Supplement 3a. Normative values used for z-transformation. Values are mean (SD).

MEP: CxM-UL: 19.7ms (1.3) (Hess in Stoehr et al. 2005); CMCT-UL: 6.0ms (0.9) (Claus 1990)

CxM-LL: height*0.308 - 23.587 (1.6), CMCT-LL: height*0.19-17.783 (1.17) (Hess in Stoehr et al. 2005)

SEP: N20: 19.3ms (1.19), CCT-M1: 5.75ms (0.6), CCT-M2: 9.03ms (0.77) (Stoehr in Stoehr et al. 2005);

P40: height*0.2+4.8 (1.6), CCT-T height*0.0357+10.46 (1.33) (Chiappa in Chiappa 3rd Ed, 1997)

Reference:

Claus D. Central motor conduction: method and normal results. Muscle Nerve. 1990;13:1125-32.

Hess C. Motorisch Evozierte Potentiale. In: Stoehr, Dichgans, Buettner, Hess (eds). *Evozierte Potentiale*, 4th ed, Heidelberg: Springer-Verlag, 2005, p 570, 574

Stoehr M. Somatosensible Reizantworten von Nerven, Rückenmark und Gehirn. In: Stoehr, Dichgans, Buettner, Hess (eds). *Evozierte Potentiale*, 4th ed, Heidelberg: Springer-Verlag, 2005, p 63

Chiappa KH. Short-latency somatosensory EPS: Methodology. In: Chiappa (eds). Evoked Potentials in Clinical Medicine. 3rd ed. Philadelphia: Lippincott-Raven, 1997, p 314

Supplement 3b. Weights of variance components used to calculate squared standard errors for the different comparisons*

	S	R	S*T	S*R	S*L	R*T	S*R*L	S*R*T	S*L*T	error
Cross-sectional group comparison (SE_{cross}) [1]	$2/n$	0	$2/n$	$2/n \cdot r$	$2/n$	0	$2/n \cdot r$	$2/n \cdot r$	$2/n$	$2/n \cdot r$
Longitudinal change in single subjects (SE_{1s}) [2]	0	0	$2/n$	0	0	$2/r$	0	$2/n \cdot r$	$2/n$	$2/n \cdot r$
Comparison of longitudinal changes between two groups (SE_{long}) [3]	0	0	$4/n$	0	0	0	0	$4/n \cdot r$	$4/n$	$4/n \cdot r$

S = subject, R = rater, T = time, L = side; n = number of subjects per group (n=1 for individual subjects), r = number of raters

[1] difference between two independent group means of EP-measurements, equal sized groups (n= i, with i=1 to i= 50, r=2)

[2] difference between longitudinal within-subject EP-measurements assuming no real changes between the two measurements (n=1, r=2),

[3] difference between two independent group means of individual longitudinal differences in EP-measurements, equal sized groups (n= i, with i=1 to i= 50, r=2)

* Standard error of respective estimate = square root of the weighted sum of variance components with weights given in the table.