(a) There are various ways to randomize an experiment aimed at determining the impact of the new cholesterol-reducing drug on subjects versus the drug currently being marketed by the competition. One way is to assign a number to each of the human subjects and then use a random number generator software program to assign the subjects to one of the two groups. As mentioned, one group is the competitor’s drug therapy and the second group is the drug being researched. In this way, bias is reduced although the impact of chance assignment remains.

(b) The experimental design could be improved by incorporating blocking. The subjects can be separated into two different groups based on whether they do or do not exercise. This will create groups that have a similar characteristic that is expected to impact the result. Each group will randomly be assigned to either the marketed drug or the drug undergoing the research. With this design, the variable of exercise will be reduced in the results. There are different levels of exercise but this study will at least mitigate the impact.

(c) This experiment should be carried out in a double-blind manner. Both the test subjects as well as the individuals administering the treatment should not know which drug is being administered to each individual test subject. If the test is not double-blind, the researchers could unduly bias the outcome in favor or their drug over that of the competition.