



The normal range for a test is often set by determining the mean \pm 2 SD from that mean (95% limits). Excluding those patient values that are below the lower 2.5% limit and those above the upper 2.5% limit. Another way to describe a group of “apparently healthy individuals” is to divide the group into sections or “tiles” such as quartiles (fourths) or quintiles (fifths).

Background

1. A group of 1000 “apparently healthy individuals” is selected and a test is run on them. This example describes hs-CRP testing on 1000 people.
2. The 1000 values are ranked lowest to highest.
 - The first 200 values (the lowest value to the 200th value) make up the first quintile.
 - The second quintile is established by grouping the next 200 values (201st value to the 400th value)
 - Consecutive ascending values are grouped and the third (401-600), fourth (601-800) and fifth (801-1000) quintiles are established
3. The study population is followed for a period of time, example 5 years. During this period, clinical events or endpoints such as AMI, stroke or death are documented. After the 5 year time period a certain number of AMIs will have occurred in each quintile group.

Interpretation

The number of AMIs, strokes and death recorded in the first quintile represents the baseline. These persons are in the lowest of the 5 quintiles and they represent the fewest cardiovascular events. The number of events is determined for each of the other 4 quintiles. The number of events in the second quintile is divided by the number of events in the first quintile. This ratio is the RELATIVE RISK of a person in the second quintile having an event. Example: After a 5-year period, 5 people in the first quintile had an AMI. In the second quintile, 12 people had an AMI. Thus the relative risk associated with a value that falls in the second quintile is 12 divided by 5 or 2.4. A person in the second quintile is 2.4 times more likely to have an AMI than a person in the first quintile.

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