Supporting material (two figures and one table) for

Cross-validated models of the relationships between neck muscle electromyography and three-dimensional head kinematics during gaze behaviour

submitted to the Journal of Neurophysiology (2011)

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**Supporting figure 1:** EMG activity (*y*-axis) of all 12 neck muscles plotted as a function of horizontal head orientation (*x*-axis) during all static intervals of animal M1 pooled together. Vertical scale bars denote 10  $\mu$ V.



**Supporting figure 2:** EMG activity (*y*-axis) of all 12 neck muscles plotted as a function of horizontal head orientation (*x*-axis) during all static intervals of animal M2 pooled together. Vertical scale bars denote 10  $\mu$ V.

	Static	Dynamic	Full
RCPmaj.	L(0.64), R(0.69)	L(0.20), R(0.35)	L(0.54), R(0.51)
OCI	L(0.64), R(0.66)	L(0.25), R(0.31)	L(0.48), R(0.58)
COM	L(0.41), R(0.30)	L(0.28), R(0.14)	L(0.38), R(0.28)
BC	L(0.52), R(0.34)	L(0.12), R(0.14)	L(0.29), R(0.26)
SP	L(0.43), R(0.61)	L(0.16), R(0.39)	L(0.17), R(0.54)
SCM	L(0.71), R(0.35)	L(0.44), R(0.26)	L(0.54), R(0.36)
Average	0.53	0.25	0.41

A: Animal M1

B: Animal M2

	Static	Dynamic	Full
RCPmaj.	L(0.80), R(0.81)	L(0.40), R(0.48)	L(0.56), R(0.66)
OCI	L(0.64), R(0.79)	L(0.24), R(0.47)	L(0.44), R(0.64)
COM	L(0.56), R(0.66)	L(0.34), R(0.37)	L(0.44), R(0.51)
BC	L(0.17), R(0.16)	L(0.09), R(0.10)	L(0.10), R(0.11)
SP	L(0.51), R(0.63)	L(0.34), R(0.37)	L(0.46), R(0.57)
SCM	L(0.83), R(0.74)	L(0.62), R(0.50)	L(0.77), R(0.69)
Average	0.61	0.36	0.50

**Supporting table 1:** The  $R_{cv}^{2}$  values for individual muscles and their average. The results are shown for static (left column), dynamic (middle column) and full (static + dynamic, right column) data of animal M1 (*A*) and M2 (*B*). The values are the same that were used to calculate and plot the averages (shown here in the last row of each table) in Fig. 9. L and R denote left and right neck muscles, respectively.