MAYO CLINIC LABORATORIES

# Test Definition: DEXA

Dexamethasone, Serum

## Overview

### Useful For

Measuring dexamethasone concentrations in serum

Ensuring that dexamethasone concentrations are adequate when performing dexamethasone suppression testing

Confirming the cause of secondary adrenal insufficiency

This test is **not useful** as the sole basis for diagnosis or treatment decisions.

### Method Name

Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS)

### NY State Available

Yes

## Specimen

### Specimen Type

Serum

### Ordering Guidance

For synthetic glucocorticoid analyte screen, order SGSS / Synthetic Glucocorticoid Screen, Serum.

### Specimen Required

**Supplies:** Sarstedt Aliquot Tube, 5 mL (T914)
**Collection Container/Tube:**
**Preferred:** Red top
**Acceptable:** Serum gel
**Submission Container/Tube:** Plastic vial
**Specimen Volume:** 0.5 mL Serum
**Collection Instructions:**
1. Draw blood between 7:30 a.m. and 9:00 a.m. the morning following an evening dose.
2. Within 2 hours of collection, centrifuge and aliquot serum into a plastic vial and freeze immediately. **Do not send in original tube.**
3. Send frozen.

### Forms

If not ordering electronically, complete, print, and send a Therapeutics Test Request (T831) with the specimen.

### Specimen Minimum Volume

Serum: 0.25 mL

### Reject Due To

| | |
|---|---|
| Gross hemolysis | OK |
| Gross lipemia | OK |
| Gross icterus | OK |

### Specimen Stability Information

| Specimen Type | Temperature | Time | Special Container |
|---|---|---|---|
| Serum | Frozen (preferred) | 28 days | |
| | Ambient | 72 hours | |
| | Refrigerated | 14 days | |

## Clinical & Interpretive

### Clinical Information

The primary use of this test is to ensure that dexamethasone concentrations are adequate for interpretation of cortisol concentrations following the overnight dexamethasone administration. Suboptimal dexamethasone concentrations may be seen when absorption of dexamethasone is impaired, when metabolism of dexamethasone is accelerated due to concomitant medications, or when instructions for taking or timing of dexamethasone are not followed.

Overnight dexamethasone suppression testing is a standard-of-care endocrine test for assessment of mild autonomous cortisol secretion in adrenal tumors or for evaluation of endogenous hypercortisolism (Cushing syndrome) of any kind (ectopic, pituitary, adrenal). Consensus guidelines recommend concomitant measurement of dexamethasone and cortisol to minimize the risk of false-positive results when performing dexamethasone suppression testing.(1)

An additional potential application of this test is to aid in the assessment of secondary adrenal insufficiency.

Synthetic glucocorticoids are widely used and have an important clinical utility both as anti-inflammatory and immunosuppressive agents. The medical use of these agents, as well as their surreptitious use, can sometimes lead to a confusing clinical presentation. Patients exposed to these steroids may present with clinical features of Cushing syndrome but with suppressed cortisol and corticotropin concentrations, ie, hypothalamus-pituitary-adrenal axis suppression. This test provides measurements of dexamethasone, a commonly used glucocorticoid. The synthetic glucocorticoid screen measures a broader spectrum of synthetic glucocorticoids and would be the recommended test when exogenous glucocorticoid exposure is suspected; see SGSS / Synthetic Glucocorticoid Screen, Serum.

### Reference Values

Baseline: <30 ng/dL
8:00 a.m. following 1 mg Dexamethasone, previous evening: >100 ng/dL
8:00 a.m. following 8 mg Dexamethasone, (4 x 2 mg doses) previous day: >800 ng/dL

### Interpretation

This test will screen for, and quantitate if present, the synthetic glucocorticoid, dexamethasone.

The presence of this synthetic glucocorticoid in serum indicates the current or recent use of this compound.

### Cautions

Lack of detection does not preclude use of dexamethasone because adrenal suppression may persist for some time after the exogenous steroid is discontinued.

### Clinical Reference

1. Fleseriu M, Auchus R, Bancos I, et al. Consensus on diagnosis and management of Cushing's disease: a guideline update. Lancet Diabetes Endocrinol. 2021;9(12):847-875. doi:10.1016/S2213-8587(21)00235-7
2. Genere N, Kaur RJ, Athimulam S, et al. Interpretation of abnormal dexamethasone suppression test is enhanced with use of synchronous free cortisol assessment. J Clin Endocrinol Metab. 2022;107(3):e1221-e1230. doi:10.1210/clinem/dgab724
3. Taylor RL, Grebe SK, Singh RJ. Quantitative, highly sensitive liquid chromatography-tandem mass spectrometry method for detection of synthetic corticosteroids. Clin Chem. 2004;50(12):2345-2352. doi:10.1373/clinchem.2004.033605
4. Bancos I, Prete A. Approach to the patient with adrenal incidentaloma. J Clin Endocrinol Metab. 2021 21;106(11):3331-3353. doi:10.1210/clinem/dgab512
5. Cronin JJ, McCoy S, Kennedy U, et al. A randomized trial of single-dose oral dexamethasone versus multidose prednisolone for acute exacerbations of asthma in children who attend the emergency department. Ann Emerg Med. 2016;67(5):593-601.e3. doi:10.1016/j.annemergmed.2015.08.001
6. Adler GK, Stowasser M, Correa RR, et al. Primary aldosteronism: An Endocrine Society Clinical Practice Guideline. J Clin Endocrinol Metab. 2025;110(9):2453-2495. doi:10.1210/clinem/dgaf284

## Performance

### Method Description

Deuterated dexamethasone is added to serum as an internal standard. Dexamethasone and the deuterated internal standard are extracted from the specimens and analyzed by liquid chromatography tandem mass spectrometry (LC-MS/MS).(Unpublished Mayo method)

### PDF Report

No

### Day(s) Performed

Tuesday, Thursday

### Report Available

2 to 10 days

### Specimen Retention Time

3 months

# Test Definition: DEXA

Dexamethasone, Serum

**Performing Laboratory Location**

Mayo Clinic Laboratories - Rochester Superior Drive

## Fees & Codes

### Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

### Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

### CPT Code Information

80299

### LOINC® Information

| Test ID | Test Order Name | Order LOINC® Value |
|---|---|---|
| DEXA | Dexamethasone, S | 14062-4 |

| Result ID | Test Result Name | Result LOINC® Value |
|---|---|---|
| 609439 | Dexamethasone, S | 14062-4 |