Assumptions of ANOVA

There are three assumptions for ANOVA that you need to verify before you perform the hypothesis test. Remember that the assumption of independent observations means that there is no correlation between any one observation in the data set and another. In other words, the response value of one observation does not influence the response value of another. For example, measurements are not repeated on the same subject. The assumption that the data for each group is approximately normal can be verified by examining plots of the data. In theory, the data for each group should be checked separately for normality. In practice, the data or the residuals as a whole are usually checked for normality. This assumption can be relaxed when the sample size is large enough. The assumption of constant variances can be checked by looking at descriptive statistics and plots of the data and by conducting a test for constant variances. If these assumptions are not valid, the probability of drawing incorrect conclusions from the analysis might be increased.
