# Relation between Shieh’s d and Cohen’s d, when n1=n2?

## General formula

|  |  |
| --- | --- |
| Shieh’s δ | Cohen’s δ |
| =  = *(because n = N/2)*  =  = | =  = *(because N =2n)*  =  =  = |
| As a conclusion,   * **Cohen’s Shieh’s** (whatever) | |

# Relation between Shieh’s d and Cohen’s d, whatever n1=n2 or not

Shieh’s d can be expressed as a function of the n-ratio :

(1)

Where =

**Note 1** : the standard deviation term is computed in order that we give more weight to the SD of the smallest group.

**Note 2** : when

It is also important to notice that when n1=n2

= (2)

It remains true, whatever standard deviations are equal between groups or not.

**When sd1=sd2**:

* σ does not depend on the group sample sizes (in other words, σ is the same for all nratio).
* The largest shieh’s d is obtained when n1=n2. As already mentioned, iIn that case :

Shieh= (3)

Because when SD1=SD2=SD, σ (formula (1)) always equals (formula (3)), one can deduce that the required correction in order to compute which measure of shieh we would have if n1 was equal to n2 is :

Correction = = =

Note : because we know that when n1=n2, **Cohen’s Shieh’s** , it also means that when sd1=sd2,

**Cohen’s Shieh’s**

**When sd1≠sd2**,

* σ depends on the group sample sizes (in other words, ).
* The largest shieh’s d is obtained when n1=n2. As already mentioned, iIn that case :

Shieh= (3)

One can deduce that the required correction in order to compute which measure of shieh we would have if n1 was equal to n2 is :

Correction = = =

Note : because we know that when n1=n2, **Cohen’s Shieh’s** , it also means that when sd1=sd2 :

**Cohen’s Shieh’s**