

# LABORATORY TESTS RELATED TO VITILIGO

## WHAT IS VITILIGO?

Vitiligo is a disease that causes the skin to lose color, leaving lighter patches of skin. It can affect skin anywhere on the body, as well as hair and the inside of the mouth.

Skin color is determined by the presence of a substance called melanin. Vitiligo develops when the cells that produce melanin (called melanocytes) die or stop working. Vitiligo can affect people of all skin tones, but it is more apparent in people with darker skin.

There are two main types of vitiligo: non-segmental and segmental

- **NON-SEGMENTAL VITILIGO** develops on both sides of the body, with nearly symmetrical white patches. It is the most common type of vitiligo and usually develops during young adulthood.
- **SEGMENTAL VITILIGO** only affects one area of the body. Patients often see rapid color loss that stabilizes after 6 to 12 months. It is more common in children.

The cause of vitiligo is not fully understood. Non-segmental vitiligo is thought to be an autoimmune condition caused by the body attacking the melanocyte skin cells that make melanin. People with non-segmental vitiligo often have other autoimmune conditions like hyperthyroidism, type 1 diabetes, or psoriasis.

Treatment for vitiligo varies from patient to patient, but doctors often prescribe medicine to stop the immune system from attacking the melanocytes and to prevent further loss of skin color.



## QUESTIONS TO ASK YOUR DOCTOR

- What type of Vitiligo do I have?
- Which additional screening tests do you recommend for potentially related diseases?
- What are my treatment options?
- What are the follow-up tests and what are we looking for?
- Based on my lab results, what is the course of action?

Vitiligo can affect people of all genders. In this material, the terms “female” and “woman” are used to refer to people assigned female at birth; the terms “male” and “man” are used to refer to people assigned male at birth.

\*Reference ranges are set by individual laboratories for their specific populations so reference ranges might differ slightly.

# LABORATORY TESTS RELATED TO DIAGNOSING VITILIGO

Vitiligo is diagnosed mostly by physical examination. However, to confirm the diagnosis, a doctor may order a biopsy to confirm that the skin condition is vitiligo. During this procedure, a doctor removes a small piece of affected skin and sends it to the laboratory, where a pathologist will look at it under a microscope. The laboratory team looks for the presence of the cells that create melanin, called melanocytes. Skin affected by vitiligo will not have any functioning melanocytes.

Vitiligo is sometimes connected with other conditions, such as Addison's disease, pernicious anemia, thyroid disease, or type 1 diabetes.

## ADDISON'S DISEASE

Addison's disease is a disorder when the body does not make enough of certain hormones, like cortisol or aldosterone. The following blood tests are used to help diagnose Addison's disease.

- **SODIUM:** Sodium is an electrolyte, which helps control the amount of fluid in the blood. It also helps regulate the level of acids and bases (pH balance) in the body. Lower than normal blood sodium levels can be a sign of Addison's disease.
- **POTASSIUM:** Potassium is another electrolyte. Higher than normal blood potassium levels can be a sign of Addison's disease.
- **CORTISOL:** Often called the “stress hormone,” cortisol helps the body respond to stress, reduce inflammation, regulate blood sugar, and control blood pressure. Lower than normal levels of cortisol in the blood can be a sign of Addison's disease.
- **ADRENOCORTICOTROPIC HORMONE (ACTH):** ACTH is a hormone that controls the production of cortisol. It is usually tested at the same time as cortisol. Low levels of cortisol in the blood with high levels of ACTH can be a sign of Addison's disease.

## PERNICIOUS ANEMIA

An autoimmune condition that limits the body's ability to absorb vitamin B12, which is essential for red blood cells to move oxygen through your body. Untreated pernicious anemia can damage the digestive system, the nervous system, and the heart. The following tests are used to help diagnose pernicious anemia.

- **VITAMIN B TESTS:** Tests the amount of one or more B vitamins in the blood or urine. Vitamin B9 (folic acid) and Vitamin B12 (cobalamin) are often tested together. Lower than normal vitamin B12 in the blood can be a sign of pernicious anemia.
- **COMPLETE BLOOD COUNT (CBC):** This blood test helps clarify what type of anemia a person has. It measures different blood cells and their characteristics, like red blood cells, white blood cells, hemoglobin, hematocrit, and platelets.
- **RETICULOCYTE COUNT:** Reticulocytes are immature red blood cells that have not finished developing. Having fewer reticulocytes than normal can be a sign that a person is not producing enough red blood cells which can occur in pernicious anemia.
- **LACTATE DEHYDROGENASE (LD) LEVELS:** LD is an enzyme that helps break down sugar into energy. Many things can cause increased LD levels in the blood, including pernicious anemia.
- **METHYLMALONIC ACID (MMA) LEVELS:** MMA is made in small amounts when the body converts food to energy. If the body doesn't have enough vitamin B12, then it may create more MMA than normal. This test is used to confirm vitamin B12 deficiency.

## THYROID DISEASE

A disorder where the thyroid does not produce the correct amount of thyroid hormone. To learn more about lab tests related to thyroid disease, refer to our [Thyroid Flyer](#).

## TYPE 1 DIABETES

A chronic condition where the pancreas does not create enough insulin, the hormone that helps process sugar into usable energy. To learn more about lab tests related to diabetes, refer to our [Diabetes Flyer](#).

## OTHER TESTS RELATED TO DIAGNOSING VITILIGO

During a physical examination, a doctor may use a special light called a Wood's lamp to look at the patient's skin. This tool emits ultraviolet (UV) light, which makes depigmented cells glow bright blue-white or yellow-green. Wood's light helps with the diagnosis because it can be hard to tell where the depigmented skin is, particularly in people who already have lighter skin.

## ADDITIONAL RESOURCES



### MEET REX

When Rex was in high school in the Philippines, he noticed a small white patch on his finger and thought he had a common fungal infection. When topical creams did not clear up the discoloration, he went to his doctor to see what could be done. They informed him that he had an autoimmune condition called vitiligo. As the condition progressed and he lost more skin pigment, he felt isolated and alone—he was often bullied for his appearance and had no role models.

***“It was difficult during my teens, in the midst of other changes happening to my body, mind, and emotions. The people around me didn’t understand or respond sensitively to what was happening.”***

Though he felt isolated, Rex continued to study science and medicine to pursue a career in laboratory medicine. He now works as a Laboratory Administrative Director and is responsible for the administrative, financial, and technical management of a clinical laboratory. He is an active antibullying advocate who works to bring awareness of vitiligo to kids around the world.

***“My advice to others living with vitiligo is to embrace resilience and don’t listen to what other people have to say. Always remind yourself that we are unique, we are special, we are wonderfully made, and it is okay to be different.”***



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