My report is on the article “New Setback for Avastin as Breast Cancer Treatment” by Andrew Pollack, which appeared in the *New York Times* on December 8, 2011. In this article Pollack discusses the use of “Avastin as a treatment for metastatic breast cancer” (Pollack, 2011). The outcome of the latest trial barely missed being statistically significant.

The article reports that those “who received Avastin the median time before tumors worsened or the patient died” extended about three months. This three month extension barely misses being statistically significant, which means that an alternative hypothesis was not accepted. In this case, the alternative was the following:

\[ H_A: \text{women in the treatment group gained a longer median time before tumors worsened or they died than did women taking the placebo.} \]

The null would be the following:

\[ H_O: \text{women in the treatment group and the placebo group had about the same median time before tumors worsened or they died.} \]

A report that misses being statistically significant does not imply that we could reject \( H_O \) with an FPR of 0.05 or less. This means that we have an FPR greater than 0.05. Since the FPR is not small, this hypothesis is considered wrong.

Statistical significance is when the FPR from a test or experiment is less than 0.05. This means that the test decides on the positive \( H_A \) outcome when the negative \( H_O \) outcome is actually true. Practical significance is when people actually care about the results of a study. This means that even if a test has statistical significance, then it still could not be significant in the way of what people care about.

In this article, the author tells us that the Avastin drug does not lengthen the median time before tumors worsen or death happens enough to have a statistical significance. The control
group has a 13.7 month median time, and the test group was found to have a 16.5 month median time. This three month difference is too short of a time to make a substantial effect on the quality of life or lengthening it. In this particular case, the practical significance is most likely low because the statistical significance is low. Since this study was meant to help breast cancer patients, the practical significance would be extremely high if the results had statistical significance themselves.