How to Calculate Relative Risk (RR)

The relative risk (sometimes called "risk ratio") compares the likelihood of dying for a certain population group against the risk of death for all other population groups.

Calculating relative risk draws our attention to unfair racial differences in disease deaths and diagnosed cases.

Relative risk is calculated by dividing the death or disease risk in a specific population group (Group A) by the risk of people from all other groups.

$$RR = \frac{\text{Risk in One Group (Group A)}}{\text{Risk in All Other Groups}}$$

What relative risk tells us

A **relative risk that is greater than 1.0** shows that there is an increased risk among the people in Group A.

- This means if the relative risk was 1.5, people in Group A would be 50% more likely than people in all other groups to die from a cause.

- Or if the relative risk were 3.0, people in Group A would be three times as likely as people from other groups to die from a cause.

A **relative risk that is less than 1.0** indicates that there is a lower risk among the people in Group A.

- If the relative risk were 0.8, people in Group A would be 20% less likely than people in all other groups to die from a cause.

A local example:

Through tests of statistical significance, it was found that African Americans had the highest death rate from AIDS, compared to the Contra Costa County population as a whole.

For this example, African Americans will be our "Group A," the group with the highest death rate from AIDS. Our comparison group will be made up of people from all other race/ethnic groups.

Table 71. Calculating Risk.
Contra Costa County: AIDS Deaths 1999-2001

	People who died from AIDS	Population
African Americans (Group A)	50	260,553
All Others	51	2,585,895
Total	101	2,846,448

To calculate the risk in each group, we divide the number of people who died of AIDS by the population totals in each group.

This gives us a risk of 0.0001919 among African Americans (50 divided by 260,553), and a risk of 0.0000198 among people from other race/ethnic groups (51 divided by 2,585,448).

To calculate the relative risk, we divide the risk among African Americans by the risk among people from other race/ethnic groups. This gives us a relative risk of 9.7 (0.0001919 divided by 0.0000198).

From this example, we can say that African Americans are ten times as likely to die from AIDS compared to people from other race/ethnic groups (RR=9.7).