

# **Test Definition: VITE**

Vitamin E, Serum

#### Overview

#### **Useful For**

Monitoring of Vitamin E supplementation/treatment

Potentially detecting Vitamin E overdoses

#### Method Name

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

#### NY State Available

Yes

#### Specimen

# Specimen Type

Serum

### Shipping Instructions

Ship specimen in amber vial to protect from light.

#### Specimen Required

Patient Preparation:
Fasting: 12 hours, required; infants should have specimen collected before next feeding
Supplies: Amber Frosted Tube, 5 mL (T915)
Collection Container/Tube:
Preferred: Red top
Acceptable: Serum gel
Submission Container/Tube: Amber vial
Specimen Volume: 0.5 mL
Collection Instructions: Within 2 hours of collection, centrifuge and aliquot serum into light protected plastic vial.

#### Forms

If not ordering electronically, complete, print, and send a General Request (T239) with the specimen.

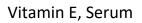
#### **Specimen Minimum Volume**

0.25 mL

#### **Reject Due To**

Gross	Reject
hemolysis	

# **Test Definition: VITE**



Gross lipemia	Reject
Gross icterus	ОК

#### **Specimen Stability Information**

**1AYO CLINIC** ABORATORIES

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	44 days	LIGHT PROTECTED
	Ambient	7 days	LIGHT PROTECTED
	Frozen	44 days	LIGHT PROTECTED

### **Clinical & Interpretive**

#### **Clinical Information**

Vitamin E is the generic term for two different groups of methylated phenol compounds with a chromane alcoholic core linked to poly-carbon chains (tocopherols and tocotrienols).

These vitamins are all free radical scavengers, with a-Tocopherol being the most potent one in humans, as most of the related compounds are not re-secreted by the liver, thus leading to much lower circulating concentrations.

Vitamin E deficiency is very rare and mostly seen in patients with extreme malabsorption of fat and in patients with abetalipoproteinemia, a rare inborn error of metabolism. Patients with these conditions may develop peripheral neuropathy, myopathy, retinopathy, and immune deficiency.

There is a large body of scientific studies that indicates positive effects on outcomes of various diseases if regular Vitamin E supplementation is provided; however, several trials have shown evidence of increasing bleeding risks at high Vitamin E doses. Therefore, tables of tolerable doses in children and adults have been established, which should not be exceeded.

#### **Reference Values**

0-17 years: 3.8-18.4 mg/L > or =18 years: 5.5-17.0 mg/L

#### Interpretation

Vitamin E concentrations within the healthy reference population range usually indicate adequate Vitamin A stores.

The rare occurrence of low Vitamin A levels might correlate with potential deficiency and investigation of potential fat malabsorptions should be considered.

Conversely, Vitamin E concentrations significantly above the upper healthy reference population range might indicate that Vitamin E intake exceeds the tolerable upper daily intake level(s).

#### Cautions

Testing of nonfasting specimens or the use of vitamin supplementation can result in elevated serum vitamin concentrations. Reference values were established using specimens from individuals who were fasting.







#### **Clinical Reference**

1. Ball GFM. Vitamins: Their role in the human body. Oxford, Blackwell Publishing. 2004:234-255

2. Traber MG. Vitamin E. In: Shils ME, Shike M, Ross AC, et al, eds. Modern Nutrition in Health and Disease.10th ed. Lippincott Williams and Wilkins; 2006:434-441

3. Roberts NB, Taylor A, Sodi R. Vitamins and trace elements. In: Rifai N, Horvath AR, Wittwer CT, eds. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. Elsevier; 2018:chap37

4. Sodi R. Vitamins and trace elements. In: Rifai N, Chiu RWK, Young I, Burnham C-AD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:417-417.e104

#### Performance

#### **Method Description**

Deuterated vitamin E (d6-alpha-tocopherol) is added to serum as an internal standard. Vitamin E (alpha-tocopherol) and the deuterated internal standard are extracted from the specimens and analyzed by liquid chromatography-tandem mass spectrometry.(Unpublished Mayo method)

## PDF Report

No

Day(s) Performed Sunday through Friday

Report Available 3 to 5 days

# Specimen Retention Time

14 days

**Performing Laboratory Location** Mayo Clinic Laboratories - Rochester Superior Drive

## Fees & Codes

#### Fees

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

#### **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**

84446

#### LOINC<sup>®</sup> Information

Test ID	Test Order Name	Order LOINC <sup>®</sup> Value
VITE	Vitamin E, S	1823-4

Result ID	Test Result Name	Result LOINC <sup>®</sup> Value
2350	A-Tocopherol, Vitamin E	1823-4