Supplementary Table 1. Proposed criteria for familial amyotrophic lateral sclerosis[3,4]

Definite FALS

History: ALS patient with at least two first- or second-degree relatives with ALS

Genetics: ALS patient with at least one relative with ALS or confirmed frontotemporal dementia and gene-positive cosegregation

Probable FALS

History: ALS patient with one first- or second-degree relative with ALS

Genetics/Neurodegeneration: ALS patient carrying a GGGGCC hexanucleotide repeat expansion in the first intron of C9ORF72 gene and with one first- or second-degree relative with confirmed frontotemporal dementia

Possible FALS

History: ALS patient with a distant relative with ALS (more distant than first or second-degree)

Genetics: Sporadic ALS patient with no family history, but positive for a FALS gene

Neurodegeneration: ALS patient with a family member with confirmed frontotemporal dementia

In Italics: modifications of the Criteria according to Chio et al, 2012

Supplementary Table 2. List of ALS-related genes

Name	**Frequency of cases**	**Mode of transmission**	**Gene**	**Locus**	**Protein**	**Cognitive impairment**	**Notes**	**Other diseases caused by the gene**
ALS1	20% fALS 1% sALS	AD/AR	*SOD1*	21q22.1	Superoxide dismutase 1 (Cu/Zn)	Yes, rare	Wide variations of frequency in different populations	
ALS2	Rare	AR	*Alsin*	2q33.1	Alsin		Juvenile ALS; occurs mainly in populations of Arab ancestry	Juvenile PLS (AR)
ALS3	Single family	AD	Not yet identified	18q21	Not yet identified			

ALS4	Rare	AD	*SETX*	9q34.13	Senataxin		Juvenile ALS	Ataxia-oculomotor apraxia type 2 (AR)
ALS5	Rare	AR	*SPG11*	15q21.1	Spatacsin	Yes	Juvenile ALS	Hereditary spastic paraplegia with thin corpus callosum (HSP11) (AR)
ALS6	3% fALS 0.5% sALS	AD/AR	*FUS/TLS*	16q11.2	Fused in sarcoma/ translocated in liposarcoma	Yes		Hereditary essential tremor 4 (ETM4) (AD)
ALS7	Single	AD	Not yet	20p13	Not yet identified			

	family		identified					
ALS8	Rare	AD	*VAPB*	20q13.32	Vesicle-associated membrane protein-associated protein B			
ALS9	Rare	AD	*ANG*	14q11.2	Angiogenin			
ALS10	4% fALS 1% sALS	AD	*TARDBP*	1p36.22	TAR DNA-binding protein 43 (TDP43)	Yes, frequent	25% of ALS patients of Sardinian ancestry	
ALS11	Rare	AD	*FIG4*	6q21	Phosphoinositide 5-phosphatase			Charcot–Marie–Hoffman disease (CMT4J) (AR)
ALS12	Rare	AD/AR	*OPTN*	10p13	Optineurin		Frequent in	Adult-onset

							Japan	primary open angle glaucoma (POAG) (AD)
ALS13	?	AD?	*ATXN2*	12q24.12	Ataxin2		Likely to be a susceptibility gene both for ALS and PD	Spinocerebellar ataxia 2 (SCA2) (AD)
ALS14	1% fALS 0.5% sALS	AD	*VCP*	9p13.3	Valosin containing protein	Yes, frequent		Inclusion body myositis, Paget disease and FTD (IBMPFD) (AD)
ALS15	1% fALS	X-linked	*UBQLN2*	Xp11.21	Ubiquilin2	Yes,		

		Dominant				frequent		
ALS16	?	AR	*SIGMAR1*	9p13.3	Sigma non-opioid intracellular receptor 1		Juvenile ALS; occurs mainly in populations of Arab ancestry	
ALS17	1% fALS (4% PMA)	AD	*CHMP2B*	3p11.2	Charged multivesicular body protein 2b	Yes	Predominantly lower motor neuron involvement	
ALS18	1% fALS 0.5% sALS	AD	*PFN1*	17p13.2	Profilin1			
ALS19	1% fALS	AD	*SQSTM1*	5q35.3	p62/sequestosome	Yes, frequent		Paget disease of bone (PDB3) (AD)

FTD-ALS	35% fALS 5% sALS	AD	*C9ORF72*	9p21.2	Chromosome 9 open reading frame 72	Yes, frequent	North-to-south decreasing gradient of frequency in Europe	Frontotemporal dementia

Classification based on OMIM. AD, autosomal dominant; AR, autosomal recessive; FTD, frontotemporal dementia; PD, Parkinson disease; PLS, primary lateral sclerosis; PMA, progressive muscular atrophy.