Additional file 1: Table S1. Summary of published screening studies based primarily on genetic analysis

Cohort (reference)	Study population	Design / observation period	Centres / countries	Screening method(s)	Patients identified, n/N (%)*
Pinto et al. 2004 [55]	Antenatal patients with suspected LSD based on metabolic screening N = 353	Retrospective observational / 20 years	Single centre / Portugal	*NPC1/NPC2* sequencing† Enzyme assay panel Filipin staining	Patients: 18 (0.4%)
Bauer et al. 2013 [33]	Adults with neurological and psychiatric symptoms N = 250	Prospective observational / No period specified	Multicentre / EU and US	*NPC1/NPC2* sequencing †	Patients: 3 (1.2%) Carriers: 12 (4.8%)
Schicks et al. 2013 [34]	Adults aged <40 years with ataxia, EOCD and medical history suggesting recessive disease M = 24	Prospective observational / 4 years	Single centre / Germany	*NPC1/NPC2* sequencing† Filipin staining	Patients: 4 (16.7%)
Zech et al. 2013 [35]	Adults with PD (n = 563), FTD (n = 133) or PSP (n = 94)	Prospective controlled observational No period specified	Multicentre / Germany	*NPC1/NPC2* sequencing† Biomarkers	Patients: 0 (0%) Carriers (PD): 6 (1.1%)
McKay et al. 2014 [41]	Infants with jaundice/cholestasis N = 228	Prospective observational / No period specified	Multicentre / UK	*NPC1/NPC2 NGS sequencing* (WES) in gene panel	Patients: 1 (0.4%) Carriers: 5 (2.2%)
Herbst et al. 2015 [42]	Infants with jaundice/cholestasis N = 6	Prospective observational / No period specified	Single-centre / Germany	*NPC1/NPC2 NGS sequencing* (WES) in gene panel	Patients: 1 (16.7%)
Synofzik et al. 2015 [27]	Adolescents/adults with unexplained early-onset ataxia N = 96	Prospective observational / 6 years	Multicentre / Germany	Targeted high-throughput *NPC1/NPC2* sequencing	Patients: 2 (2.1%)
Pyle et al. 2015 [40]	Patients with unexplained inherited, sporadic ataxias N = 35	Prospective observational / No period specified	Single centre / UK	*NPC1/NPC2* NGS sequencing (WES)	Patients: 2 (5.7%)
Marelli et al. 2016 [39]	Adolescents/adults with probable early-onset ataxia N = 33	Prospective observational / No period specified	Multicentre / France	Mini-exome/CNV-based NGS gene panel	Patients: 2 (6.1%)
Cupidi et al. 2017 [38]	Adults with early-onset dementia-plus N = 50	Prospective observational / No period specified	Single centre / Italy	*NPC1/NPC2* sequencing† NP-C SI	Patients: 0 (0%) Carriers: 4 (8.0%)
Nanetti et al. 2017 [36]	Adults with suspected HD N = 18	Prospective observational / No period specified	Single centre / Italy	*NPC1/NPC2* sequencing†	Patients: 3 (16.7%)
Topcu et al. 2017 [37]	Family members of NPC1/NPC2 probands N = 510	Prospective observational / No period specified	Single centre / Turkey	*NPC1/NPC2* sequencing†	Patients: 2 (0.4%) Carriers: 116 (22.7%)
Mavridou et al. 2014 [43]	Family members of two NP-C patients N = 153	Retrospective observational / No period specified	Single centre / Greece	*NPC1/NPC2* sequencing†	Patients: 0 (0%) Carriers: 64 (41.8%)

**n/N (%), number of cases detected per cohort or study over total number of subjects in cohort/study (% based on n/N); †Sanger sequencing; CNV, copy-number variation; FTD, frontotemporal dementia; LSD, lysosomal storage disease; NGS, next-generation sequencing; PD, Parkinson's disease; PSP, progressive supranuclear gaze palsy; SI, suspicion index; WES, whole-exome sequencing; HD, Huntington´s disease.*