



## Type I Error & Type II Error

Suppose there is a test for a particular disease.

- If the **disease** really exists and is diagnosed early, it **can be successfully treated**
- If it is **not diagnosed** and treated, the person will become severely **disabled**
- If a person is **erroneously diagnosed** as having the disease and **treated**, **no physical damage** is done



## Power of Test

- The ability of a test to reject a false null hypothesis.
- The probability of supporting an alternative hypothesis that is true.
- Power =  $1 - \beta$
- High value of  $1 - \beta$  (near 1) means test is working fine, it is rejecting a null hypothesis when it is false.