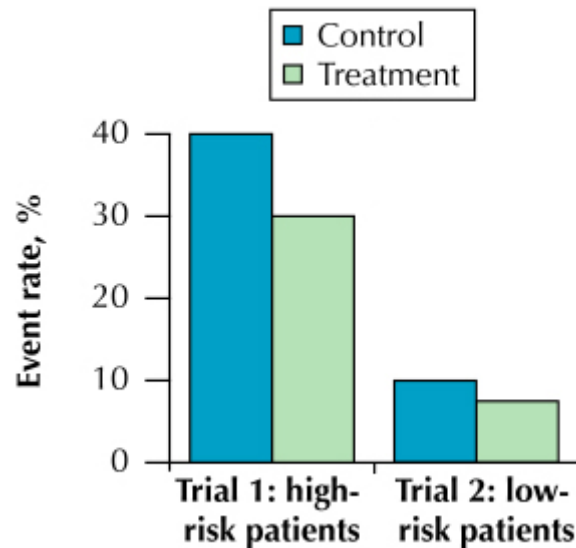


Understanding risk and risk reduction

Scenario: Consider randomized trials of a therapy done on 2 populations, one with a high rate of a serious disease and the other with a lower rate. In each population, half the people are randomly assigned to receive a treatment for the disease.

1. Draw 2 bars side by side to represent the results in the high-risk population: bar 1 is the event rate in the control group (40%), bar 2 is the event rate in the treatment group (30%).
2. Ask the learners to describe the impact of treatment (risk difference 10%, relative risk reduction 25%).
3. Repeat the process with bars 3 and 4 representing the results of the trial in the low-risk population: bar 3 is the event rate in the control group (10%), bar 4 is the event rate in the treatment group (7.5%), risk difference is 2.5%, and relative risk reduction is 25%.
4. Learners discover the relation between the risk difference and the event rate in the control group.



Summary Points:

- Event rate is the percentage of people in a group experiencing an outcome event of interest.
- Risk difference is the arithmetic difference in event rates achieved by therapy.
- Relative risk reduction is the proportional decrease in event rates achieved by therapy.
- Relative risk reduction is impressively larger than the risk difference when event rates are low.