

## A Full Examination of a Vitiligo and its Natural Cure.

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### ABSTRACT

*Vitiligo is a long lasting skin condition characterized by patches of the skin losing their pigment. Usually with sharp borders, the affected skin patches turn white. The hair from the skin might also become white. The inside of the nose and mouth might also be concerned. The rate of colour loss from skin condition is unpredictable. Vitiligo happens when the cells that produce melanin stop or die functioning. Vitiligo affects the individual of all skin sorts, but it may be more noticeable in people with darker skin. Risk factors include a family history of the condition or other autoimmune diseases. In this survey we center around how plant based natural items help in relieving vitiligo.*

**Keywords:-** Vitiligo, Melanocyte, Re-pigmentation, Herbs, Herbal Medicine, Remedies, Treatments.

### INTRODUCTION

A pigmentation condition called vitiligo arrives on when melanocyte cells are destroyed, these cells are responsible for the production of skin pigment (Melanin) [1].

Although the true aetiology of vitiligo remains unknown, it is believed to be caused by a lack of melanocyte activities. A number of illnesses such as autoimmune disorder, genetic, neural, viral infections and oxidative stress perform an vital role in vitiligo [2].

Due to the breakdown of melanocytes in this condition, white patches and spots develop on the skin. In the entire world, just 1% of people have to deal by this medical condition [3].

The highest recorded cases of this disease are in India, Egypt, and Japan, where they affect 1.25 to 6 percent of the population.

Vitiligo is usually more in childhood or in young adults (20–30 years of age) and in about 30 % there is a positive family history. These can be divided into three primary categories: mixed vitiligo (MV), segmental vitiligo (SV), and non segmental vitiligo (NSV) [4-5].

White patches develop as a result of these illnesses on the lips, axillae, perioral, periorbital, and anogenital skin, as well as on the hands, wrists, feet, arms, cheeks, and perioral region. It may also have an impact on the body's mucous membrane [6]. In the majority of people, it often changes gradually, with stable periods that can last several years.

The pigment may return in some patients after some time, but is not sure, and scant returns completely [7]. These white patches are spread to other areas of the body but in some patients, the white patches do not spread, while some people

patches spread slowly and, in some people, quickly. White patches spread more quickly in those patients who suffer from higher levels of physical, physiological, and mental stress [8].

### **HISTORY**

The name "vitiligo" comes from the Latin word "vitilus," which means "calf." The phrase was originally employed in the first decades A.D. by the Roman physician Celsus. [9]. He claimed that the disease white patches looked similar to the white spots on a spotted calf.

Religious prayers like the Bible, Veda, and the Holy Quran all mention the old disease vitiligo. The illness is even referred to as "Bai Dian Feng" for traditional Chinese medicine, "Shewetakusta" in the ancient Indian Atharva Veda, "Kilas" in Vinay Pitah, "Bars," and "Phulbehri" in Arabic and Punjabi. [10].

### **EPIDEMIOLOGY**

Vitiligo is the most common skin condition that causes depigmentation; it affects 0.5–2% of people worldwide, including adults and children. [11,14]. In 1977, one of the first and largest epidemiological surveys ever documented was carried out on the Danish island of Bornholm, where vitiligo was found to affect 0.38 percent of the population [11].

Males and females are equally impacted, yet women and girls usually seek advice more frequently, possibly due to the negative societal impact is stronger for them than for men and boys [13].

NSV can develop at any age, however it most frequently affects young people between the ages of 10 and 30 [15-17]. 25 percent of vitiligo patients experience the condition before the age of 10, 50 percent

or more experience it before the age of 20, and between 70 and 80 percent or more experience it before the age of 30 [15,18].

Most populations have mixed age-of-onset groups and double peaks as has been noted [19]. SV occur at a younger age than NSV [17]. In 87% of cases, before the age of 30 and in 41.3% before the age of 10 [20]. In the report of Hann and Lee [20] the average onset age was 15.6 years. The earliest documented beginning occurred right after birth, and the latest was at age 54. Most cases, with lengths ranging from 2 months to 15 years, have been open for less than 3 years at the time of referral [20].

There are three different forms of vitiligo: segmental, non-segmental, and mixed [21]. Segmental cases typically affect one side of the body, and the diseased region of skin does not grow over time. It may have an impact on different body parts. This kind makes for almost 10% of all known cases of vitiligo. Most cases of vitiligo that are known to exist are of the non-segmental kind; it is more prevalent and affects both sides of the body.

Usually, it starts begin with a temporary discoloration of the hands, feet, or face. Acrofacial type typically involves the peritoneal cavity. Patients with acrofacial disorders may also have mucosa in certain areas.

The most prevalent variety in adulthood, universal has the most impact on the tegument (affecting 80–90% of the body surface). It typically comes after the generalised or common form. Mixed Vitiligo is a combination of both Segmental and Non-Segmental vitiligo [21].

## CLASSIFICATION

*Table 1:-Classification of Vitiligo*

TYPES OF VITILIGO	SUBTYPE
Segmental Vitiligo (SV)	Focal Unisegmental Bi or Multisegmental
Non segmental Vitiligo (NSV)	Focal Mucosal Acrofacial Generalized Universal

## TYPES AND PATTERNS OF VITILIGO

- **FOCAL VITILIGO:** This is the type which mostly occurs in children. This unique type of vitiligo involves a small area and it don't spread in certain pattern within 1-2 years. The term "focal vitiligo" was used to describe a small, isolated acquired pigmentation without the typical segmental distribution as well as two to three smaller acquired lesions that were up to 5 cm in size and localised in a non-segmental area [22].
- **MUCOSAL VITILIGO:** The mucosal vitiligo generally affects the mucous membranes of the body parts; generally, of mouth and genitals. Mucosal vitiligo (MV) may develop by itself, as a development of perioral acrofacial vitiligo, or as a component of vitiligo vulgaris. The most likely subtype of this illness is pure MV [22].
- **ACROFACIAL VITILIGO:** This kind of vitiligo can spread to the periorificial and distal fingers. If this only affects the lips & fingertips; then it is called 'Liptip vitiligo' [22].
- **GENERALIZED VITILIGO:** This condition commonly known as "Vitiligo Vulgaris," is the most prevalent variety of vitiligo. This form of discoloured patches is widely distributed and symmetrically arranged. One of the most common types of vitiligo that causes depigmentation is generalised vitiligo, sometimes called nonsegmental vitiligo. in patches of skin all over the body. The face,

neck, scalp, and areas surrounding body openings like the mouth and genitalia are the areas where depigmentation occurs most frequently. [22].

- **UNIVERSAL VITILIGO:** This unusual type shows the involvement of 80% of skin in the disease [22].
- **SEGMENTAL VITILIGO:** Early onset is a feature of segmental vitiligo. Patches of this type are only observed on one side of the body or in one specific area, like the hands, the face, etc [22].
- **MIXED VITILIGO:** This very rare kind of segmental vitiligo appears as a clearspot of segmental vitiligo on one side of the body, which becomes restricted by the midline [22].

## DIAGNOSIS OF VITILIGO

The only indication that someone has vitiligo is the presence of patchy, depigmented skin, which usually appears on the extremities. People occasionally feel a lot of itching right before the next patch appears. The patches can begin in a limited region at first and then develop, spread, and change shape. The face, wrists, and hands are the areas of the body where skin lesions are most common. Around body orifices, such as the mouth, eyes, nostrils, genitalia, umbilicus, and others, the loss of skin pigmentation is most visible. Around the margins in specific affected areas, there is additional layer of skin pigmentation [23]. It is very difficult to differentially diagnose vitiligo. To correctly identify vitiligo, one must be able

identify between various skin conditions such as complete depigmentation, hypopigmentation, and the skin's original colour. The diagnosis of vitiligo can be very difficult in persons with very light skin tones. The use of Wood's light in the diagnosis of vitiligo patients with skin conditions I and II has been shown to be very helpful. Techniques and equipments like Pure Tone And Speech Audiometer, Sound Treated Room, Cochlear Emission Analyzer Madsen, Emittance Meter, Evoked Response Audiometer Nickolet Compact Four, Wood's Light Lamp have been very useful in the diagnosis of vitiligo [24].

### **TREATMENT OF VITILIGO**

While there are presently no known cures for vitiligo, there are certain herbal and medicinal products that can be applied to stimulate the development of new pigment cells in the skin. Some important herbal remedies are the following:

- **GINKGO BILOBA:** Ginkgo biloba (also called the "maiden hair tree") is one of the oldest trees on Earth whose leaves and seeds are largely used in medicine. A common plant called ginkgo biloba is used to treat a number of diseases, including allergies, vein problems, premenstrual syndrome, headaches, vertigo, and others. These plants' seeds and leaves have been used in medicine for a very long period. It is mostly showing the anti-inflammatory, repigmentary, immunomodulatory and antioxidant properties [25,26]. A large percentage of the white areas have been treated by this treatment, but melanocyte repigmentation is not uniform. The drug is safe and well-tolerated at therapeutic dosages (normal value: 120mg/day). The daily dosage > 240mg may result in restlessness and gastrointestinal disorders, and this treatment is contraindicated for haemorrhagic patients because these drugs are interfuse the blood [27].

- **MUSKMELON:** The fruit muskmelons are a member of the Cucurbitaceae family. It grows usually as climbing plants with stems that are 1.5 metres long and sprawl along the ground. It is primarily found along riverbanks and deserts [25, 28]. High levels of superoxide dismutase, an antioxidant, are found in curcumas melo extract. This antioxidant is essential for preventing the melanocyte from becoming damaged under oxidative stress [29]. When combined with narrow band UVB and curcumas melo extract, it is applied to skin lesions and is effective in treating vitiligo [30].

- **PICRORHIZA KURROA:** An alternative name for Picrorhiza kurroa is "kutki." The main application of kutki extract is as a hepatoprotective agent and it contains antioxidant and immunomodulating properties. The picrorhiza is used to treat vitiligo as a result of a recent study that shows a common effect in repigmentation [31].

- **PSORALEA CORYLIFOLIA:** Due to the presence of psoralen in the seeds, Psoralea corylifolia is also used to cure leucoderma. The seeds are consumed in the morning, empty stomach [32]. These seeds' extracts are combined with ultraviolet A light (UVA), and the treatment includes receiving a medication that raises the sensitivity of UV light. The duration of this therapy is BD (twice a day) for at least six to ten months [33].

- **GINGER AND RED CLAY:** Red clay and ginger juice are combined, then applied to regions that have lost their colour to help treat vitiligo [34]. Clay contains copper, which causes the skin to re-pigment. Ginger promotes increased blood flow to the white spot, which helps in the re-pigmentation of the spots. The river bank and hill are where the red clay is collected [35].

- **KHELLIN:** The Khellin is obtained from the natural source; it is derived from the plant of Amni visnaga.

This plant has been used as a herbal remedy for a variety of disorders. It promotes melanogenesis and melanocyte proliferation. This medication doesn't perform well when taken orally because it is hepatotoxic. It works best when combined with UVA Phototherapy[36].

- **POLYPODIUMLEUCOTOMOS** : Polypodium leucotomos is a tropical fern and is also called as “Calaguala”, and Polypodium aureum. It is belonging to the family of Polypodiaceae. Due to the high concentration of antioxidant and photoprotective compounds in this fern, it is primarily used to treat a variety of skin conditions, including vitiligo, psoriasis, and atopic dermatitis [37,38]. It indicates that the combination of oral Polypodium leucotomos with PUVA therapy produced superior results than photochemotherapy alone in the form of faster repigmentation [39].

- **CAPSICUM:** One of the most significant spice components is the capsicum, which contains the active ingredient found in chilli peppers known as capsaicin. It has compounds with antioxidant and anti-inflammatory properties. Due to capsaicin's ability to stop ROS-induced cellular damage, it has been applied for treating vitiligo for several decades. [40].

#### **MEDICINAL REMEDIES OF HERBS IN VITILIGO**

- **BAKUCHI (Psoralea corylifolia)** commonly referred to as Bakuchi. In India, it is widely distributed. Its seed shows stimulant, aphrodisiac, diuretic, cytotoxic, anthelmintic, antibacterial, astringent, cardiac, deobstruent, and cytotoxic effects[41]. This is a useful herb for treating vitiligo. The seeds of this plant contain a variety of coumarins, including psoralen. For the treatment of Vitiligo, or skin conditions that cause white spots, psoralea and sunshine work well together [41].

- **HARIDRA (Curcuma longa)**

The main curcuminoid in turmeric, a well-known Indian spice that belongs to the ginger family (Zingiberaceae), is called curcumin. Ayurvedic medicine has traditionally utilised turmeric as a blood purifier, antimicrobial, and treatment for skin conditions and wound healing. It also was used externally, to heal sores and cosmetic use is common. It prevents fungus and viral illness. Turmeric, also known as haridra, may help in vitiligo repigmentation. Curcumin, the main ingredient in turmeric, aids in melanoma skin restoration through its anti-inflammatory and antioxidant properties. [41].

- **KUMARI (Aloe barbadensis)**

For vitiligo, it is an effective ayurvedic remedy. The herb has potent antioxidant and anti-inflammatory qualities that calm and repair skin. [41].

- **ASHWAGANDHA (Withania somnifera)**

commonly referred to as ashwagandha, is the strongest herb in its class. essentially used as a restorative medication. Identical to ginseng in traditional Chinese medicine, Withania somnifera has a role in Ayurvedic therapies. Another name for it is "Indian Ginseng." Many Ayurvedic medications for sustaining health contain Withania somnifera. It boosts immunity and is regarded as a beneficial nerve tonic. [41].

- **GILOY (Tinospora cordifolia )**

Tinospora is known as “Guduchi”commonly and from family Menispermaceae, found at higher altitude. Widely used in formulations for fever, liver disorders and various skin diseases. In Ayurveda, the plant is most commonly used for tridos-samak, which boosts immunity. [41].

- **BASIL-HERB (Ocimum Sanctum)**

Commonly called Tulsi and found in almost every Indian home. It has a role in providing better immunity and it works well to improve body metabolism. Used to



treat bacteria-based infections, fungal infections, and respiratory problems. Tulsi is beneficial for eyes as well as skin care. It has antimalarial property and widely used in Malaria and Typhoid [41].

- **CHIRAYATA (*Swertia chirata*)**  
It has Indian name Chirayata. It has antimicrobial properties and usually is being used as blood purifier. It has anti-inflammatory properties and is used to treat malaria also. And used to treat various skin diseases and infections [41].

- **SHATAVARI (*Asparagus racemosus*)**  
It is also called Shatavari and is a powerful herb from family liliaceous. It is a climbing plant that can be found all over India in low forest settings. It is primarily used to support immunity and general health. Many Ayurvedic medicines apply the powder to promote health [41].

- **NEEM (*Azadirachta indica*)**  
commonly referred to as Neem, or as well as Nimba in Indian society. The neem tree grows all over India. It is a popular village tree. In India, toothbrushes are frequently used. The antiseptic effect of it can treat a variety of bacterial illnesses. Neem is considered to be an effective blood purifier in Ayurveda medicine. Several skin disorders, including vitiligo, are treated using neem leaves. It contains immunomodulating properties that make it useful for treating skin's white patches [41].

## PREVENTION

Currently, there is no treatment for vitiligo and hardly to prevent the condition. The aim of therapy, if somebody chooses to pursue it, is frequently to stop additional skin depigmentation and restore colour. One of the best methods to avoid damage and de-pigmentation is to limit your exposure to the sun. Some food is also helps to cure vitiligo like fig, beet root, carrot, chick pees, dates, green leaf vegetable and reddish etc. However, some people avoided vitiligo by adhering to

certain advice, even in the absence of evidence. Water consumption can help the body's immunological system, which can help prevent vitiligo.

1. Vitiligo can be avoided by consuming green leafy vegetables and fruits like bananas and apples.
2. Avoid drinking alcohol, caffeine, eating red meat, and consuming fish to prevent the development of white spots.
3. White spots can be avoided by consuming foods high in vitamins B, C, amino acids, and folic acid.
4. It will also help if you add minerals like iron, zinc, and copper to your food.
5. When a cut, burn, or sunburn affects the skin, the skin pigment cells are destroyed. That might lead to vitiligo.
6. Vitiligo can be prevented by avoiding serious skin wounds and burns [41-42].

## HOMEMADE PREPARATION OF FORMULATIONS

1. **TURMERIC AND PSORALEA SEED:** The herb (psoralen) that works the most effective is used to treat vitiligo. Turmeric has anti inflammatory and antiseptic properties in it and also plays an vital role in Ayurvedic medicine because of its health benefits. When both of them are combined with turmeric as an effective cure for Vitiligo. Psoralen should be handled with extreme caution and knowledge of all aspects of it, since failure to do so could be harmful [43].

**DIRECTION FOR USE:** Soak psoralen seeds in water along with turmeric for approximately four days. The seed should be dried and ground into a paste. The paste should be applied on the white spot for at least one month, you will be noticing changes in the skin, for best results, it is recommended to continue treatment beyond one month.

2. **MUSTARD OIL AND TURMERIC:** Turmeric has anti inflammatory and antiseptic properties in it

and also plays an vital role in Ayurvedic medicine because of its health benefits. It increases the body's natural immunity when used on wound that can prevent bacterial infection. Patients with Vitiligo can benefit greatly from homemade medicines produced with mustard oil and turmeric. Because it is antimicrobial, the oil might aid in body detoxification [43].

**DIRECTION OF USE:** Mix 5 tablespoon of turmeric powder with 250 ml of mustard oil. Make sure the oil and turmeric are thoroughly combined. On the white spots of skin, use this mixture twice daily. To achieve good results, the spots must be completely eliminated after a year of treatment, and your skin will be clear and healthier. The remedy is natural and safe [43].

**3. LEMON JUICE AND BASIL LEAVES:** Basil leaves are one of the common useful kitchen ingredients. It has antiviral and anti-aging effect and proved effective in curing Vitiligo and stress. Lemon juice has much positive effect as it also acts an anti inflammatory effect and good source of vitamin C. Melanin production in the body is triggered by the combination of extracts from the leaves of basil and lemon juice. [43].

**DIRECTION OF USE:** In a bowl, mix the lemon juice and basil leaf extract. Apply the mixture on the white spot and leave it for a while. Use this treatment 3 or 4 times daily. Within 5-6 months you can see visible result. The treatment has no side effects and it absolutely safe for Vitiligo patients [43].

**4. THE WATER STORED IN COPPER UTENSILS:** As vitiligo is also caused due to the deficiency of vitamins and some other deficiency. Water reserves in copper bottles, glasses are very useful[43].

**DIRECTION OF USE :** The water used in copper utensils is kept overnight. The water should be taken every morning and

within six months we can notice a difference in the skin. The treatment promotes the production of melanin by melanocytes stimulation in the body. It is a safe home remedy and with no side effect [43].

### CONCLUSION

The real reason for vitiligo is unknown. It happens when the melanocytes, which are the cells that give skin its colour, die or stop functioning. However, this is an immune system issue and not just a skin condition. Individuals who have vitiligo in their family are at a higher risk of developing the problem; however, since melanoma is not a disease, it cannot be inherited by a person who already has it. Although there is no known treatment for vitiligo, drinking lots of water and eating lots of green, leafy vegetables may help to prevent the condition. Patches are prevented by vitamins B, C, and amino acids. Avoid coffee, fish, alcohol, and red meat to prevent the spots. Papaya pieces can be applied to the patches to help from vitiligo control. Vitiligo cannot be totally cured, but it can be treated. Numerous plants, including as kumari, green basil leaves, haridra, bakuchi, ashwagandha, neem, and Chirayata, can aid with vitiligo.

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