

PARAMETRIC VERSUS NONPARAMETRIC TESTS IN BIOMEDICAL RESEARCH

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Despite the wide use of statistics in biomedical research, simple ideas are sometimes misunderstood or misinterpreted by medical research workers, who have only limited knowledge of statistics. This article deals with basic biostatistical concepts and their application to enable postgraduate medical students and researchers to analyze and interpret their study data and to critically interpret published literature. The adequate choice of statistical tests has a strong influence on data interpretation. Understanding this choice is important for critical evaluation of biomedical research. The question often arises on whether to use parametric or nonparametric test. If we are planning a study and trying to determine how many patients/cases to include, a nonparametric test will require a slightly larger sample size to have the same power as the corresponding parametric test. In summary, nonparametric procedures are useful in many cases and necessary in individual, but they are not the perfect solution. Fortunately, the most frequently used parametric analyses have their non-parametric counterparts. This can be useful when the assumptions of a parametric test are violated and we can thus choose a nonparametric alternative instead.

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