

# 25-Hydroxy Vitamin D Test

## What is Vitamin D and why do I need it?

Vitamin D is a family of compounds that is essential for the proper growth and formation of teeth and bones. Vitamin D helps your body absorb calcium, and maintains bone strength throughout your life. Your body produces Vitamin D when the sun's UV rays contact your skin. Other sources of the vitamin include fish, eggs, and fortified dairy products. It's also available as a dietary supplement for those who may not get enough exposure to sunlight, or lack Vitamin D in their food intake.

Vitamin D deficiency can lead to several health issues over time. If your Vitamin D levels are low and they're accompanied by bone pain, the deficiency could be affecting your bone density. Without sufficient Vitamin D in the system, your bones will be soft, malformed, and unable to repair themselves normally, resulting in diseases called rickets in children and osteomalacia in adults. Vitamin D has also been shown to influence the growth and differentiation of many other tissues and to help regulate the immune system. These other functions have linked Vitamin D with other disorders, such as autoimmunity and cancer. Low blood levels of the vitamin have been associated with increased risk of death from cardiovascular disease, cognitive impairment in older adults and severe asthma in children.

## What is the 25-Hydroxy Vitamin D Test?

The 25-hydroxy Vitamin D test is a simple blood test, and the best way to monitor Vitamin D levels. The amount of 25-hydroxy Vitamin D in your blood is a good indication of how much Vitamin D your body has. The test can determine if your Vitamin D levels are too high or too low.

The test is also known as the 25-OH Vitamin D test and the calcidiol 25-hydroxycholecalciferol test. It can be an important indicator of osteoporosis (bone weakness) and rickets (bone malformation).

## Who should get tested?

There are several factors which can increase your risk of Vitamin D deficiency. Young children and the elderly are particularly vulnerable to complications arising from insufficient Vitamin D in their systems.



Other factors that affect Vitamin D levels are:

- Not consuming enough food types that are rich in Vitamin D. This is likely if you follow a strict vegan diet, or are lactose-intolerant.
- Not getting enough exposure to the sun. People who are home-bound or live in northern latitudes or have a profession that keeps them from getting enough sunlight are at risk.
- You have a darker skin tone, since greater amounts of melanin in the skin reduce the amount of sunlight the skin can absorb
- Exclusively breast-feeding babies for prolonged time periods, which would increase their risk of developing Vitamin D deficiency
- You have kidney issues which prevent Vitamin D being converted to its active form in your body. This happens mostly within older age groups
- You've undergone gastric bypass surgery
- Certain medical problems, including Crohn's disease, cystic fibrosis, and celiac disease, can affect your intestine's ability to absorb Vitamin D from the food you eat. Certain people with obesity can also have Vitamin D deficiency, since Vitamin D is extracted from the blood by fat cells, altering its release into the circulation.

## When is this test ordered?

Your doctor will order this test if they suspect that you're showing signs of Vitamin D deficiency, or if you're at risk of developing this deficiency.

There are several factors, including your previous medical and test history, which would determine when this test should be ordered for you. If you have low levels of calcium, phosphorus and / or parathyroid hormone, or exhibiting bone weakness, fatigue, loss in muscle mass, hair loss, the 25-hydroxyVitamin D is usually ordered to identify a possible deficiency in Vitamin D.

Known risk factors like being homebound, institutionalized, having low sunlight exposure, obesity or having fat malabsorption can also lead to Vitamin D deficiency. This test is often requested before an individual begins treatment for osteoporosis.

When Vitamin D, calcium, phosphorus, or magnesium supplementation is necessary, Vitamin D levels are sometimes measured to monitor treatment effectiveness. Your doctor may change the recommended dosage based on the results of this test.

Rarely, this test may be done when calcium is high or a person has a disease that might produce excess amounts of Vitamin D, such as sarcoidosis or some forms of lymphoma. It may also occur from taking too many vitamin pills and other nutritional supplements. High doses of Vitamin D can result in a condition called hypervitaminosis D. Hypervitaminosis is a rare but serious condition that could put you at risk for liver or kidney problems.

## How can I get tested?

Ask your healthcare provider about getting the 25-Hydroxy Vitamin D Test as part of your health checkups, and to establish your baseline Vitamin D level. Measuring your existing level will help your doctor determine if you need treatment or increase your Vitamin D intake through food, supplements or lifestyle changes. It also equips you and your doctor to monitor your Vitamin D levels in the future.

## Understanding your results

Your test report will indicate the Vitamin D levels in the form of nanomoles/liter (nmol/L) or nanograms/milliliter (ng/mL). The results can indicate whether your levels are normal, deficient, insufficient or too high. Your medical history, age, gender and other factors influence the outcome of the tests. It's best to consult your doctor on the next course of action. Your doctor will help explain the results of your test and determine whether further testing or treatment is required.

### How is the test performed?

The 25-Hydroxy Vitamin D is a blood test

### How much does it cost?

The test costs \$35.

### When will I get my results?

Your test results will be available to your healthcare provider within 2 weeks of sample collection.

### Sources

- Mayo Clinic Staff. (2013). Vitamin D. [mayoclinic.com/health/vitamin-d/NS\\_patient-vitamin-d](http://mayoclinic.com/health/vitamin-d/NS_patient-vitamin-d)
- Vitamin D [Fact sheet]. (2014) [ods.od.nih.gov/factsheets/VitaminD-HealthProfessional/](https://ods.od.nih.gov/factsheets/VitaminD-HealthProfessional/)
- Vitamin D testing. (2013) [mayomedicallaboratories.com/articles/vitamin-d/](http://mayomedicallaboratories.com/articles/vitamin-d/)
- Lab Tests Online- Vitamin D Test (2016) [labtestsonline.org/tests/vitamin-d-tests](http://labtestsonline.org/tests/vitamin-d-tests)
- Harvard School of Public Health: Vitamin D and Health [hsph.harvard.edu/nutritionsource/vitamin-d/](http://hsph.harvard.edu/nutritionsource/vitamin-d/)
- Institute of Medicine: "Dietary Reference Intakes for Calcium and Vitamin D."

**COMPLETE and ACCURATE information is required in all shaded areas.**

Patient Surname (from CareCard)		First	Initial(s)	Date of Birth		Sex
				DAY	MONTH	YEAR
Bill to: <input type="checkbox"/> MSP <input type="checkbox"/> ICBC <input type="checkbox"/> WorkSafeBC <input type="checkbox"/> Patient <input type="checkbox"/> Other				Chart Number		Room # (LTC use only)
PHN		I.D. Number				
Patient Address		City, Province	Postal Code	Patient Telephone Number		
Ordering Physician, Address, MSP Practitioner Number	Locum for:	C0 Number		Date/Time of Collection	Phlebotomist	Data Entry
	Physician			Date/Time/Name of Medication		
Copy to: Address, MSP Practitioner Number	Pregnant <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Fasting	<input type="checkbox"/> Phone <input type="checkbox"/> Fax	Telephone Requisition Received By:		
	<input type="checkbox"/> hours prior to test	INITIAL/DATE				
Diagnosis and indications for guideline protocol and special tests						
For tests indicated with a shaded tick box <input type="checkbox"/> , consult provincial guidelines and protocols ( <a href="http://www.BCGuidelines.ca">www.BCGuidelines.ca</a> )						

### HEMATOLOGY

☐ Hematology profile

☐ PT-INR ☐ On Warfarin?

☐ Ferritin (query iron deficiency)

HFE – Hemochromatosis (check ONE box only)

☐ Confirm diagnosis (ferritin first,  $\pm$  TS,  $\pm$  DNA testing)

☐ Sibling/parent is C282Y/C282Y homozygote (DNA testing)

### CHEMISTRY

☐ Glucose - fasting (see reverse for patient instructions)

☐ GTT - gestational diabetes screen (50 g load, 1 hour post-load)

☐ GTT - gestational diabetes confirmation (75 g load, fasting, 1 & 2 hour test)

☐ Hemoglobin A1c

☐ Albumin/creatinine ratio (ACR) - Urine

### LIPIDS

☒ One box only. For other lipid investigations, please order under Other Tests section and provide diagnosis.

☐ Baseline cardiovascular risk assessment or follow-up (Lipid profile, Total, HDL, non-HDL & LDL Cholesterol, Triglycerides, fasting)

☐ Follow-up of treated hypercholesterolemia (Total, HDL & non-HDL Cholesterol, fasting not required)

☐ Follow-up of treated hypercholesterolemia (ApoB only, fasting not required)

☐ Self-pay lipid profile (non-MSP billable, fasting)

### THYROID FUNCTION

☒ One box only. For other thyroid investigations, please order under Other Tests section and provide diagnosis.

☐ Monitor thyroid replacement therapy (TSH Only)

☐ Suspected Hypothyroidism TSH first (plus FT4 if required)

☐ Suspected Hyperthyroidism, TSH first (plus FT4 or FT3 if required)

### OTHER CHEMISTRY TESTS

<input type="checkbox"/> Sodium	<input type="checkbox"/> Creatinine/eGFR
<input type="checkbox"/> Potassium	<input type="checkbox"/> Calcium
<input type="checkbox"/> Albumin	<input type="checkbox"/> Creatine kinase (CK)
<input type="checkbox"/> Alk phos	<input type="checkbox"/> PSA - Known or suspected prostate cancer (MSP billable)
<input type="checkbox"/> ALT	<input type="checkbox"/> PSA screening (self-pay)
<input type="checkbox"/> Bilirubin	<input type="checkbox"/> Pregnancy Test
<input type="checkbox"/> GGT	<input type="checkbox"/> Serum
<input type="checkbox"/> T. Protein	<input type="checkbox"/> Urine

The personal information collected on this form and any medical data subsequently developed will be used and disclosed only as permitted or required by the Personal Information Protection Act (and related acts and regulations) of British Columbia. LifeLabs privacy policy is available at [www.lifelabs.com](http://www.lifelabs.com). Use of this form implies consent for the use of de-identified patient data and specimens for quality assurance purposes.

### MICROBIOLOGY

**LABEL ALL SPECIMENS WITH PATIENT'S FIRST AND LAST NAME, DOB AND/OR PHN & SITE**

#### ROUTINE CULTURE

List current antibiotics: \_\_\_\_\_

☐ Throat ☐ Sputum ☐ Blood

☐ Superficial Wound Site: \_\_\_\_\_

☐ Deep Wound Site: \_\_\_\_\_

☐ Other: \_\_\_\_\_

#### VAGINITIS

☐ Initial (smear for BV & yeast only)

☐ Chronic/recurrent (smear, culture, trichomonas)

☐ Trichomonas testing

#### GROUP B STREP SCREEN (Pregnancy only)

☐ Vagino-anorectal swab ☐ Penicillin allergy

#### CHLAMYDIA (CT) & GONORRHEA (GC)

☐ CT & GC Testing

Source/site: ☐ Urethra ☐ Cervix ☐ Urine

☐ GC culture: ☐ Throat ☐ Rectal

☐ Other: \_\_\_\_\_

#### STOOL SPECIMENS

History of bloody stools? ☐ Yes ☐ No

☐ C. difficile testing

☐ Stool culture

☐ Stool ova & parasite exam

☐ Stool ova & parasite (high risk, 2 samples)

#### DERMATOPHYTES

☐ Dermatophyte culture ☐ KOH prep (direct exam)

Specimen: ☐ Skin ☐ Nail ☐ Hair

Site: \_\_\_\_\_

#### MYCOLOGY

☐ Yeast ☐ Fungus Site: \_\_\_\_\_

Date \_\_\_\_\_

Requisition is valid for one year from the date of issue.

### URINE TESTS

☐ Urine culture - list current antibiotics: \_\_\_\_\_

☐ Macroscopic  $\rightarrow$  microscopic if dipstick positive

☐ Macroscopic  $\rightarrow$  urine culture if pyuria or nitrite present

☐ Macroscopic (dipstick) ☐ Microscopic

☐ Special case (if ordered together)

### HEPATITIS SEROLOGY

☒ One box only. For other Hepatitis Markers, please order under Other Tests section.

☐ Acute viral hepatitis undefined etiology

Hepatitis A (anti-HAV IgM)

Hepatitis B (HBsAg, plus anti-HBc if required)

Hepatitis C (anti-HCV)

☐ Chronic viral hepatitis undefined etiology

Hepatitis B (HBsAg, anti-HBc, anti-HBs)

Hepatitis C (anti-HCV)

#### Investigation of hepatitis immune status

☐ Hepatitis A (anti-HAV, total)

☐ Hepatitis B (anti-HBs)

☐ Hepatitis marker(s) HBsAg

### HIV SEROLOGY

☐ HIV Serology (patient has legal right to choose not to have their name and address reported to public health – non-nominal reporting)

☐ Non-nominal reporting

### OTHER TESTS

☐ ECG

☐ Fecal Occult Blood (Age 50-74 asymptomatic q2y) Copy to Colon Screening Program.

☐ Fecal Occult Blood (other indications)

Standing Order requests - expiry and frequency must be indicated

Physician Signature \_\_\_\_\_

**You will be asked to present your Care Card/BC Services Card at each visit.**

For tests not covered by MSP, payment can be made by VISA, MasterCard and Debit.

Test Results for clinicians: 1-800-431-7206. Patients can register to receive test results at [www.myehealth.ca](http://www.myehealth.ca)

Patient Service Centres	Hours (Monday to Friday)	Fax
<b>Kamloops - St. Paul</b> 135 - 546 St. Paul Street	8:00 to 4:00	(250) 374-5638
<b>Kamloops - Nicola</b> 202 - 321 Nicola Street	8:00 to 3:00	(250) 372-0588
<b>Kamloops - Tranquille</b> 1 - 685 Tranquille Road	7:00 to 4:00; (Sat. 7:00 to 12:00)	(250) 376-4165
<b>Prince George</b> 110 - 1669 Victoria Street	7:00 to 4:00; (Sat. 7:00 to 12:00)	(250) 562-7358
<b>Quesnel</b> 15 - 665 Front Street	7:30 to 3:00	(250) 992-5889
<b>Terrace</b> 105 - 4634 Park Avenue	8:00 to 4:00	(250) 615-0332
<b>Dawson Creek</b> 2 - 705 - 103rd Avenue	7:30 to 3:00	(250) 782-5764
<b>Nelson</b> 806 Vernon Street	8:00 to 4:00	(250) 352-6628
<b>Kimberley</b> 260 - 4th Avenue	7:30 to 3:30	(250) 427-2108

**PATIENT INSTRUCTIONS: (unless otherwise indicated by your physician)**

**Fasting Required:** Do not eat or drink (except water) for **8-12 hours** before the following tests:

- GLUCOSE - fasting
- GTT-gestational diabetes confirmation and GTT - non pregnant
- LIPIDS/CHOLESTEROL - if indicated

Note: Chewing gum and brushing teeth during the fasting period is acceptable.

**Fasting is preferred,** but not required for the following tests:

- Homocysteine, Iron/Transferrin

**H. Pylori:** Do not eat, drink (except water), or smoke for **4 hours** before the test. Do not drink **any** fluid for the last hour of fasting.

**AM Cortisol and Testosterone:** Collect sample within 3 hours of waking

Patient Instructions are also available on our website [www.lifelabs.com](http://www.lifelabs.com)

**APPOINTMENTS ARE REQUIRED FOR THE FOLLOWING TESTS:**

Call to schedule an appointment Mon - Fri from 9am - 5pm  
604-412-4495 or Toll Free 1-855-412-4495


- Ambulatory Blood Pressure
- DOT/non-DOT Drug Screen
- Holter Monitor
- Lactose Tolerance/Hydrogen Breath Test
- Paternity / DNA
- Semen Analysis

**APPOINTMENTS ARE AVAILABLE BUT NOT REQUIRED FOR THE FOLLOWING TESTS:**

- Legal Drug Screen
- Panorama Pre-Natal Screening Test

For tests not listed above, you may arrive without an appointment OR schedule an appointment at a LifeLabs location online at [www.lifelabs.com](http://www.lifelabs.com).



 <b>Ministry of Health and Long-Term Care</b> <b>Laboratory Requisition</b> <b>Requisitioning Clinician / Practitioner</b>		<b>Laboratory Use Only</b>	
<b>Name</b> <input type="text"/>		<div style="text-align: right;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Clear Form</div> </div>	
<b>Address</b> <input type="text"/>		<b>Clinician/Practitioner's Contact Number for Urgent Results</b> <input type="text"/>	
<b>Clinician/Practitioner Number</b> <input type="text"/>		<b>Service Date</b> <div style="display: flex; justify-content: space-between;"> <span>yyyy</span> <span>mm</span> <span>dd</span> </div>	
<b>CPSO / Registration No.</b> <input type="text"/>		<b>Health Number</b> <input type="text"/>	
<b>Version</b> <input type="text"/>		<b>Sex</b> <input type="checkbox"/> M <input type="checkbox"/> F	
<b>Date of Birth</b> <div style="display: flex; justify-content: space-between;"> <span>yyyy</span> <span>mm</span> <span>dd</span> </div>		<b>Province</b> <input type="text"/>	
<b>Check (✓) one:</b> <input type="checkbox"/> OHIP/Insured <input type="checkbox"/> Third Party / Uninsured <input type="checkbox"/> WSIB		<b>Other Provincial Registration Number</b> <input type="text"/>	
<b>Additional Clinical Information (e.g. diagnosis)</b> <input type="text"/>		<b>Patient's Telephone Contact Number</b> <input type="text"/>	
<b>Patient's Last Name (as per OHIP Card)</b> <input type="text"/>		<b>Patient's First &amp; Middle Names (as per OHIP Card)</b> <input type="text"/>	
<input type="checkbox"/> Copy to: Clinician/Practitioner <b>Last Name</b> <input type="text"/> <b>First Name</b> <input type="text"/>		<b>Patient's Address (including Postal Code)</b> <input type="text"/>	
<b>Address</b> <input type="text"/>			
<b>Note: Separate requisitions are required for cytology, histology / pathology and tests performed by Public Health Laboratory</b>			
<b>Biochemistry</b>		<b>Hematology</b>	
<input type="checkbox"/> Glucose <input type="checkbox"/> Random <input type="checkbox"/> Fasting		<input type="checkbox"/> CBC	
<input type="checkbox"/> HbA1C		<input type="checkbox"/> Prothrombin Time (INR)	
<input type="checkbox"/> Creatinine (eGFR)		<b>Immunology</b>	
<input type="checkbox"/> Uric Acid		<input type="checkbox"/> Pregnancy Test (Urine)	
<input type="checkbox"/> Sodium		<input type="checkbox"/> Mononucleosis Screen	
<input type="checkbox"/> Potassium		<input type="checkbox"/> Rubella	
<input type="checkbox"/> ALT		<input type="checkbox"/> Prenatal: ABO, RhD, Antibody Screen (titre and ident. if positive)	
<input type="checkbox"/> Alk. Phosphatase		<input type="checkbox"/> Repeat Prenatal Antibodies	
<input type="checkbox"/> Bilirubin		<b>Microbiology ID &amp; Sensitivities (if warranted)</b>	
<input type="checkbox"/> Albumin		<input type="checkbox"/> Cervical	
<input type="checkbox"/> Lipid Assessment (includes Cholesterol, HDL-C, Triglycerides, calculated LDL-C & Chol/HDL-C ratio; individual lipid tests may be ordered in the "Other Tests" section of this form)		<input type="checkbox"/> Vaginal	
<input type="checkbox"/> Albumin / Creatinine Ratio, Urine		<input type="checkbox"/> Vaginal / Rectal – Group B Strep	
<input type="checkbox"/> Urinalysis (Chemical)		<input type="checkbox"/> Chlamydia (specify source): <input type="text"/>	
<input type="checkbox"/> Neonatal Bilirubin:		<input type="checkbox"/> GC (specify source): <input type="text"/>	
<input type="checkbox"/> Child's Age: <input type="text"/> days <input type="text"/> hours		<input type="checkbox"/> Sputum	
<input type="checkbox"/> Clinician/Practitioner's tel. no. ( ) <input type="text"/>		<input type="checkbox"/> Throat	
<input type="checkbox"/> Patient's 24 hr telephone no. ( ) <input type="text"/>		<input type="checkbox"/> Wound (specify source): <input type="text"/>	
<input type="checkbox"/> Therapeutic Drug Monitoring:		<input type="checkbox"/> Urine	
<input type="checkbox"/> Name of Drug #1 <input type="text"/>		<input type="checkbox"/> Stool Culture	
<input type="checkbox"/> Name of Drug #2 <input type="text"/>		<input type="checkbox"/> Stool Ova & Parasites	
<input type="checkbox"/> Time Collected #1 <input type="text"/> hr. #2 <input type="text"/> hr.		<input type="checkbox"/> Other Swabs / Pus (specify source): <input type="text"/>	
<input type="checkbox"/> Time of Last Dose #1 <input type="text"/> hr. #2 <input type="text"/> hr.			
<input type="checkbox"/> Time of Next Dose #1 <input type="text"/> hr. #2 <input type="text"/> hr.			
<b>I hereby certify the tests ordered are not for registered in or out patients of a hospital.</b>		<b>Specimen Collection</b>	
<input type="checkbox"/>		<b>Time</b> <input type="text"/> 24 hour clock <b>Date</b> <input type="text"/> yyyy/mm/dd	
		<b>Fecal Occult Blood Test (FOBT) (check one)</b>	
		<input type="checkbox"/> FOBT (non CCC) <input type="checkbox"/> ColonCancerCheck FOBT (CCC) no other test can be ordered on this form	
<b>X</b> <b>Clinician/Practitioner Signature</b> <input type="text"/> <b>Date</b> <input type="text"/>		<b>Laboratory Use Only</b>	
		<div style="text-align: right;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Print</div> </div>	