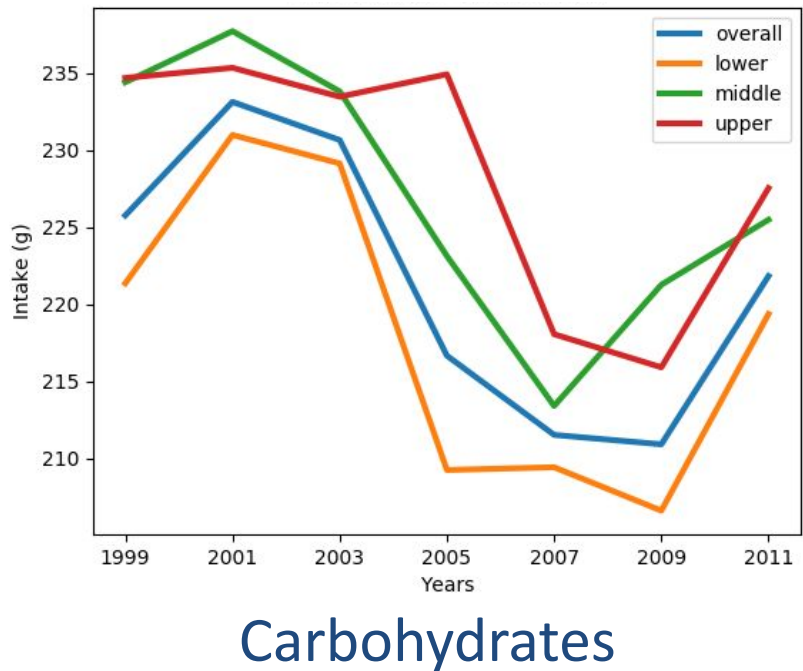
Clustering using K-Means

- K yields the least within set sum of squares error (WSSSE) → 6
- Distance metric → Euclidean
- 6 clusters correspond the 6 sections of ipr values ranging from 1 → 6
- Clusters generated are 2D depictions of 4D information



Few Insights

- Food intake irrespective of financial class is carbohydrate dominant
- High carb intake may be due to the increase in junk and soda intake among children.
- The overall mean dietary intake is close to lower financial class behavior because they form the majority in the dataset



Class Wise Nutrient Intake Trend (1999-2011)

- Upper financial classes consume higher quantities of macronutrients
- They outperform other classes especially in fiber and protein intake
- This may be due to greater diet awareness and also a superior educational background.
- Lower financial class fall behind other classes in overall macronutrient consumption and have the highest possibility of diabetes diagnosis
- This may unfortunately be due to lack of access to healthy food and quality education