

# Data Type in Healthcare

Healthcare generates a massive amount of data, which can be categorized into **structured** and **unstructured** data. Understanding these data types is essential for efficient data mining, AI-driven healthcare applications, and clinical decision-making.

## 1. Structured Data in Healthcare

Structured data refers to **highly organized, well-formatted data** that fits into predefined categories or databases (like spreadsheets or SQL databases).

This data type is easy to store, search, and analyze using traditional data mining techniques.

## 2. Unstructured Data in Healthcare

Unstructured data refers to **free-form** (text, images, audio), **non-tabular data** that does not follow a specific format.

It is difficult to organize but contains valuable insights that can be extracted using **natural language processing (NLP)** and **AI**.

### Notes:

**Structured Data** is easier to analyze and mainly used in hospital management, billing, and patient records.

**Unstructured Data** contains rich insights but requires **AI techniques** for analysis, such as image processing and NLP.

## Observational Data in Healthcare

Observational data is crucial in healthcare because it helps us **understand diseases, identify risk factors, and improve patient care** without conducting experiments.

- ✓ **Finds Risk Factors for Diseases** (e.g., smoking and lung cancer)
- ✓ **Improves Public Health Policies** (e.g., tracking COVID-19 cases)
- ✓ **Helps in Predictive Analytics** (e.g., predicting heart attack risks from patient history)