



# Rules of Thumb for Cohen d (th\_cohen\_d)

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## Introduction

The *th\_cohen\_d* determines a classification for a given Cohen d.

This document contains the details on how to use the functions, and background info.

## 1 About the Function

### 1.1 Input parameters:

- **d**  
the Cohen d value
  
- *Optional parameters*
  - **qual**  
the rule-of-thumb to be used for the qualification/classification. Either:
    - "cohen" => Cohen (1988, p. 40)
    - "rosenthal" => Rosenthal (1996, p. 45)
    - "lovakov" => Lovakov and Agadullina (2021, p. 514)
    - "sawilowsky" => Sawilowsky (2009, p. 599)

### 1.2 Output

- **qual**  
The qualification using the specified rule of thumb

### 1.3 Dependencies

- **Excel**  
None. You can run the **th\_cohen\_d\_addHelp** macro so that the function will be available with some help in the 'User Defined' category in the functions overview.
- **Python**  
None
- **R**  
None



## 2 Examples

### 2.1 Excel

	A	B	C	D	E
1					
2					
3		d	0,19		
4					
5		cohen	negligible	=th_cohen_d(\$C\$3;B5)	
6		rosenthal	negligible	=th_cohen_d(\$C\$3;B6)	
7		lovakov	small	=th_cohen_d(\$C\$3;B7)	
8		sawilowsky	very small	=th_cohen_d(\$C\$3;B8)	
9					

### 2.2 Python

```
[1]: from thumb_cohen_d import th_cohen_d

d = 0.19

rules = ["cohen", "rosenthal", "lovakov", "sawilowsky"]

for i in rules:
    print(th_cohen_d(d, i))

negligible
negligible
small
small
```

### 2.3 R

```
> source("thumb_cohen_d.R")
>
> d = 0.19
>
> rules = c("cohen", "rosenthal", "lovakov", "sawilowsky")
>
> for (i in rules) {
+   print(th_cohen_d(d, i))
+ }
[1] "negligible"
[1] "negligible"
[1] "small"
[1] "very small"
```



### 3 Rules Used

d	Cohen (1988, p. 40)				Lova kov and Agadullina (2021, p. 501)				Rosenthal (1996, p. 45)				Sawilowsky (2009, p. 599)			
	negligible				small				medium				large			
0,00 < 0,05	negligible				negligible				negligible				negligible			
0,05 < 0,10	negligible				negligible				negligible				very small			
0,10 < 0,15	negligible				negligible				negligible				very small			
0,15 < 0,20	negligible				negligible				negligible				very small			
0,20 < 0,25	negligible				small				negligible				very small			
0,25 < 0,30	negligible				small				negligible				very small			
0,30 < 0,35	small				small				small				small			
0,35 < 0,40	small				small				small				small			
0,40 < 0,45	small				small				small				small			
0,45 < 0,50	small				small				small				small			
0,50 < 0,55	medium				medium				medium				medium			
0,55 < 0,60	medium				medium				medium				medium			
0,60 < 0,65	medium				medium				medium				medium			
0,65 < 0,70	medium				medium				medium				medium			
0,70 < 0,75	medium				medium				medium				medium			
0,75 < 0,80	medium				medium				medium				medium			
0,80 < 0,85	large				large				large				large			
0,85 < 0,90	large				large				large				large			
0,90 < 0,95	large				large				large				large			
0,95 < 1,00	large				large				large				large			
1,00 < 1,20	large				large				large				large			
1,20 < 1,30	large				large				large				very large			
1,30 < 2,00	large				large				large				very large			
2,00 or more	large				large				large				huge			

### 4 Sources

of ES have been offered above, as follows:

**small:  $d = .20$ ,**  
**medium:  $d = .50$ ,**  
**large:  $d = .80$ .**

(Cohen, 1988, p. 40)

Based on current research findings in the applied literature, it seems appropriate to revise the rules of thumb for effect sizes to now define  $d (.01) =$  very small,  $d (.2) =$  small,  $d (.5) =$  medium,  $d (.8) =$  large,  $d (1.2) =$  very large, and  $d (2.0) =$  huge. Hence, the list of conditions of an

(Sawilowsky, 2009, p. 599)



Table 2. Comparison of Cohen's and empirically derived thresholds for effects size

Thresholds	Correlation			Cohen's <i>d</i>		
	Small	Medium	Large	Small	Medium	Large
Cohen's thresholds	0.10	0.30	0.50	0.20	0.50	0.80
Empirically derived thresholds	0.12	0.24	0.41	0.15	0.36	0.65

(Lovakov & Agadullina, 2021, p. 501)

TABLE 1. Qualitative Interpretation of Strength of Association and Effect Size for Difference in Means in Standard Deviation Units (*d*)

Difference	Strength of Association	Effect Size
about .20 (or about $-.20$ )	weak	small
about .50 (or about $-.50$ )	moderate	medium
about .80 (or about $-.80$ )	strong	large
about 1.30 (or about $-1.30$ ) or greater	very strong	very large

(Rosenthal, 1996, p. 45)

## 5 References

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). L. Erlbaum

Associates.

Lovakov, A., & Agadullina, E. R. (2021). Empirically derived guidelines for effect size interpretation in social psychology. *European Journal of Social Psychology, 51*(3), 485–504.

<https://doi.org/10.1002/ejsp.2752>

Rosenthal, J. A. (1996). Qualitative descriptors of strength of association and effect size. *Journal of Social Service Research, 21*(4), 37–59. [https://doi.org/10.1300/J079v21n04\\_02](https://doi.org/10.1300/J079v21n04_02)

Sawilowsky, S. (2009). New effect size rules of thumb. *Journal of Modern Applied Statistical Methods, 8*(2). <https://doi.org/10.22237/jmasm/1257035100>