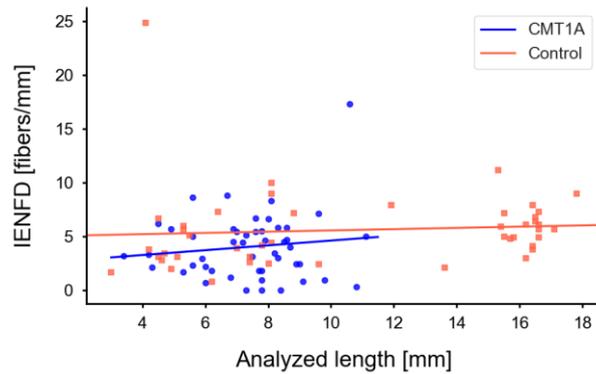
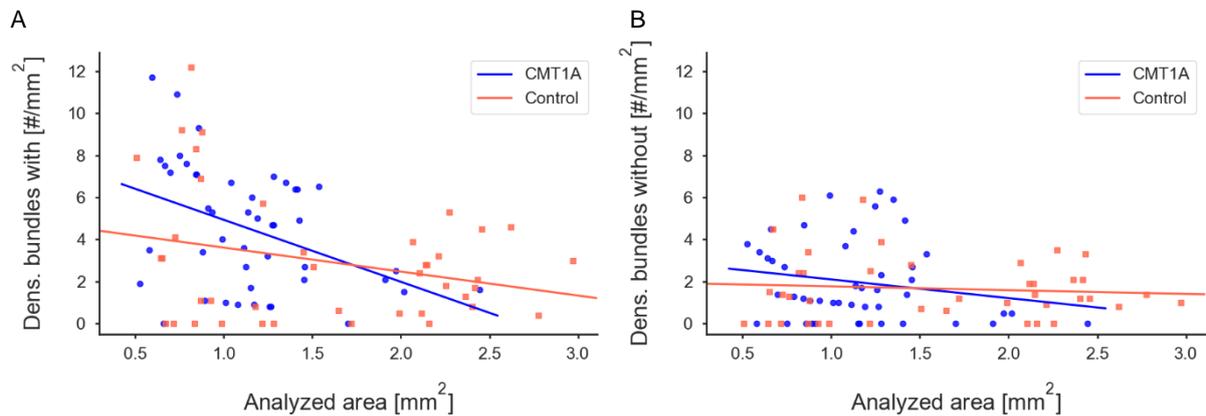


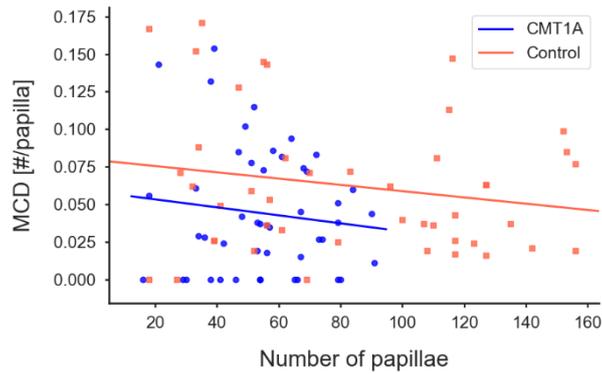
## Supplementary material



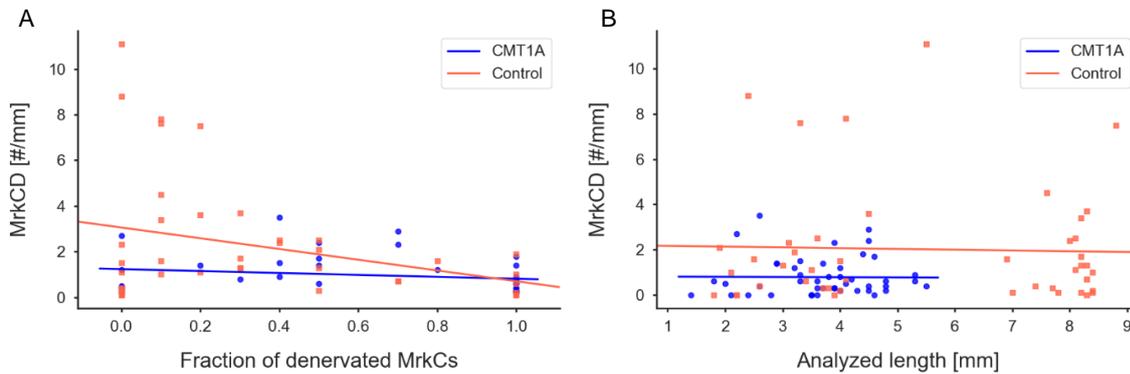
**Supplementary Figure 1: Correlations between the intraepidermal nerve fiber densities and the analyzed epidermis length of CMT1A (blue;  $R=0.13$ ,  $P=0.39$ ) and healthy controls (red;  $R=0.08$ ,  $P=0.60$ ).**



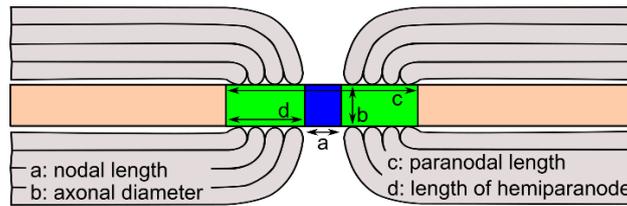
**Supplementary Figure 2: Correlation analyses between analyzed tissue and the obtained nerve bundle densities in CMT1A (blue) and healthy controls (red).** (A) Bundles with myelinated fibers vs. dermis area (Control:  $R=-0.276$ ,  $P=0.08$ , CMT1A:  $R=-0.414$ ,  $P=0.004$ ). (B) Bundles without myelinated fibers vs. dermis area (Control:  $R=-0.085$ ,  $P=0.60$ , CMT1A:  $R=-0.191$ ,  $P=0.20$ ).



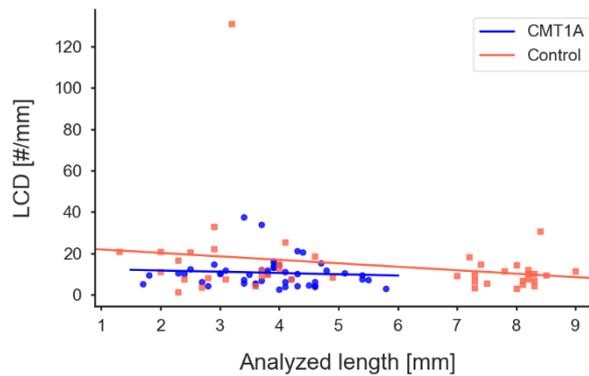
**Supplementary Figure 3: Correlations between the Meissner corpuscle densities and the analyzed numbers of papillae in CMT1A (blue;  $R=-0.117$ ,  $P=0.43$ ) and healthy controls (red;  $R=-0.190$ ,  $P=0.211$ ).**



**Supplementary Figure 4: Correlations between the Merkel cell densities and other parameters in CMT1A (blue) and healthy controls (red).** (A) Merkel cell density vs. density of denervated Merkel cells (Control:  $R=-0.313$ ,  $P=0.049$ ; CMT1A:  $P=0.210$ ,  $R=-0.205$ ). (B) Merkel cell density vs. analyzed epidermis length (Control:  $R=-0.0089$ ,  $P=0.83$ ; CMT1A:  $R=-0.010$ ,  $P=0.94$ ).



**Supplementary Figure 5: Schematic of the node of Ranvier.** Structures measured for the evaluation of the nodal parameters: node (blue), hemiparanodes (green). For measurements, samples were double-labeled with anti-Caspr and anti-pan-sodium channel as described in the methods.



**Supplementary Figure 6: Correlation between Langerhans cell density and analyzed epidermis length in CMT1A (blue,  $R=-0.084$ ,  $P=0.58$ ) and healthy controls (red,  $R=-0.217$ ,  $P=0.157$ ).**