[Template:About](/wiki/Template:About" \o "Template:About)

[Template:Use dmy dates](/wiki/Template:Use_dmy_dates) [Template:Infobox medical condition](/wiki/Template:Infobox_medical_condition) **Vitiligo** is a chronic [skin](/wiki/Skin) condition characterized by portions of the skin [losing their pigment](/wiki/Depigmentation). It occurs when [skin pigment cells](/wiki/Melanocyte) die or are unable to function. Aside from cases of contact with certain chemicals,[[1]](#cite_note-1) the cause of vitiligo is unknown. Research suggests vitiligo may arise from [autoimmune](/wiki/Autoimmune), genetic, [oxidative stress](/wiki/Oxidative_stress), neural, or viral causes.[[2]](#cite_note-2) Vitiligo is typically classified into two main categories: segmental and non-segmental vitiligo. Half of those affected show the disorder before age 20, though most develop it before age 40.[[3]](#cite_note-3) The global percentage of people affected with vitiligo is less than 1%,<ref name=pmid7977362>[Template:Cite journal](/wiki/Template:Cite_journal)</ref> with some populations averaging 2–3% and rarely as high as 16%.[[4]](#cite_note-4) Autoimmune diseases such as [Addison's disease](/wiki/Addison's_disease), [Hashimoto's thyroiditis](/wiki/Hashimoto's_thyroiditis), and [type 1 diabetes mellitus](/wiki/Type_1_diabetes_mellitus) tend to occur more often in people who have vitiligo. There is no known cure for vitiligo but many treatment options are available including topical [steroids](/wiki/Glucocorticoid), [calcineurin inhibitors](/wiki/Calcineurin_inhibitor), and [phototherapy](/wiki/Phototherapy).

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## Classification[[edit](/index.php?title=(none)&action=edit&section=1)]

Classification attempts to quantify vitiligo have been analyzed as being somewhat inconsistent,[[5]](#cite_note-5) while recent consensus have agreed to a system of segmental vitiligo (SV) and non-segmental vitiligo (NSV). NSV is the most common type of vitiligo.<ref name=Ezzedine2015>[Template:Cite journal](/wiki/Template:Cite_journal)</ref>

### Non-segmental[[edit](/index.php?title=(none)&action=edit&section=2)]

In non-segmental vitiligo (NSV), there is usually some form of [symmetry](/wiki/Symmetry) in the location of the patches of depigmentation. New patches also appear over time and can be generalized over large portions of the body or localized to a particular area. Vitiligo, where little-pigmented skin remains, is referred to as *vitiligo universalis*. NSV can come about at any age (unlike segmental vitiligo, which is far more prevalent in teenage years).[[6]](#cite_note-6) Classes of non-segmental vitiligo include the following:

* Generalized Vitiligo: the most common pattern, wide and randomly distributed areas of depigmentation[[7]](#cite_note-7)\* Universal Vitiligo: depigmentation encompasses most of the body[[7]](#cite_note-7)\* Focal Vitiligo: one or a few scattered macules in one area, most common in children[[7]](#cite_note-7)\* Acrofacial Vitiligo: fingers and periorificial areas[[7]](#cite_note-7)\* Mucosal Vitiligo: depigmentation of only the mucous membranes[[7]](#cite_note-7)

### Segmental[[edit](/index.php?title=(none)&action=edit&section=3)]

Segmental vitiligo (SV) differs in appearance, [cause](/wiki/Etiology_(medicine)) and prevalence of associated illnesses. Its treatment is different from that of NSV. It tends to affect areas of skin that are associated with [dorsal roots](/wiki/Dorsal_root) from the [spinal cord](/wiki/Spinal_cord) and is most often unilateral.<ref name=Ezzedine2015/><ref name=VanGeel2012/> It spreads much more rapidly than NSV and, without treatment, it is much more stable/static in course and its association with autoimmune diseases appears to be weaker than that of generalized vitiligo.<ref name=VanGeel2012>[Template:Cite journal](/wiki/Template:Cite_journal)</ref> SV is a very treatable condition that responds to topical treatment.[[6]](#cite_note-6)

## Signs and symptoms[[edit](/index.php?title=(none)&action=edit&section=4)]

[thumb|Vitiligo on lighter skin](/wiki/File:Vitiligo03.jpg) [thumb|Vitiligo on darker skin](/wiki/File:Vitiligo1.JPG) The only sign of vitiligo is the presence of pale patchy areas of depigmented skin which tend to occur on the extremities.[[8]](#cite_note-8)[[9]](#cite_note-9) The patches are initially small, but often grow and change shape.[[2]](#cite_note-2)[[8]](#cite_note-8) When skin [lesions](/wiki/Lesion) occur, they are most prominent on the face, hands and wrists.[[8]](#cite_note-8)[[9]](#cite_note-9) The loss of skin pigmentation is particularly noticeable around body orifices, such as the mouth, eyes, [nostrils](/wiki/Nostril), [genitalia](/wiki/Genitalia) and [umbilicus](/wiki/Navel).[[8]](#cite_note-8)[[9]](#cite_note-9) Some lesions have [increased skin pigment](/wiki/Hyperpigmentation) around the edges.[[6]](#cite_note-6) Patients who are [stigmatized](/wiki/Stigmatization) for their condition may experience depression and similar [mood disorders](/wiki/Mood_disorder).[[10]](#cite_note-10)

## Causes[[edit](/index.php?title=(none)&action=edit&section=5)]

Although multiple hypotheses have been suggested as potential triggers that cause vitiligo, studies strongly imply that changes in the immune system are responsible for the condition.<ref name=Ezzedine2015/>[[11]](#cite_note-11) Vitiligo has been proposed to be a multifactorial disease with genetic susceptibility and environmental factors both thought to play a role.<ref name=Ezzedine2015/>

The TYR gene encodes the protein [tyrosinase](/wiki/Tyrosinase), which is not a component of the immune system, but is an enzyme of the melanocyte that catalyzes [melanin](/wiki/Melanin) biosynthesis, and a major autoantigen in generalized vitiligo.<ref name=Ezzedine2015/> Some state the sunburns can cause the disease but there is not good evidence to support this.[[12]](#cite_note-12)

### Immune[[edit](/index.php?title=(none)&action=edit&section=6)]

Variations in genes that are part of the immune system or part of melanocytes have both been associated with vitiligo.<ref name=Ezzedine2015/> It is also thought to be caused by the immune system attacking and destroying the melanocytes of the skin.[[13]](#cite_note-13) A genomewide association study found approximately 36 independent susceptibility [loci](/wiki/Locus_(genetics)) for generalized vitiligo.[[14]](#cite_note-14)

### Autoimmune associations[[edit](/index.php?title=(none)&action=edit&section=7)]

Vitiligo is sometimes associated with [autoimmune](/wiki/Autoimmune) and [inflammatory diseases](/wiki/Inflammatory_disease) such as [Hashimoto's thyroiditis](/wiki/Hashimoto's_thyroiditis), [scleroderma](/wiki/Scleroderma), [rheumatoid arthritis](/wiki/Rheumatoid_arthritis), [type 1 diabetes mellitus](/wiki/Type_1_diabetes_mellitus), [psoriasis](/wiki/Psoriasis), [Addison's disease](/wiki/Addison's_disease), [pernicious anemia](/wiki/Pernicious_anemia), [alopecia areata](/wiki/Alopecia_areata), and [systemic lupus erythematosus](/wiki/Systemic_lupus_erythematosus).<ref name=Ezzedine2015/>

Among the inflammatory products of NALP1 are [caspase 1](/wiki/Caspase_1) and [caspase 7](/wiki/Caspase_7), which activate the inflammatory [cytokine](/wiki/Cytokine) [interleukin-1β](/wiki/Interleukin-1_beta). Interleukin-1β is expressed at high levels in patients with vitiligo.[Template:Citation needed](/wiki/Template:Citation_needed) In one of the mutations, the [amino acid](/wiki/Amino_acid) leucine in the NALP1 protein was replaced by [histidine](/wiki/Histidine) (Leu155->His). The original protein and sequence is highly [conserved in evolution](/wiki/Conserved_sequence), and is found in humans, [chimpanzee](/wiki/Chimpanzee), [rhesus monkey](/wiki/Rhesus_Macaque), and the [bush baby](/wiki/Galago). [Addison's disease](/wiki/Addison's_disease) (typically an autoimmune destruction of the [adrenal glands](/wiki/Adrenal_gland)) may also be seen in individuals with vitiligo.[[15]](#cite_note-15)<ref name=NALP2>[Template:Cite journal](/wiki/Template:Cite_journal)</ref>

## Diagnosis[[edit](/index.php?title=(none)&action=edit&section=8)]

[thumb|UV photograph of a hand with vitiligo](/wiki/File:Vitiligo_UV_1.jpg) [thumb|UV photograph of a foot with vitiligo](/wiki/File:Vitiligo_UV_2.jpg) An [ultraviolet light](/wiki/Ultraviolet_light) can be used in the early phase of this disease for identification and to determine the effectiveness of treatment. Skin with vitiligo, when exposed to a [blacklight](/wiki/Blacklight), will glow blue. In contrast, healthy skin will have no reaction.

### Differential diagnosis[[edit](/index.php?title=(none)&action=edit&section=9)]

Conditions with similar symptoms include the following:

* [Pityriasis alba](/wiki/Pityriasis_alba)
* [Tuberculoid leprosy](/wiki/Tuberculoid_leprosy)
* [Postinflammatory hypopigmentation](/wiki/Postinflammatory_hypopigmentation)
* [Tinea versicolor](/wiki/Tinea_versicolor)[[7]](#cite_note-7)\* [Albinism](/wiki/Albinism)
* [Piebaldism](/wiki/Piebaldism)[[7]](#cite_note-7)\* [Idiopathic guttate hypomelanosis](/wiki/Idiopathic_guttate_hypomelanosis)[[7]](#cite_note-7)\* [Progressive macular hypomelanosis](/wiki/Progressive_macular_hypomelanosis)[[7]](#cite_note-7)\* [Primary adrenal insufficiency](/wiki/Primary_adrenal_insufficiency)

## Treatment[[edit](/index.php?title=(none)&action=edit&section=10)]

There is no cure for vitiligo but several treatment options are available.<ref name=Ezzedine2015/> The best evidence is for applied [steroids](/wiki/Steroid) and the combination of [ultraviolet light](/wiki/Ultraviolet_light) in combination with creams.[[16]](#cite_note-16) Due to the higher risks of skin cancer, the United Kingdom's [National Health Service](/wiki/National_Health_Service) suggests phototherapy only be used if primary treatments are ineffective.[[17]](#cite_note-17) Lesions located on the hands, feet, and joints are the most difficult to repigment; those on the face are easiest to return to the natural skin color.<ref name=Ezzedine2015/>

### Immune mediators[[edit](/index.php?title=(none)&action=edit&section=11)]

Topical preparations of immune suppressing medications including [glucocorticoids](/wiki/Glucocorticoids) (such as 0.05% clobetasol or 0.10% betamethasone) and [calcineurin inhibitors](/wiki/Calcineurin_inhibitor) (such as [tacrolimus](/wiki/Tacrolimus) or [pimecrolimus](/wiki/Pimecrolimus)) are considered to be first-line vitiligo treatments.<ref name=Ezzedine2015/>

### Phototherapy[[edit](/index.php?title=(none)&action=edit&section=12)]

Phototherapy is considered a second-line treatment for vitiligo.<ref name=Ezzedine2015/> Exposing the skin to light from UVB lamps is the most common treatment for vitiligo. The treatments can be done at home with an UVB lamp or in a clinic. The exposure time is managed so that the skin doesn't suffer overexposure. Treatment can take a few weeks if the spots are on the neck and face and if they existed not more than 3 years. If the spots are on the hands and legs and have been there more than 3 years, it can take a few months. Phototherapy sessions are done 2–3 times a week. Spots on a large area of the body may require full body treatment in a clinic or hospital. UVB broadband and narrowband lamps can be used,[[18]](#cite_note-18)[[19]](#cite_note-19) but narrowband ultraviolet picked around 311 nm is the choice. It has been constitutively reported that combination of UVB phototherapy with other topical treatments improves repigmentation.

Ultraviolet light ([UVA](/wiki/Ultraviolet_A)) treatments are normally carried out in a hospital clinic. [Psoralen](/wiki/Psoralen) and ultraviolet A light ([PUVA](/wiki/PUVA)) treatment involves taking a drug that increases the skin's sensitivity to ultraviolet light, then exposing the skin to high doses of UVA light. Treatment is required twice a week for 6–12 months or longer. Because of the high doses of UVA and psoralen, PUVA may cause side effects such as sunburn-type reactions or skin freckling.[[17]](#cite_note-17) Narrowband ultraviolet B (NBUVB) phototherapy lacks the side-effects caused by psoralens and is as effective as PUVA.<ref name=Ezzedine2015/> As with PUVA, treatment is carried out twice weekly in a clinic or every day at home, and there is no need to use psoralen.[[17]](#cite_note-17)

### Skin camouflage[[edit](/index.php?title=(none)&action=edit&section=13)]

In mild cases, vitiligo patches can be hidden with makeup or other [cosmetic camouflage](/wiki/Cosmetic_camouflage) solutions. If the affected person is pale-skinned, the patches can be made less visible by avoiding [tanning](/wiki/Sun_tanning) of unaffected skin.[[7]](#cite_note-7)

### De-pigmenting[[edit](/index.php?title=(none)&action=edit&section=14)]

Most vitiligo is [idiopathic](/wiki/Idiopathic); however, in cases where it is triggered by skin bleaching or other substances, it is said to be chemical after being treated with bleaching agents. In cases of extensive vitiligo the option to de-pigment the unaffected skin with topical drugs like [monobenzone](/wiki/Monobenzone), [mequinol](/wiki/Mequinol), or [hydroquinone](/wiki/Hydroquinone) may be considered to render the skin an even colour. The removal of all the skin pigment with [monobenzone](/wiki/Monobenzone) is permanent and vigorous. Sun-safety must be adhered to for life to avoid severe [sun burn](/wiki/Sun_burn) and [melanomas](/wiki/Melanomas). Depigmentation takes about a year to complete.[[17]](#cite_note-17)

## History[[edit](/index.php?title=(none)&action=edit&section=15)]

Descriptions of a disease believed to be vitiligo date back to a passage in the medical text [Ebers Papyrus](/wiki/Ebers_Papyrus) circa 1500 BC in ancient Egypt. Mentions of whitening of the skin was also present circa 1400 BC in sacred Indian texts such as [Atharvaveda](/wiki/Atharvaveda) as well as [Shinto](/wiki/Shinto) prayers in East Asia circa 1200 BC. The Hebrew word "[Zora'at](/wiki/Tzaraath)" from the [Old Testament](/wiki/Old_Testament) book of [Leviticus](/wiki/Leviticus)<ref name=Taieb/> dating to 1280 BCE<ref name=Kurzweil11>[Template:Cite book](/wiki/Template:Cite_book)</ref> (or 1312 BCE<ref name=Timeline>[History Crash Course #36: Timeline: From Abraham to Destruction of the Temple](http://www.aish.com/jl/h/48944541.html), by Rabbi Ken Spiro, Aish.com. Retrieved 2010-08-19.</ref>) described a group of skin disease associated with white spots, and a subsequent translation to Greek led to continued conflation of those with vitiligo with leprosy and spiritual uncleanliness.<ref name=Taieb/> Medical sources in the ancient world such as [Hippocrates](/wiki/Hippocrates) often did not differentiate between vitiligo and [leprosy](/wiki/Leprosy), often grouping these diseases together. In Arabic literature, the word "alabras" has been associated with vitiligo, with this word found in the [Quran](/wiki/Quran). The name "vitiligo" was first used by the Roman physician [Aulus Cornelius Celsus](/wiki/Aulus_Cornelius_Celsus) in his classic medical text [*De Medicina*](/wiki/De_Medicina).<ref name=Taieb>[Template:Cite book](/wiki/Template:Cite_book)</ref>

### Etymology[[edit](/index.php?title=(none)&action=edit&section=16)]

The etymology of the term "vitiligo" is believed to be derived from "vitium", meaning "defect" or "blemish".[[20]](#cite_note-20)

## Notable cases[[edit](/index.php?title=(none)&action=edit&section=17)]

[thumb|right|Michael Jackson was diagnosed with vitiligo universalis.](/wiki/File:Michael_Jackson_gives_autographCropped.jpg)

* Pop music icon [Michael Jackson](/wiki/Michael_Jackson) revealed in an interview with [Oprah Winfrey](/wiki/Oprah_Winfrey) in February 1993 that he had vitiligo. This was confirmed by the autopsy report following his [death in 2009](/wiki/Death_of_Michael_Jackson).<ref name=jackson\_autopsy>[Template:Cite news](/wiki/Template:Cite_news)</ref>
* Canadian model [Chantelle Brown-Young](/wiki/Chantelle_Brown-Young) (known by her stage name Winnie Harlow) has a prominent form of vitiligo. Her participation in the [*America's Next Top Model*](/wiki/America's_Next_Top_Model) contest led to her being called a "vitiligo spokesmodel".[[21]](#cite_note-21)\*[P. Sathasivam](/wiki/P._Sathasivam), who is the current Governor of Kerala, in office since 2014, has vitiligo. He previously served as the 40th [Chief Justice of India](/wiki/Chief_Justice_of_India) from 2013 to 2014.[[22]](#cite_note-22)\*Former WBC Interim Middleweight Boxing Champion [Marco Antonio Rubio](/wiki/Marco_Antonio_Rubio) has vitiligo.[[23]](#cite_note-23)\*[NFL](/wiki/NFL) assistant coach [Karl Dunbar](/wiki/Karl_Dunbar) was diagnosed with the condition in the 7th grade.[[24]](#cite_note-24)\*[Michaela DePrince](/wiki/Michaela_DePrince), a Sierra Leonean-American ballet dancer, is the only dancer of African origin in the [Dutch National Ballet](/wiki/Dutch_National_Ballet), lived in a refugee camp as a child and was called "devil's child" because of vitiligo.[[25]](#cite_note-25)\*[Bryan Lloyd Danielson](/wiki/Daniel_Bryan), an American retired professional wrestler best known for his tenure in WWE under the name Daniel Bryan, stated on Twitter that he has vitiligo.[[26]](#cite_note-26)\*[Scott Jorgensen](/wiki/Scott_Jorgensen), an American mixed martial arts fighter, has publicly demonstrated all the stages of vitiligo from beginning to end.[[27]](#cite_note-27)

## Research[[edit](/index.php?title=(none)&action=edit&section=18)]

[Afamelanotide](/wiki/Afamelanotide) is in phase II and III clinical trials for vitiligo and other skin diseases.[[28]](#cite_note-28) A medication for rheumatoid arthritis, [tofacitinib](/wiki/Tofacitinib), has been tested for the treatment of vitiligo.[[29]](#cite_note-29) In October 1992, a scientific report was published of successfully transplanting [melanocytes](/wiki/Melanocyte) to vitiligo affected areas, effectively re- pigmenting the region.[[30]](#cite_note-30) The procedure involved taking a thin layer of pigmented skin from the patient's [gluteal](/wiki/Gluteal_muscles) region. Melanocytes were then separated out to a [cellular](/wiki/Cell_(biology)) suspension that was expanded in culture. The area to be treated was then denuded with a [dermabrader](/wiki/Dermabrasion) and the melanocytes [graft](/wiki/Skin_grafting) applied. Between 70 and 85 percent of patients experienced nearly complete repigmentation of their skin. The longevity of the repigmentation differed from person to person.[[31]](#cite_note-31) By now, several transplantation techniques have been developed, including transplantation of melanocyte precursors derived from hair follicles. Transplantation procedures are frequently used to treat segmental vitiligo which is poorly responsive to other types of treatment. In non-segmental vitiligo, success is achieved when treating patches that are not expanding (so called stable vitiligo).

## See also[[edit](/index.php?title=(none)&action=edit&section=19)]

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## External links[[edit](/index.php?title=(none)&action=edit&section=21)]

[Template:Commons category](/wiki/Template:Commons_category)

* [Template:DMOZ](/wiki/Template:DMOZ)
* [Questions and Answers about Vitiligo](http://niams.nih.gov/Health_Info/Vitiligo/default.asp) - US National Institute of Arthritis and Musculoskeletal and Skin Diseases

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