



## Effect Size <sup>[1]</sup>

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Effect size tells us the strength of the relationship between variables in a statistical data. It describes how strong the relationship between two or more sets of data is.

The effect size <sup>[3]</sup> in this case would tell us how strong this correlation <sup>[4]</sup> between age and probability <sup>[5]</sup> of attack is. The higher the effect size, the higher the correlation, which means children will be much more likely to be affected by this virus. Effect size is independent of the sample size <sup>[6]</sup>, unlike significance tests <sup>[7]</sup>.

Effect size is a very important parameter in medical and social research because it correlates the variables that the researcher is studying and tells her how strong this relationship is.

Effect size helps to rule out chance probabilities in the group. For example, a random sample of 50 students in a university might show that girls outscore boys. However, it is quite possible that this outcome was specific to the group and its occurrence was random. It is therefore necessary to establish the correlation between gender and grades, which can be determined by using the effect size.

Effect size can also show how strong the correlation is.

For example, it might be observed that students when they have a healthy breakfast score better than when they eat nothing in the morning. Also, it might be observed that students who have a healthy lunch score better than those who have no lunch. However, the effect that breakfast has on scores could be more than the effect of the lunch. In this case, the effect size for breakfast-score correlation is higher than the corresponding effect size for lunch-score correlation.

Effect size also comes with a degree of error and uncertainty and in many cases; it may only indicate average values, which might be misleading.

For example, a weight loss program might claim that it lead to an average weight loss of 20 pounds, which is the effect size in this case (correlating between the program and the weight loss).

However, it is possible that half the people lost 40 pounds while the remaining half were at the same level. Therefore in many cases, variability in effect size is also important as this gives a more complete picture.

## Links

[1] <https://explorable.com/effect-size> [2] <https://explorable.com/users/siddharth> [3]  
[http://en.wikipedia.org/wiki/Effect\\_size](http://en.wikipedia.org/wiki/Effect_size) [4] <https://explorable.com/statistical-correlation> [5]  
<https://explorable.com/experimental-probability> [6] <https://explorable.com/statistical-significance-sample-size> [7] <https://explorable.com/significance-test-2>