

# One-Sample z-test

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- To construct a confidence interval for the mean when  $\sigma$  is known, we compute

$$M \pm z_{cv} \left( \sigma / \sqrt{n} \right)$$

- Typically we only construct two-tailed confidence intervals
- For a 95% CI,  $z_{cv} = 1.96$

# One-Sample t-test

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- A confidence interval is constructed in the same manner as a one-sample z-test except  $s$  is used instead of  $\sigma$  and a  $t$  critical value is used instead of a  $z$  critical value

$$M \pm t_{cv}(s/\sqrt{n})$$

# Independent-Samples t-test

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- Independent sample t-test:

$$(M_1 - M_2) \pm t_{cv} * SE_{M_1 - M_2}$$

- The  $SE_{M_1 - M_2}$  is the standard error computed using either the pooled or separate variance method (i.e., the denominator of the t-statistic formula)

# Related-Samples t-test

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- Related-samples t-test

$$\bar{D} \pm t_{cv}(S_D/\sqrt{n})$$