Attributable Risk (AR)

Attributable risk is a way of measuring how much the risk of an outcome is due to a given exposure. It measures the difference in risk between an exposed group and unexposed group, and quantifies it so that a set percentage of risk can be assigned to the studied risk factor. AR is equal to incidence in exposed group (%) minus incidence in unexposed group (%).

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Use

Proportion Exposure Increases Disease
Up-arrow Diseased-guy with Exposure to radiation
Attributable risk describes how much an exposed group’s risk of disease is increased or decreased due to exposure to the risk factor.

Formula

Incidence of Diseased (Sick)
How many Diseased in Population?
The concept of attributable risk measures the percentage that exposure to a risk factor correlates to the incidence of disease in a population. Attributable risk is calculated and correlates to the incidence of new cases of disease.

Equals =
Equal
Attributable risk is equal to incidence of disease in the exposed group - incidence of disease in the unexposed group.

Exposed Group
Exposed to radiation
Expressed as a percentage, this is the group of individuals who have been exposed to a risk factor and may or may not have disease.

a / (a + b)
A-apple / A-apple + B-bee body-armor
The number of subjects who were both exposed and have disease (a) is divided by the sum of these same individuals (a) in addition to the subjects who were exposed but do not have disease (b).

Minus -
Minus
This subtraction step should be carried out last. First, calculate the two percentages for the exposed and unexposed groups before subtracting.

Unexposed Group
Unexposed to radiation
Expressed as a percentage, this is the group of individuals who have never been exposed to the risk factor and may or may not have disease.

c / (c + d)
C-cat / C-cat + D-dog
The number of subjects who have never been exposed but are diseased (c) is divided by the sum of these same individuals (c) in addition to the subjects who do not have exposure or disease (d).

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