

Narcolepsy: The Current Understanding and Treatment

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Outline

- What is Narcolepsy
- 2 subtypes
- Symptoms
- How is Narcolepsy diagnosed
- Pathology

History of Narcolepsy

- Jean-Baptiste-Edouard Gelineau
- *Narke* and *Lepsis*

Photo:

https://en.wikipedia.org/wiki/Jean-Baptiste-%C3%89douard_G%C3%A9lineau



D^r JEAN-BAPTISTE-ÉDOUARD GÉLINEAU

What is Narcolepsy

- Chronic neurological disorder
- Disrupts of the sleep-wake cycle



Type 1 vs Type 2

- Type 1
 - With cataplexy
- Type 2
 - Without cataplexy

Symptoms

- Gelineau Tetrad
- Fragmented sleep
- Abnormal dreams



Epworth Sleep Scale

- Questions to determine if testing is needed

<i>Activity</i>	<i>Chance of Dozing</i>			
	0 (Never)	1 (Slight)	2 (Moderate)	3 (High)
Sitting and Reading				
Sitting inactive in a public place (such as theater or meeting)				
As a passenger in a car for an hour without a break				
Lying down to rest in the afternoon				
Sitting and talking to someone				
Sitting quietly after lunch without alcohol				
In a car, while stopped for a few minutes in traffic				
Total score:				

Diagnosis

- MSLT
- Cerebral Spinal Fluid

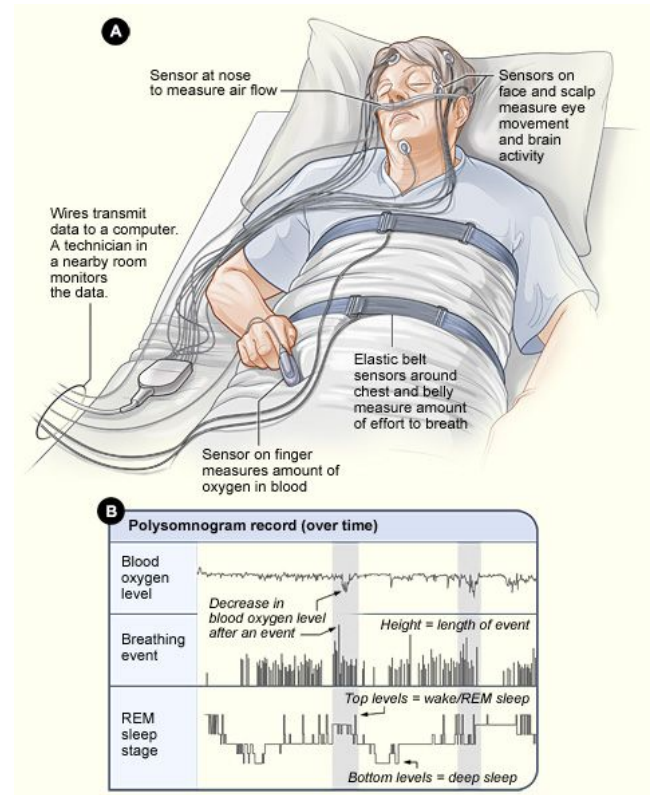


Photo:
<https://www.hypersomniafoundation.org/>

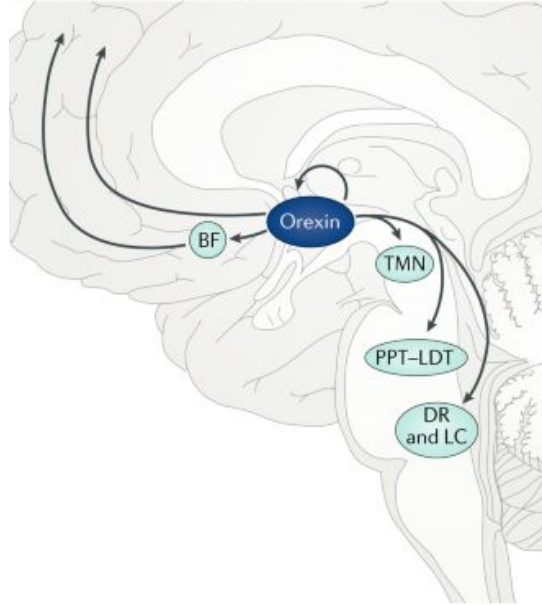
Sleep Pathology

- Rapid eye movement sleep
- Non-rapid eye movement sleep
- Neural pathways

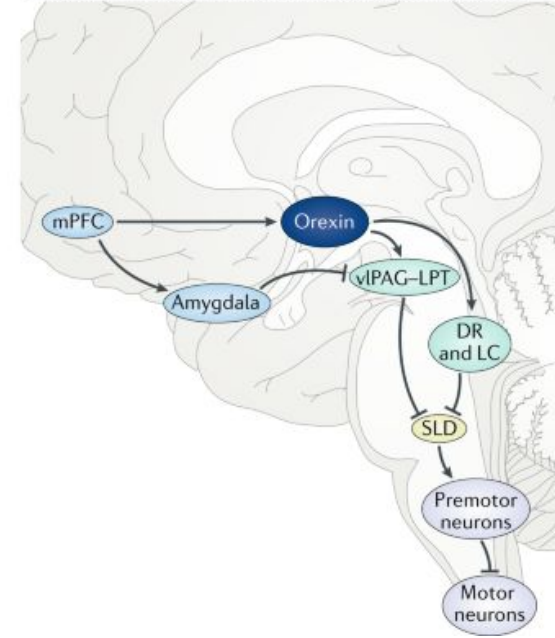
Pathophysiology of Narcolepsy

- Hypocretin degeneration
- Type 1 vs Type 2

a Orexin neurons maintain wake



b Orexin neurons maintain muscle tone during wake



(Coelho 2024)

Causes

- Cause still not entirely agreed upon
- Is it genetic?
- Is it autoimmune?

Treatment

- Drugs to combat EDS
- Non-medicated options

TABLE 2

Drugs to treat excessive daytime sleepiness in narcolepsy

Medication	Dosage	Side effects and federal schedule
Modafinil	100–400 mg/day in 2 divided doses	Headache, anxiety, nausea, dry mouth, anorexia, diarrhea, reduction of efficacy of oral contraceptives, Stevens-Johnson syndrome (rare) Schedule IV ^a
Armodafinil	150-250 mg once daily in the morning	Same as modafinil Schedule IV
Methylphenidate	Immediate-release: 5 mg twice daily titrated up by 5-10 mg per dose weekly up to 10-20 mg twice daily; once on stable dose, transition to extended- or sustained-release formulation	Headache, anxiety, nausea, anorexia, tremor, psychosis, cardiovascular effects like hypertension and arrhythmias, abuse (rare) Schedule II ^b
Dextroamphetamine	Short-acting: 5 mg twice daily titrated up by 5-10 mg per dose weekly up to 30 mg twice daily; once on stable dose, transition to long-acting formulation	Headache, anxiety, nausea, anorexia, tremor, psychosis, cardiovascular effects like hypertension and arrhythmias, abuse (rare) Schedule II
Amphetamine/dextroamphetamine	Short-acting: 5–10 mg daily titrated up by 10 mg weekly up to 60 mg/ day or satisfactory clinical response; may add additional doses 4–6 hours after first dose; once on stable dose, transition to long-acting formulation	Headache, anxiety, nausea, anorexia, tremor, psychosis, cardiovascular effects like hypertension and arrhythmias, abuse (rare) Schedule II

(Golden et al, 2018)

Treatment

- Treatment options of cataplexy

TABLE 3

Medications to treat cataplexy in narcolepsy

Medication	Dose	Side effects
Sodium oxybate ^a	3 g/night in divided doses, once before bedtime and then 2.5-4 hours later, titrated up to 4.5-9 g in divided doses	Nausea, mood swings, enuresis, headache, weight loss, sedation, sleepwalking, worsening of obstructive sleep apnea; High salt content can worsen preexisting hypertension, heart failure, and renal impairment Schedule III, ie, moderate to low potential for physical and psychological dependence; see www.dea.gov/druginfo/ds.shtml
Venlafaxine	Short-acting: 37.5–75 mg twice daily; may transition to long-acting formulation once on stable dose	Nausea, dizziness, dry mouth, headache, insomnia, sexual dysfunction
Fluoxetine	20–60 mg once daily	Nausea, headache, dry mouth, diarrhea, sexual dysfunction
Sertraline	50–150 mg once daily	Nausea, headache, dry mouth, diarrhea, sexual dysfunction
Protriptyline	5–10 mg twice daily	Dry mouth, constipation, light-headedness, urinary retention

^aTreats both daytime sleepiness and cataplexy.

(Golden et al, 2018)

Future for Narcolepsy

- Still no agreement on what it is or what causes it
- More awareness is needed
- More research needs to be done