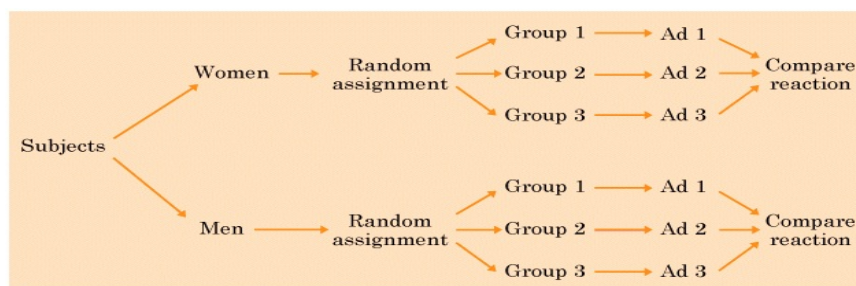


1. What question did the **Physician's Health Study** attempt to answer?
  - (a) Are sexually transmitted diseases more pervasive among certain income classes?
  - (b) Is there a relationship between the drug Memantine and Alzheimer's disease?
  - (c) Does taking aspirin reduce the chance of heart attacks?
  - (d) Which groups of males are more susceptible to prostate cancer?
  
2. To study exercise and bone loss, a researcher recruits 1,000 post-menopausal women, of various ethnicity, who exercise regularly. She matches each woman with a similar post-menopausal woman who does not exercise regularly. She monitors both groups and records the amount of bone loss after 5 years. What is **response variable** measured in this situation?
  - (a) whether or not women are in the post-menopausal stage.
  - (b) exercise
  - (c) ethnicity
  - (d) amount of bone loss
  
3. Your textbook describes an experiment to compare the effectiveness of three television commercials for the same product. The following design appears in your text:



- Which experimental design best describes this experiment?
- (a) completely randomized design
  - (b) randomized block design
  - (c) matched pairs design
  - (d) Latin-square design
- 
4. What are the three basic principles of **experimental design**?
    - (a) bias, non-response, and undercoverage
    - (b) power, variability, and consistency
    - (c) extrapolation, lack of realism, and stratification
    - (d) control, randomization, and replication

5. The drug AZT was the first drug that seemed to be effective in delaying the onset of AIDS. Evidence for AZT's effectiveness was sought in a moderately large randomized clinical trial. The subjects were 1,000 volunteers who were infected with HIV, the virus that causes AIDS, but did not yet have AIDS. The researchers in the study assigned 500 subjects (at random) to take a certain dose of AZT each day, and the other 500 patients to take a placebo. We consider these patients to be a **random sample** from all patients with HIV (who have not yet developed AIDS).

At the end of the study, 50 of the placebo subjects and 30 of the AZT subjects had developed AIDS.

(a) Is this an experiment or an observational study? Explain!

(b) The study revealed that there is a **significant difference** in the proportions of patients that develop AIDS. What does the term "significant difference" mean?