# Performance indexes

Performance of the proposed classifiers has been tested by means of the following indexes:

 (1)

 (2)

 (3)

 (4)

 (5)

where is the actual number of Positives, i.e., number of *patients* in the set, is the number of True Positives, i.e., the number of *patients* correctly classified, is the actual number of Negatives, i.e., the number of *controls* in the set, is the number of False Negatives, i.e., the number of *patients* wrongly classified as *controls*; is the number of True Negatives, i.e., the number of *controls* correctly classified, and is the number of False Positives, i.e. the number of *controls* wrongly classified as *patients*; *Prev* is the Prevalence and is most commonly described as the percentage of people with the disease in a specified population.

In (1) is the True Positive Rate, also known as sensitivity or recall, and measures the ability of the model to correctly identify *patients* (people affected by MS).

In (2) is the True Negative Rate, also known as specificity, and measures the ability of the model to correctly identify *controls* (healthy people).

In (3) is the Balanced Accuracy and represents the arithmetic mean of sensitivity and specificity.

In (4) PPV is the Predictive Positive Value and indicates the probability that following a positive test result, that individual will truly have that specific disease.

In (5) NPV is the Negative Predictive Value and indicates the probability that following a negative test result, that individual will truly not have that specific disease.