

## Two-Group Binary Comparisons

**Example 1:** A randomized clinical trial (RCT) was conducted to evaluate the use of infra-red stimulation (IRS) in reducing pain caused by osteoarthritis. **26** patients were randomized, **13** to be treated by IRS and **13** to receive mock transcutaneous electrical stimulation (i.e. a placebo). One patient in the IRS group dropped out. In the IRS group, **9** of the 12 patients reported an improvement in pain, compared with **4** out of **13** in the control group.

**Example 2:** A study was conducted to examine factors related to juvenile delinquency in teenage boys. A group of delinquent boys and a control group similarly aged non-delinquents were given vision tests. In the delinquent group **9** boys failed the vision test, only one wore prescription eyeglasses. Of the **7** boys in the control group who failed the test, **5** of the boys wore prescription glasses.

**Example 3:** In a landmark study published in 1950 by Richard Doll and Austin Bradford Hill in the U.K. **60** female lung cancer patients were compared with **60** similarly aged healthy patients. **41** of the cancer patients were established smokers compared to **28** in the control group.

**Example 4:** To examine the relation between Marijuana consumption and sleep disturbances, **17** male Marijuana smokers were recruited. Each Marijuana smoker provided names of similarly aged friends who did not smoke Marijuana, and from that pool of names, one control subject was recruited for each smoker. All subjects were evaluated for sleep disturbances and the results were recorded by pair. In **4** of the **32** pairs both subjects yielded positive sleep tests and in **1** pair both subjects tested negative. In **9** pairs the Marijuana smoker tested positive and the control subject negative and in **3** remaining pairs the reverse was true.

**Example 5:** Deep vein thrombosis (DVT) is the occurrence of a blood clot in a vein that is deep in the body, such as the femoral vein, which extends from the upper thigh into the abdomen. The most accurate means of diagnosing deep vein thrombosis is venography, which involves taking an injecting dye (a.k.a. contrast medium) into the suspect vein and taking X-rays. A less invasive approach is to use ultrasonography (U/S or ultrasound) which uses high frequency sound waves. **47** subjects suspected of having a DVT were tested by both methods. **17** subjects tested positive on both methods, **20** tested negative on both methods, **4** tested positive on venography but negative on U/S, and **6** tested positive on U/S but negative on venography.