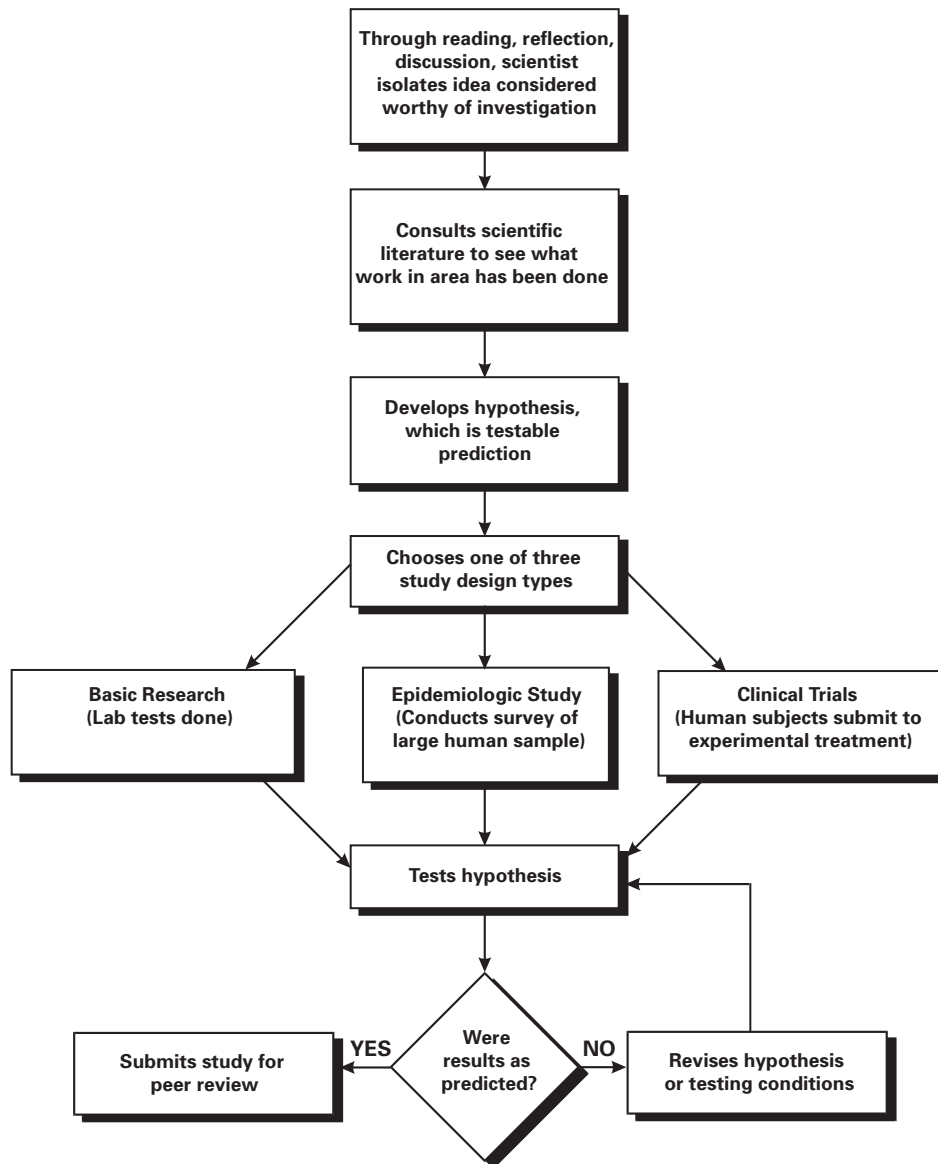


Chapter 4

Food Science & Technology

Understanding Scientific Theories

Directions: As noted in Chapter 4 of the textbook, new claims about foods and nutrition seem to appear almost daily. The chapter notes further that the most reliable claims are those developed by scientists and backed by evidence. Yet, how do scientists ensure that their findings are reliable before passing them along to the public? Fortunately, there is a long-standing method for ensuring that claims are supportable. The flowchart below shows this method. Study this chart. Then answer the questions under *Thinking Critically*, and complete the activities as directed by your teacher.



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Thinking Critically

1. Why do you think scientists consult the literature in their field after developing an idea?

2. Which of the three study designs mentioned do you think might take the most time to develop? Explain your reasoning.

3. Epidemiologic studies in nutritional health have been done to investigate the connection between eating habits and heart disease. Why might this have been a more appropriate choice for a study design than either of the other two possibilities? What might be the limitations of this type of study?

4. Basic research might be chosen for which type of food-related research design? For which type of research design might scientists conduct clinical trials?

For Further Study

- ◆ The flowchart stops at the peer review stage—a point in research when the results of a study are presented to fellow scientists. An idea may go through several other stages, including submission of an article to a professional journal, before it finally reaches the public. Using print or on-line resources, investigate these next few steps. Use your findings to complete the flowchart.
- ◆ Find a newspaper or magazine article reporting a scientific study in the area of food or nutrition. Choose an article that mentions the journal in which the study was published. Locate a copy of the journal, and skim one or two articles as well as the table of contents. (Many of these are now published on the Internet.) Assuming the newspaper article is accurate in its reporting, what does the article reveal about the knowledge foods and nutrition journalists need? Express your opinion in a brief essay and submit it to your teacher for review.