

Preventing Vitiligo with Herbal Remedies

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ABSTRACT

In Vitiligo disease, the skin loses the colour. The discolored areas usually get bigger with time. The condition can affect the skin on any part of the body. It can also affect hair and the inside of the mouth. Vitiligo is caused by the lack of a pigment called melanin in the skin. Melanin is produced by skin cells called melanocytes, and it gives your skin its colour. There are no proven remedies to cure vitiligo, but the use of sunscreens as well as makeup or dyes to cover the light areas of skin may improve appearance. By asking the history of patches, your health history and family history of vitiligo doctor can diagnose it. There is no cure of this disease. Treatment may improve the appearance of the skin but doesn't cure the disease. Purpose of this article is to describe the sign symptom, cause, prevention, diagnosis, treatment of Vitiligo disease.

Keywords: Vitiligo, Melanocytes, Segmental, Non- segmental, Neurochemicals, Remedies.

INTRODUCTION

Vitiligo is a skin disease that causes the skin to lose its colour. It occurs when the melanocytes, cells that give skin their colour, die or do not work. This is a problem because these cells protect against the light from the sun [1]. The patches of skin affected become white and usually have sharp margins. The hair from the skin may also become white [2]. It is more noticeable in people with dark skin [3].

- 1) The exact cause of vitiligo is complex and not fully understood. It may be caused by the immune system, genetic, and environmental factors. Vitiligo may also be caused by stress that affects the immune system, leading the body to react and start eliminating skin pigment. Typically both sides of the body are affected [1,2].
- 2) People over 20 years old rarely develop this disease. These patches often occur to both sides symmetrically and may change shape [1].
- 3) Vitiligo has no cure. But treatment might stop or slow the discolouring

process and return some colour to your skin [4].

- 4) Topical steroids come as a cream or ointment you apply to your skin. They can sometimes stop the spread of the white patches and may restore some of your original skin colour. A topical steroid may be prescribed to adults if: you have non-segmental vitiligo on less than 10% of your body [5].



Fig. 1. Vitiligo Affected Skin

SYMPTOMS

- 1) The only symptom of vitiligo is the appearance of flat white spots or patches on the skin. The first white spot that becomes noticeable is often in an area that tends to be exposed to the sun.
- 2) It starts as a simple spot, a little paler than the rest of the skin, but as time passes, this spot becomes paler until it turns white.
- 3) The patches are irregular in shape. At times, the edges can become a little inflamed with a slight red tone, sometimes resulting in itchiness.
- 4) Normally, however, it does not cause any discomfort, irritation, soreness, or dryness in the skin.
- 5) The effects of vitiligo vary between people. Some people may have only a handful of white dots that develop no further, while others develop larger white patches that join together and affect larger areas of skin [6].
- 6) Those affected by vitiligo who are stigmatized for their condition may experience depression and similar mood disorders [7].



Fig. 2. Symptoms of Vitiligo

TYPES

Doctors typically categorize vitiligo as one of the following two types:

Non-Segmental Vitiligo (Also Known As Bilateral Vitiligo, Vitiligo Vulgaris, And Generalized Vitiligo)

This is the most common type of vitiligo and results in white patches appearing on both sides of the body. Usually it starts near the hands, around the eyes or mouth, on the feet, or in an area of the body where the skin rubs together frequently. With nonsegmental vitiligo, colour loss comes in spurts over the course of one's life, spreading and becoming more noticeable as time goes on.

Segmental Vitiligo (Also Known As Unilateral Vitiligo)

This type of vitiligo usually starts when a person is young. It generally progresses for a year or so before it stops. Segmental vitiligo appears in one area (or segment, hence the name) of the body, such as on one arm or one leg. In about 50 percent of cases, it's accompanied by colour changes in the hair, eyebrows, or eyelashes. Segmental vitiligo is less common than nonsegmental vitiligo and affects about 1 in 10 vitiligo patients. Doctors use the following subtypes to describe how much pigment loss appears on the body:

- 1) **Localized:** The vitiligo appears in just one or a couple of spots on the body.
- 2) **Generalized:** The patches of colour loss appear in many areas of the body.
- 3) **Universal:** Most of the original skin colour is gone. This is very rare [8].

CAUSES

Vitiligo is caused by the lack of a pigment called melanin in the skin. Melanin is produced by skin cells called melanocytes, and it gives your skin its colour. In vitiligo, there are not enough working melanocytes to produce enough melanin in your skin. This causes white patches to develop on your skin or hair. It's not clear exactly why the melanocytes disappear from the affected areas of skin [9]. 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 [10].

Auto-immune Conditions

Non-segmental vitiligo (the most common type) is thought to be an autoimmune condition. In autoimmune conditions, the immune system does not work properly. Instead of attacking foreign cells, such as viruses, your immune system attacks your body's healthy cells and tissue.

- 1) If you have non-segmental vitiligo, your immune system destroys the melanocyte skin cells that make melanin.
- 2) Vitiligo is also associated with other autoimmune conditions, such as hyperthyroidism (an overactive thyroid gland), but not everyone with vitiligo will develop these conditions.

Risk Factors

You may be at increased risk of developing non-segmental vitiligo if:

- 1) other members of your family have it
- 2) there's a family history of other autoimmune conditions – *for example*, if one of your parents has pernicious anaemia (an autoimmune condition that affects the stomach)

- 3) you have another autoimmune condition
- 4) you have melanoma (a type of skin cancer) or non-Hodgkin lymphoma (cancer of the lymphatic system)
- 5) you have particular changes in your genes that are known to be linked to non-segmental vitiligo

Neurochemicals

Segmental vitiligo (the less common type) is thought to be caused by chemicals released from the nerve endings in your skin. These chemicals are poisonous to the melanocyte skin cells.

Triggers

It's possible that vitiligo may be triggered by particular events, such as:

- 1) Stressful events, such as childbirth.
- 2) Skin damage, such as severe sunburn or cuts (this is known as the Koebner response).
- 3) Exposure to certain chemicals – for example, at work.

Vitiligo is not caused by an infection and you cannot catch it from someone else who has it [9].

CAUSES OF VITILIGO

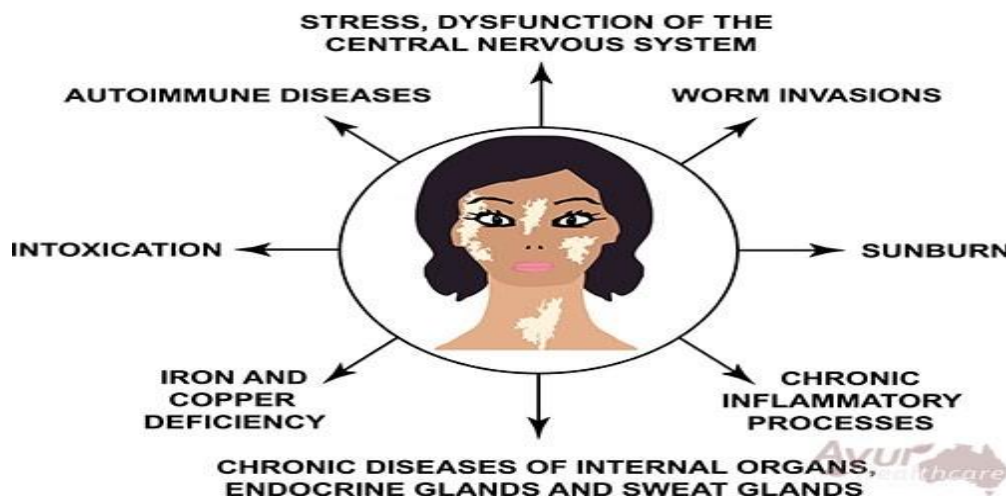


Fig. 3. Causes of Vitiligo

PREVENTION

There is currently no cure for vitiligo and no way to prevent the condition. If a person decides to pursue treatment, the aim is generally to restore pigment and prevent depigmentation from affecting more skin. Limiting sun exposure is one of the most effective ways to prevent depigmentation and damage [11]. But Despite any evidence, some people prevented vitiligo by following some tips.

1) Drinking a lot of water can boost body immune system that can prevent vitiligo

- 2) Having green leafy vegetables, fruits like banana, apple can prevent vitiligo
- 3) To prevent the formation of white patches avoid consuming alcohol, coffee, fish, red meat.
- 4) Consuming food which contains vitamin B, C, amino acids and Folic acids can prevent these white patches.
- 5) Adding minerals like copper, zinc, iron to your food will also help.
- 6) The skin pigment cells are destroyed when the skin is affected by wounds, burns, sunburns. That can cause vitiligo. Avoiding deep skin woods and burns will prevent vitiligo [12].



Beet-Root



Carrot



Chick Peas



Copper glassful of water



Dates



Fig



Green-leafy-vegetables



Radish

Fig. 4. Diet Chart for Vitiligo Patients

DIAGNOSIS

“Scheduling an appointment with your dermatologist is the best way to diagnose vitiligo,” **Hal Weitzbuch**, MD, a dermatologist in private practice in Calabasas, California. At your appointment, your doctor may ask about:

- 1) **The History of the Patches:** Expect questions such as: When did they first appear? Have they been spreading or staying in one area?
- 2) **Your Health History:** The doctor will likely be interested in hearing if you have been diagnosed with an autoimmune disease.
- 3) **Family History of Vitiligo:** Vitiligo tends to run in families. In fact, about 20 percent of people with vitiligo also have one or more close relatives with the same issue.
- 4) **Any Recent Stressful Events:** A doctor may ask about recent events that have stressed you out physically or emotionally, such as life changes or severe sunburns [13].

An ultraviolet light can be used in the early phase of this disease for identification and to determine the effectiveness of treatment.[14] Using a Wood's light, skin will change colour (fluoresce) when it is affected by certain bacteria, fungi, and changes to pigmentation of the skin [15].

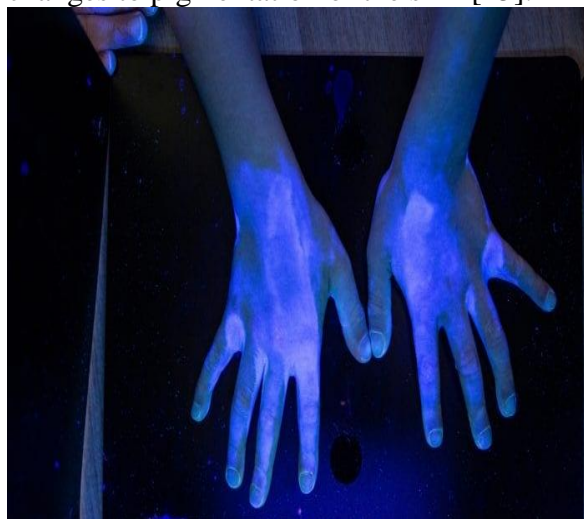


Fig. 5. Diagnosis of Vitiligo

TREATMENT

The choice of treatment depends on your age, how much skin is involved and where, how quickly the disease is progressing, and how it's affecting your life.

- 1) Medications and light-based therapies are available to help restore skin colour or even out skin tone, though results vary and are unpredictable. And some treatments have serious side effects. So your doctor might suggest that you first try changing the appearance of your skin by applying a self-tanning product or makeup.
- 2) If you and your doctor decide to treat your condition with a drug, surgery or therapy, the process may take many months to judge its effectiveness. And you may have to try more than one approach or a combination of approaches before you find the treatment that works best for you.
- 3) Even if treatment is successful for a while, the results may not last or new patches may appear. Your doctor might recommend a medication applied to the skin as maintenance therapy to help prevent relapse.

Medications

No drug can stop the process of vitiligo — the loss of pigment cells (melanocytes). But some drugs, used alone, in combination or with light therapy, can help restore some skin tone.

Drugs that control inflammation

- 1) Applying a corticosteroid cream to affected skin might return colour. This is most effective when vitiligo is still in its early stages. This type of cream is effective and easy to use, but you might not see changes in your skin's colour for several months. Possible side effects include skin thinning or the appearance of streaks or lines on your skin.

- 2) Milder forms of the drug may be prescribed for children and for people who have large areas of discolored skin.
- 3) Corticosteroid pills or injections might be an option for people whose condition is progressing rapidly.

Medications that affect the immune system

- 1) Calcineurin inhibitor ointments, such as Tacrolimus (Protopic) or Pimecrolimus (Elidel) might be effective for people with small areas of depigmentation, especially on the face and neck. The U.S. Food and Drug Administration (FDA) have warned about a possible link between these drugs and lymphoma and skin cancer.

Therapies

Light Therapy

- 1) Phototherapy with narrow band ultraviolet B (UVB) has been shown to stop or slow the progression of active vitiligo. It might be more effective when used with corticosteroids or calcineurin inhibitors. You'll need therapy two to three times a week. It could take one to three months before you notice any change, and it could take six months or longer to get the full effect.
- 2) Given the FDA warning regarding possible risk of skin cancer with use of calcineurin inhibitors, talk with your doctor about the risks and benefits of using these drugs with phototherapy.

Combining Psoralen and Light Therapy

- 1) This treatment combines a plant-derived substance called psoralen with light therapy (photochemotherapy) to return colour to the light patches. After you take psoralen by mouth or apply it to the affected skin, you're exposed to ultraviolet A (UVA) light. This approach, while effective, is more

difficult to administer and has been replaced in many practices by narrow band UVB therapy.

- 2) Removing the remaining colour (depigmentation). This therapy may be an option if your vitiligo is widespread and other treatments haven't worked. A depigmenting agent is applied to unaffected areas of skin. This gradually lightens the skin so that it blends with the discolored areas. The therapy is done once or twice a day for nine months or longer.
- 3) Side effects can include redness, swelling, itching and very dry skin. Depigmentation is permanent.

Surgery

If light therapy and medications haven't worked, some people with stable disease may be candidates for surgery. The following techniques are intended to even out skin tone by restoring colour:

Skin grafting

- 1) In this procedure, your doctor transfers very small sections of your healthy, pigmented skin to areas that have lost pigment. This procedure is sometimes used if you have small patches of vitiligo. Possible risks include infection, scarring, a cobblestone appearance, spotty colour and failure of the area to recolor.

Blister Grafting

- 1) In this procedure, your doctor creates blisters on your pigmented skin, usually with suction, and then transplants the tops of the blisters to discolored skin. Possible risks include scarring, a cobblestone appearance and failure of the area to recolor. And the skin damage caused by suctioning may trigger another patch of vitiligo.
- 2) Cellular suspension transplant. In this procedure, your doctor takes some tissue on your pigmented skin, puts the cells into a solution and then

transplants them onto the prepared affected area. The results of this repigmentation procedure start showing up within four weeks.

- 3) Possible risks include scarring, infection and uneven skin tone.

Potential Future Treatments

Treatments being studied include:

- 1) A drug to stimulate colour-producing cells (melanocytes). Called afamelanotide, this potential treatment is implanted under the skin to promote the growth of melanocytes.
- 2) A drug that helps control melanocytes. Prostaglandin E₂ is being tested as a way to restore skin colour in people with vitiligo that isn't widespread or spreading. It's applied to the skin as a gel [16].

MEDICINAL REMEDIES OF HERBS IN VITILIGO

Bakuchi (*Psoralea corylifolia*)

Popularly known as Bakuchi. It is found abundantly in India. Its seed has anthelmintic, antibacterial, astringent, cardiac, cytotoxic, deobstruent, aphrodisiac, diuretic, stimulant properties [17]. It is an important herb in the treatment of vitiligo. The seeds of this plant contain a variety of coumarins including psoralen. A combination of Psoralea and sunlight is beneficial in treatment of Vitiligo i.e. white patches on skin [18].



Fig. 6. Bakuchi Plant

Katuki (*Picrorrhiza kurroa*)

The plant can be used to cure many skin ailments like vitiligo. This can be used both as natural and herbal medicine, and its mechanism is simply inducing the repigmentation of the skin. Shows antioxidant properties and modulates the immune system [17].



Fig.7. Katuki

Haridra (*Curcuma longa*)

Curcumin is the principal curcuminoid of the popular Indian spice turmeric, which is a member of the ginger family (Zingiberaceae). Turmeric has long been used in Ayurvedic medicine as a antibiotic and blood purifier, skin diseases and wound healing. It also was used externally, to heal sores and cosmetic use is common. It inhibits viral and fungal disease [17]. Haridra or turmeric has the potential of improving repigmentation in vitiligo. Curcumin, the prime constituent of turmeric by means of its antioxidant and anti-inflammatory mechanisms, helps in repairing skin in vitiligo [18].



Fig. 8. Haridra

Kumari (*Aloe barbadensis*)

It is potent ayurvedic medicine for vitiligo. The plant contains strong anti-inflammatory and antioxidant properties that soothe and heal the skin [18].



Fig. 9. Kumari

Ashwagandha (*Withania somnifera*)

Popularly known as Ashwagandha and is the most powerful herb of its kind. Basically used as a rejuvenating drug. Withania somnifera holds a place in the Ayurvedic practices very similar to Ginseng in Chinese traditional practices. It is also termed as “Indian Ginseng”. Withania somnifera is used in many Ayurvedic medicines for maintaining good health. It provide better immunity and considered as a good nerve tonic [17].



Fig.10. Ashwagandha

Giloy (*Tinospora cordifolia*)

Tinospora is known as “Guduchi” commonly and from family Menispermaceae, found at higher altitude. The herb is better known for immunity

improvement and tridos-samak according to Ayurveda. Widely used in formulations for fever, liver disorders and various skin diseases [17].



Fig. 11. Giloy

Basil-Herb (*Ocimum Sanctum*)

Commonly called Tulsi and found in almost every Indian home. Used to treat respiratory disorders, fungal infections, and bacterial infections. Tulsi is good for skin care and eye care. It has a role in providing better immunity and it works well to improve body metabolism. It has antimalarial property and widely used in Malaria and Typhoid [17].



Fig.12. Basil Herb

Chirayata (*Swertia chirata*)

It has Indian name Chirayata. It has antimicrobial properties and usually is being used as blood purifier. Used to treat various skin diseases and infections. It has

anti-inflammatory properties and is used to treat malaria also [17].



Fig.13. Chirayata

Shatavari (*Asparagus racemosus*)

It is also called Shatavari and is a powerful herb from family liliaceous. It is a climbing plant which grows in low forest areas throughout India. It is mainly used to promote good health and specifically improves immunity. The powder is used in many Ayurvedic formulations to provide good health [17].



Fig. 14. Shatavari

Neem (*Azadirachta indica*)

Popularly known as Nimba or Neem in India. Neem tree is found throughout India. It is a popular village tree. Commonly used in India as toothbrush. Its Antiseptic effect can cure many bacterial

infections. [17]Neem is considered a good blood purifier in Ayurveda. Neem leaves are used for leprosy, vitiligo and various skin ailments. It has immunomodulating property which is effective in treatment of white patches on skin [18].



Fig.15. Neem

CONCLUSION

Exact cause of vitiligo is unknown. It occurs when the melanocytes, cells that give skin their colour, die or do not work. But this is not only a skin disease, it is a disorder related to immune system. Person having the family history of vitiligo have chance of vitiligo but Vitiligo is not caused by an infection and you cannot catch it from someone else who has it. There is no cure of vitiligo but having lot of water and having green leafy vegetables can help in prevention of vitiligo. Vitamin B, Vitamin C, and amino acids prevent to patches. To prevent the patches avoid alcohol, coffee, fish and red meat. Rubbing papaya pieces on the patches help in vitiligo management. We can not cure the vitiligo completely, but we can treat it .There are many herbs that can help in vitiligo (eg.-Neem, Ashwagandha, Sarawari, Chirayata, Tulsi, Guduchi *etc.*)

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