

# Narcolepsy (*HLA-DQB1*) Genotyping

## Indications for Ordering

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Aid in diagnosis of narcolepsy

## Test Description

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Polymerase chain reaction with melting-curve analysis to detect the HLA-DQB1\*06:02 allele

## Tests to Consider

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Genetic testing

- [Narcolepsy \(\*HLA-DQB1\*\\*06:02\) Genotyping 2005023](#)
  - May help rule out narcolepsy when clinical history and sleep studies are inconclusive

Evaluation to rule out other treatable disorders may include

- [CBC with Platelet Count and Automated Differential 0040003](#)
- [Glucose, Plasma or Serum 0020024](#)
- [Drugs of Abuse 9 Panel, Urine – Screen Only 0090453](#)
- [Drug Screen \(Nonforensic\), Urine, Qualitative 0090500](#)
- [Melatonin 0098816](#)

## Disease Overview

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**Prevalence** – 1/2,000 affected with narcolepsy

### Incidence

- HLA-DQB1\*06:02 allele
  - Varies by ethnicity
  - Caucasians
    - 15% of general population has HLA-DQB1\*06:02 allele
    - 99% with narcolepsy and cataplexy have HLA-DQB1\*06:02 allele
  - Also strongly associated with narcolepsy in other populations (Japanese, African Americans, Koreans, Hispanics)

### Age of onset

- Narcolepsy is generally diagnosed in adulthood
- Has been reported in children

## Symptoms

- Narcolepsy is a sleep disorder
  - Excessive daytime sleepiness
  - Cataplexy
    - Sudden loss of muscle tone triggered by strong emotions
  - Disturbed nighttime sleep
  - Sleep paralysis
  - Hypnagogic hallucinations
    - Occurs in the period between sleep and wakefulness
- Diagnosis is based on clinical symptoms

## Genetics

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**Gene** – *HLA-DQB1*

**Variant** – HLA-DQB1\*06:02

- Cause of narcolepsy is multifactorial
  - Both genetic and environmental components
- Familial cases are rare

## Test Interpretation

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### Sensitivity/specificity

- Clinical sensitivity – 85-95%
- Clinical specificity – <1%
- Analytical sensitivity/specificity – 99%

### Results

- Positive
  - HLA-DQB1\*06:02 allele detected
    - Supportive of a clinical diagnosis of narcolepsy
    - Does not by itself establish a diagnosis
- Negative
  - HLA-DQB1\*06:02 allele not detected
    - Diagnosis of narcolepsy is less likely but not eliminated

### Limitations

- Does not differentiate between heterozygosity and homozygosity of the HLA-DQB1\*06:02 allele
- Diagnostic errors can occur due to rare primer-site variations
- Alleles other than HLA-DQB1\*06:02 will not be identified
- Other genetic and nongenetic factors that influence narcolepsy are not evaluated