

# Narcolepsy

DSM-5-TR 347.00-347.10 | ICD-10-CM G47.411, G47.419

*Chronic hypocretin-deficient hypersomnolence with irrepressible sleep attacks, cataplexy, sleep paralysis, and vivid hypnagogic hallucinations.*

## PREVALENCE

~25-50 per 100,000

## TYPICAL ONSET

Bimodal: ~15 and ~35 yrs

## DIAGNOSTIC DELAY

~8-10 years on average

## COURSE

Lifelong; cataplexy may ease

## CLINICAL PICTURE

- Irresistible daily sleep attacks lasting 10 to 20 minutes that are refreshing on waking, unlike the unrefreshing sleepiness of sleep apnea.
- Cataplexy is sudden bilateral loss of muscle tone triggered by laughter or surprise, with fully preserved consciousness and rapid recovery.
- Sleep paralysis and vivid hypnagogic or hypnopompic hallucinations at sleep transitions are frequently misread as a psychotic disorder.
- Nocturnal sleep is fragmented despite severe daytime sleepiness, and patients commonly report vivid dreams and dream enactment behavior.
- In children cataplexy may present as facial hypotonia, tongue protrusion, ptosis, and an unsteady gait rather than dramatic collapse.
- Automatic behaviors with amnesia, rapid weight gain, and precocious puberty in pediatric cases complete the clinical presentation.

## DIAGNOSTIC CRITERIA AT A GLANCE

- Recurrent irrepressible need to sleep, lapses into sleep, or daytime napping occurring at least three times weekly over the past three months.
- Requires one of: cataplexy, low CSF hypocretin-1, or a nap study with mean sleep latency under 8 minutes plus two sleep-onset REM periods.
- DSM-5-TR subtypes the disorder by hypocretin deficiency, cataplexy status, autosomal dominant forms, and secondary medical causes.
- A sleep-onset REM period on the preceding overnight polysomnogram may substitute for one of the two required nap REM periods.
- Patients must be off REM-suppressing medication and adequately rested before testing or the multiple sleep latency test is uninterpretable.

## NEUROBIOLOGY & PHYSIOLOGY

- Type 1 narcolepsy reflects loss of roughly 90% of lateral hypothalamic **orexin/hypocretin** neurons, giving CSF hypocretin-1 below 110 pg/mL.
- The mechanism is autoimmune: over 98% of type 1 cases carry **HLA-DQB1\*06:02**, with T-cell reactivity directed at hypocretin neurons.
- Molecular mimicry with H1N1 influenza and the **Pandemrix** vaccine produced a documented incidence spike across Europe after 2009.
- Without orexin the wake-REM flip-flop switch becomes unstable, so REM phenomena intrude into wakefulness as cataplexy and sleep paralysis.
- Cataplexy is REM atonia occurring without REM sleep, mediated by pontine and medullary inhibition of spinal alpha motor neurons.
- Comorbid obesity, type 2 diabetes, and precocious puberty reflect broader hypothalamic dysfunction beyond sleep-wake regulation alone.

## PSYCHOLOGICAL MECHANISMS

- Misdiagnosis as depression, laziness, or malingering is near-universal and produces roughly a decade of accumulated shame before correct diagnosis.
- Cataplexy triggered by laughter teaches emotional suppression, so patients flatten their affect and withdraw socially in order to stay upright.
- Hypnagogic hallucinations with sleep paralysis are frequently mislabeled as psychosis, leading to unnecessary antipsychotic exposure.
- Academic and occupational failure is common despite intact ability, and formal accommodations often rescue trajectories more than dose increases.
- Depression affects roughly a third of patients and both worsens subjective sleepiness and confounds assessment of stimulant response.

## DIFFERENTIAL & COMORBIDITY

- Rule out insufficient sleep syndrome first using actigraphy and a sleep diary, since it is the leading cause of a false-positive nap study.
- Obstructive sleep apnea coexists and must be treated before testing, because it independently produces sleep-onset REM periods.
- Idiopathic hypersomnia features long unrefreshing sleep with severe sleep inertia and no cataplexy or REM intrusion phenomena.
- Cataplexy mimics include syncope, atonic seizures, drop attacks, and functional events, with preserved consciousness the key discriminator.
- Obesity, depression, anxiety, ADHD, and REM sleep behavior disorder are all overrepresented and require concurrent management.

## Treatment EVIDENCE-BASED MANAGEMENT

### PHARMACOLOGIC

- Modafinil 100-400 mg** or **armodafinil 150-250 mg** is first-line for sleepiness; counsel on reduced hormonal contraceptive efficacy.
- Sodium oxybate** or the low-sodium formulation, dosed twice nightly, is the only agent treating sleepiness, cataplexy, and disrupted sleep together.
- Pitolisant 17.8-35.6 mg** is a histamine H3 inverse agonist that treats both sleepiness and cataplexy without controlled-substance scheduling.
- Solriamfetol 75-150 mg** and traditional stimulants such as **methylphenidate** or amphetamine salts remain effective for residual sleepiness.
- Venlafaxine** and SSRIs suppress cataplexy off-label, and abrupt discontinuation can precipitate rebound status cataplecticus.

### PSYCHOTHERAPY

- CBT** adapted for narcolepsy targets shame, anticipatory anxiety about cataplexy, and avoidance of emotionally arousing situations.
- Psychoeducation reframing the symptoms as neurologic rather than characterological is the highest-yield early intervention for these patients.
- Behavioral scheduling of two or three planned 15 to 20 minute naps meaningfully reduces sleepiness burden alongside medication.
- Treat comorbid depression with psychotherapy where feasible, since several antidepressants complicate later cataplexy management.
- Family and school sessions correct attributions of laziness and establish realistic expectations for the adolescent patient.

### ADJUNCT & SUPPORTIVE

- A fixed sleep-wake schedule, adequate nocturnal sleep opportunity, and avoidance of alcohol and heavy meals reduce overall symptom burden.
- Secure formal accommodations including scheduled naps, flexible start times, and extended testing time under disability protections.
- Driving counseling is mandatory, with documented sleepiness control and adherence to state reporting requirements for lapses of consciousness.
- Track outcomes with the **Epworth Sleepiness Scale** and weekly cataplexy counts rather than global clinical impressions.
- Monitor cardiometabolic risk, blood pressure on stimulants, and sodium load when standard **sodium oxybate** is prescribed.

## CLINICAL PEARLS

- Refreshing short naps suggest narcolepsy; unrefreshing long naps suggest something else.
- Sleep paralysis with hallucinations is REM intrusion, not psychosis.
- Treat coexisting apnea before an MSLT or the result is uninterpretable.

# References

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## NOTE

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