

1. What are the researcher's null and alternative hypothesis? Remember that the alternative hypothesis is the idea the researchers are trying to support with evidence. The null hypothesis is the no-effect model (the opposite of the alternative hypothesis). You can find this information on the first page of the article.

The Null Hypothesis is that solar radiation and exposure to vitamin has no correlation with prostate cancer.

The alternative hypothesis is that solar radiation and exposure to vitamin d reduces the risk of prostate cancer.

2. What would be a type I error for this null and alternative hypothesis? What would be the harm in making a type I error here?

A type 1 error would be if the researchers determine that solar radiation does have an effect on reducing prostate cancer when it in fact does not.

The harm would be that people would then believe that sunlight could help in reducing prostate cancer or help prevent it and that isn't accurate. It is a false treatment at that point.

3. What would be a type II error for this null and alternative hypothesis? What would be the harm in making a type II error here?

A type 2 error would be if the researchers determine that solar exposure and vitamin d have no effect on prostate cancer when, in fact, it does.

The harm is this is that people are told false information about something that could help keep them healthy and reduce their chances of having prostate cancer.

4. Which error, a type I or type II error, is more serious for society? Why?

I feel a type one error would be more harmful for society because you are giving them false information about a treatment that doesn't actually work. Then they may be exposing themselves to solar radiation unnecessarily which may have an adverse effect.