

<https://doi.org/10.47093/2218-7332.2022.426.08.S>

## SUPPLEMENTARY MATERIALS / ДОПОЛНИТЕЛЬНЫЕ МАТЕРИАЛЫ

**For citation:** Suvorov A.Yu., Bulanov N.M., Shvedova A.N., Tao E.A., Butnaru D.V., Nadinskaia M.Yu., Zaikin A.A. Supplementary materials. Statistical hypothesis testing: general approach in medical research. Sechenov Medical Journal. 2022; 13(1): 4–13. <https://doi.org/10.47093/2218-7332.2022.426.08.S>

**Table S1. Selected effect size calculation methods for assessment of the difference between statistics**

Name	Description	Standardized method	Formula
Mean	Arithmetic mean value	No	$\mu$
Delta of means	Delta (difference) between two means	No	$\Delta = \mu_1 - \mu_2$
Ratio of means	Ratio of means, ROM. Mean of group 1 divided by mean of group 2	Yes	$RoM = \mu_1 / \mu_2$
Cohen's d (standardized mean difference)	Difference of two means divided by pooled SD	Yes	$d = (\mu_1 - \mu_2) / s_{pooled}$
Cohen's d for paired samples	Cohen's d value adjustment taking into account correlation coefficient	Yes	$d = d' / \sqrt{(1 - r)}$
Glass' $\Delta$	Difference of two means divided by SD of the second group	Yes	$\Delta = (\mu_1 - \mu_2) / s_2$
Risk difference	Risk difference, RD. Difference between effect proportions ( $p_1, p_2$ ) in two groups	Yes	$RD = p_1 - p_2$

Note:  $\mu$  – arithmetic mean;  $\mu_i$  – arithmetic mean in group  $i$ ;  $s_i$  – standard deviation in group  $i$ ;  $p_i$  – outcome proportion in group  $i$ ;  $r$  – correlation coefficient.

**Table S2. Selected effect size calculation methods for assessment of the connections between numeric variables' distributions**

Name	Description	Formula
Pearson correlation coefficient	Correlation of two variables	$r_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}}$
Coefficient of determination	Proportion of variation in the dependent variable predictable from the independent one	$R^2 = r^2$

Note:  $x_i, y_i$  – parameters values  $x, y$  for a patient  $i$ ;  $n$  – a total number of patients in a group;  $r_{xy}$  – correlation coefficient between variables  $x, y$ ;  $R^2$  – coefficient of determination;  $\bar{x}, \bar{y}$  –  $x$  and  $y$  mean values.

**Table S3. 2x2 contingency table for risk estimation**

	Disease	No disease	Total number
Risk factor	$D_N$	$H_N$	$D_N + H_N = T_N$
No risk factor	$D_E$	$H_E$	$D_E + H_E = T_E$

Примечание:  $D_N$  – количество пациентов с фактором риска среди больных;  $D_E$  – количество пациентов без фактора риска среди больных;  $H_N$  – количество пациентов с фактором риска среди здоровых;  $H_E$  – количество пациентов без фактора риска среди здоровых.

Note:  $D_N$  – number of subjects with disease who have a risk factor;  $D_E$  – number of subjects with disease without a risk factor;  $H_N$  – number of subjects without disease who have a risk factor;  $H_E$  – number of subjects without disease who do not have a risk factor.

**Table S4. Selected standardized effect size calculation methods assessing connections between categorical variables**

Name	Description	Formula
Cohen's h	Measure of distance between two proportions or probabilities	$h = 2 \times (\arcsin \sqrt{p_1} - \arcsin \sqrt{p_2})$
Odds ratio	Odds ratio, OR. Shows the probability ( $N / 1$ ) of outcome in exposed group compared to the probability in the not exposed group	$OR = (D_E / H_E) / (D_N / H_N)$
Relative risk	Relative risk (risk ratio), RR. Shows outcomes' ratio during a certain period of time in exposed group compared to the group without exposure	$RR = (D_E / T_E) / (D_N / T_N)$