

Data Mining in Healthcare

What is Data Mining?

Data mining is the process of analyzing large amounts of data to find useful patterns and relationships. Data mining in healthcare helps uncover hidden patterns in medical data, enabling early disease detection, personalized treatment, and efficient resource allocation.

Types of Research Questions in Detail

When conducting research, different types of questions guide how data is collected and analyzed.

- Descriptive Research Questions
- Exploratory Research Questions
- Inferential Research Questions
- Predictive Research Questions
- Causal Research Questions
- Deterministic Research Questions

Research Type	Purpose	Example Question	Data Mining Method
Descriptive	What is happening?	What are the most common symptoms of diabetes in patients over 40?	Data visualization, frequency analysis
Exploratory	What new insights can we find?	Are there unknown genetic factors linked to diabetes risk?	Clustering, anomaly detection
Inferential	What can we conclude about a population?	Does a low-carb diet reduce blood sugar levels in diabetic patients?	Statistical analysis, hypothesis testing
Predictive	What will happen?	Can AI predict which patients are at high risk of developing diabetes?	Machine learning, regression
Causal	Why is something happening?	Does a sedentary lifestyle directly contribute to diabetes?	Causal inference, controlled experiments
Deterministic	What will always happen?	Will insulin deficiency always lead to high blood sugar?	Rule-based models, medical simulations