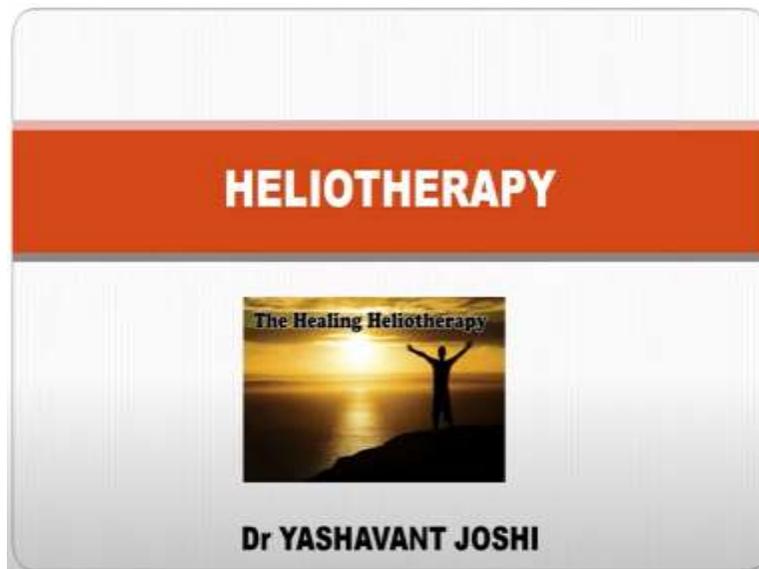


Certificate in Integrative Palliative Care – 3
Dr. Geeta Joshi
Dr. Piyush Gupta
Dr. Col. Yashavant Joshi
International Institute of Distance Learning
Indian Institute of Technology, Kanpur

Week-02
Lecture 13: Helio Therapy

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Hi, I am naturopathy expert Shikha Gupta. I am practicing naturopathy since 23 years. Today, I am from Lucknow to give presentation on heliotherapy.

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Heliotherapy means sun beam therapy or Suriya Chikitsa.

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PRELUDE...

- For ages, people have worshiped the sun for its numerous uses, so it's no surprise that heliotherapy has become a popular treatment.
- This therapy works in several ways, but is **best known as a conveyor of vitamin D**. When the ultraviolet rays of the sun make contact with the skin, they help the body produce this vitamin, which, in turn, is said to help in the formation of bones, treating rickets disease, and lowering blood pressure.
- It is also said to enhance the immune system, which can help the body fight off numerous bacterial, viral, and fungal infections.
- Most are well aware that sunlight exposure is a means to increasing vitamin D levels, yet at the same time we are told to avoid sun exposure especially at midday as it has been implicated in skin cancer, skin damage and premature aging.

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Most are all aware that sunlight exposure is a means to increasing vitamin D levels, yet at the same time we are told to avoid sun exposure especially at midday as it has been implicated in skin cancer, skin damage and premature ageing.

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Surya Namaskar

- The original practice from which Surya Namaskar might have originated is a collection of rituals, known as the **Surya Narayana Pujas**. It has been traced back 2,500 years ago.
- Surya Namaskar or Sun Salutation is a sequence of 12 powerful yoga poses. Besides being a great cardiovascular workout, Surya Namaskar is also known to have an immensely positive impact on the body and mind.

Surya Namaskar The original practice from which Surya Namaskar might have originated is a collection of rituals known as the Surya Namaskar, Surya Narayan Pujas. It has been traced back 2500 years ago. Surya Namaskar or Sun Salutation is a sequence of 12 powerful yoga poses. Besides being a great cardiovascular workout, Surya Namaskar is also known to have an immensely positive impact on the body and mind.

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Surya Namaskar

- Practicing Surya Namaskar steps is best done early morning on an empty stomach. Each round of Sun Salutation consists of two sets, and each set is composed of 12 yoga poses. You might find several versions on how to practice Sun Salutation. However, it is advisable to stick to one particular version and practice it regularly for the best results.
- Besides good health, Surya Namaskar also provides an opportunity to express gratitude to the sun for sustaining life on this planet.

Practicing Surya Namaskar steps is best done early in the morning and empty stomach. Each round of Sun Salutation consists of two sets and each set composed of 12 asanas. You might find several versions on how to practice sun salutation. However, it is advisable to stick on one particular version and practice it regularly for the best result. Besides good health, Surya Namaskar also provides an opportunity to express gratitude to the sun for sustaining life on this planet.

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Surya Namaskar

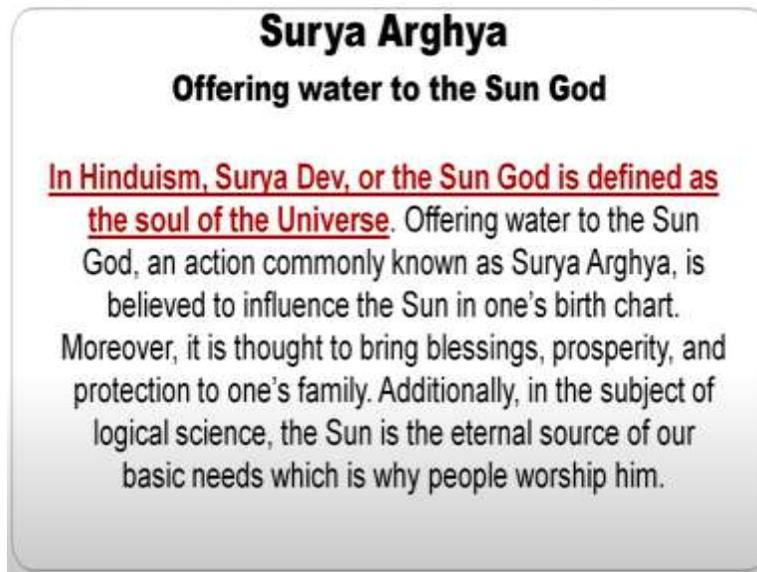


This is the picture of Surya Namaskar. You can see the first one is Namaskarasana. Second one is Hastuthanasana. Third is Padhastasana. Fourth one is Ashwasanchalana.

Fifth one Parvatasana. Sixth one is Astanganamaskar. Seventh one Bhujangasana again. Eighth one Parvatasana again. Ashwasanchalana again, 10th Padhastasana, 11th Hastuthanasana and 12th one is again Namaskar Mudra.

So, here are 12 yogic posture in front of you in the given slide.

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Now let's understand the Surya Arghya offering water to Sun God. In Hinduism, Surya Dev or Sun God is defined as the soul of universe. Offering water to Sun God, an action commonly known as Surya Arghya, is believed to influence the Sun in one's birth chart. It is thought to bring blessings, prosperity and protection to one's family.

Additionally, in subject of logical science, the sun is the eternal source of our basic needs which is why people worship him.

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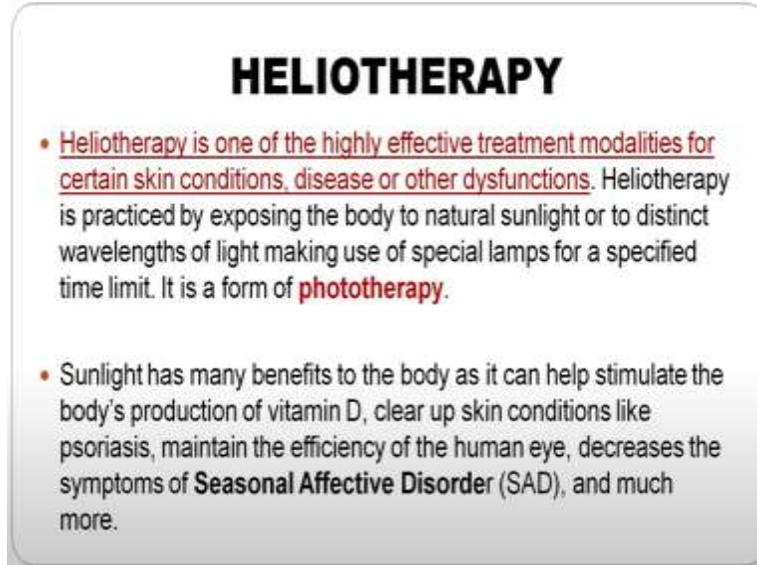
This is the beautiful picture of Surya Arghya. A very little cute girl offering water to the sun, the right way and benefits of offering water to Lord Surya.

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Another picture is a old man offering water to the sun.

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HELIO THERAPY

- Heliotherapy is one of the highly effective treatment modalities for certain skin conditions, disease or other dysfunctions. Heliotherapy is practiced by exposing the body to natural sunlight or to distinct wavelengths of light making use of special lamps for a specified time limit. It is a form of **phototherapy**.
- Sunlight has many benefits to the body as it can help stimulate the body's production of vitamin D, clear up skin conditions like psoriasis, maintain the efficiency of the human eye, decreases the symptoms of **Seasonal Affective Disorder (SAD)**, and much more.

Sun therapy or heliotherapy is one of the highly effective treatment modalities for certain skin condition, disease or other dysfunctions.

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WHY SUNLIGHT IS IMPORTANT

- Essential for the evolution of life on earth
- Visible light needed for photosynthesis
- IR gives warmth
- Directly or indirectly every body depends on sun

Why sunlight is important. Essential for the evolution of life on earth, visible light needed for photosynthesis.

IR gives warmth, means infrared wavelengths gives warmth, directly or indirectly everybody depends on sun.

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HISTORY...

- Beginning in the late 1800s, heliotherapy became a large part in the treatment for tuberculosis (of the bones- due to lack of vitamin D), and many conditions for joints and skin. In 1903, Niels Ryberg Finsen discovered that UV radiation benefited those who had been diagnosed with a skin condition, lupus vulgaris. He was awarded a Nobel Prize in treating a disease using concentrated light radiation, advancing treatment for medical science. He believed that the UV radiation killed the bacteria which created the disease, which is exactly what sunlight has the ability to do.

Let us understand the history of heliotherapy or sunbeam therapy. Beginning in late 1800s, heliotherapy became a large part in the treatment of tuberculosis of the bones due to the lack of vitamin D and many conditions of joint skin. In 1903, Niels Ryberg Finsen discovered that UV radiation benefited those who had been with the skin condition, lupus Vulgaris. He was awarded a noble prize in treating a disease using concentrated light radiation, advancing treatment for medical science.

He believed that the ultraviolet radiation killed the bacteria which created the disease which is exactly what sunlight has the ability to do.

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HISTORY...

- We can't ignore the fact that compared to all past generations, today we are extremely limited to the amount of time in the open air and sunshine. Up until the past two-hundred years, people lived and worked outdoors under the sunlight for hours at a time. Today, we wake up to the sound of our alarms instead of the natural light. We then drive to work in our car and stay in our offices for the next 8 hours, only to leave when the sun is setting, and by the time we make it through traffic and get home, it has set. It's no wonder why more than half of the general population is vitamin D deficient. This is a statistic according to the Center for Disease Control and Prevention.

We cannot ignore the fact that compared to all past generations, today we are extremely limited to the amount of time in open air and sunshine. Up until the past 200 years, people lived in, worked outdoor under the sunlight or hours of a day or time. Today wake up of the sound of our alarms instead of our natural light. We then drive to work in our car and stay in our offices for next 8 hours only to leave when sun is setting and by the time we make it through traffic and get home, it has set.

It is no wonder why more than half of the general population is vitamin D deficient. This is the static according to the center of disease control and prevention.

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HISTORY

History?

- Hippocrates was a great advocate of the Sun's healing properties.
- prolonged exposure to sunlight kill the bacteria
- From the late 1800s, heliotherapy became a key part of treatment for tuberculosis - esp. of the bones, joints and skin.
- As sunlight is not available all times, artificial alternatives developed – like UV, Infrared Lemp.
- In Ayurveda- Atapa snana, Chankramana, Vyayama in early day light, Tapa sweda after Abhyanga etc. examples...



Let's understand much more history. Hippocrates was a great advocate of sun's healing properties. Prolonged exposure to sunlight kills the bacteria.

From the late 1800s, heliotherapy became a key part of treatment of tuberculosis, especially for the bones, joints and skin. As sunlight is not available all the time, artificial alternatives developed like ultraviolet, infrared lamps, etc. In Ayurveda, Atapa and tapa sweda after abhyanga are the examples of sunbeam therapy.

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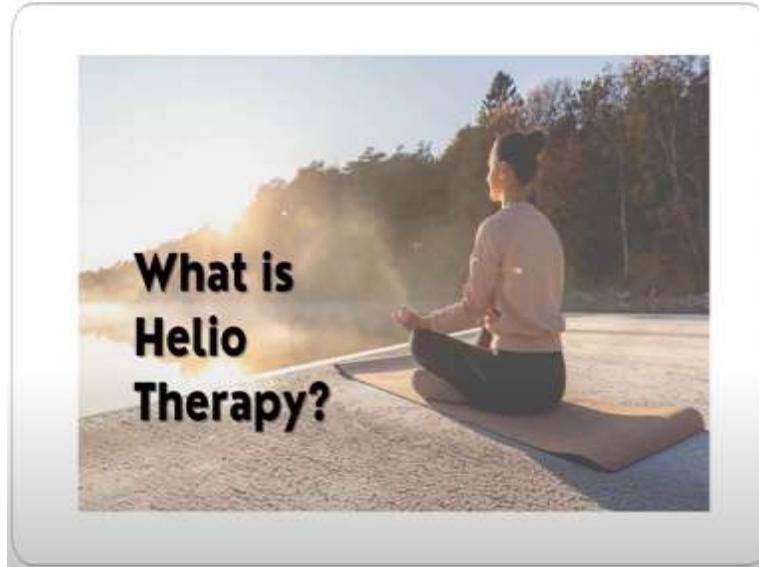


When to use sun rays? Let us understand. However, just like any health regimen, there is a smart way and less smart way to implement light as a medicine.

Variables that affect how much sun you can handle include skin type and diet. While you get max vitamin D midday when the sun is overhead. IRA light is available at sunshine and sunset means infrared light. This is called the golden hours as it prepares and repairs your skin from ultraviolet radiation. Our ancestors would have been outside much of the time.

So, their skin would have been primed for your UVB exposure by infrared light in the AM and healed by the IR light at the sunset.

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This is the picture of heliotherapy, sunbeam therapy. A lady is receiving sunlight, sun rays in front of the sun.

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Heliotherapy, healing with sunlight. Any person who misses out on sunlight becomes weak and suffers mental and physical problems as a result.

His vital energy diminishes in due time, which is reflected in the quality of life.

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HELIO THERAPY

INTRODUCTION

- Helio therapy is defined as the treatment of disease by exposing the body to sunlight
- It is the treatment by means of Sun's electromagnetic waves



Heliotherapy is defined as a treatment of disease by exposing the body to the sunlight. It is a treatment of means of sun's electromagnetic waves.

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SUN RAYS

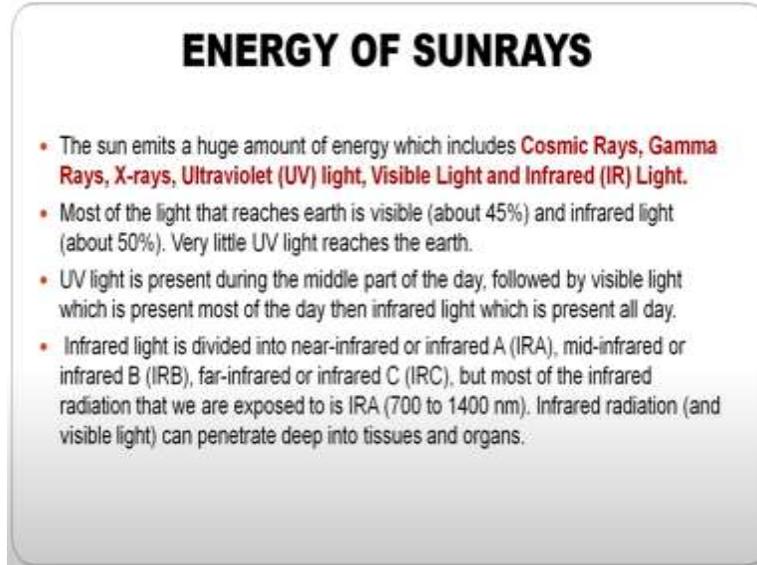
- The **Ultraviolet (UV)** part of the sunlight spectrum has beneficial effects in small doses.
- **Short Wavelength UVB** and longer wavelength UVA induce vitamin D production and other chemicals that protect skin cells.
- The **UV Radiation** is anti-inflammatory, immune suppressing, and anti-proliferative.



The ultraviolet part of the sunlight spectrum has been beneficial in small doses. Now, next rays short wavelength UVB and longer wavelength UVA induce vitamin D production and other chemicals that protects skin cells.

The ultraviolet radiation is anti-inflammatory, immune suppressing and anti-proliferative.

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ENERGY OF SUNRAYS

- The sun emits a huge amount of energy which includes **Cosmic Rays, Gamma Rays, X-rays, Ultraviolet (UV) light, Visible Light and Infrared (IR) Light.**
- Most of the light that reaches earth is visible (about 45%) and infrared light (about 50%). Very little UV light reaches the earth.
- UV light is present during the middle part of the day, followed by visible light which is present most of the day then infrared light which is present all day.
- Infrared light is divided into near-infrared or infrared A (IRA), mid-infrared or infrared B (IRB), far-infrared or infrared C (IRC), but most of the infrared radiation that we are exposed to is IRA (700 to 1400 nm). Infrared radiation (and visible light) can penetrate deep into tissues and organs.

Let us understand the energy of sun rays. The sun emits a huge amount of energy which includes cosmic rays, gamma rays, X-rays, ultraviolet rays, visible lights and infrared light. Most of the light that reaches earth is visible about 45 percent and infrared light about 50 percent. Very little ultraviolet light reaches the earth.

Ultraviolet light is present during the middle part of the day followed by visible light which is present most of the day. Then infrared light which is present all the day. Infrared light is divided into near infrared or far infrared, mid infrared or far infrared or infrared C, A, B, C. But most of the infrared radiation that we are exposed to is IRA 700 to 1400 nanometer. Infrared radiation and visible light can penetrate deep into the tissue and organs.

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UV SPECTRUM
Energy Of Sunrays

- Infrared is present all day and there are higher IR to UV ratios closer to sunrise and sunset, during the morning and later afternoon/evening. UV light transmission depends on many factors.
- Time of day, season of the year, geographical location (latitude and altitude), weather conditions and air pollution all affect the transmission of UV light.
- The UV spectrum ranges from far-UV or UVC (200 to 280 nm) which does not penetrate the atmosphere due to the ozone layer to mid-UV or UVB (280 to 320 nm) to near-UV or UVA (320 to 400 nm) which has the longest wavelengths compared to the other UV ranges.
- It is estimated that about 5% of UVA and less than 1% of UVB from the sun reaches earth (6) and of this approximately 90% to 95% of UVA and 5% to 10% of UVB in solar radiation reaches human skin under ideal conditions (noon time in the tropics).
- It is UVB radiation that is responsible for the production of vitamin D in the body.

Ultraviolet spectrum, infrared is present all day and there are higher infrared rays or ultraviolet ratios closer to sunrise and sunset during the morning and later afternoon evening. Ultraviolet light transmission depends on many factors, time of the day, season of the year, geographical location, latitude or altitude, weather conditions and air pollution all affects the transmission of UV light. The UV spectrum ranges from far UV or UVV which is 200 to 280 nanometer which does not penetrate the atmosphere due to ozone layer. Mid UV or UVB 280 to 320 nanometer to near ultraviolet or UVA 320 to 400 nanometer which has longest wavelengths compared to the other UV ranges. It is estimated that about 500 of UVA and less than 1 percent of UVB from sun reaches earth and of this approximately 90 percent to 95 percent of UVA and 5 percent to 10 percent of UVB in solar radiation reaches human skin under ideal conditions, known time in tropical regions.

It is UVB radiation that is responsible for the production of vitamin D in the body.

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What does sunlight therapy actually do? Increase circulation by formation of new capillaries to replace damaged ones to speed up the healing process by carrying more oxygen as well as more nutrients needed for healing and carry waste project away from the body. Stimulate the production of collagen, the most common protein found in the body, essential to repair of damaged tissue and to replace old tissues. By increasing collagen production, less scar tissues are formed at the wound. Increase RNA and DNA synthesis helping damaged cells to be replaced more promptly.

Stimulate fibroblastic activity which aids in the repair process. Fibroblasts are present in connective tissue and are capable of forming collagen fiber. Stimulate tissue granulation and connective tissue projections which are part of healing process of wounds, ulcers and inflammation.

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Now, let us understand the types of sun bath. Ordinary sun bath, rickley sun bath, kuhne sun bath, sun bath with wet cloth and atapa snana

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This is the picture of heliotherapy, sunbeam therapy.

In one picture the person is wrapped through a cellophane or polythene and in other picture the person is wrapped by blankets. Here are two or three blankets.

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What Skin Conditions Respond to Heliotherapy

Heliotherapy also referred to as Surya/ Agni Chikitsa in naturopathic medicine can aid certain skin conditions and disorders.

1. Lupus - Tuberculosis of the skin

- Heliotherapy – seldom called phototherapy – turned out to be an essential part of certain treatment regimes for tuberculosis, notably tuberculosis of the bones, joints as well as skin (prolonged exposure to sunlight can kill the bacteria causing the disease). Due to the unavailability of sunlight all the time, artificial options like Finsen lamp were developed to mirror the Sun's profitable effects. Its greatest achievement was in the treatment of lupus tuberculosis of the skin.

2. Acne vulgaris

- Heliotherapy has proved effective in treating acne vulgaris & detoxification of the body.

What skin conditions respond to heliotherapy? Heliotherapy also referred to as Surya Agni Chikitsa in naturopathy medicine can aid certain skin conditions and disorders. First one is Lupus, tuberculosis of skin.

Heliotherapy seldom called phototherapy. Turned out to be an essential part of certain treatment regimen of tuberculosis, notably tuberculosis of the bones, joints as well as skin. Prolonged exposure to sunlight can kill the bacteria causing the disease. Due to the unavailability of sunlight all the time, artificial options like finsen lamp were developed to mirror the sun's profitability effects. Its greatest achievement was in the treatment of lupus tuberculosis of the skin.

Second one is acne vulgaris. Heliotherapy has proved effective in treating acne vulgaris and detoxification of the body.

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What Skin Conditions Respond to Heliotherapy

3. Psoriasis

- Though heliotherapy has shown improvement in the condition of the intensity and severity of psoriasis patients, it seldom clears it totally on the contrary in some cases sun exposure worsens the condition.

4. Atopic dermatitis/Eczema

- Heliotherapy might show betterment in Atopic dermatitis/ Eczema but there stand chances that sunlight can result in photo aggravated Eczema.

5. Vitiligo

- Skin conditions like Vitiligo too have been legendarily treated with sunlight.

Third one understand psoriasis. Through the heliotherapy has shown improvement in the condition of the intensity and severity of psoriasis patients. It seldom clears it totally. On the contrary, in some cases sun exposure worsens the condition.

Fourth one is atopic dermatitis or eczema. Heliotherapy might show betterment in atopic dermatitis eczema, but there stand chances that sunlight can result in photo aggravated eczema. Vitiligo, Skin conditions like vitiligo too have been legendarily treated with sunlight.

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Advantages of Heliotherapy...

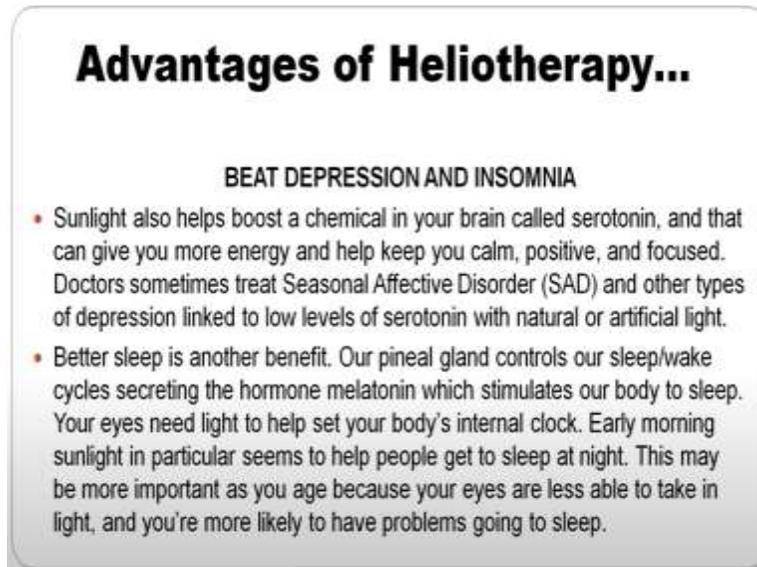
Heliotherapy advantages comprise:

- Heliotherapy is universally accessible though it depends on weather/climate.
- Heliotherapy is supportive, particularly in regions where phototherapy is rare.
- One Research revealed that in bright light therapy, may ease **Parkinson's** disease by reducing patients' tremors.
- Also in **Alzheimer's disease**, positive impact of light therapy on overall cognitive function found.

Let us understand the advantage of heliotherapy. Heliotherapy is universally accessible though it depends on weather or climate. Heliotherapy is supportive particularly in regions where phototherapy is rare.

One research revealed that in bright light therapy may ease Parkinson's disease by reducing patient's tremor. Also in Alzheimer's disease, positive impact of light therapy on overall cognitive function founds.

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Advantages of Heliotherapy...

BEAT DEPRESSION AND INSOMNIA

- Sunlight also helps boost a chemical in your brain called serotonin, and that can give you more energy and help keep you calm, positive, and focused. Doctors sometimes treat Seasonal Affective Disorder (SAD) and other types of depression linked to low levels of serotonin with natural or artificial light.
- Better sleep is another benefit. Our pineal gland controls our sleep/wake cycles secreting the hormone melatonin which stimulates our body to sleep. Your eyes need light to help set your body's internal clock. Early morning sunlight in particular seems to help people get to sleep at night. This may be more important as you age because your eyes are less able to take in light, and you're more likely to have problems going to sleep.

And the most important benefit is beat depression and insomnia, which is very, very essential in today's scenario. Sunlight also helps boost the chemical in your brain called serotonin and that can give you more energy and helps keep you calm, positive and focused. Doctors sometimes treat seasonal affective disorder, SAD and other types of depression linked to low level of serotonin with natural or artificial light.

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Advantages of Heliotherapy

BOOST IMMUNITY

- The sun broad immune-boosting effect. It stimulates our pituitary gland – the master switch of our endocrine system. This produces hormones which determine the strength and speed of our body's immune responses. Researchers found evidence that more sunlight can help reduce flu infections along with other viruses. This study contributes to a growing body of research that links vitamin D to influenza risk. When ultraviolet radiation in sunlight hits bare skin, it triggers the production of vitamin D. In recent decades, several research teams have studied the potential effects of vitamin D supplementation on the risk of influenza and other acute respiratory tract infections.

Another important advantage of heliotherapy is boost immunity.

The sun brought immune boosting effect. It stimulates our pituitary gland, the master switch of our endocrine system. This produces hormones which determine the strength and speed of our body's immune responses. Researchers found evidence that more sunlight can help reduce flu infections along with other viruses. This study contributes to a growing body of research that links vitamin D to influenza risk. When ultraviolet radiation in sunlight hits, it triggers the production of vitamin D.

In recent decades, several research teams have studied the potential effects of vitamin D supplementation on the risk of influenza, other acute respiratory tract conditions.

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Heliotherapy Benefits

- Acne, psoriasis and other skin disorders
- Muscular stimulation and relaxation
- Seasonal Affective Disorder
- Reducing body odor
- Boosting the body's immune system for the treatment of AIDS
- Reducing bacteria count by as much as 50% from infections
- Decontaminating blood transfusions
- DNA repair
- Irradiating the blood of cancer patients
- Hyperbilirubinemia (neonatal jaundice)



Another much more benefits, let us understand acne, psoriasis and other skin disorders. Muscular stimulation and relaxation, seasonal affective disorder, reducing body odor, boosting the body's immune system for treatment of AIDS, reducing bacteria count as much as 50 percent from infection, decontaminating blood transfusions, DNA repair, eradicating the blood of cancer patients, Hyperbilirubinemia (neonatal jaundice).

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BENEFITS

- Healthy looking complexion
- Regular exposure builds natural resistance against harmful sun rays
- UV rays – antiseptics
- Clears skin diseases
- Enhance immune system
- Encourages healthy circulation
- Sooth nerves and boost mood by increasing production of endorphin and serotonin
- Increases melatonin output at night

Much more benefits, healthy looking complexion, regular exposure built natural resistance against harmful sun rays, UV rays antiseptics, clear skin disease, enhance

immune system, encourages healthy circulation, soothes nerve and boost mood by increasing production of endorphins and serotonin, increases melatonin output at night.

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Limitations of Heliotherapy

Limitations of heliotherapy comprise:

- Heliotherapy might result in side effects such as **sunburn**, the chance of reaction due to photosensitivity, as well as long-term skin aging & skin cancer.
- The amount of UV in sunlight relies on a no. of variable factors (latitude, time, seasonal variation, etc.) thus the dose cannot be fixed.
- Exposure time for every individual might differ depending on their skin phototype, it's the reaction to photosensitivity, the condition being treated, etc.

In this slide, we can understand the limitations of heliotherapy.

Heliotherapy might result in side effects such as sunburn. The chance of reaction due to photosensitivity as well as long term skin ageing and skin cancer. The amount of ultraviolet in sunlight release on a number of variable factors, latitude, time, seasonal variations, etc. Thus, the dose cannot be fixed. Exposure time of every individual might differ depending on the skin phototype.

It is a reaction to photosensitivity, the condition being treated etcetera.

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How to Sun Bathe?

- Sunbathing properly isn't as simple as just going out and laying in the sun. There are important things to consider to ensure you sunbathe only to receive benefits and not do yourself any harm in the process. Oh, and toss out that sunblock, you won't be using it.
- Just as you would with any treatment, sunshine needs to be absorbed in moderation. Even the healthiest of things can be detrimental if taken in excess. The sun is extremely powerful and must be used with precautions set in place to protect your body from overexposure.
- If you are very old, fair skinned or in bad health, a small amount of sunlight will have a more profound effect upon your body than someone who is young and darker skinned. Working up on your sun exposure needs to be done gradually, adding a few more minutes each session so you will not end up getting a sun burn.

How to sunbath? Let us understand. It is not common, it is a scientifically proven and you have to learn the technique of sunbathing. Sunbathing properly it is not simple as just going outside or laying in the sun. Here are important things to consider to ensure you sun bath only to receive benefits and not to do yourself any harm in the process.

Oh! and toss out the sun block, you won't be using it. Just as you would With any treatment, sunshine needs to be absorbed in moderation. Even the healthiest of things can be detrimental if taken in excess. The sun is extremely powerful and must be used with precautions set in place of protect your body from over exposure. If you are very old, fair skinned or in bad health, a small amount of sunlight will have to more profound effect upon your body and someone who is young and darker skinned working up on your sun exposure need to be done gradually adding a few more minutes each session.

So, you will not end up getting a sunburn.

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How to Sun Bathe?

- It is best to sunbathe in the morning sunlight as opposed to the mid-afternoon sun. This is because there is much more beneficial ultraviolet rays in the morning, and by the time afternoon hits, the sunshine has changed to be mainly infrared rays which is very hot and doesn't do nearly as much good.
- Do not wear sunglasses while sunbathing, you need to close your eyes and let the beneficial lights seep in through your eyelids. This is very important in using sunbathing for health purposes.
- Sunblock or Sunscreens should also never be put on your body. They do much more harm than good. The chemicals in these lotions cause damage and disease to develop in the skin when exposed to the sun. One of the worst of these ingredients is PABA.
- As far as duration goes, work your way up and let your body get used to the sun. Maybe start with 5 minutes the first day, 10 minutes the second day and so on, working up to about an hour per session.

It is best to sunbath in the morning sunlight as opposed to the mid-afternoon. This is because there is much more beneficial ultraviolet rays in the morning. And by the time afternoon hits, the sunshine has changed to be mainly infrared rays which is very hot and does not nearly as much good. Do not wear sunglasses while sunbathing. You need to close your eyes and let the beneficial lights sleep in through your eyelids.

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One of the worst of these ingredients is PABA. As far as duration goes, work your way up and let your body get used to the sun. Maybe start with 5 minutes the first day, 10 minutes another day, second day and so on. Working up to about an hour per session.

But you can increase gradually.

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CAUTIONS...

1. The white sunlight is a mixture of 7 colors-Violet, Indigo, Blue, Green, Yellow, Orange & Red. When we talk about the healing factor to be the sun rays, let us not ignore the different colors in the solar spectrum & discuss their importance too.
2. Undue exposure to the sun should be avoided. Heliotherapy might not suit photosensitive individuals. Note that the sun is a class 1 carcinogen.
 - Undertake exposures at the same time/s of the day, each day.
 - Continue the prescribed treatment (monitor with your dermatologist).
 - Continue routine use of emollient (moisturizer that softens skin).

Here are some cautions. The white sunlight is a mixture of 7 colors. Violet, indigo, blue, green, yellow, orange and red. When we talk about the healing factor to be the sun rays, let us not ignore the different colours in solar spectrum and discuss their importance too. Undue exposure to sun should be avoided.

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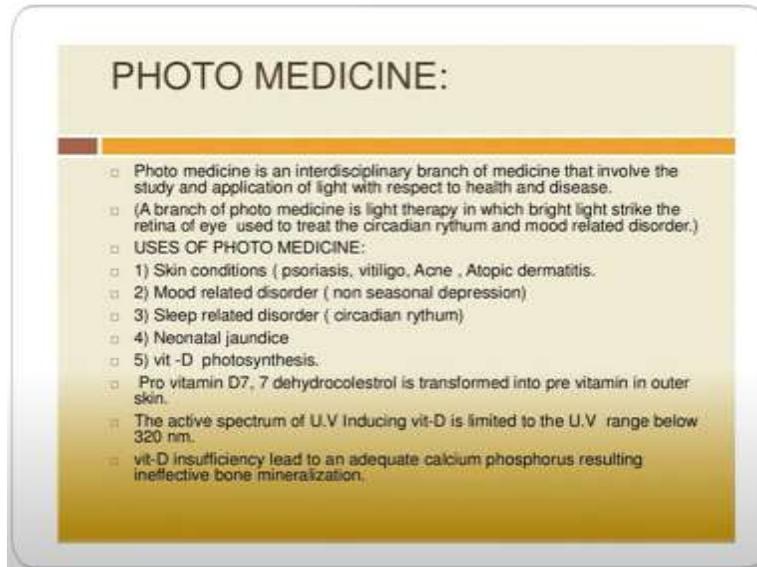
CAUTION

The same invisible ultraviolet radiation that treats psoriasis is also responsible for many undesirable skin changes as well. These same wavelengths of light can also cause skin aging, wrinkling, tanning, burning and skin cancer. Please do more research and talk with your doctor before practicing Heliotherapy.

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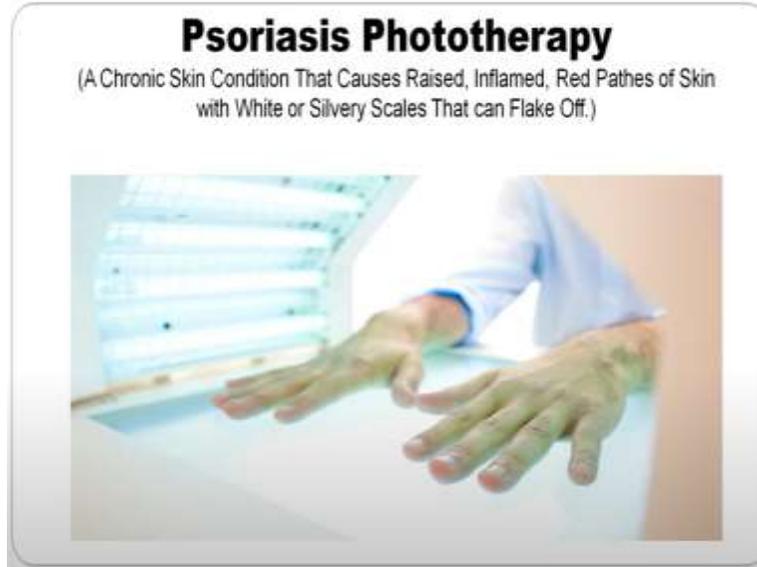


Let us understand some more important part of the heliotherapy is photo medicine. Photo medicine is an interdisciplinary branch of medicine that involves the study and application of light with respect to health and disease. A branch of photo medicine is light therapy in which bright light strike the retina of eye using to treat the circadian rhythm and mood related disorder.

Uses of photo medicine. Skin conditions psoriasis, vitiligo, acne, atopic dermatitis. Mood related disorder - non seasonal depression. Sleep related disorder - circadian rhythm. Neonatal jaundice, vitamin D photosynthesis, provitamin D7, 7-dehydrocholesterol is transformed into pre-vitamin in outer skin. The active spectrum of UV including vitamin D is limited to UV range below 320 nanometer.

Vitamin D insufficiency lead to an adequate calcium phosphorus resulting in effective bone mineralization.

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This is the picture of psoriasis and the person who is treating through the LED lights or lights or sunbeam therapies, artificial sunbeam therapies you can say, the chronic skin condition that causes raised, inflamed, red patches of skin and white or silvery scales that can flake off. You can understand very well the sunbeam therapy, heliotherapy and in future I hope you can understand very well and go through these slides again and again and heal your life with sun. Thank you.