



# Short overview of the current status of research, impact and gaps to be filled in the area of co-morbidities

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# Comorbidity – Definition

Comorbidity (in medicine) is the presence of one or more additional diseases or disorders co-occurring with a primary disease or disorder.

Wikipedia

Causal interaction is not necessary

40-50% of patients have at least one epilepsy comorbidity.

Some diseases are up to eight times more common in people with epilepsy than in the general population. Among them:

- migraine
- heart disease
- peptic ulcers
- arthritis
- depression
- anxiety
- dementia



# Comorbidity – Interactions and Aims for action

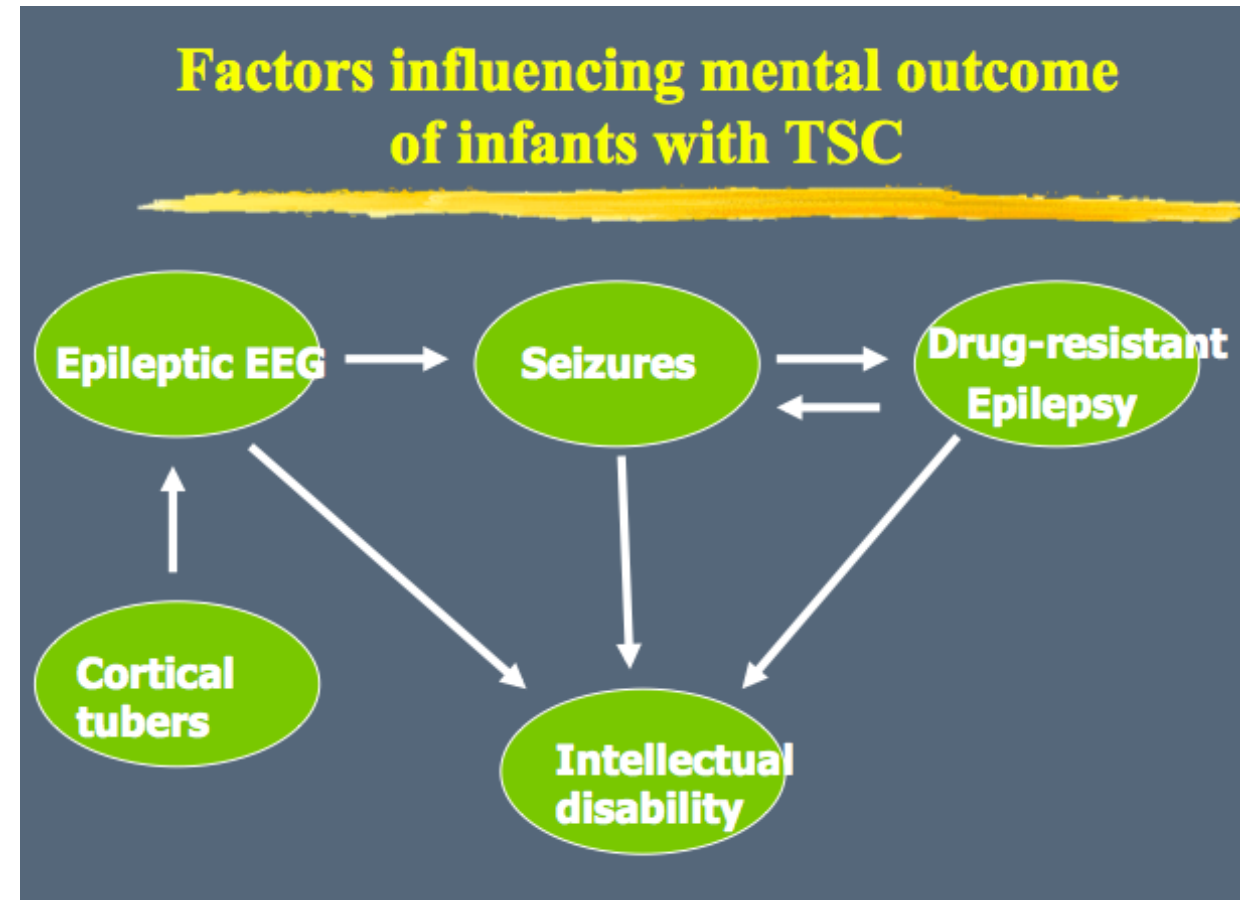
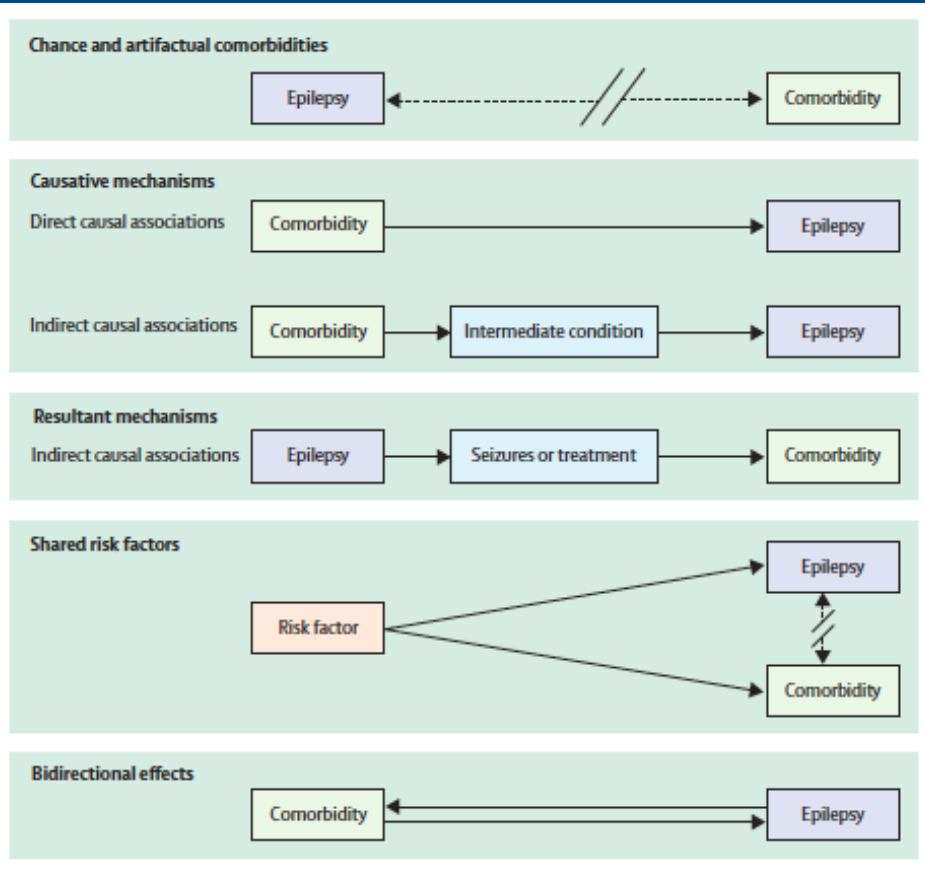


Figure 1: Mechanisms of association between epilepsy and its comorbidities  
 Each arrow with a solid line represents a causal association, with the cause leading to the effect. Arrows with dashed lines represent non-causal associations.

Keezer et al. Lancet 2016

Jozwiak et al.EJPN 2011

# Comorbidity

## – What can be learnt from animal models?

- Mechanism of shared pathophysiology
- Potential avenues for therapy and disease modification (interaction between antidepressants and AEDs)
- Correlation between behavioral phenotype of the comorbidity and epilepsy syndrome (seizure type, frequency, etc)
- Role of the comorbidity in epilepsy progression and epileptogenesis



# Comorbidity – Unmet needs

- Need a standard screening protocols for people with epilepsy that implement screening for comorbidities e.g. TAND Questionnaire for ASD in TSC
- Identification of biomarkers which influence therapeutic decisions
  - Individuals with epilepsy and anti-Gad antibodies could be treated with immunotherapies
  - EEG follow up in infants with TSC may identify candidates for pre-seizure treatment (new treatment recommendations)
- Using biomarkers we are closer to personalised medicine

