

## APA format for statistical notation and other things:

### Statistical abbreviations:

<b>ANCOVA</b> Analysis of Covariance	<b>ANOVA</b> Analysis of Variance	$\alpha$ alpha, the probability of making a Type 1 error in hypothesis testing	$\beta$ beta, the probability of making a Type 2 error in hypothesis testing
CI confidence interval	$d$ Cohen's measure of effect size	$d'$ d-prime (a measure of sensitivity, used in Signal Detection Theory)	$df$ degrees of freedom
$F$ F-ratio (used in ANOVA, ANCOVA and MANOVA)	$F_{max}$ Hartley's $F_{max}$ test value (a test for homogeneity of variance)	$H$ Kruskal-Wallis test value	$H_a$ Alternative hypothesis
$H_0$ Null hypothesis	$HSD$ Tukey's Honestly Significant Difference	$LSD$ Fisher's Least Significant Difference	MANOVA Multivariate Analysis of Variance
$M$ (or $\bar{x}$ ) Mean (usually, the sample mean)	$Mdn$ Median	$MS$ Mean Square	$MSE$ Mean square error
$\mu$ mu, designating the population mean	$n$ Number in subsample	$N$ Total number in sample	$ns$ Not significant
$p$ Probability	% Percentage	$\sigma$ sigma, designating the population standard deviation (n version of the SD formula)	$r$ Pearson's correlation
$r^2$ coefficient of determination	$R$ multiple correlation	$s$ (or $\sigma_{n-1}$ ) sample standard deviation (n-1 version of the SD formula)	$s^2$ sample variance (n-1 version)
$r_s$ Spearman's rho	$SD$ Standard deviation	$SE$ (or $SEM$ ) Standard error	SS Sum of Squares

<i>t</i> t-test value	<i>T</i> Wilcoxon test value	<i>U</i> Mann-Whitney test value	<i>x</i> Horizontal axis on a graph
<i>y</i> Vertical axis on a graph	<i>z</i> z-score	$\Sigma$ Sum	$\chi^2$ Chi square test value

**Other commonly used abbreviations :**

°C Degrees Centigrade	cm Centimetre(s)	°F Degrees Fahrenheit	g Gram(s)
h Hour(s)	IQ Intelligence Quotient	kg Kilogram(s)	km Kilometre(s)
kph Kilometres per hour	L Litre(s)	m Metre(s)	m <sup>2</sup> Square metre(s)
mg Milligramme(s)	min Minute(s)	ml Millilitre(s)	mm Millimetre(s)
ms Millisecond(s)		RT Reaction Time	s Second(s)

Jeffrey Kahn's guide to APA format is reproduced below. Find the original here:

<http://my.ilstu.edu/~jhkahn/apastats.html>

## Reporting Statistics in APA Style

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The following examples illustrate how to report statistics in the text of a research report. You will note that significance levels in journal articles--especially in tables--are often reported as either "*p* > .05," "*p* < .05," "*p* < .01," or "*p* < .001." APA style dictates reporting the exact *p* value within the text of a manuscript (unless the *p* value is less than .001).

Please pay attention to issues of italics and spacing. APA style is very precise about these. Also, with the exception of some *p* values, most statistics should be rounded to two decimal places.

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**Mean and Standard Deviation** are most clearly presented in parentheses:  
The sample as a whole was relatively young ( $M = 19.22$ ,  $SD = 3.45$ ).

The average age of students was 19.22 years ( $SD = 3.45$ ).

**Percentages** are also most clearly displayed in parentheses with no decimal places:

Nearly half (49%) of the sample was married.

**Chi-Square** statistics are reported with degrees of freedom and sample size in parentheses, the chi-square value (rounded to two decimal places), and the significance level:

The percentage of participants that were married did not differ by gender,  $\chi^2(1, N = 90) = 0.89$ ,  $p = .35$ .

**T Tests** are reported like chi-squares, but only the degrees of freedom are in parentheses. Following that, report the  $t$  statistic (rounded to two decimal places) and the significance level.

There was a significant effect for gender,  $t(54) = 5.43$ ,  $p < .001$ , with men receiving higher scores than women.

**ANOVAs** (both one-way and two-way) are reported like the  $t$  test, but there are two degrees-of-freedom numbers to report. First report the between-groups degrees of freedom, then report the within-groups degrees of freedom (separated by a comma). After that report the  $F$  statistic (rounded off to two decimal places) and the significance level.

There was a significant main effect for treatment,  $F(1, 145) = 5.43$ ,  $p = .02$ , and a significant interaction,  $F(2, 145) = 3.24$ ,  $p = .04$ .

**Correlations** are reported with the degrees of freedom (which is  $N-2$ ) in parentheses and the significance level:

The two variables were strongly correlated,  $r(55) = .49$ ,  $p < .01$ .

**Regression** results are often best presented in a table. APA doesn't say much about how to report regression results in the text, but if you would like to report the regression in the text of your Results section, you should at least present the unstandardized or standardized slope (beta), whichever is more interpretable given the data, along with the  $t$ -test and the corresponding significance level. (Degrees of freedom for the  $t$ -test is  $N-k-1$  where  $k$  equals the number of predictor variables.) It is also customary to report the percentage of variance explained along with the corresponding  $F$  test.

Social support significantly predicted depression scores,  $\beta = -.34$ ,  $t(225) = 6.53$ ,  $p < .001$ . Social support also explained a significant proportion of variance in depression scores,  $R^2 = .12$ ,  $F(1, 225) = 42.64$ ,  $p < .001$ .

**Tables** are useful if you find that a paragraph has almost as many numbers as words. If you do use a table, do not also report the same information in the text. It's either one or the other.

**Based on: American Psychological Association. (2010). Publication manual of the American Psychological Association (6th ed.). Washington, DC: Author.**