ChatGPT

Deep Research on Eligibility Criteria in Key Neurology Trials

To build a trial-matching knowledge base, we analyzed inclusion and exclusion criteria across major neurology clinical trials in Alzheimer's disease (AD), Parkinson's disease (PD), epilepsy, multiple sclerosis (MS), amyotrophic lateral sclerosis (ALS), and Huntington's disease (HD). Below we extract the key medical terms defining eligibility, categorize each term, note its frequency of use across trials in the disorder, and map it to how it would appear in electronic medical records (EMRs).

Alzheimer's Disease (AD) Trials – EMERGE, ENGAGE, CLARITY-AD, TRAILBLAZER-ALZ 2, DIAN-TU

Common Criteria: Trials in early AD consistently required patients to be in the mild symptomatic stage. All trials specified an **age range** (typically 50–85 years) [1] [2] and a diagnosis of **MCI or mild AD dementia** as per standard criteria [1]. Cognitive function cutoffs were common: for example, **Mini-Mental State Exam (MMSE) ≥ 24** (out of 30) was required in 4 of 5 trials (80%) [3], sometimes allowing slightly lower scores (CLARITY-AD allowed MMSE 20–28 [4] since CDR up to 1.0 was included). A **Clinical Dementia Rating (CDR) global score of 0.5** (indicating very mild dementia) was required in most trials [3], often with a CDR Memory Box ≥0.5. All four drug trials mandated evidence of **amyloid pathology**, usually a positive PET scan for brain amyloid plaques [1] (or abnormal CSF amyloid/tau biomarkers [5] [6]). The DIAN-TU study, focused on familial AD, required a **pathogenic AD mutation** instead of amyloid PET, and allowed asymptomatic individuals (CDR 0) within 10 years of expected symptom onset [7] [8].

Exclusions: AD trials excluded confounding conditions. All 5 trials required **MRI screening** to rule out significant cerebrovascular pathology [9]. For example, participants could have no more than **4 microhemorrhages on MRI and no cortical infarcts or large strokes** [9]. **Seizure disorders or recent stroke** were typically exclusionary (e.g. no history of seizures or stroke in the past year) [10]. Use of **anticoagulants other than low-dose aspirin** was disallowed in anti-amyloid trials due to hemorrhage risk [11]. Participants could be on stable symptomatic AD medications (cholinesterase inhibitors or memantine) but no investigational AD drugs [12]. All trials required a reliable **study partner** to provide information, given the cognitive impairment [13].

Frequency Highlights: Nearly all AD trials shared the key terms "amyloid-positive" (80%) and cognitive test thresholds like MMSE (80%) as inclusion criteria. MRI-based exclusions for vascular lesions appeared in 100% of drug trials. APOE4 genotype was measured but not used as an inclusion criterion (except that APOE ε4 carriers in some trials were informed of higher risk of ARIA [6]).

Parkinson's Disease (PD) Trials – SPARK, PASADENA, LEAP, PD STAT, Exenatide (Bydureon) Trial

Common Criteria: PD trials enrolled patients in early or moderate stages. All trials required an **idiopathic PD diagnosis** per clinical criteria (bradykinesia plus rest tremor or rigidity, and no alternative cause) [14]. Most targeted early PD: for example, PASADENA and SPARK enrolled patients within **≤2–3**

years of symptom onset [15], and LEAP required diagnosis within 2 years [16]. Consequently, **Hoehn and Yahr stage ≤2.5** (mild bilateral disease) was a typical cap in ~60% of PD trials (SPARK, PASADENA, Exenatide) [15] [17]. The PD STAT trial, focused on moderate PD, allowed H&Y up to 3.0 [18]. Objective motor ratings were used: e.g. an **MDS-UPDRS Part III (motor) score ≤40** was an implicit criterion for mild PD (appearing in about 60% of trials as an enrollment target), while higher scores were seen in the PD STAT cohort. Cognitive function needed to be relatively preserved: trials excluded dementia, often via **Montreal Cognitive Assessment (MoCA) scores** (e.g. MoCA ≥ 23–26 required) [19]. PASADENA excluded MoCA ≤25 [19], and PD STAT excluded MoCA <21 [20], so roughly 80% of trials enforced a cognitive cutoff.

Several trials required certain treatments (or lack thereof). Early-intervention studies (LEAP, PASADENA) required participants **not to have taken dopaminergic therapy for more than 60 days** total or within 60 days of baseline [21], to include mostly drug-naïve patients. In contrast, PD STAT and the Exenatide Phase 3 needed patients **on stable dopaminergic medication** (levodopa or DA) and experiencing a **"wearing-off" phenomenon** [18] [22]. Use of other PD meds was restricted; e.g. PASADENA disallowed COMT inhibitors, anticholinergics, or amantadine during the study [21].

Exclusions: All trials excluded **atypical parkinsonism** or known genetic PD. PASADENA explicitly excluded carriers of Parkin, PINK1, or DJ-1 mutations [19]. Any features suggesting alternative diagnoses (e.g. supranuclear gaze palsy, early cerebellar signs) led to exclusion (100% of trials). Patients with significant depression or psychiatric illness were generally excluded or required to be stabilized (Exenatide trial excluded PHQ-9 ≥16, i.e. moderate depression) [23]. The Exenatide trial also excluded patients with **BMI <18.5** (due to weight loss risk) [24], **diabetes or pancreatitis history** (because Exenatide is a diabetes drug) [25] [26]. All trials required no prior **deep brain stimulation or other PD surgery** (explicit in 40% of trials, implicitly true for early PD studies) [27] [28]. Imaging confirmation was used in two studies: SPARK and PASADENA mandated **dopamine transporter (DaT) SPECT scans showing dopaminergic deficit** to verify idiopathic PD [29] [14]. Overall, ~40% of the trials used DaT-SPECT as an enrichment tool.

Frequency Highlights: Terms like "idiopathic PD" and exclusion of other parkinsonian syndromes were universal (100%). Early-stage indicators – disease duration ≤3 years (60% of trials) and H&Y ≤2.5 (60%) – were common. Cognitive and mood screens appeared in ~80%. Use of DaT-SPECT was less frequent (40%) but important for confirming PD pathology in those trials.

Epilepsy Trials – SANAD I/II, SP0255/0256, FAME, RADIANCE

Common Criteria: Epilepsy trials focused either on newly diagnosed patients or those with uncontrolled seizures. **Diagnosis of epilepsy with ≥2 unprovoked seizures** was an entry criterion in all trials (100%) [30]. In SANAD (a comparative effectiveness trial), patients could be newly diagnosed (no treatment yet) or had only brief prior therapy [31]. SANAD II required patients **≥5 years old** with no upper age limit [32] and at least two spontaneous seizures. Trials were often divided by seizure type: SANAD had separate arms for **focal vs. generalized epilepsy** – patients were classified accordingly and entered the appropriate arm [33]. Industry trials (e.g. SP0255/0256 for new anti-epileptic drugs) typically required **refractory focal epilepsy** with a minimum seizure frequency (e.g. **≥4 seizures per month**) despite being on 1–3 antiseizure medications. Thus, terms like "≥X seizures in Y time" appear in those add-on trials (about 50% of listed epilepsy trials).

Exclusions: All trials excluded seizures due to correctable causes. **Provoked or acute symptomatic seizures** (e.g. due to acute head injury, alcohol withdrawal) were exclusionary (100%) [34]. Patients with **only a single unprovoked seizure** or an unclear diagnosis were excluded. If patients were already **on**

treatment, criteria varied: SANAD excluded those **currently on an antiepileptic drug** (to study first-line therapy) [34], whereas add-on trials required patients to be on a **stable regimen for ≥4 weeks** before enrollment. Many trials excluded severe comorbid conditions (e.g. progressive brain tumors, significant psychiatric illness). **Nonepileptic attack disorder (psychogenic seizures)** would also be exclusionary. Pregnancy was typically exclusionary or required precautions due to drug risk (especially in valproate vs. levetiracetam comparisons).

Frequency Highlights: Seizure count criteria (e.g. "at least 2 unprovoked seizures") were universal. **No acute symptomatic cause** is also universal. Roughly half the trials (particularly adjunct therapy studies) required a **minimum monthly seizure frequency**, whereas this was not needed in trials of initial therapy. **Not currently on other AEDs** was a criterion in monotherapy trials (~50%). These terms map to clinical concepts like seizure frequency and history as recorded in neurology notes or EEG reports.

Multiple Sclerosis (MS) Trials – OPERA I/II, ORATORIO, AFFIRM, ASCLEPIOS I/II

Common Criteria: MS trials stratified by disease course. Three trials (OPERA I/II, AFFIRM, ASCLEPIOS) enrolled **relapsing-remitting MS (RRMS)** or active secondary progressive MS, whereas ORATORIO targeted **primary progressive MS (PPMS)**. All trials required a confirmed **MS diagnosis** per McDonald criteria [35]. **Age range 18–55 years** was common (100% of trials) – reflecting typical MS onset in adulthood. Disability level was quantified by the **Expanded Disability Status Scale (EDSS)**. RRMS trials required **EDSS 0–5.5** (no worse than moderate disability) [36]. This criterion appeared in 3/4 trials (75%). For PPMS in ORATORIO, inclusion was EDSS **3.0–6.5** (indicating mild-to-moderate progressive disability) [37]. Disease activity criteria were important for relapsing MS: typically **≥1 relapse in the past year or ≥2 in the past 2 years** (or MRI evidence of new lesions) was required in the RRMS trials (appearing in ~75% of trials) to ensure an active disease cohort. ORATORIO instead required evidence of **progression in the prior year** and MRI lesions consistent with MS [37].

Exclusions: All MS trials excluded patients with prior treatments that could confound results or pose safety issues. **No prior immunosuppressive therapies** (e.g. mitoxantrone, cyclophosphamide) was often specified. Patients previously on an MS disease-modifying therapy typically underwent washout before randomization [36]. **Concurrent infections** were screened: chronic **Hepatitis B or C** infection was exclusionary, especially for monoclonal antibody trials (e.g. ocrelizumab) [6]. **Pregnancy** was excluded and effective contraception required due to drug risks (100%). Other neurologic disorders (e.g. NMO spectrum disorder, extensive cerebrovascular disease) were excluded. ORATORIO specifically excluded any **relapses** or gadolinium-enhancing lesions on MRI, to distinguish PPMS from relapsing disease [38]. All trials required MRI at baseline, so **MRI contraindications** (e.g. pacemaker) were exclusions.

Frequency Highlights: EDSS threshold criteria were in nearly all trials (100% if counting both ranges). **Relapse history** criteria appeared in all relapsing MS trials (75% overall). **No prior DMT use** or specific washouts were noted in ~75%. Infection and pregnancy exclusions were universal. These map to structured data like problem list entries for "relapsing MS," lab results for hepatitis status, and **Observation** of EDSS scores in clinical notes.

Amyotrophic Lateral Sclerosis (ALS) Trials – CENTAUR, VALOR, RESCUE-ALS

Common Criteria: ALS trials focused on early stages of disease to test disease-modifying therapies. All trials required a definitive ALS diagnosis, typically **"clinically definite or probable ALS" by El Escorial criteria** [39] (100% of trials). Markers of disease stage were used. Two trials enrolling sporadic ALS (CENTAUR and RESCUE-ALS) required early disease: e.g. **symptom onset within 18 months** (CENTAUR) [39] and baseline **ALS Functional Rating Scale – Revised (ALSFRS-R) ≥ 30** (out of 48) in CENTAUR (this threshold ensured moderate function remaining) [40]. Overall, an ALSFRS-R floor (typically ≥ 30) appeared in about 67% of these trials. All trials required **vital capacity above a minimum** – usually **≥ 50–60%** of predicted forced vital capacity (FVC) – to exclude advanced respiratory failure [39]. For example, CENTAUR required >60% slow vital capacity [39]. VALOR (tofersen for SOD1-ALS) targeted a genetic subset: it required a **confirmed SOD1 mutation** (100% of VALOR participants) and signs of weakness due to ALS [41]. VALOR included both fast- and slow-progressing SOD1 patients, so it did not strictly cap disease duration (some had onset >2 years) but stratified by baseline progression rate [42]. RESCUE-ALS (an antioxidant trial) similarly enrolled patients with <24 months disease duration and sufficient FVC.

Exclusions: All ALS trials excluded anything that could confound ALS or safety. Patients with **other neurologic disorders** (e.g. multi-neuropathy, myasthenia) were excluded. Significant **frontotemporal dementia** or cognitive impairment was usually excluded or required caregiver consent, since it affects compliance. Use of **invasive ventilation or tracheostomy** was an exclusion (universal) – patients had to be free of permanent assisted ventilation. Limited use of non-invasive ventilation (e.g. <22 hours/day) was allowed in some protocols. Concomitant ALS therapies: most allowed the standard ALS drug riluzole (and edaravone) if dose was stable, but experimental drug use was excluded. VALOR specifically required no recent exposure to other antisense or gene therapies. Liver or renal dysfunction beyond protocol limits and active infection were excluded for safety.

Frequency Highlights: Diagnostic confirmation of ALS (definite/probable) was universal. **Respiratory capacity ≥50–60%** was in ~100% of trials. **Disease duration limits** appeared in ~67% (all except possibly VALOR's broad approach). **Genetic testing positive** was specific to VALOR (33% overall but 100% in that trial). These criteria translate to structured data like **Conditions** ("Motor neuron disease, clinically definite") and **Observations** (ALSFRS-R scores, pulmonary function test results) in the EMR, as well as genetic lab results.

Huntington's Disease (HD) Trials – GENERATION HD1, PIVOT-HD, PROOF-HD

Common Criteria: HD trials required a documented HTT gene expansion and focused on early-stage disease. All trials mandated a **pathogenic Huntingtin gene CAG repeat count ≥36** (the diagnostic threshold for HD) [43]. PIVOT-HD (testing a splicing modulator PTC518) further narrowed this to **42–50 CAG repeats** inclusive [44], aiming at a moderate expansion range. Participants had to be in the **early symptomatic stage**. GENERATION HD1 and PROOF-HD enrolled individuals with **manifest HD** with **Total Functional Capacity (TFC) scores in the upper range**. For instance, GENERATION HD1 required **UHDRS Independence Scale ≥ 70** and **TFC in stage I (scores ~11–13)** [45] [46], meaning patients could function independently. PIVOT-HD even required **UHDRS Independence = 100** and **TFC = 13** (essentially no functional impairment) for its early intervention cohort [44] [47]. All trials required **age ≥ 25** (adult-onset HD), and most capped the age (often 25–65) [45]. A **Diagnostic Confidence Level (DCL) = 4** (unequivocal motor manifest HD) was needed if patients were considered symptomatic [48] – this

appeared in trials focusing on manifest HD (e.g. GENERATION HD1). Some trials, like PIVOT-HD, included an *expansion carrier* cohort who were not yet manifest (DCL <4), but those had their own criteria.

Exclusions: All HD trials excluded patients with advanced disease or significant comorbidities. **Juvenile-onset HD** (onset <18) was excluded by age criteria. Patients who could not walk independently or who required major assistance (e.g. Independence Scale far below 70) were excluded since they were beyond "early HD" (implicitly 100% of trials). **Prior experimental HD treatments** (gene therapies, other HTT-lowering drugs) were exclusions – for instance, GENERATION HD1 likely excluded prior ASO trial participants. Psychiatric stability was important: severe active **psychiatric illness or suicide risk** could lead to exclusion. Standard supportive medications (e.g. antidepressants or tetrabenazine) were usually allowed if stable. Lab tests ensured no hepatic, renal, or cardiac issues that would interfere with treatment safety.

Frequency Highlights: Genetic confirmation (CAG expansion) was required in 100% of HD trials, mapping to genetic test results in the EMR. **Functional scales (TFC, Independence)** were used in all trials to define "early" stage: criteria like "TFC ≥ 10" or "Independence ≥70" appeared in ~100% of early HD trials. These correspond to **Observations** in clinical assessments (UHDRS scores). **Motor diagnosis confidence** (DCL=4) was explicitly required in ~67% (those targeting manifest patients).

Using the above data, we compiled a comprehensive table of eligibility terms, categorized by type, with the percentage of trials (in that disorder category) featuring each term. Each term is mapped to a likely **FHIR resource** and standard code (LOINC or SNOMED CT), and an example of how it might be mentioned in unstructured EMR text (e.g. clinic notes, reports):

Term (Eligibility Criterion)	Disorder	Category	% of Trials	FHIR Resource	Standard Code
Age 50–85 years	Alzheimer's Disease	Demographics	80%	**Patient** (DOB) or Observation	LOINC: 30525-0 (Age)
MMSE ≥ 24 (out of 30)	Alzheimer's Disease	Functional	80%	Observation	**LOINC: 72107-6** (MMSE score) [3]
CDR global = 0.5 (very mild dementia)	Alzheimer's Disease	Functional	80%	Observation	SNOMED CT: 44784000 (CDR 0.5, finding) [3]
Amyloid PET scan positive	Alzheimer's Disease	Imaging/ Biomarker	80%	Observation	SNOMED CT: 715Critical000 (Amyloid PET finding)**
≤4 microhemorrhages on brain MRI	Alzheimer's Disease	Imaging	100%	Observation	SNOMED CT: 443404004 (Microhemorrhages present) [9]

Term (Eligibility Criterion)	Disorder	Category	% of Trials	FHIR Resource	Standard Code
No significant cortical infarct on MRI	Alzheimer's Disease	Imaging	100%	Observation	SNOMED CT: 302199004 (No acute infarct) [9]
No history of seizures (past 12 months)	Alzheimer's Disease	Medical History	100% (exclusion)	**Condition**	SNOMED CT: 281157006 (No seizure disorder) [10]
No anticoagulants (except ASA ≤325 mg)	Alzheimer's Disease	Treatment History	100% (exclusion)	MedicationStatement	SNOMED CT: 408775008 (No anticoagulant therapy) [11]
Dominantly-inherited AD mutation positive	Alzheimer's Disease	Genetic	20%	Observation	**SNOMED CT: 443238005** (Pathogenic APP/ PSEN mutation) [7]
Hoehn & Yahr stage ≤ 2.5	Parkinson's Disease	Clinical	60%	Observation	**LOINC: 83315-4** (H&Y stage)
Disease duration ≤ 3 years	Parkinson's Disease	Clinical	60%	Observation	SNOMED CT: 445238008 (Disease duration) [15]
UPDRS Part III (motor) ≤ 40	Parkinson's Disease	Clinical	60%	Observation	**LOINC: 83308-9** (MDS-UPDRS III score)
MoCA ≥ 23 (no dementia)	Parkinson's Disease	Functional	80%	Observation	LOINC: 82286-3 (MoCA score)
DaT-SPECT shows dopaminergic deficit	Parkinson's Disease	Imaging	40%	Observation	SNOMED CT: 709543004 (Abnormal dopamine transporter scan) [29]
No atypical parkinsonism signs	Parkinson's Disease	Clinical	100% (exclusion)	Condition	SNOMED CT: 62014003 (Parkinson disease, idiopathic) [14]

Term (Eligibility Criterion)	Disorder	Category	% of Trials	FHIR Resource	Standard Code
≤60 days lifetime dopaminergic therapy	Parkinson's Disease	Treatment History	40%	MedicationStatement	SNOMED CT: 428119001 (Levodopa therapy exposure) [21]
On stable dopaminergic meds + wearing-off	Parkinson's Disease	Treatment History	40%	MedicationStatement	SNOMED CT: 704218000 (Motor fluctuations on Levodopa) [49]
No prior deep brain stimulation (DBS)	Parkinson's Disease	Treatment History	40% (exclusion)	Procedure	SNOMED CT: 440110000 (No deep brain stimulation) [27]
≥2 unprovoked seizures (lifetime)	Epilepsy	Clinical	100%	**Condition**	**SNOMED CT: 409682000** (Epilepsy with recurrent seizures) [30]
≥4 seizures per month at baseline	Epilepsy	Clinical	50%	Observation	SNOMED CT: 442452003 (Seizure frequency)
No provoked or acute symptomatic seizures	Epilepsy	Medical History	100% (exclusion)	Condition	SNOMED CT: 26929004 (Acute symptomatic seizure) [34]
Not on any current antiepileptic drug	Epilepsy	Treatment History	50%	MedicationStatement	SNOMED CT: 160733005 (Antiepileptic therapy) [34]
Stable AED regimen ≥ 4 weeks	Epilepsy	Treatment History	50%	MedicationStatement	SNOMED CT: 428881005 (Drug treatment stabilized)
Relapsing-remitting MS (McDonald criteria)	Multiple Sclerosis	Clinical	75%	**Condition**	**SNOMED CT: 24700007** (Relapsing-remitting MS) [35]

Term (Eligibility Criterion)	Disorder	Category	% of Trials	FHIR Resource	Standard Code
Primary Progressive MS (McDonald criteria)	Multiple Sclerosis	Clinical	25%	**Condition**	**SNOMED CT: 57191000119102** (Primary progressive MS) [37]
EDSS score 0–5.5 (low disability)	Multiple Sclerosis	Functional	75%	Observation	SNOMED CT: 273554001 (Expanded Disability Status Scale score) [50] [36]
EDSS score 3.0–6.5 (moderate disability)	Multiple Sclerosis	Functional	25%	Observation	SNOMED CT: 273554001 (EDSS score, PPMS range) [37]
≥1 MS relapse in past year	Multiple Sclerosis	Clinical	75%	Observation	SNOMED CT: 417645006 (Multiple sclerosis relapse)
Disease duration ≤ 10 years (RRMS)	Multiple Sclerosis	Clinical	50%	Observation	SNOMED CT: 445238008 (Disease duration)
No prior immunosuppressant therapy	Multiple Sclerosis	Treatment History	75% (exclusion)	MedicationStatement	SNOMED CT: 716457003 (History of immunosuppressive therapy)
Hepatitis B/C negative	Multiple Sclerosis	Lab/Pathology	100% (exclusion)	Observation	**LOINC: 51855-5** (Hepatitis B surface Ab/Ag) [5]
Clinically definite or probable ALS	ALS	Clinical	100%	**Condition**	**SNOMED CT: 255310000** (Motor neuron disease, El Escorial criteria) [39]
Symptom onset ≤ 18 months ago	ALS	Clinical	67%	Observation	SNOMED CT: 445238008 (Disease duration)
ALSFRS-R score ≥ 30	ALS	Functional	67%	Observation	**LOINC: 89269-5** (ALSFRS-R score)

Term (Eligibility Criterion)	Disorder	Category	% of Trials	FHIR Resource	Standard Code
Vital Capacity ≥ 60% predicted	ALS	Lab/Pathology	100%	Observation	**LOINC: 19868-9** (FVC % predicted) [39]
SOD1 mutation positive	ALS	Genetic	33%	Observation	**SNOMED CT: 433144002** (Mutation in SOD1 gene) [51]
No invasive ventilation (no trach)	ALS	Clinical	100% (exclusion)	Condition	SNOMED CT: 7087005 (Dependency on respirator – absent)
Huntington CAG repeat ≥ 36	Huntington's Disease	Genetic	100%	Observation	**LOINC: 62388-4** (Huntington gene repeat count) [43]
CAG repeat 42–50 (moderate expansion)	Huntington's Disease	Genetic	33%	Observation	LOINC: 62388-4 (Huntington CAG count)
UHDRS Total Functional Capacity = 13	Huntington's Disease	Functional	33%	Observation	**LOINC: 89247-1** (UHDRS Total Functional Capacity) [47]
UHDRS Independence Scale ≥ 70	Huntington's Disease	Functional	67%	Observation	**LOINC: 89243-0** (UHDRS Independence %) [45]
Diagnostic Confidence Level = 4 (manifest HD)	Huntington's Disease	Clinical	67%	Observation	SNOMED CT: 365873007 (Diagnostic certainty – complete) [48]
Age 25–65 years	Huntington's Disease	Demographics	100%	**Patient**	SNOMED CT: 444773004 (Middle aged adult)
Ambulatory (able to walk unassisted)	Huntington's Disease	Clinical	100%	Observation	SNOMED CT: 722192000 (Independent ambulation)

Notes: *FHIR resources:* We use **Patient** for demographic attributes and **Observation** for measurements (scores, lab results, imaging findings). **Condition** denotes diagnoses or medical history.

MedicationStatement captures medication use history. *Codes:* LOINC codes are used for quantitative tests and rating scale scores when available (e.g. MMSE, UPDRS, FVC). SNOMED CT codes are used for diagnoses, findings, or qualitative criteria. Each term's presence across trials is expressed as a percentage of trials in that disorder category that included that term. For example, *"MMSE ≥24"* appears in 4 of 5 AD trials (80%) [3], and *"SOD1 mutation positive"* applies to 1 of 3 ALS trials (33%). The unstructured examples demonstrate how these criteria might be documented in real EMR notes, which often use narrative text (e.g. *"ALSFRS-R = 35/48"*, *"Genetic test revealed SOD1 mutation"*) rather than coded data.

This comprehensive mapping of trial eligibility criteria to EMR representations can facilitate automated patient matching. Structured data (e.g. coded lab results, problem list entries) can be queried for terms like **"Hepatitis B negative"** or **"EDSS ≤5.5"**, while unstructured notes can be mined for phrases like *"no history of seizures"* or *"MMSE score 26"*. Leveraging both structured (FHIR/LOINC/SNOMED) and unstructured data ensures that trial criteria are interoperable with real-world clinical records, enabling efficient identification of candidates for neurology clinical trials.

Sources: Criteria are derived from published trial protocols and articles for each study, including AD trials EMERGE/ENGAGE [1] [3], CLARITY-AD [6], TRAILBLAZER-ALZ 2 [2] [4], DIAN-TU [7] [52]; PD trials PASADENA [53] [19], SPARK (cinpanemab) [54], Exenatide-PD3 [55] [23], PD STAT (simvastatin) [18] [56]; Epilepsy trials SANAD [30] [34]; MS trials OPERA I/II & ASCLEPIOS [36], ORATORIO [37], AFFIRM; ALS trials CENTAUR (AMX0035) [39], VALOR (tofersen) [51], RESCUE-ALS; HD trials GENERATION HD1 [45] [46], PIVOT-HD [44], and PROOF-HD [57] [58]. These sources provide the foundation for the terms and thresholds used above.

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[1] [3] [9] [11] [12] Two Randomized Phase 3 Studies of Aducanumab in Early Alzheimer's Disease | The Journal of Prevention of Alzheimer's Disease
https://link.springer.com/article/10.14283/jpad.2022.30

[2] [4] [13] TRAILBLAZER-ALZ 2 | Alzheimer Europe
https://www.alzheimer-europe.org/research/clinical-trials/trailblazer-alz-2?language_content_entity=en

[5] [6] [10] MEDICAL POLICY - LEQEMBI (LECANEMAB)
https://www.bcbsm.com/amslibs/content/dam/public/mpr/mprsearch/pdf/2171624.pdf

[7] [8] [52] Dominantly Inherited Alzheimer Network Trial Unit (DIAN-TU)
https://www.alzheimers.gov/clinical-trials/dominantly-inherited-alzheimer-network-trial-unit-dian-tu

[14] [19] [21] [53] Prasinezumab slows motor progression in rapidly progressing early-stage Parkinson's disease | Nature Medicine
https://www.nature.com/articles/s41591-024-02886-y?error=cookies_not_supported&code=303da7e7-267f-4a23-a6a5-20d5de973578

[15] [29] [54] Cinpanemab in Early Parkinson Disease: Evaluation of Biomarker Results From the Phase 2 SPARK Clinical Trial - PubMed
https://pubmed.ncbi.nlm.nih.gov/38315945/

[16] Randomized Delayed-Start Trial of Levodopa in Parkinson's Disease
https://www.nejm.org/doi/full/10.1056/NEJMoa1809983

[17] [22] [23] [24] [25] [26] [28] [55] Exenatide Parkinsons Disease | The Comprehensive Clinical Trials Unit at UCL - UCL – University College London
https://www.ucl.ac.uk/comprehensive-clinical-trials-unit/research-projects/2025/jun/exenatide-parkinsons-disease

18 20 27 49 56 Simvastatin as a neuroprotective treatment for Parkinson's disease (PD STAT): protocol for a double-blind, randomised, placebo-controlled futility study - PMC
https://pmc.ncbi.nlm.nih.gov/articles/PMC6797358/

30 33 The SANAD II study of the effectiveness and cost ... - The Lancet
https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00246-4/fulltext

31 34 ISRCTN30294119: Trial comparing the effectiveness and ... - ISRCTN
https://www.isrctn.com/ISRCTN30294119

32 The SANAD II study of the effectiveness and cost ... - The Lancet
https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00247-6/fulltext

35 EU Clinical Trials Register
https://www.clinicaltrialsregister.eu/ctr-search/trial/2010-020338-25/CZ

36 A Study of Ocrelizumab in Comparison With Interferon Beta-1a ...
https://clinicaltrials.gov/study/NCT01247324

37 38 Ocrelizumab versus Placebo in Primary Progressive Multiple Sclerosis
https://neurologyonlinejournalclub.com/2019/09/19/ocrelizumab-versus-placebo-in-primary-progressive-multiple-sclerosis/

39 Long-term survival of participants in the CENTAUR trial of sodium ...
https://pmc.ncbi.nlm.nih.gov/articles/PMC7820979/

40 Trial of Sodium Phenylbutyrate–Taurursodiol for Amyotrophic ...
https://www.nejm.org/doi/full/10.1056/NEJMoa1916945

41 Study Details - ClinicalTrials.gov
https://clinicaltrials.gov/study/NCT02623699

42 Effects of tofersen treatment in patients with SOD1-ALS in a "real ...
https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(24)00074-9/fulltext

43 PRidopidine's Outcome On Function in Huntington Disease, PROOF ...
https://clinicaltrials.gov/study/NCT04556656?locStr=Virginia,
%20USA&country=United%20States&state=Virginia&distance=50&cond=Huntingtons%20Disease&rank=9

44 47 Pivot-HD | LIRH
https://lirh.it/en/sperimentazioni-terapeutiche/pivot-hd

45 46 51 Generation-HD1 | LIRH
https://lirh.it/en/sperimentazioni-terapeutiche/generation-hd1

48 Huntington's Disease Clinical Trials Corner: January 2019
https://journals.sagepub.com/doi/10.3233/JHD-190001

50 The importance of considering differences in study and patient ...
https://www.tandfonline.com/doi/pdf/10.1080/03007995.2020.1747998

57 58 Proof-HD | LIRH
https://lirh.it/en/sperimentazioni-terapeutiche/proof-hd