

**1. Scientific Method**

From class and the reading *2.1 The Science of Nutrition:*

* From Figure 1 The Scientific Method, complete the following steps of the scientific method.
  + Observe and \_\_research\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Hypothesis
  + Conduct \_experiments\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Draw \_\_conclusion\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Determine if \_\_\_hypothesis\_\_\_\_\_\_\_\_\_\_ supported or not supported
  + Report result
* What is the difference between a hypothesis and a theory? Theory has been repeatedly tested
* Describe epidemiology – patterns of health in populations
* What is the definition of observational research? No cause and effect just observation
* How does experimental research differ from observational research? Has control group and doing an experiment
* Why are laboratory experiments conducted on animals and cells often used in nutrition research? What are the concerns with animal and cell studies? Less cost, less time, more control, not human

From the video *Matters of Life and Death* about Joseph Goldberger and pellagra:

* What observations did Joseph Goldberger initially make regarding pellagra? He saw the foods he was eating it was very bland not vitamin b
* After making these observations, what was Joseph Goldberger’s hypothesis? Not good enough diet
* What type of study was used when Joseph Goldberger observed differences in those who had pellagra and those who did not have pellagra? Observation reasearch
* What type of study was used when Joseph Goldberger changed the dietary intake of the prisoners to corn-based meals?

**Terms to Know**

Hypothesis

Theory

Peer-review

Observational research

Epidemiology

Correlation - relation

Cause and Effect

Experimental research

Experimental group

Control group

Placebo

Placebo Effect

Single-blinded

Double-blinded

Randomization

Confounding variables

**2. Strength of the Evidence**

From class, the video *The Danger of Mixing up Causality and Correlation*, and the reading *Some thoughts about Causality vs. Association:*

* Why doesn’t correlation mean causation? Theres a relation

From class and the reading *2.2 Evaluating Strength of the Evidence from Scientific Studies*:

* Are the results from laboratory nutrition studies conducted on animals and cells considered strong evidence for human nutrition? Why/Why not? No
* Which of the following types of studies can begin to indicate cause and effect for humans?

|  |  |
| --- | --- |
| Laboratory studies | Yes  No |
| Observational studies | Yes  No |
| Experimental studies | Yes  No |

* Complete the following table using Figure 3 Evaluating the Strength of the Evidence.

|  |  |
| --- | --- |
| **Type of Evidence** | **Strength of Evidence** |
| Anecdotal, Opinion  Poorly Designed Study  Single Study  Small studies | weak |
| Well-designed Observational or  Epidemiological Studies that have  consistent results | Moderate |
| Well-designed, Large, Randomized,  Double-blinded, Placebo-controlled  Studies that have consistent results | Strong |

**Number of Studies and Consistency of Findings**

From class and the reading *2.2 Evaluating Strength of Evidence from Scientific Studies*.

* What four questions can you ask to help determine the strength of the evidence?
  + Is the evidence quantifiable
  + Is it the correct population
  + Were there proper controls
  + Were the results interpreted accurately
* Are the results from a single study enough to develop a theory? No needs to be tested multiple times
* Why is the consistency of findings an important consideration when determining the strength of the evidence?
* *Question to Ponder*: Would you change your dietary intake based on information from one research study? Why/Why not

**Quality of the research design**

From class and the American Cancer Society’s webpage *Placebo Effect*:

* Why is it important to control for the placebo effect in clinical trials?

From class and the reading in section on *Experimental Research* in *2.1 The Science of Nutrition*

* Why does a well-designed experimental study require both a control and an experimental group?
* Why does a double-blind study minimize the placebo effect?

**3. Evaluating Nutrition Information**

From class, the reading *2.3 Using Eyes of Discernment,* and the article *Nutrition Misinformation: How to Identify Fraud and Misleading Claims*

* What are the red flags for nutrition misinformation?
* What are the ways you can develop discerning eyes when reading or hearing nutritional news?
* What types of sources usually provide reliable nutrition information?
* What are the educational and professional requirements to become a Registered Dietitian Nutritionist (RDN)? (Refer to *What is a Registered Dietitian Nutritionist?* website)
* *Question to ponder:* Why is information in advertisements likely to be exaggerated or inaccurate?

From class, the video *How to File a Complaint with the Federal Trade Commission*, and the reading *2.3 Using Eyes of Discernment: Federal Trade Commission*:

* What is the role of the Federal Trade Commission? Protects consumers antitrust laws

**4. Week 2 Assignment – Two Types of Knowledge**

From the week 2 assignment and the reading *3.4 2020-2025 Dietary Guidelines for Americans*:

* What is the purpose of the Dietary Guidelines for Americans 2020-2025?
* What are the four overall guidelines from the 2020-2025 Dietary Guidelines for Americans?