

**S2 Supporting Information. Definition of statistics calculated from confusion matrices**

**generated by models for classification of accelerometer data.** See text for details on data collected and other methods.

*Acronyms:*

TP= True positive

TN= True negative

FP= False positive

FN= False negative

**Accuracy:** Overall, describes frequency with which the classifier is correct.

$$Accuracy = (TP+TN) / (TP+FP+FN+TN)$$

**Kappa:** A measure of how well the classifier performed as compared to how well it would have performed simply by chance.

**P value:** A weighted average of the true positive rate (recall) and precision.

**Sensitivity or true positive rate (TPR):**

The proportion of occurrences of a behavior that are accurately predicted (i.e., the model predicted a behavior and it actually occurred).

$$TPR=TP / (TP+FN)$$

**Specificity (SPC) or true negative rate:**

The proportion of occurrences when a behavior does not occur that are accurately predicted (i.e., the model predicted the behavior did not occur and it did not).

$$SPC= TN / (TN+FP)$$

**Precision or positive predictive value (PPV):**

## Supervised accelerometry classification

23 The proportion of predictions of a behavior that are accurate (i.e., the behavior actually occurred  
24 when the model predicted it did).

25  $PPV = TP / (TP + FP)$

26 **Negative predictive value (NPV):**

27 The proportion of predictions that a behavior does not occur that are accurate (i.e., the behavior  
28 did not occur but the model predicted it did).

29  $NPV = TN / (TN + FN)$

30 **Prevalence (PRV):**

31 The proportion of correctly predicted occurrences composed of a single behavior.

32  $PRV = TP / (TP + FP + FN + TN)$

33 **Balanced Accuracy (BA):**

34 The mean of sensitivity and specificity by behavior type

35  $BA = (Sensitivity + Specificity) / 2$