

In binary classification, each structure/repeat combination may be a true positive (TP), false positive (FP), true negative (TN), or false negative (FN)

Case 1: nothing is affected (negative control)

- False positive: a structure/repeat combination for which any structure is rejected
- True negative: a structure/repeat combination for which any structure is not rejected
- Nothing is affected → no true positives or false negatives
- Can estimate false positive rate; cannot estimate false negative rate

Case 2: left hippocampus is affected

- False positive: a structure/repeat combination for which amygdala is rejected
- False negative: a structure/repeat combination for which hippocampus is not rejected
- True negative: a structure/repeat combination for which amygdala is not rejected
- True positive: a structure/repeat combination for which hippocampus is rejected
- Can estimate both false positive and false negative rates

Case 3: both left amygdala and left hippocampus are affected (positive control)

- True positive: a structure/repeat combination for which any structure is rejected
- False negative: a structure/repeat combination for which any structure is not rejected
- Both structures are affected → no false positives or true negatives
- Cannot estimate false positive rate; can estimate false negative rate

Case 4: either left hippocampus or left amygdala are affected, but not both

- True positive: a structure/repeat combination for which either hippocampus or amygdala is correctly rejected
- False positive: a structure/repeat combination for which either hippocampus or amygdala is incorrectly rejected
- True negative: a structure/repeat combination for which either hippocampus or amygdala is correctly not rejected
- False negative: a structure/repeat combination for which either hippocampus or amygdala is incorrectly not rejected
- One structure is definitely affected → no false positives or true negatives
- Cannot estimate false positive rate; can estimate false negative rate