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# **Module 3 Lecture - Biopsychology**

Introductory Psychology

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# 1 Overview and Introduction

## 1.1 Textbook Learning Objectives

- Explain how scientific research addresses questions about behavior
- Discuss how scientific research guides public policy
- Appreciate how scientific research can be important in making personal decisions
- Describe the different research methods used by psychologists
- Discuss the strengths and weaknesses of case studies, naturalistic observation, surveys, and archival research
- Compare longitudinal and cross-sectional approaches to research
- Compare and contrast correlation and causation
- Explain what a correlation coefficient tells us about the relationship between variables
- Recognize that correlation does not indicate a cause-and-effect relationship between variables
- Discuss our tendency to look for relationships between variables that do not really exist
- Explain random sampling and assignment of participants into experimental and control groups
- Discuss how experimenter or participant bias could affect the results of an experiment
- Identify independent and dependent variables
- Discuss how research involving human subjects is regulated
- Summarize the processes of informed consent and debriefing
- Explain how research involving animal subjects is regulated

## 1.2 Instructor Learning Objectives

- Understand the critical role research plays in solidifying psychology as a science
- Understand the pitfalls and dangers of unethical research
- Be able to identify the core components and features of a described research design

### **1.3 Introduction**

## **2 Human Genetics**

### **2.1 Introduction**

### **2.2 Genetic Variation**

### **2.3 Gene-Environment Interactions**

## **3 Cells of the Nervous System**

### **3.1 Introduction**

### **3.2 Neuron Structure**

### **3.3 Neuronal Communication**

### **3.4 Neurotransmitters and Drugs**

## **4 Parts of the Nervous System**

### **4.1 Introduction**

### **4.2 Peripheral Nervous System**

## **5 The Brain and Spinal Cord**

### **5.1 Introduction**

### **5.2 The Spinal Cord**

### **5.3 The Two Hemispheres**

### **5.4 Forebrain Structures**

### **5.5 Lobes of the Brain**

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*"I don't mind not knowing. It doesn't scare me." — Richard P. Feynman*

### **5.6 Other Areas of the Forebrain**