

**Supplementary Table S1:** The classification of different types of Charcot-Marie-Tooth (CMT) disease includes subtypes, their phenotypes, OMIM ID, mode of inheritance, responsible genes, chromosomal location, protein, UniProtKB ID, and onset age.

Charcot-Marie-Tooth Disease Type 1 (CMT1)									
S/No.	Subtypes	CMT OMIM	Inheritance	Gene	Gene OMIM	Chromosomal location	Protein	UniprotKB	Onset age
1.1	CMT type 1A	118220	AD	<i>PMP22</i>	601097	17p12	PMP22	Q01453	1 <sup>st</sup> -2 <sup>nd</sup> decade
1.2	CMT type 1B	118200	AD	<i>MPZ</i>	159440	1q23.3	MPZ	P25189	1 <sup>st</sup> -2 <sup>nd</sup> decade
1.3	CMT type 1C	601098	AD	<i>LITAF</i>	603795	16p13.13	LITAF	Q99732	2-12 years
1.4	CMT type 1D	607678	AD	<i>EGR2</i>	129010	10q21.3	EGR2	P11161	1 <sup>st</sup> -2 <sup>nd</sup> decade
1.5	CMT type 1E	118300	AD	<i>PMP22</i>	601097	17p12	PMP22	Q01453	2-12 years
1.6	CMT type 1F	607734	AD/AR	<i>NEFL</i>	162280	8p21.2	NEFL	P07196	1-13 years
1.7	CMT type 1G	6168279	AD	<i>PMP2</i>	170715	8q21.13	PMP2	P02689	1 <sup>st</sup> -2 <sup>nd</sup> decade
1.8	CMT type 1H	619764	AD	<i>FBLN5</i>	604580	14q32.12	FBLN5	Q9UBX5	1 <sup>st</sup> - 3 <sup>rd</sup> Decade
1.9	CMT type 1I	619742	AD	<i>POLR3B</i>	614366	12q23.3	POLR3B	Q9NW08	1 <sup>st</sup> -2 <sup>nd</sup> decade
Charcot-Marie-Tooth Disease Type 2 (CMT2)									
2.1	CMT type 2A1	118210	AD	<i>KIF1B</i>	605995	1p36.22	KIF1B	O60333	1 <sup>st</sup> – 5 <sup>th</sup> decade
2.2	CMT type 2A2	609260	AD/AR	<i>MFN2</i>	608507	1p36.22	MFN2	O95140	1 <sup>st</sup> – 5 <sup>th</sup> decade
2.3	CMT type 2B	600882	AD	<i>RAB7</i>	602298	3q21.3	RAB7	P51149	2 <sup>nd</sup> Decade
2.3.1	CMT type 2B1	605588	AR	<i>LMNA</i>	150330	1q22	LMNA	P02545	1 <sup>st</sup> - 3 <sup>rd</sup> Decade
2.3.2	CMT type 2B2	605589	AR	<i>MED25</i>	605610	19q13.33	MED25	Q71SY5	3 <sup>rd</sup> – 5 <sup>th</sup> decade

2.4	CMT type 2C	606071	AD	<i>TRPV4</i>	605427	12q24.11	TRPV4	Q9HBA0	1 <sup>st</sup> – 6 <sup>th</sup> decade
2.5	CMT type 2CC	616924	AD	<i>NEFH</i>	162230	22q12.2	NEFH	P12036	1 <sup>st</sup> – 4 <sup>th</sup> Decade
2.6	CMT type 2D	601472	AD	<i>GARS1</i>	600287	7p14.3	GARS1	P41250	2 <sup>nd</sup> – 3 <sup>rd</sup> decade
2.7	CMT type 2DD	618036	AD	<i>ATP1A1</i>	182310	1p13.1	ATP1A1	P05023	1 <sup>st</sup> -2 <sup>nd</sup> decade
2.8	CMT type 2E	607684	AD	<i>NEFM</i>	162280	8p21.2	NEFM	P07197	1 <sup>st</sup> - 3 <sup>rd</sup> Decade
2.9	CMT type 2EE	618400	AR	<i>MPV17</i>	137960	2p23.3	MPV17	P39210	1 <sup>st</sup> -2 <sup>nd</sup> Decade
2.10	CMT type 2F	606595	AD	<i>HSPB1</i>	602195	7q11.23	HSPB1	P04792	2 <sup>nd</sup> – 3 <sup>rd</sup> decade
2.11	CMT type 2FF	619519	AD	<i>CADM3</i>	609743	1q23.2	CADM3	Q8N126	1 <sup>st</sup> - 3 <sup>rd</sup> Decade
2.12	CMT type 2GG	606483	AD	<i>GBF1</i>	603698	10q24.32	GBF1	Q92538	2 <sup>nd</sup> – 3 <sup>rd</sup> decade
2.13	CMT type 2HH	619574	AD	<i>JAG1</i>	601920	20p12.2	JAG1	P78504	1 <sup>st</sup> - 3 <sup>rd</sup> Decade
2.14	CMT type 2I	607677	AD	<i>MPZ</i>	159440	1q23.3	MPZ	P25189	4 <sup>th</sup> -6 <sup>th</sup> Decade
2.15	CMT type 2J	607736	AD	<i>MPZ</i>	159440	1q23.3	MPZ	P25189	4 <sup>th</sup> – 6 <sup>th</sup> decade
2.16	CMT type 2K	607831	AD/AR	<i>GDAP1</i>	606598	8q21.11	GDAP1	Q8TB36	< 3 Years
2.17	CMT type 2L	608673	AD	<i>HSPB8</i>	608014	12q24.23	HSPB8	Q9UJY1	2 <sup>nd</sup> – 4 <sup>th</sup> decade
2.18	CMT type 2M	606482	AD	<i>DNM2</i>	602378	19q13.2	DNM2	P50570	1 <sup>st</sup> - 3 <sup>rd</sup> Decade
2.19	CMT type 2N	613287	AD	<i>AARS</i>	601065	16q22.1	AARS	P49588	1 <sup>st</sup> – 6 <sup>th</sup> Decade

2.20	CMT type 2O	614228	AD	<i>DYNC1H1</i>	600112	14q32.31	DYNC1H1 1	Q14204	1 <sup>st</sup> Decade
2.21	CMT type 2P	614436	AR	<i>LRSAM1</i>	610933	9q33.3-q34.11	LRSAM1	Q6UWE0	1 <sup>st</sup> – 8 <sup>th</sup> decade
2.22	CMT type 2Q	615025	AD	<i>DHTKD1</i>	614984	10p14	DHTKD1	Q96HY7	2 <sup>nd</sup> –3 <sup>rd</sup> decade
2.23	CMT type 2R	615490	AR	<i>TRIM2</i>	614141	4q3.1	TRIM2	Q9C040	< 1 year
2.24	CMT type 2S	616155	AR	<i>IGHMBP2</i>	600502	11q13.3	IGHMBP2	P38935	1 <sup>st</sup> Decade
2.25	CMT type 2T	617017	AD/AR	<i>MME</i>	120520	3q25.2	MME	P08473	4 <sup>th</sup> – 6 <sup>th</sup> Decade
2.26	CMT type 2U	616280	AD	<i>MARS</i>	156560	12q13.3	MARS	P56192	>50 years
2.27	CMT type 2V	616491	AD	<i>NAGLU</i>	609701	17q21.1	NAGLU	P54802	2 <sup>nd</sup> – 7 <sup>th</sup> Decade
2.28	CMT type 2W	616625	AD	<i>HARS</i>	142810	5q31.3	HARS	P12081	1st – 6 <sup>th</sup> Decade
2.29	CMT type 2X	616668	AR	<i>SPG11</i>	610844	15q21.1	SPG11	Q96JI7	1 <sup>st</sup> – 4 <sup>th</sup> Decade
2.30	CMT type 2Y	616687	AD	<i>VCP</i>	601023	9p13.3	VCP	P55072	1 <sup>st</sup> – 6 <sup>th</sup> Decade
2.31	CMT type 2Z	616688	AD	<i>MORC2</i>	616661	22q12.2	MORC2	Q9Y6X9	1 <sup>st</sup> -2 <sup>nd</sup> decade
Charcot-Marie-Tooth Disease Type 3 (CMT3) or Dejerine-sottas disease									
3	CMT Type 3	145900	AD/AR	<i>MPZ</i>	601097	1q23.3	MPZ	P25189	1 <sup>st</sup> -2 <sup>nd</sup> decade
			AD/AR	<i>EGR2</i>	129010	10q21.3	EGR2	P11161	1 <sup>st</sup> -2 <sup>nd</sup> decade
			AD/AR	<i>PMP22</i>	159440	17p12	PMP22	Q01453	1 <sup>st</sup> -2 <sup>nd</sup> decade
			AD/AR	<i>PRX</i>	605725	19q13.2	PRX	Q9BXM0	1 <sup>st</sup> -2 <sup>nd</sup> decade
Charcot-Marie-Tooth Disease Type 4 (CMT4)									
4.1	CMT type 4A	214400	AR	<i>GDAP1</i>	606598	8q21.11	GDAP1	Q8TB36	< 2 years
4.2	CMT type 4B1	601382	AR	<i>MTMR2</i>	603557	11q21	MTMR2	Q13614	< 4 years
4.3	CMT type 4B2	604563	AR	<i>SBF2</i>	607697	11p15.4	SBF2	Q86WG5	4-13 years

4.4	CMT type 4B3	615284	AR	<i>SBF1</i>	603560	22q13.33	SBF1	O95248	5-20 years
4.5	CMT type 4C	601596	AR	<i>SH3TC2</i>	608206	5q32	SH3TC2	Q8TF17	1 <sup>st</sup> – 4 <sup>th</sup> Decade
4.6	CMT type 4D	601455	AR	<i>NDRG1</i>	605262	8q24.22	NDRG1	Q92597	5-25 years
4.7	CMT type 4E	605253	AD/AR	<i>EGR2/MPZ</i>	129010	10q21.3	EGR2	P11161	Congenital
4.8	CMT type 4F	614895	AR	<i>PRX</i>	605725	19q13.2	PRX	Q9BXM0	< 1 years
4.9	CMT type 4G	6052850	AR	<i>HK-1</i>	142600	10q22.1	HK-1	P19367	8-16 years
4.10	CMT type 4H	609311	AR	<i>FGD4</i>	611104	12p11.21	FGD4	Q96M96	< 2 years
4.11	CMT type 4J	611228	AR	<i>FIG4</i>	609390	6p21	FIG4	Q92562	1 <sup>st</sup> – 6 <sup>th</sup> Decade
4.12	CMT type 4K	616684	AR	<i>SURF1</i>	185620	9p34.2	SURF1	Q15526	1 <sup>st</sup> decade
<b>Charcot-Marie-Tooth Disease X-linked Type (CMTX)</b>									
5.1	CMT X1	302800	XL-D	<i>GJB1</i>	304040	Xq13.1	GJB1	P08034	1 <sup>st</sup> -2 <sup>nd</sup> decade
5.2	CMT X2	302801	XL-R	?	?	Xp22.2	?	?	< 1 years
5.3	CMT X3	301802	XL-R	?	?	Xq26	?	?	10-14 years
5.4	CMT X4	310490	XL-R	<i>AIFM1</i>	300169	Xq26.1	AIFM1	O95831	< 4 years
5.5	CMT X5	311070	XL-R	<i>PRPS1</i>	311850	Xq22.3	PRPS1	P60891	1 <sup>st</sup> decade
5.6	CMT X6	300905	XL-D	<i>PDK3</i>	300906	Xp22.11	PDK3	Q15120	1 <sup>st</sup> decade
<b>Dominant Intermediate Charcot-Marie-Tooth Disease (DI-CMT)</b>									
6.1	CMT-DI A	606483	AD	<i>GBF1</i>	603698	10q24.32	GBF1	Q92538	2 <sup>nd</sup> Decade
6.2	CMT-DI B	606482	AD	<i>DNM2</i>	602378	19q13.2	DNM2	P50570	1 <sup>st</sup> -2 <sup>nd</sup> decade
6.3	CMT-DI C	608323	AD	<i>YARS</i>	603623	1p35.1	YARS	P54577	1 <sup>st</sup> – 6 <sup>th</sup> Decade
6.4	CMT-DI D	607791	AD	<i>MPZ</i>	601097	1q23.3	MPZ	P25189	---

6.5	CMT-DI E	614455	AD	<i>INF2</i>	610982	14q32.33	INF2	Q27J81	1 <sup>st</sup> -3 <sup>rd</sup> decade
6.6	CMT-DI F	615185	AD	<i>GNB2</i>	139390	7q22.1	GNB2	P63244	1 <sup>st</sup> -2 <sup>nd</sup> decade
6.7	CMT-DI G	617882	AD	<i>NEFL</i>	162280	8p21.1	NEFL	P07196	1 <sup>st</sup> -2 <sup>nd</sup> decade
<b>Recessive Intermediate Charcot-Marie-Tooth Disease (RI-CMT)</b>									
6.8	CMT-RI A	608340	AR	<i>GDAP1</i>	606598	8q21.11	GDAP1	Q8TB36	2-4 years
6.9	CMT-RI B	613641	AR	<i>KARS</i>	601421	16q23.1	KARS	Q15046	---
6.10	CMT-RI C	615376	AR	<i>PLEKHG5</i>	611101	1p36.31	PLEKHG5	O94827	1 <sup>st</sup> – 5 <sup>th</sup> Decade
6.11	CMT-RI D	616039	AR	<i>COX6A1</i>	602072	12q24.31	COX6A1	P12074	4-5 years

**Table S2:** *In-silico* predictions of the identified variants in their respective genes by online prediction tools

		<i>MPV17: c.83G&gt;</i>		<i>PRX: c.231C&gt;A</i>		<i>GJB1 c.61G&gt;C</i>		<i>SACS: c.262C&gt;T</i>		<i>SACS: c.4934G&gt;C</i>	
S/No	Engine	Score	Indicative Prediction	Score	Indicative Prediction	Score	Indicative Prediction	Score	Indicative Prediction	Score	Indicative Prediction
1	<u>BayesDel addAF</u>	0.4419	Damaging	0.618	Damaging	0.7408	Damaging	0.625	Damaging	0.5022	Damaging
2	<u>BayesDel noAF</u>	0.3971	Damaging	0.6499	Damaging	0.8263	Damaging	0.66	Damaging	0.4836	Damaging
3	MetaLR	0.7972	Damaging	n/p, n/a	n/p, n/a	0.9901	Damaging	n/p, n/a	n/p, n/a	0.8923	Damaging

4	<u>MetaRNN</u>	0.9275	Damaging	n/p, n/a	n/p, n/a	0.9942	Damaging	n/p, n/a	n/p, n/a	0.9386	Damaging
5	MetaSVM	0.5284	Damaging	n/p, n/a	n/p, n/a	0.9692	Damaging	n/p, n/a	n/p, n/a	1.0003	Damaging
6	<u>REVEL</u>	0.787	n/p, n/a	n/p, n/a	n/p, n/a	0.971	n/p, n/a	n/p, n/a	n/p, n/a	0.8489	n/p, n/a
7	<u>BLOSUM</u>	8	n/p, n/a	n/p, n/a	n/p, n/a	6	n/p, n/a	n/p, n/a	n/p, n/a	-5	n/p, n/a
8	<u>DANN</u>	0.9962	n/p, n/a	0.9934	n/p, n/a	0.999	n/p, n/a	0.9971	n/p, n/a	0.9913	n/p, n/a
9	<u>DEOGEN2</u>	0.6296	Damaging	n/p, n/a	n/p, n/a	0.8818	Damaging	n/p, n/a	n/p, n/a	0.7455	Damaging
10	<u>EIGEN</u>	0.3549	n/p, n/a	0.2456	n/p, n/a	n/p, n/a	n/p, n/a	0.6421	n/p, n/a	0.5472	n/p, n/a
11	<u>EIGEN PC</u>	0.3916	n/p, n/a	0.002112	n/p, n/a	n/p, n/a	n/p, n/a	0.4614	n/p, n/a	0.4478	n/p, n/a
12	<u>FATHMM</u>	2.11	Damaging	0.4617	Neutral	6.3	Damaging	n/p, n/a	n/p, n/a	-2.99	Damaging
13	<u>FATHMM-MKL</u>	0.9467	Damaging	0.1743	Neutral	0.9715	Damaging	0.9542	Damaging	0.9821	Damaging
14	<u>FATHMM-XF</u>	0.7566	Damaging	n/p, n/a	n/p, n/a	n/p, n/a	n/p, n/a	0.7482	Damaging	0.9591	Damaging
15	<u>LIST-S2</u>	0.8637	Damaging	n/p, n/a	n/p, n/a	0.893	Damaging	n/p, n/a	n/p, n/a	0.9291	Damaging
16	<u>LRT</u>	-0.0	Deleterious	0	Deleterious	0	Deleterious	0.000006	Deleterious	0	Deleterious
17	<u>M-CAP</u>	0.5715	Damaging	n/p, n/a	n/p, n/a	0.9597	Damaging	n/p, n/a	n/p, n/a	0.8277	Damaging

18	<u>Mutation assessor</u>	2.48	Medium	n/p, n/a	n/p, n/a	4.015	High	n/p, n/a	n/p, n/a	3.355	Medium
19	<u>MutationTaster</u>	1, 0.9999	Disease causing	1	Disease causing	1	Disease causing	1	Disease causing	0.9993	Disease causing
20	<u>MVP</u>	0.9123	n/p, n/a	n/p, n/a	n/p, n/a	0.9998	n/p, n/a	n/p, n/a	n/p, n/a	0.9294	n/p, n/a
21	<u>PrimateAI</u>	0.7167	Tolerated	n/p, n/a	n/p, n/a	0.9061	Damaging	n/p, n/a	n/p, n/a	0.7239	Tolerated
22	<u>PROVEAN</u>	4.44	Damaging	n/p, n/a	n/p, n/a	7.22	Damaging	n/p, n/a	n/p, n/a	-6.28, -6.04	Damaging
23	<u>SIFT</u>	-0.045	Damaging	n/p, n/a	n/p, n/a	0	Damaging	n/p, n/a	n/p, n/a	0	Damaging
24	<u>SIFT4G</u>	-0.028	Damaging	n/p, n/a	n/p, n/a	-0.001	Damaging	n/p, n/a	n/p, n/a	0	Damaging

n/p: not predicted by online in-silico tools, n/a: not available