

Conjecture: The waves look pretty big today, I'm not sure if I should go surfing.

H₀: It is safe to go surfing, I will paddle out.

H_a: It is too dangerous to go surfing, I will not paddle out.

Type I error: **Reject H₀, when it's true.**

I determine that it is not safe to surf when it was actually safe.

Consequence: I miss out on a day of surfing where I would have had fun, rode some big waves, and gotten some exercise.

Type II error: **Fail to Reject H₀, when it's false.**

I determine that it is safe to surf when it was not safe.

Consequence: I risk breaking my surfboard, getting hurt, or possibly drowning.

Questions:

1. Which is Worse? Why?: The Type II error is definitely worse in this situation. The risk of injury or death is much worse than missing a day of surfing.

2. What is the Power of this, in context?: The power in this situation is the probability of correctly deciding that it is too dangerous to surf when it is actually too dangerous to surf.

3. What should the alpha level be set at? Why?: The alpha level should be set at the 10% level making it easier to reject H₀. Which will make a type I error more possible and protecting against a type II error.

