Questions and Answers about Vitiligo

This publication contains general information about vitiligo. Individual sections describe what vitiligo is, who is affected, its symptoms, how it is diagnosed, and treatment options. If you have further questions, you may wish to discuss them with your health care provider.

What is vitiligo?

Vitiligo (vit-ill-EYE-go) is a pigmentation disorder in which melanocytes (the cells that make pigment) in the skin are destroyed. As a result, white patches appear on the skin in different parts of the body. Similar patches also appear on both the mucous membranes (tissues that line the inside of the mouth and nose) and the retina (inner layer of the eyeball). The hair that grows on areas affected by vitiligo sometimes turns white.

The cause of vitiligo is not known, but doctors and researchers have several different theories. There is strong evidence that people with vitiligo inherit genes that make them susceptible to depigmentation. The most widely accepted view is that the depigmentation occurs because vitiligo is an autoimmune disease – a disease in which a person's immune system reacts against the body's own organs or tissues. People's bodies produce proteins called cytokines that, in vitiligo, alter their pigment-producing cells and cause these cells to die. Another theory is that melanocytes destroy themselves. Finally, some people have reported that a single event, such as sunburn or emotional distress, triggered vitiligo; however, these events have not been scientifically proven as causes of vitiligo.

- Who is affected by vitiligo?
- What are the symptoms of vitiligo?
- Will the depigmented patches
Who is affected by vitiligo?

About 0.5 to 1 percent of the world’s population have vitiligo. The average age of onset is in the mid-twenties, but it can appear at any age. The disorder affects both sexes and all races equally; however, it is more noticeable in people with dark skin.

Vitiligo seems to be somewhat more common in people with certain autoimmune diseases, including hyperthyroidism (an overactive thyroid gland), adrenocortical insufficiency (the adrenal gland does not produce enough of the hormone called corticosteroid), alopecia areata (patches of baldness), and pernicious anemia (a low level of red blood cells caused by the failure of the body to absorb vitamin B₁₂). Scientists do not know the reason for the association between vitiligo and these autoimmune diseases. However, most people with vitiligo have no other autoimmune disease.

Vitiligo sometimes runs in families. Children whose parents have the disorder are more likely to develop vitiligo. However, most children will not get vitiligo even if a parent has it, and most people with vitiligo do not have a family history of the disorder.

What are the symptoms of vitiligo?

People who develop vitiligo usually first notice white patches (depigmentation) on their skin. These patches are more commonly found on sun-exposed areas of the body, including the hands, feet, arms, face, and lips. Other common areas for white patches to appear are the armpits and groin and around the mouth, eyes, nostrils, navel, genitals, and rectum.

Vitiligo generally appears in one of two patterns:
- **Segmental (or unilateral) pattern** – depigmented patches that develop on one side of the body only.

- **Nonsegmental (or bilateral or generalized) pattern** – the most common pattern. Depigmentation occurs symmetrically on both sides of the body.

In addition to white patches on the skin, people with vitiligo may have premature graying of the scalp hair, eyelashes, eyebrows, and beard. People with dark skin may notice a loss of color inside their mouths.

**Will the depigmented patches spread?**

Segmental vitiligo remains localized to one part of the body and does not spread. There is no way to predict if nonsegmental vitiligo will spread. For some people, the depigmented patches do not spread. The disorder is usually progressive, however, and over time the white patches will spread to other areas of the body. For some people, vitiligo spreads slowly, over many years. For other people, spreading occurs rapidly. Some people have reported additional depigmentation following periods of physical or emotional stress.

**How is vitiligo diagnosed?**

The diagnosis of vitiligo is made based on a physical examination, medical history, and laboratory tests.

A doctor will likely suspect vitiligo if you report (or the physical examination reveals) white patches of skin on the body, particularly on sun-exposed areas, including the hands, feet, arms, face, and lips. If vitiligo is suspected, the doctor will ask about your medical history. Important factors in the diagnosis include a family history of vitiligo; a rash, sunburn, or other skin trauma that occurred at the site of vitiligo before depigmentation started; stress or physical illness; and premature graying of the hair (usually before age 35). In addition, the doctor will ask whether you or anyone in your family has had any autoimmune diseases and whether you are very sensitive to the sun.

To help confirm the diagnosis, the doctor may take a small sample (biopsy) of the affected
skin to examine under a microscope. In vitiligo, the skin sample will usually show a complete absence of pigment-producing melanocytes. On the other hand, the presence of inflamed cells in the sample may suggest that another condition is responsible for the loss of pigmentation.

Because vitiligo may be associated with pernicious anemia (a condition in which an insufficient amount of vitamin B₁₂ is absorbed from the gastrointestinal tract) or hyperthyroidism (an overactive thyroid gland), the doctor may also take a blood sample to check the blood cell count and thyroid function. For some patients, the doctor may recommend an eye examination to check for uveitis (inflammation of part of the eye), which sometimes occurs with vitiligo. A blood test to look for the presence of antinuclear antibodies (a type of autoantibody) may also be done. This test helps determine if the patient has another autoimmune disease.

**How can people cope with the emotional and psychological aspects of vitiligo?**

Although vitiligo is usually not harmful medically, its emotional and psychological effects can be devastating.

White patches of vitiligo can affect emotional and psychological well-being and self-esteem. People with vitiligo can experience emotional stress, particularly if the condition develops on visible areas of the body (such as the face, hands, arms, and feet) or on the genitals. Adolescents, who are often particularly concerned about their appearance, can be devastated by widespread vitiligo. Some people who have vitiligo feel embarrassed, ashamed, depressed, or worried about how others will react.

Fortunately, there are several strategies to help people cope with vitiligo. Also, various treatments – discussed in the next section – can minimize, camouflage, or, in some cases, even eliminate white patches. First, it is important to find a doctor who is knowledgeable about the disorder and takes it seriously. You must let your doctor know if you are feeling depressed, because doctors and other mental health professionals can help people deal with depression. You should also learn as much as possible about the
disorder and treatment choices so that you can participate in making important decisions about your medical care.

**What treatment options are available?**

The main goal of treating vitiligo is to reduce the contrast in color between affected and unaffected skin. The choice of therapy depends on the number of white patches; their location, sizes, and how widespread they are; and what you prefer in terms of treatment. Each patient responds differently to therapy, and a particular treatment may not work for everyone. Current treatment options for vitiligo include medication, surgery, and adjunctive therapies (used along with surgical or medical treatments).

**Medical Therapies**

A number of medical therapies, most of which are applied topically, can reduce the appearance of vitiligo. These are some of the most commonly used:

- **Topical therapy.** Creams, including corticosteroids, may be helpful in repigmenting (returning the color to) white patches, particularly if they are applied in the initial stages of the disease. Corticosteroids are a group of drugs similar to hormones such as cortisone, which are produced by the adrenal glands. Yet, as with any medication, these creams can cause side effects. For this reason, the doctor will monitor you closely for skin shrinkage and skin striae (streaks or lines on the skin).

- **Light treatment.** Light therapy or excimer laser treatments are also used to treat vitiligo, although multiple treatments are needed and results may not be permanent.

- **Psoralen photochemotherapy.** Also known as psoralen and ultraviolet A (PUVA) therapy, this is an effective treatment for many patients. The goal of PUVA therapy is to repigment the white patches. However, it is time consuming, and care must be taken to avoid side effects, which can sometimes be severe. Psoralen is a drug that contains chemicals that
react with ultraviolet light to cause darkening of the skin. The treatment involves taking psoralen by mouth (orally) or applying it to the skin (topically). This is followed by carefully timed exposure to sunlight or to ultraviolet A (UVA) light that comes from a special lamp. You must minimize exposure to sunlight at other times.

Known side effects of oral psoralen include sunburn, nausea and vomiting, itching, abnormal hair growth, and hyperpigmentation. Oral psoralen photochemotherapy may also increase the risk of skin cancer, although the risk is minimal at doses used for vitiligo. If you are undergoing oral PUVA therapy, you will be advised to apply sunscreen, avoid direct sunlight, and wear protective UVA sunglasses for a period of time after each treatment.

- **Depigmentation.** This treatment involves fading the rest of the skin on the body to match the areas that are already white. For people who have vitiligo on more than 50 percent of their bodies, depigmentation may be recommended. Patients apply cream once or twice a day to pigmented areas until they match the already depigmented areas. The major side effect of depigmentation therapy is inflammation (redness and swelling) of the skin. You may also experience itching or dry skin. Depigmentation tends to be permanent, is time consuming, and is not easily reversed. In addition, a person who undergoes depigmentation will always be unusually sensitive to sunlight.

**Surgical Therapies**

Surgical techniques may be an option when topical creams and light therapy do not work. Surgery is typically not recommended for people who scar easily or develop keloids. A variety of effective procedures are available. Talk to your doctor about whether a surgical approach may be right for you.

**Additional Therapies**

In addition to medical and surgical therapies,
there are many things you can do on your own to protect your skin, minimize the appearance of white patches, and cope with the emotional aspects of vitiligo:

- **Sunscreens.** People who have vitiligo, particularly those with fair skin, should minimize sun exposure and use a sunscreen that provides protection from both UVA and ultraviolet B light. Tanning makes the contrast between normal and depigmented skin more noticeable. Sunscreen helps protect the skin from sunburn and long-term damage.

- **Cosmetics.** Some patients with vitiligo cover depigmented patches with makeup, self-tanning lotions or dyes. These cosmetic products can be particularly effective for people whose vitiligo is limited to exposed areas of the body.

- **Counseling and support groups.** Many people with vitiligo find it helpful to get counseling from a mental health professional. People often find they can talk to a counselor about issues that are difficult to discuss with anyone else. A mental health counselor can also offer support and help in coping with vitiligo. In addition, it may be helpful to attend a vitiligo support group.

What research is being conducted on vitiligo?

In the past, research on the role that melanocytes play in vitiligo has greatly increased. Genetic advances have permitted relatively rapid increases in knowledge of melanocytes at the cellular and molecular levels.

Much of the research that holds promise for understanding, treating, and possibly preventing vitiligo is supported by the NIAMS. Researchers are looking at the immune response, in particular regulatory T cells, to understand the body’s natural mechanisms to control autoimmune diseases, which could be used to develop new treatment strategies.

Others are trying to determine if melanocyte stem cells are able to regenerate pigment in skin where pigment has been lost.
Melanocytes are also being studied to find out the effects of ultraviolet light exposure on immune responses to melanocytes. Still other research is looking at melanocytes to find out how specific enzymes manage to regulate the melanin production. This understanding of melanocytes may allow researchers to stimulate the creation of melanocytes from stem cells of hair follicles and use them to add pigment back into affected skin. Such a therapy may be more effective and safer than current light therapies.

The NIAMS also supports studies looking for genes that may contribute to vitiligo in several ethnic groups. Genetic analyses of these groups have enabled the identification of several vitiligo susceptibility genes. This work may lead to development of specific approaches to disease therapy and prevention for patients at high genetic risk.

More information on research is available from the following resources:

- **National Institutes of Health (NIH) Clinical Research Trials and You** was designed to help people learn more about clinical trials, why they matter, and how to participate. Visitors to the website will find information about the basics of participating in a clinical trial, first-hand stories from clinical trial volunteers, explanations from researchers, and links on how to search for a trial or enroll in a research-matching program.

- **ClinicalTrials.gov** offers up-to-date information for locating federally and privately supported clinical trials for a wide range of diseases and conditions.

- **NIH RePORTER** is an electronic tool that allows users to search a repository of both intramural and extramural NIH-funded research projects from the past 25 years and access publications (since 1985) and patents resulting from NIH funding.

- **PubMed** is a free service of the U.S. National Library of Medicine that lets you search millions of journal citations and abstracts in the fields of medicine, nursing, dentistry, veterinary medicine, the health care system, and preclinical sciences.
Where can people find more information about vitiligo?

National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) Information Clearinghouse
National Institutes of Health
1 AMS Circle
Bethesda, MD 20892-3675
Phone: 301-495-4484
Toll free: 877-22-NIAMS (877-226-4267)
TTY: 301-565-2966
Fax: 301-718-6366
Email: NIAMSinfo@mail.nih.gov
Website: https://www.niams.nih.gov

If you need more information about available resources in your language or another language, please visit our website or contact the NIAMS Information Clearinghouse at NIAMSinfo@mail.nih.gov.

Other Resources

American Academy of Dermatology
Website: http://www.aad.org

American Vitiligo Research Foundation
Website: http://www.avrf.org

National Vitiligo Foundation, Inc.
Website: http://www.mynvfi.org

Vitiligo Support International Inc.
Website: http://www.vitiligosupport.org

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For Your Information

This publication contains information about medications used to treat the health condition discussed here. When this publication was developed, we included the most up-to-date (accurate) information available. Occasionally, new information on medication is released.

For updates and for any questions about any medications you are taking, please contact

**U.S. Food and Drug Administration**

Toll free: 888-INFO-FDA
(888-463-6332)
Website: http://www.fda.gov

For additional information on specific medications, visit Drugs@FDA at http://www.accessdata.fda.gov/scripts/deridaf. Drugs@FDA is a searchable catalog of FDA-approved drug products.

For updates and questions about statistics, please contact

**Centers for Disease Control and Prevention, National Center for Health Statistics**

Toll free: 800-232-4636
Website: http://www.cdc.gov/nchs

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