

## t-test Research Examples

“Independent t-test” *versus* the “Related Measures t-test,” & directional(one-tailed) *versus* non-directional(two-tailed) statistical tests  
[ The “Related Measures t-test” is also known as the “Correlated t-test” or “Matched Groups t-test” ]

### Independent t-test examples, one-tailed type:

- ❑ A researcher predicted that men would outperform women on a test of mechanical aptitude. The *Minnesota Test of Mechanical Aptitude* was administered to 30 men and 45 women with the following results. [ test scores appear here ] What could she conclude?
- ❑ A researcher hypothesized that a new tranquilizer would have a depressing effect on a person’s ability to respond speedily while driving a car. Two groups of subjects, an experimental group and a control group were created. The experimental group received the tranquilizer, the control group a placebo. Both groups were then tested on a common test of reaction time with the following results. [ results appear here ] What could he conclude?

### Independent t-test examples, two-tailed type:

- ❑ A researcher suspected that seven year olds and twelve year olds differed in “cognitive style” as measured by the *Eysenck Test of Cognitive Style*. Twenty-three seven year olds and 14 twelve year olds were administered the test with the following results. [test scores appear here] What could be concluded here?
- ❑ Do men and women differ in “cognitive style” a researcher asked? Thirty men and 42 women were administered the *Eysenck Test of Cognitive Style* with the following results. [test scores appear here] What could be concluded?

### Related Measures t-test examples, one-tailed type:

- ❑ A researcher predicted that a new tranquilizer would have a depressing effect on a person’s ability to respond speedily while driving a car. Thirty subjects were tested on a reaction time device BEFORE and again AFTER being administered the drug with the following results. [test results appear here] What could she conclude?
- ❑ A researcher matched two groups of subjects on their IQ Scores in order to control this potentially confounding variable in his research. The subjects were then assigned to either experimental or control conditions. The experimental group received a tranquilizer. The control group received a placebo. The researcher predicted that the experimental group would have lower scores on a “cognitive style” test than would the control group. [test results appear here] What could she conclude?

### Related Measures t-test example, two-tailed type:

- ❑ A researcher wondered if a new tranquilizer would depress a person’s ability to drive. He gave a single group of subjects a driving test BEFORE and again AFTER they were given a drug with the following results. [ results go here] What could be concluded?