

**Supplementary Table 1. Sensitivity and specificity of the different classification analyses**

Estimated sensitivity and specificity of an L2-regularized logistic regression model, trained with data from whole brain images and regions of interests in five different brains regions. The group closest to estimated disease onset (considering the control group further from clinical diagnosis than any of the prHD groups) is considered to be the “positive” group, hence the sensitivity indicates the percentage of the participants in this group that is correctly classified.

**A. Control versus prHD<sub>near</sub>**

	Whole brain	Hypothalamic region	Caudate	Insula	Cortex	Cerebellum
<b>Sensitivity (%) (95% CI)</b>	84.3 (73.2,91.5)	87.1 (76.5,93.6)	91.4 (81.6,96.5)	88.6 (78.2,94.6)	70.0 (57.7,80.1)	57.1 (44.8,68.7)
<b>Specificity (%) (95% CI)</b>	90.7 (81.1,95.8)	85.3 (74.8,92.1)	85.3 (74.8,92.1)	89.3 (79.5,95.0)	69.3 (57.5,79.2)	72.0 (60.3,81.5)

**B. Control versus prHD<sub>mid</sub>**

	Whole brain	Hypothalamic region	Caudate	Insula	Cortex	Cerebellum
<b>Sensitivity (%) (95% CI)</b>	72.0 (60.3,81.5)	78.7 (67.4,87.0)	76.0 (64.5,84.8)	74.7 (63.1,83.7)	65.3 (53.4,75.7)	58.7 (46.7,69.7)
<b>Specificity (%) (95% CI)</b>	72.0 (60.3,81.5)	70.7 (58.9,80.3)	77.3 (65.9,85.9)	76.0 (64.5,84.8)	62.7 (50.7,73.3)	60.0 (48.0,70.9)

**C. Control versus prHD<sub>far</sub>**

	Whole brain	Hypothalamic region	Caudate	Insula	Cortex	Cerebellum
<b>Sensitivity (%) (95% CI)</b>	62.7 (50.7,73.3)	69.3 (57.5,79.2)	66.7 (54.7,76.9)	53.3 (41.5,64.8)	65.3 (53.4,75.7)	57.3 (45.4,68.5)
<b>Specificity (%) (95% CI)</b>	58.7 (46.7,69.7)	56.0 (44.1,67.3)	54.7 (42.8,66.1)	50.7 (39.0,62.3)	49.3 (37.7,61.0)	44.0 (32.7,55.9)

**D. prHD<sub>far</sub> versus prHD<sub>near</sub>**

	Whole brain	Hypothalamic region	Caudate	Insula	Cortex	Cerebellum
<b>Sensitivity (%) (95% CI)</b>	75.7 (63.7,84.8)	72.9 (60.7,82.5)	82.9 (71.6,90.5)	71.4 (59.2,81.3)	51.4 (39.3,63.4)	54.3 (42.0,66.1)
<b>Specificity (%) (95% CI)</b>	84.0 (73.3,91.1)	84.0 (73.3,91.1)	88.0 (78.0,94.0)	81.3 (70.3,89.1)	65.3 (53.4,75.7)	69.3 (57.5,79.2)

**E. prHD<sub>mid</sub> versus prHD<sub>near</sub>**

	Whole brain	Hypothalamic region	Caudate	Insula	Cortex	Cerebellum
<b>Sensitivity (%) (95% CI)</b>	58.6 (46.2,70.0)	54.3 (42.0,66.1)	64.3 (51.9,75.1)	52.9 (40.6,64.8)	50.0 (38.6,61.4)	52.9 (40.6,64.8)
<b>Specificity (%) (95% CI)</b>	78.7 (67.4,87.0)	74.7 (63.1,83.7)	66.7 (54.7,76.9)	65.3 (53.4,75.7)	60.0 (48.0,70.9)	76.0 (64.5,84.8)

**F. prHD<sub>far</sub> versus prHD<sub>mid</sub>**

	Whole brain	Hypothalamic region	Caudate	Insula	Cortex	Cerebellum
<b>Sensitivity (%) (95% CI)</b>	61.3 (49.4,72.1)	62.7 (50.7,73.3)	61.3 (49.4,72.1)	57.3 (45.4,68.5)	58.7 (46.7,69.7)	44.0 (32.7,55.9)
<b>Specificity (%) (95% CI)</b>	52.0 (40.2,63.6)	62.7 (50.7,73.3)	65.3 (53.4,75.7)	61.3 (49.4,72.1)	61.3 (49.4,72.1)	48.0 (36.4,59.8)