Choosing a test of relatedness between two variables

VARIABLE TYPE	Numeric, assumptions* for parametric test met	Numeric, assumptions* for parametric test NOT met	Ordinal	Categorical***: 2 categories	Categorical***: 2 categories, repeated measures	Categorical***: more than 2 categories	Categorical***: more than 2 categories, repeated measures
Numeric, assumptions* for parametric test met	Pearson correlation coefficient	Spearman's rank correlation coefficient / Kendall's tau	Spearman's rank correlation coefficient / Kendall's tau	Two-sample Student's t-test	Paired t-test	One-way ANOVA	Repeated measures ANOVA
Numeric, assumptions* for parametric test NOT met		Spearman's rank correlation coefficient / Kendall's tau	Spearman's rank correlation coefficient / Kendall's tau	Man-Whitney U-test (also called Wilcoxon rank sum test)	Wilcoxon signed rank test	Kruskal Wallis test	Friedman's ANOVA
Ordinal			Spearman's rank correlation coefficient / Kendall's tau	Man-Whitney U-test (also called Wilcoxon rank sum test)	Wilcoxon signed rank test	Kruskal Wallis test	Friedman's ANOVA
Categorical: 2 categories				Chi-squared test with Yates's correction / Fisher's exact test	Mc Nemar's test	Chi-squared test / Fisher's exact test	NOT APPLICABLE
Categorical: 2 categories, repeated measures**					NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE
Categorical: more than 2 categories						Chi-squared test	NOT APPLICABLE
Categorical: more than 2 categories, repeated measures**							NOT APPLICABLE

*These vary by test but generally involve underlined normal distribution and homoskedasticity.

**Repeated measures means that each category (categorical variable value) represents a different measurement taken on the same group of subjects. For example, in a medical trial the three categories could be 'before medication', '1 day after treatment', '1 week after treatment', each representing a measurement of symptom intensity, taken for each patient in a group of patients.

***In statistics, when tested against a numeric or ordinal variable, a categorical variable is intepreted as a grouping variable and the tests as testing for a difference between the numeric/ordinal variable's values in the different groups.