## SUPPLEMENTARY

Case-control	Age	Sex	Age of onset	Disease	Engel score
cohort	(years)	(F/M)	(years)	duration	(I)
				(years)	
НС	$36.0 \pm 11.7$	508/378	-	-	-
( <i>n</i> = 886)					
L TLE MTS	$39.0\pm10.8$	161/119	$14.9 \pm 11.8^{*}$	$23.8\pm13.5^*$	102
( <i>n</i> =280)					
R TLE MTS	$39.8 \pm 10.9$	130/96	$15.1 \pm 11.3^{*}$	$24.4\pm13.8^{\ast}$	66
( <i>n</i> =226)					
L TLE non-	$36.0\pm10.5$	93/133	$19.4 \pm 11.4^{*}$	$16.8 \pm 12.0^{*}$	23
lesional					
( <i>n</i> =150)					
R TLE non-	$365.5 \pm 11.5$	71/42	$19.9 \pm 13.4^{*}$	$14.8 \pm 10.9^{*}$	25
lesional					
( <i>n</i> =113)					

## Table S1 | Detailed clinico-demographic data of ENIGMA-Epilepsy TLE cohort

Age, age of onset, and disease duration are presented in mean ± SD. \*Clinical information available: a) age of onset: L-TLE MTS = 8/280, R-TLE MTS = 11/130, L-TLE non-lesional = 8/150, R-TLE non-lesional 7/113; b) disease duration: L-TLE MTS = 32/280, R-TLE MTS = 24/130, L-TLE non-lesional 16/150, R-TLE non-lesional 18/113.

Group	Tract abbreviation	Full name	
	SCC	Splenium of the corpus callosum	
Corpus Callosum	BCC	Body of the corpus callosum	
	GCC	Genu of the corpus callosum	
	FX	Fornix (column and body)	
	FXST	Fornix (cres) / Stria terminalis	
Limbic	CGH	Cingulum (hippocampus)	
	CCG	Cingulum (cingulate gyrus)	
	UNC	Uncinate fasciculus	
	ALIC	Anterior limb of the internal capsule	
	PLIC	Posterior limb of the internal capsule	
	RLIC	Retrolenticular part of the internal capsule	
	ACR	Anterior corona radiata	
Cortical-subcortical	SCR	Superior corona radiata	
	PCR	Posterior corona radiata	
	PTR	Posterior thalamic radiation	
	EC	External capsule	
	CST	Corticospinal tract	
	SS	Sagittal stratum	
Cortical	SLF	Superior longitudinal fasciculus	
	SFO	Superior fronto-occipital fasciculus	
	IFO	Inferior fronto-occipital fasciculus	

## TABLE S2 | White matter tract labels

## FIGURE S3 | Sensitivity analyses with age-sliding window ranges

	Age-sliding window of ±2	Age-sliding window of ±3	Age-sliding window of ±4
and Subcortical Volume		Coto	Cortex
ical Thickness	Subcortex	Subcotex	Subcotex
Cort	Hippocampus	Hippocampus	Hippocampus
Fractional Anisotropy	Corpus callosum Umbic Cortical-subcortical Cortical	Corpus callosum	Cortical-subcontical Cortical-
	Corpus callosum	Corpus callosum	Corpus callosum
Mean Diffusivity	Central-subcontral	Cerrical-subcortical	Contral-subcontral
	Contral	Contral	Conical
150			
	Age 70	Age 70	Age 70

FIGURE S4 | Covariance of lifespan trajectories separated by ipsilateral and contralateral structures and regions

