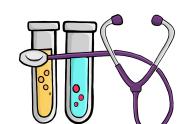


Neurodegenerative Disease	Clinical Presentation	Disease Gene	Lesion	Aggregate
Alzheimer Disease (AD) ↓ACh	Early Stages: <ul style="list-style-type: none">Memory deficits (rapid forgetting)Anomia (word loss)	<i>APP</i> (21) Amyloid precursor protein <i>PSEN1</i> (14) & <i>PSEN2</i> (1) Presenilin <i>APO-E</i> (19) APO-E4 → ↑Aβ amyloid → ↑risk APO-E2 → ↓Aβ amyloid → ↓risk	Senile plaques extracellular	Aβ Amyloid
	Middle Stages: <ul style="list-style-type: none">Further memory & language declineVisuospatial deficitsAgnosias (loss of knowledge)Mood & Personality changes		Neurofibrillary tangles Intracellular	Hyper-phosphorylated Tau
	Late Stages: <ul style="list-style-type: none">Global aphasiaMotor dysfunction			
Pick Disease Frontotemporal Lobar Dementia (FTLD)	Behavioral disinhibition Personality change Aphasia Dementia		Cortical Pick Bodies	Round Tau TDP-43
Parkinson Disease (PD) ↑ACh, ↓DA, ↓Serotonin “Lewy Parks Taurist’s cars”	Hypo-kinetic Disorder - “TRAP” Substantia Nigra Degeneration Tremor - pill rolling tremor that disappears w/ movement Rigidity - cogwheel rigidity Akinesia or Bradykinesia Postural instability & Shuffling gait	<i>a-synuclein</i> <i>Parkin</i> <i>UCHL1</i>	Lewy Bodies Intracellular	<i>a-synuclein</i> Tau
Lewy body Dementia	Dementia Hallucinations Parkinsonian features		Cortical Lewy Bodies Intracellular	<i>a-synuclein</i>
Huntington Disease (HD) ↓ACh, ↑DA, ↓GABA “Dominant Hunters CAGe their pray”	Hyper-kinetic Disorder - “AC/DC” Autosomal dominant Choreiform movement Dementia, Depression, mental Disturbances Caudate & Putamen (Striatum) atrophy	CAG trinucleotide repeats (4) Expansion of repeats during spermatogenesis → anticipation		Mutant huntingtin
Amyotrophic Lateral Sclerosis (ALS) “Lou Gehrig Disease”	Upper & lower motor neuron signs UMN: spasticity, hyperreflexia, dysarthria, dysphagia LMN: atrophy, fasciculations, hyporeflexia, weakness	<i>SOD1</i> <i>C9 ORF 72</i> Chromosome 9 hexanucleotide repeat		Mutant SOD1 TDP-43



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