Narcolepsy

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Symptoms
- Excessive daytime sleepiness
- Irresistible sleep attacks
- Microsleep
- Cataplexy
- Hypnagogic hallucination
- Sleep paralysis
- Fragmented night sleep
- Automatic behavior
- Loss of concentration and memory
-Blurry vision

Causes/Pathology
- Hypocretin/orexin - stabilizes wakefulness
  - Neurons in TMN are inhibited during REM sleep
- Deficiency of hypocretin
  - Canine and mouse models
- Narcolepsy as an autoimmune disease
  - HLA-DR15/16 found in most narcoleptic patients
  - H1N1 evidence
  - Flu antigen similar to receptor in hypocretin neurons

Proposed Mechanism

(Julkunen & Partinen, 2014)
### Treatments

- No cure
- Lifestyle changes
- Counseling (depression)
- Medication
  - Stimulants – to promote wakefulness & alertness
  - Antidepressants – to suppress REM sleep, alleviate cataplexy, hallucinations, sleep paralysis
  - Sodium oxybate (Xyrem) – for severe cataplexy

### Future direction for treatment

- Gene therapy - hypoocretin replacing gene therapy
- Development of synthetic hypoocretin receptor agonist
- Cell transplantation
- None of them are successful - not ready to be implemented as treatments yet

### References


