

# Effect Sizes for common designs

Statistical Test	Effect size	Equation	Rule of thumb for effect sizes
1 sample t-test	Cohen's d	$d = (\text{mean} - \text{constant}) / SD$	small=0.20, medium=0.50, large=0.80
2 sample t-test	Cohen's d	$d = (\text{mean}_1 - \text{mean}_2) / SD_{\text{pooled}}$	small=0.20, medium=0.50, large=0.80
Paired t-test	Cohen's d	$d = (\text{mean}_1 - \text{mean}_2) / SD_{\text{pooled}}$	small=0.20, medium=0.50, large=0.80
1-Way ANOVA	Eta squared Cohen's f	$\eta^2 = SS_{\text{treatment}} / SS_{\text{total}}$ $f = \sqrt{\eta^2 / (1 - \eta^2)}$	small=0.01, medium=0.05, large=0.14 small=0.10, medium=0.25, large=0.40
2-Way ANOVA	Eta squared Cohen's f	$\eta^2 = SS_{\text{treatment}} / SS_{\text{total}}$ $f = \sqrt{\eta^2 / (1 - \eta^2)}$	small=0.01, medium=0.06, large=0.14 small=0.10, medium=0.25, large=0.40
Repeated Measures ANOVA	Partial Eta squared Cohen's f	Partial $\eta^2 = SS_{\text{effect}} / (SS_{\text{effect}} + SS_{\text{error}})$ ...	small=0.01, medium=0.06, large=0.14 small=0.10, medium=0.25, large=0.40
1 proportion test	Cohen's h	$h = 2 * \text{asin}(\sqrt{\text{prop}_1}) - 2 * \text{asin}(\sqrt{\text{prop}_{\text{const}}})$	small=0.20, medium=0.50, large=0.80
2 proportions test	Cohen's h	$h = 2 * \text{asin}(\sqrt{\text{prop}_1}) - 2 * \text{asin}(\sqrt{\text{prop}_2})$	small=0.20, medium=0.50, large=0.80
Chi-squared test	Cohen's w	$w = \sqrt{\sum (\text{prop}_{\text{obs}} - \text{prop}_{\text{exp}})^2 / \text{prop}_{\text{exp}}}$	small=0.10, medium=0.30, large=0.50
Pearson Correlation	Correlation (R)	...	small=0.10, medium=0.30, large=0.50
Linear Regression (Entire Model)	F squared	$f^2 = R^2_{\text{model}} / (1 - R^2_{\text{model}})$	small=0.02, medium=0.15, large=0.35
Linear Regression (Ind. Predictor)	F squared	$f^2 = R^2_{\text{increase}} / (1 - R^2_{\text{increase}})$	small=0.10, medium=0.30, large=0.50