

RESEARCH DOCUMENT

Van Gogh National Park and mental health

Pauline Lightburne

Table of contents

Introduction.....	5
Van Gogh's mental health.....	7-27
The history of light therapy.....	29-47
Light therapy in VGNP.....	48-71
Conclusion.....	73
Sources.....	75-76

Introduction

Vincent Van Gogh was a troubled soul who's mental illness both disabled his productivity and greatly abled his creativity. His will to create beautiful things for the people kept him driven and sane. Unfortunately, his time couldn't provide him with the medical help he needed and his illness eventually cut his extraordinary life short. Van Gogh National Park is to me a place that needs to provide awareness and solution on mental health issues in memory of Van Gogh. Van Gogh's paintings show that he had a unique way of seeing and representing light and colors. These lights changed throughout his life according to his mood changes and following the places where he lived. Without light, there is no art, and without light, there is no life. However there isn't enough light in VGNP. This research goes through Vincent's life and mental struggles and explores the powers of light as a solution to improve mental health in VGNP.

Vincent Van Gogh's mental health

Vincent van Gogh (1853–1890) was a genius with troubled soul, who's mental illness both disabled his productivity and greatly abled his creativity. His will to create beautiful things for the people kept him driven and sane. His brother, Theo, always believed in his talent and supported him both financially and emotionally. Vincent suffered from several depressive episodes during his life and started experiencing recurrent psychotic episodes two years before he committed suicide, at the age of 37. Over 150 physicians have attempted to diagnose his illness despite the limited data we have on his pathological states. Henri Gastaut, a French neurologist and epileptologist, published in 1956 a study of Vincent's illness in the light of the new understandings of psychomotor epilepsy. His conclusions were that during the last two years of his life, the artist suffered from temporal lobe epilepsy aggravated by his use of absinthe. Henri Gastaut confirmed the diagnosis originally made by the French physicians who had treated van Gogh. However, there is another side to Van Gogh's illness that cannot be explained with the epilepsy diagnosis. Van Gogh's letters suggest that he suffered two distinct depression episodes and has shown signs of bipolar disorder. His episodes of depression were followed by periods of restlessness and enthusiasm, first as an overly eloquent evangelist and then as an extroverted artist in Paris. This paper is an attempt at retracing the development of Van Gogh's mental illness throughout his life and understanding it was prematurely cut short.

Vincent was born on March 30, 1853 at Groot-zundert. His brother Theo, who was devoted to him his whole life was four years younger than him.

One of his sister spent several years in a mental hospital, probably for schizophrenia. There isn't any other known history of mental illness or epilepsy in the family.

In 1874 the daughter of his lodgers, Ursula Loyer, rejected his marriage proposal and this seems to have triggered his first depressive episode. He went back to Helwirt, his father's parish. He worked in London and in Paris *"demoralized, ill at ease and depressed"*, and wrote in April 1875 *"peace of mind returned to me"*.

Vincent decided to become a painter but in order to earn his living he worked in a small school in Ramsgate. He then felt drawn to religion and became a preacher at Isleworth. He was overly eloquent which got him dismissed. He returned to his home and studied to become a pastor. Vincent's letters show that he was highly intelligent. He spoke and wrote four languages fluently. Yet in July 1878, he abandoned his studies and started talking about suicide.

His mood improved in November 1878 as he became a preacher in a poor mining district of the Borinage¹. He drew many drawings of the peasant life that surrounded him. Moved by the state of the miners, he lived like them, gave everything away and presented himself unwashed and unkempt. The church saw him as an embarrassment and dismissed him. He was depressed the year that

1. Drawings of the Borinage, see page 20-21

followed this. He wandered around the country and he went back to the Borinage to draw. His brother Theo decided that he would devote himself to him and provide for him.

He attempted to join the Brussels Art School but found the courses sterile and went back to Etten.

In 1882, he devoted himself to a prostitute and her children but he abandoned them in September 1883 when he became depressed, and wandered through the country. His devotion to the prostitute could be interpreted as a hypomanic state where he idealized the woman and hoped to be her salvation, followed by a depressive state weighed by feelings of guilt and hopelessness when he abandoned her and her children. From March 1886 to February 1888 he lived in Paris with his brother Theo where he formed friendships with the group of modern painters that included Toulouse Lautrec and Gauguin. His mood fluctuated as well as his artistic productivity and some of his paintings showed a new use of colour.

Paris, letter from Theo to their youngest sister:

"It seems as if he were two persons: one, marvelously gifted, tender and refined, the other, egotistic and hard hearted. They present themselves in turns, so that one hears him talk first in one way, then in the other, and always with arguments on both sides.

It is a pity that he is his own enemy, for he makes life hard not only for others but also for himself"

Vincent moved to Arles in early 1888 in search of a European Landscape resembling the Japanese color prints he was attracted to. There, his illness evolved and reached psychotic dimensions for the first time before the end of 1888.

He wrote after his arrival:

"I was surely about to suffer a stroke when I left Paris. It affected me quite a bit when I had stopped drinking and smoking so much, and as I began to think instead of knocking the thoughts from my head. Good heavens, what despair and how much fatigue I felt at that time".

He unfortunately soon resumed to his former habits of using absinthe and cognac. He described in a letter how he was coping with his state of heightened emotionality: he would focus entirely on his work to escape his intrusive thoughts, and *"if the storm within gets too loud, I take a glass more to stun myself"*. His mental state worsened and alternated between feverish creative activity and episodes of listlessness to the point of exhaustion. The letters he wrote after his first breakdown best document his mental states:

"I am unable to describe exactly what is the matter with me; now and then there are horrible fits of anxiety, apparently without cause, or otherwise a feeling of emptiness and fatigue in the head....and at times I have attacks of melancholy and of atrocious remorse".

"There are moments when I am twisted by enthusiasm or madness or prophecy, like a Greek oracle on the tripod. And then I have great readiness of speech".

He lived in a house place Lamartine which he called the "Yellow House" and there he painted many of his best works of harvest, sunflowers and local portraits. He wrote:

"I threw myself body and soul into my work. If the storm inside me growls too lively I drink a glass too many to stun myself. This is madness when I consider what it ought to be."

He went through periods where he barely fed himself and lived on bread and great amounts of coffee. In the autumn 1888, he invited Gauguin to join him to make the Yellow House a center for painters. On Christmas, according to Gauguin, the two friends got into a fight and Vincent threatened Gauguin with a razor. Gauguin left to a hotel and Vincent cut off a part of his ear, parceled it up and brought it to Rachel, a prostitute at a brothel in Arles.

The next day, Vincent was taken to the General Hospital where he was under the observation of Dr Rey, a young intern who diagnosed him with a "sort" of epilepsy and prescribed potassium bromide. Vincent was apparently in a state of confusion and excitement and had sight and hearing hallucinations.

About three weeks after admission, he painted *Self-Portrait with Bandaged Ear and Pipe*, which shows him in serene composure. It was one of the 33 self-portraits he produced between 1885 and 1890, the majority in Paris and the last two at St Remy Asylum. He mostly painted himself with a questioning eye and he seems to seek in himself reassurance². This uneasiness appears in all his self-portraits except in *Self-Portrait with Bandaged Ear and Pipe*, in which he appears calm and relieved as depressed people do after a suicide attempt. During recovery, he described his own mental state in letters to Theo and his sister Wilhelmina:

"The intolerable hallucinations have ceased, in fact have diminished to a simple nightmare, as a result of taking potassium bromide, I believe."

"I am rather well just now, except for a certain undercurrent of vague sadness difficult to explain."

"While I am absolutely calm at the present moment, I may easily relapse into a state of overexcitement on account of fresh mental emotion."

2. Vincent Van Gogh's self portraits, See page 22-23

He also noted:

"three fainting fits without any plausible reason, and without retaining the slightest remembrance of what I felt".

He was discharged on January 7th but seemed to be in a hypomanic state until the end of the month. He was readmitted to the hospital on February 8th in a confusion state thinking that he had been poisoned. His state improved on February 20th as he was able to write to Theo, but he became confused again on the 28th and was put back in a cell. On March 19th, he seemed better and wrote to Theo, but he relapsed after drinking turpentine while being out in the city with the painter Signac on the 23rd. Signac described van Gogh as being entirely rational until after suffering a minor attack, at which point he put a bottle of turpentine to his mouth and had to be brought back to the hospital. He was calm again on March 27th, and judged cured by his physician.

It seems that all these relapse episodes occurred after he left the hospital and drank absinthe. He decided to enter St Remy Hospital as a voluntary patient and was given a room to himself that allowed him to paint. On July 6th, he went out and had a convulsion after drinking absinthe. He seemed to be in a state of hypomania in September as he was extremely active but was allowed to paint outside in October after he had settled.

He went to Arles on February 20, 1890, and began to drink, which led to a two-month long series of episodes of excitement with night terrors and hallucinations. In April, in a state of depression, he attempted suicide by swallowing his paints.

His mood started to improve at the end of the month and his brother arranged for him to stay at Auvers, near Paris, under the supervision of Dr Gachet who was a well-known amateur artist. He arrived there on May 21st. He visited Theo on July 6th in Paris, but his friends noticed that he was sad and seemed unsettled. On July 8th, he painted his last crowfield³ and said that it expressed "solitude and sadness". The end seemed then inevitable as the signs of depression were not recognized by the people around him. He painted immense fields of wheat under dark and stormy skies, commenting, "*It is not difficult to express here my entire sadness and extreme loneliness*". On July 14th, he watched the National Day celebrations and painted a strange picture of the town hall. It is decorated with flags but there is no sign of gay celebration as the square is empty of people. He wrote an incoherent letter to Theo that he concluded writing "*Will this misery never end?*" before he shot himself on July 27th.

When Vincent was first admitted to the hospital at Christmas 1888, Dr Felix Rey diagnosed Vincent with

"a sort of epilepsy with hallucinations and episodes of agitation and confusion provoked by alcoholic excesses." No other clinical diagnosis seems to have been made in Vincent's lifetime. The following extracts from his letters to Theo suggest that his mental illness was a manic-depressive psychosis:

July 1880:

"The traveler, after many wanderings and after being tossed on a stormy sea arrives at last at his destination. He who seemed good for nothing and incapable of performing any tasks finished by finding a place suitable for him and capable and full of activity he turns to be quite otherwise than he seemed at first sight (...) One who is inwardly tortured by a desire for action who does nothing because it is as if he were imprisoned within something (...) When sympathy returns life is born again."

1888:

"if you are healthy, you must be able under those conditions to work the whole day on a single piece of bread and still have the strength to smoke and drink your glass. You can feel the stars and the infinite above so that in spite of everything life is almost enchanting." July 1890: "I have started to work again but the brush nearly drops from my hand. Paintings represent enormous stretches of cornfield under a troubled sky and I have not hesitated to express the feeling of sadness and utter solitude."

3. *Wheatfield with Crows*, see page 24-25

Dr Rey wrote: *"Just after each crisis he had a great urge to paint and an eye very acute, and he thought he could reach heights of his art that had seemed unattainable."*

It seems that Vincent's alcohol consumption started when he arrived in Paris, where absinthe was then the favorite drink of French artists⁴. He began to drink heavily in 1886 and his portrait by Toulouse-Lautrec shows him sitting at a table with a glass of absinthe⁵. Vincent may have not been drinking more than his contemporaries but he was particularly vulnerable to the epileptogenic properties of absinthe.

The consumption of absinthe in France created a great social problem because of the eventual mental deterioration it caused. It was made from the herb *Artimesia absinthium* from which is extracted wormwood oil. Wormwood oil contains the terpene compound of thujone, a structural isomer of camphor. Thujone produces an important excitation of the autonomic nervous system, and its abuse is said to produce manic states and hallucinations. Numerous writers and painters described the effects of absinth in the nineteenth century. Among them, Alfred de Musset wrote his poem "Ode to absinthe".

4. Absinthe consumption in the 19th century Parisian art scene , see page 26

5. *Vincent van gogh*, Henri de Toulouse-Lautrec, see page 27

*Hello, green liqueur, Nemesis of the orgy !
Very often, by passing on my reddened lip,
you gave me the drunkenness and the forgetting of my troubles;
I saw more than one giant going pale under your embrace !
Bring some absinthe ;
That we pour it in steams !
It is finally time to thank you :
The one who does not know all the poetry
That a crystal flask can carry in its womb,
That one has never been standing near a round table,
He will not support without his heart falling apart
There is no worth a thing on the earth
Of the absinthé artist the radiant sleep !*

Ode to absinthe – Alfred de Musset

In 1892, France prohibited the sale of absinthe, and a substitute was introduced and proscribed altogether in 1914 but in 1922 it was licensed for sale containing 40% of alcohol and 2% of essence after extraction of thujone. There is clear evidence that Vincent took increasing quantities of absinth in the last eighteen months of his life and that it triggered episodes of hallucination resembling the ones described by writers as occurring in absinth drinkers.

Vincent felt the need to exteriorize his intense feelings with words his whole life and turned to painting to express them.

He produced most of his work during the last seven years of his life and reached a technical level sufficient to express his feelings in the last four years of his life. His paintings in Arles in 1888-9 show a certain agitation with winding brushstrokes that are suggestive of toxemia, brain disturbances or supercharged emotional excitement. The tones become darker when he is in a depressed state.

"We must all share in diseases. It is hardly fair to be free of them if one has lived for years in good health. I would not exactly have chosen madness if I had my choice, but once one has had a disease like that one cannot catch it again. Perhaps it is a consolation that in spite of it I can continue to paint. Although I think squarely of accepting the role of an insane person, I do not feel that I have the strength for such a role."

An analysis of van Gogh's illness and emotionality must not obscure the fact that the great artist also had great strengths. Apart from distinct episodes of madness when he used absinthe and had seizures, he maintained a remarkable degree of lucidity during his stormy life, as is well documented in his letters.

1. Drawings of the Borinage



Vincent Van Gogh, *Coalmine in the Borinage*, 1879



Vincent Van Gogh, *The Bearers of the Burden*, 1881

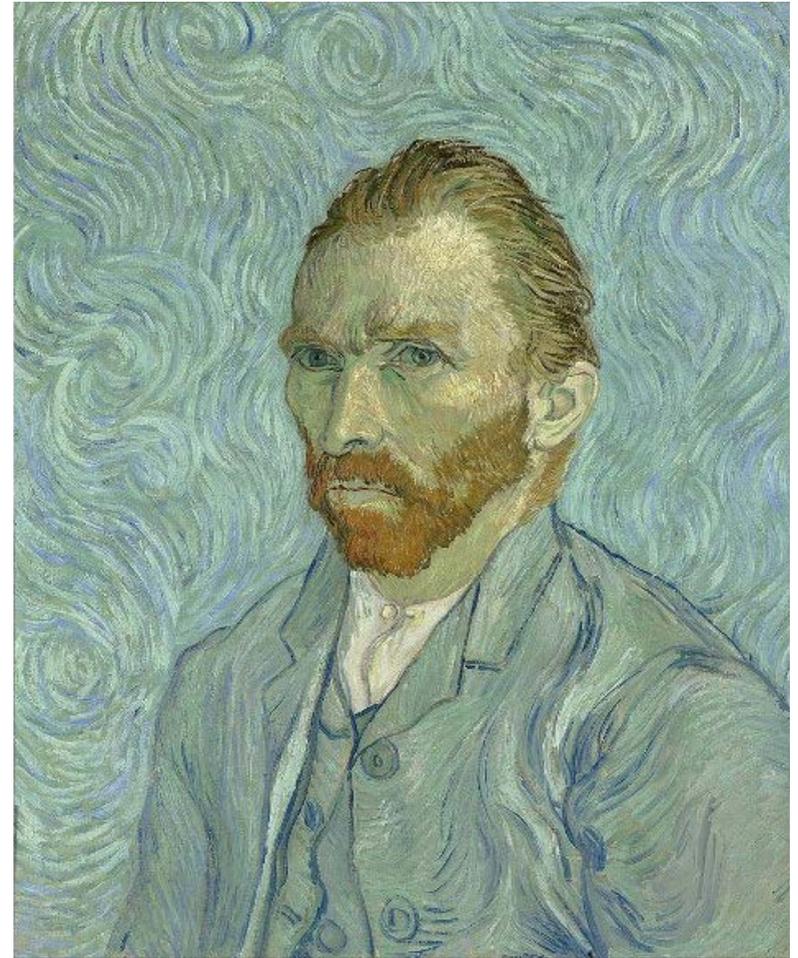


Vincent Van Gogh, *Miner's wives carrying sacks of coal*, 1881-82

2. Vincent Van Gogh's self portraits



Vincent Van Gogh, *Self-Portrait with Bandaged Ear and Pipe*, 1889



Vincent Van Gogh, *Self-Portrait*, 1889

Vincent sent this portrait to Theo, with the following message: "You will need to study [the picture] for a time. I hope you will notice that my facial expressions have become much calmer, although my eyes have the same insecure look as before, or so it appears to me."



3. Vincent Van Gogh, *Wheatfield with Crows*, 1890

4. Absinthe consumption in the 19th century Parisian art scene



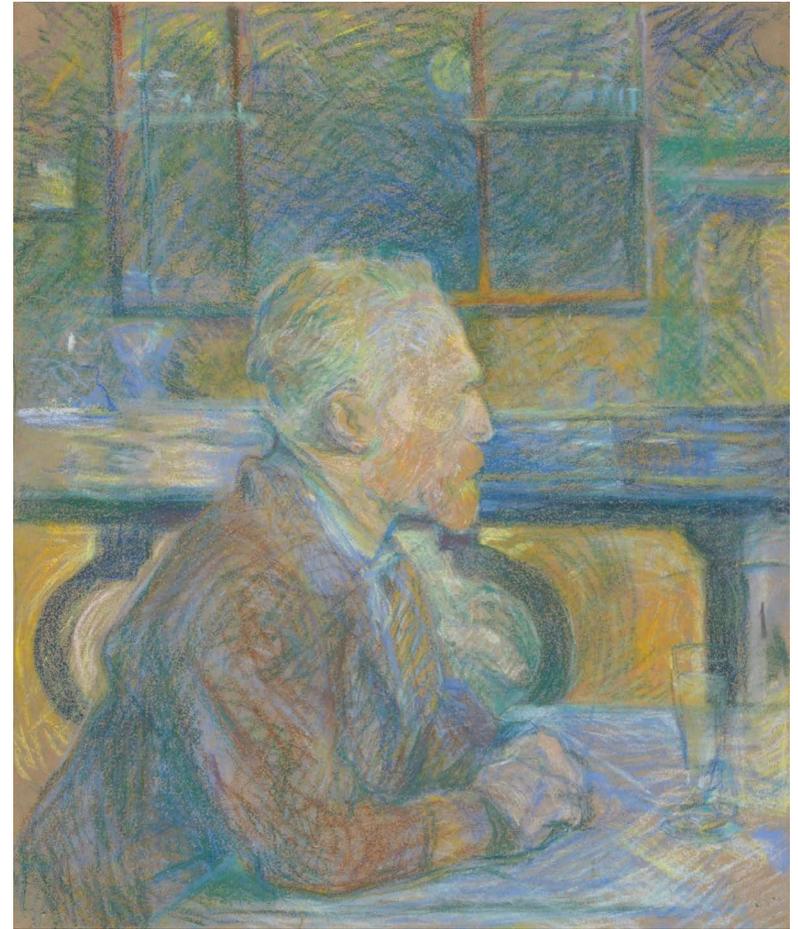
Van Gogh, *Cafe Table with Absinthe*, 1887



Art Nouveau absinthe poster



Edgar Degas, *L'Absinthe*, 1876



5. Henri de Toulouse-Lautrec, *Vincent Van Gogh*, 1887

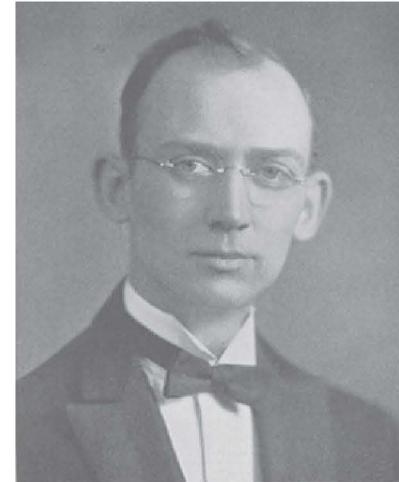
The history of light therapy

The healing powers of the light and the sun were recognized by all the major civilisations. The Ancient Greeks were the first to document the theory and the practice of solar therapy, and evidence shows that the Assyrians, Babylonians and Egyptians all practiced therapeutic sunbathing. Heliopolis (which means 'City of the Sun' in Greek) was known for its healing temples and light rooms. The windows were draped with specially dyed textiles, each of which was said to have various healing properties. The Egyptians practiced chromotherapy (colour therapy) in temples dedicated to color healing. The sunlight was filtered with colored gems, such as rubies and sapphires in rooms designed to disseminate the color spectrum. The patients were "color diagnosed" and then bathed in the light of the color they needed. In these ancient cultures, color, as a manifestation of light, had both a medicinal and a divine meaning.

The pages that follow depict the history of light therapy and the evolution of its uses in medicine from the 1870s to our days. It focuses on the treatment of both physical and mental conditions.



Dinshah Ghadiali's Spectro-Chrome, 1920



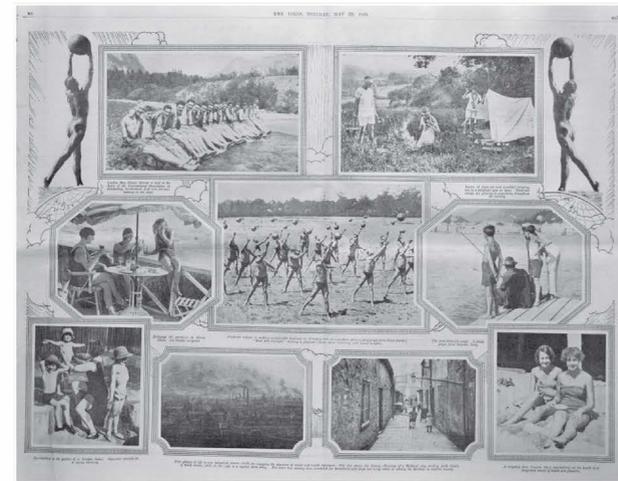
1900

1920

Dinshah Ghadiali developed the Spectro-Chrome system of healing after 23 years of scientific research. It determined the relationship between colors and different parts of the body.

Dr. Kate Baldwin, Chief Surgeon at Philadelphia Woman's Hospital, used Dinshah's methods for many years and is quoted as saying "after nearly 37 years of active hospital and private practice in medicine and surgery, I can produce quicker and more accurate results with colors than with any or all other methods combined – and with less strain on the patient".

Harry Riley Spitler developed the principles of Syntonics (from 'syntony' – to bring into balance) in which light is used to balance the sympathetic and parasympathetic nervous systems. His College of Syntonic Optometry is now at the forefront of developments in ocular phototherapy. Spitler is generally considered to be the father of colored light phototherapy.



Stripped to the waist and wearing goggles, children sit round a lamp having sun ray treatment while they listen to the gramophone at the East End Mission in Commercial Rd, London. 1931.

Dr. Auguste Rollier (1874-1954) established a sun-therapy (heliotherapy) clinic in Leysin in the Swiss Alps. He was probably the most famous heliotherapist of his day, and at his peak ran 36 clinics with over 1,000 beds just in Leysin. He very effectively treated all sorts of patients, particularly those with tuberculosis. Rollier found that sunbathing early in the morning, combined with a nutritious diet, produced the best effects.

In May 1928, The Times magazine published a supplement titled "Sunlight and Health" in, that included images, graphics, and ads that pictured smiling faces, tanned skins and sunbathed semi-naked bodies on beaches or under indoor shining lamps. These photographs depict bodies consuming therapeutic light – soaking up its rays – as well as the natural environments and artificial technologies that make such exposures possible. This supplement collapsed medical and popular conceptions of light therapy in the late 1920s and shows the central role of light in health, disease, pleasure and risk that are still relevant nowadays.



Stripped to the waist and wearing goggles, children sit round a lamp having sun ray treatment while they listen to the gramophone at the East End Mission in Commercial Rd, London, 1931.



group of ladies relax on the sandy floor in the solarium of the Tollend Hotel, Bournemouth, 1930.

1930

Sun-lamps (lights that mimic the color temperature of sunshine) were employed at Charing Cross Hospital in London to treat circulatory ailments, anemia, varicose veins, heart disease, and degenerative disorders.



Hollywood film star, Dorothy Sebastian (1903 - 1957) undergoing treatment for bronchial congestion with a sun-ray lamp at MGM studios. 1930.



23 year old Alma Smith, the 'cleverest soubrette' of the cast of 'Blackbirds' at the London Pavilion, receiving her daily dose of ultra violet rays from a sun machine, 1929



Light therapy's visual culture is hard to define. It is popularized with the spread of images in medical textbooks, journals, populist handbooks, illustrated newspapers, tourist postcards and avant-garde oeuvres. Light's healing powers were at once medicalised, commodified, spiritualised, sexualised, and aestheticised.



1940

Emmitt Knott developed a haemorradiation machine. He administered light to the whole body by irradiating just a small volume of blood with ultra-violet light and transfusing it back into the patient. This technique had a dramatic impact in the treatment of puerperal sepsis, peritonitis, encephalitis, polio and herpes simplex. By 1947, around 80,000 patients had been treated with success rates of 50-80%



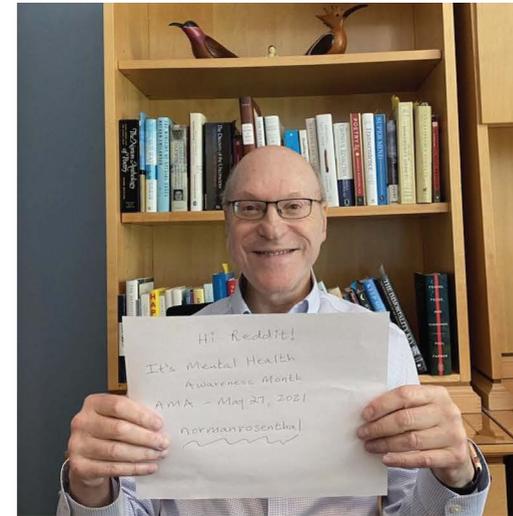
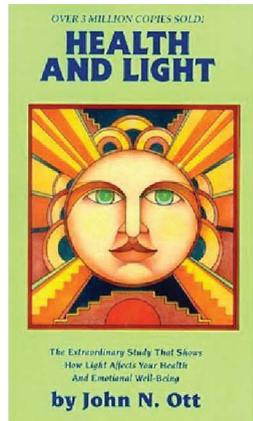
Two crew members of a British submarine spend a session under a sunlamp whilst ashore, to make up for the time they spend below the surface without being subjected to sunlight. 1940

WWII

Light therapy was used in various ways during World War II by both civilians and soldiers, as it is shown on the pictures above. In London, children were given light therapy with sun-ray lamps to help make up the deficiency in sunlight and the lack of certain items of food, such as fruit, during the winter months.



An RAF Flying Officer receiving Sun-Ray and electrical treatment after suffering a broken back. 1941



1970

John Ott invented the term "mal-illumination," implying that people may be subjecting themselves to the condition by spending so much time in front of artificial lights (a condition similar to malnutrition, caused by poor, unbalanced diets). He helped develop the first 'full-spectrum' fluorescent tube and studied the effects of 'full-spectrum' light on school children in the early 1970s. Behaviour and academic performance improved remarkably.

1980

Fritz Hollwich discovered that people working under artificial 'cool-white' fluorescent tubes had significantly increased levels of stress hormones (ACTH & cortisol). 'cool-white' fluorescent tubes are now banned in German medical establishments.

Norman Rosenthal, a South African doctor practicing in Washington published in 1984 with the help of his group of researchers at the National Institute of Mental Health in the US the first scientific description of the Seasonal Affective Disorder, or SAD. Rosenthal presented the first case series describing the antidepressant effect of light on these patients suffering from SAD. The first devices used in the eighties were large boxes equipped with powerful light bulbs.



LED-Based Lighting Treatment for Wound Healing

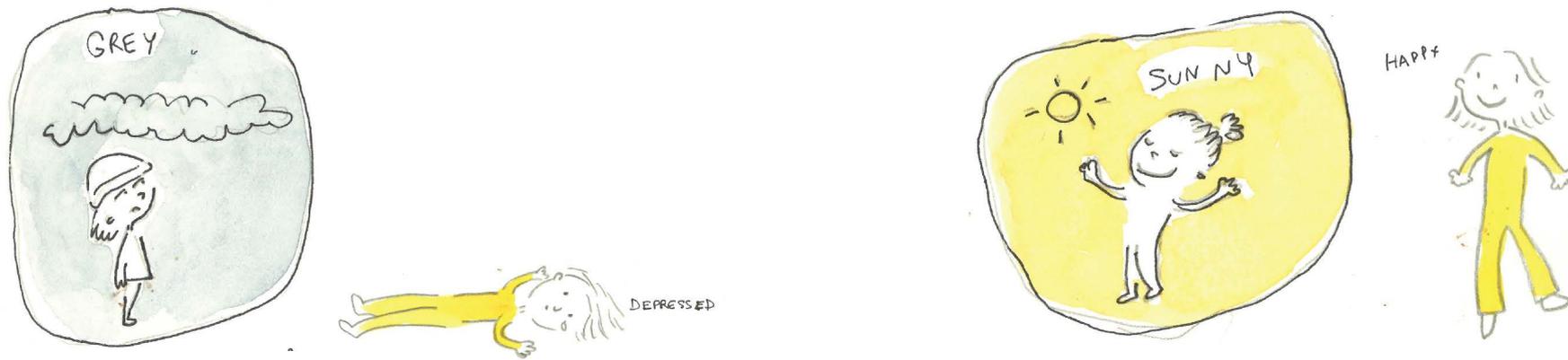


Blood irradiation therapy

1990

NASA applied the use of light emitting diodes (LED)-based light therapy units for healing wounds in astronauts (wounds take longer to heal in zero-gravity conditions).

Professor Kira Samoilova, a cell biologist in St. Petersburg, developed the concept of haemo-irradiation with her colleagues at the Russian National Academy of Sciences. They extracted a small quantity of blood, treated it with either ultra-violet or laser light for about 10-15 minutes and re-transfused it into the patient. The reported results were astonishing for a wide range of conditions including, suppurative – inflammatory conditions, infections, cardiovascular, auto-immune, dermatologic and oncologic diseases, as well as ulcers, burns, traumas, intoxications, etc. Their research opened the way for experimentations with the detoxification of substance addicts and other conditions, such as viral pneumonia.



2000

Dr. Barbara Parry, UCSD publishes in 1996 several studies showing light to be effective at regulating irregular menstrual cycles, treating PMS and PMDD as well as prenatal and postpartum depression. Light is also used in studying perimenopausal depression and menopausal sleep disorders.

Dr. Daniel Kripke at UCSD demonstrates that light therapy is as effective as medication in treating non-seasonal, major depression. Light acts within 1 week as opposed to several weeks for SSRI's.

The Journal "The Lancet", shows that bright light significantly increased serotonin levels, while dark or cloudy days caused serotonin to plummet. Serotonin is thought to be a major factor in depression.

Researchers at UCSD confirm Dr. Neumeister's discovery (1996), using sleep deprivation and bright light to treat depression. Sleep deprivation (staying awake all night) is modified to 'wake therapy,' as patients are allowed to sleep until 2:00 am.

Light therapy in VGNP

Interview with Jasmijn Van Kooten who works at GGzE for the Licht Café in Eindhoven.
Eindhoven, June 6th

Pauline Lightburne (P.L)

When did psychiatry start experimenting with light therapy?

Jasmijn Van Kooten (J.V.K)

We started experimenting a few years ago, and then light therapy was not so normal to give as a treatment. But a year and a half ago, the light cafe started, like it is now. Before this year, light therapy was not prescribed for people with bipolar disorder, but now it is in Holland because of what we did here.

P.L

So you studied how people with bipolar disorder would react to light therapy?

J.V.K

So we give light therapy to people who have depression, and also to people who are depressed and bipolar, and sometimes people get manic. And that's not what we want. So it's a very fine line. So when they are depressed, we give light therapy. But when they are better, we have to stop before they get manic. And that's why we do it here. In September, we have the second light cafe in Valkenswaard. It's a village a few kilometers from Eindhoven. And light therapy started in Sweden, in the 70s. They experimented with light therapy because

they're they they have a lack of light and a lot of depression, alcohol abuse because of depression. So they started experimenting with light in the 70s. Oh nice, I'd like to find pictures of that.

P.L

How does it actually work? Because you mentioned it is like vitamin C, right?

J.V.K

No, no, no. I said it gives your vitamin C shot. We would like people to see light therapy as your vitamin C shot. So when you feel a little bit sombre, less energetic and depressed, please get some light therapy. Like when you feel a little bit cold and lack energy. Sometimes people get vitamin C. So we invite people to please be normal

about it and just take it as a little bit of self care. But how does it work? That 10,000 Lux that you get for half an hour, it comes in the eyes and it will activate your brain. In your brain there is the hypophyses that communicates with your brain and it will give it a boost and it will start up all the communication between neurons. So it will start your brain and it will tell your brain that it is day. So your heart rate will go up, your body temperature will go up and your digestive system will get started. So when you wake up, normally you have to go to the toilet and you get hungry. So you start the day. And when you start the day and you have a little bit of movement, you get in contact with people, you

feel a little bit better. You'll feel happy, happier. And when you do that a long time you reprogram yourself in your brain. And it makes you feel better, more energetic. And it helps to have a good night of sleep, the opposite in the evening, to go to bed at a good time. You need to make sure that you fall asleep at the same time everyday. So your melatonin, it's the sleep hormone, can kick in, then your biological clock will tick the right moments, then you will feel a whole lot better. And so that's how light therapy works. And when you have a little bit of exercise and your diet is okay, then you'll feel less depressed. People who don't have a good night of sleep for a long time get depressed. And when you are depressed,

most of the time your biological clock will also not be okay. Because when people are depressed, they don't eat properly, most of the times they fall asleep during the day, they don't have a lot of contact with their friends. So it's vice versa. That's how it works. Your hypophysis in the brain also takes care of all the hormones. So the light therapy will also make sure that the hormonal program will reset.

P.L

Is that why it works for PMS?

J.V.K

Yes, and people who are pregnant, 8% of the people who are pregnant are depressed to when they are pregnant. And after they give birth they

might have postpartum depression, we also treat that.

P.L

How much sun would you need for 30 minutes of light therapy?

J.V.K

Well, you have to get the boost before 11 o'clock in the morning, because we want to make your biological clock tick at the right time. And if you want to have that boost in the morning in Holland... I don't know how, if you are born in Mexico or in Marseille, maybe you can get your boost in the morning when you go out in the summer, and maybe go by bike to work, then you will get your light boost. In Holland it's very difficult. Yeah. But when you're not

depressed, it's okay. But when your mood is not okay, and you don't get enough sunlight, then it's very difficult to feel good. Actually, in Holland, everyone could benefit from a light boost in the morning. Anyone who is a little bit depressed, or even to have more energy. But at the light cafe we treat depression. But for everybody who feels a little bit tired, lacking energy, they can get a Philips lamp or your booth in a station Hall.

P.L

I think you already answered this question a bit, who is like therapy for?

J.V.K

We give light therapy to everybody who is in care of the GGze or comes with a prescription from their

physician. And we don't give therapy to people who are manic or suicidal or have physical complaints when you have a heart problem. People who have bad sleep can also benefit from light therapy, but we treat people who are depressed because that's our job. We are trained to give care to people who are depressed.

You have sleep centres who treat people who have bad nights of sleep. That's not our job, but they can benefit from light therapy.

P.L

Do you think that people in Eindhoven need light therapy more than let's say people in Spain or Mexico?

J.V.K

There is a study that people who live in the coffee belt are not as

depressed as in the western countries because of the light. But the light gives a good boost, and when you live by nature, you wake up with the light and you go to sleep when it's dark. You live by the biological clock, and it's okay for you. So people in Eindhoven need it more because there's not as much light. And in Norway, they need it even more.

P.L

Do you have a lot of expats from sunny places coming to the light cafe?

J.V.K

Yes, we do. Yes. And the biggest group we see in the Light Café are students at the moment, due to Corona.

We do have a lot of expats, but more because of social problems such as isolation

rather than the problems of lights.
Because I guess that if you lived in a country where it's very sunny, and then you move here, it can, it can have an effect.
It can have an effect, yes. But as long as I've been here, we didn't have a lot of people who recently moved from sunny places to Eindhoven. Who does?
-we laughed-

J.V.K
They do. The effects are not so good. And we are experimenting at this moment with - no it's not an experiment but - people who have to stay in the hospital who stay in rooms that are on the sunny side of the building have a shorter stay in the hospital than people who stay on the shadow side.

P.L
Is psychiatry experimenting with other kinds of light therapy?

P.L
So we need very narrow hospitals.

J.V.K
Yes, we are experimenting with the blue glasses. Did you see these ones?

J.V.K
Yes, or hospitals made of glass.
But we are not experimenting a lot here at this time, now we are collecting a lot of data to tell the world that it's really working. That's what we do now. It's a research for a one and a half years to

P.L
I think Yeah. They look funny.

see how people react on it. Because when people can have light therapy, they don't have to take medication. And when you get depressed in fall and winter, you can come back to two or three times a year for light therapy. That's so much better than taking medication for all year long or get depressed for half year every year. So we want to tell the whole world about it.

people with abuse of alcohol and drugs. So yeah, there's a lot of experiments with light therapy. Also people with autism, kids with ADHD, they think that the some people who have a ADHD don't make enough biological melatonin and when you boost it with light therapy, you can sleep better. And it has an effect on your ADHD. So there's a lot of experiments with light therapy.

P.L
Is there countries around the world that are also experimenting with like therapy?

P.L
That's interesting. Well I think that you answered all my questions. This was very helpful in my research. Thank you very much for your time!

J.V.K
Yeah, there's a lot of there's a lot of experiments with light therapy or a lot of institutes who are using light therapy. Also for people with dementia,

J.V.K
You're welcome, I'm looking forward to see your light station around Eindhoven!

The sun doesn't often peak through the clouds during the winter in Eindhoven. I grew up in Marseille and winters here feel like endless darkness.

People who live in the north tend to suffer from Seasonal Affective Disorder more than people who live in sunny places. Everyone is affected on a certain level by the lack of sun and the shorter days. Our modern lives don't allow us to live following the natural rhythm of the seasons. During winter, we have to wake up before the sun rises, and it sets before we leave work. People can go days and even weeks without seeing a ray of sun. Yet the sun is vital for our health, it is like food and water. It regulates our circadian rhythm (sleep), our digestive system, it provides us with vitamin D and much more. Light is life, most plants can't grow without it, the same goes for humans.

On Fig 1 and Fig 2, we can see that Eindhoven gets significantly fewer sunshine days than Marseille. Marseille's lowest score is around 16 days of sun for the months of November and April while Eindhoven's lowest score of 12/13 days of sun is met in February, May, June, July, August, and December.

We can see that Marseille and Eindhoven almost get the same amount of daylight hours, but the difference is in the sunshine hours, probably because Eindhoven is more cloudy than Marseille.

Sunshine days - Eindhoven, Netherlands

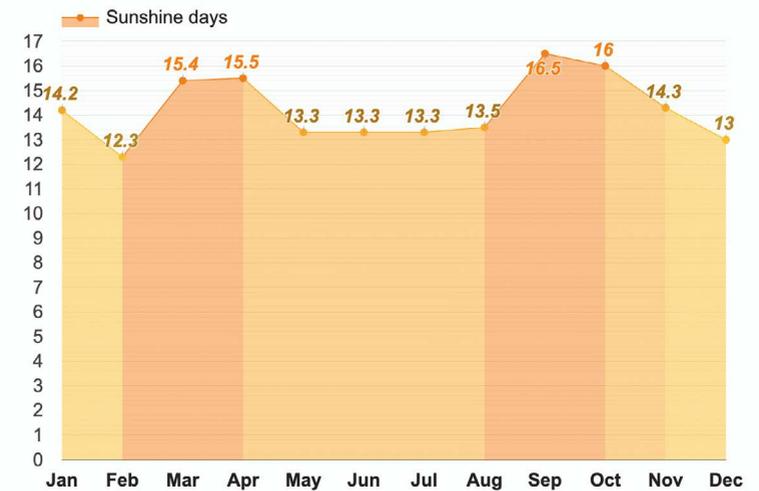


Fig 1: Sunshine days in Eindhoven, Netherlands

Sunshine days - Marseille, France

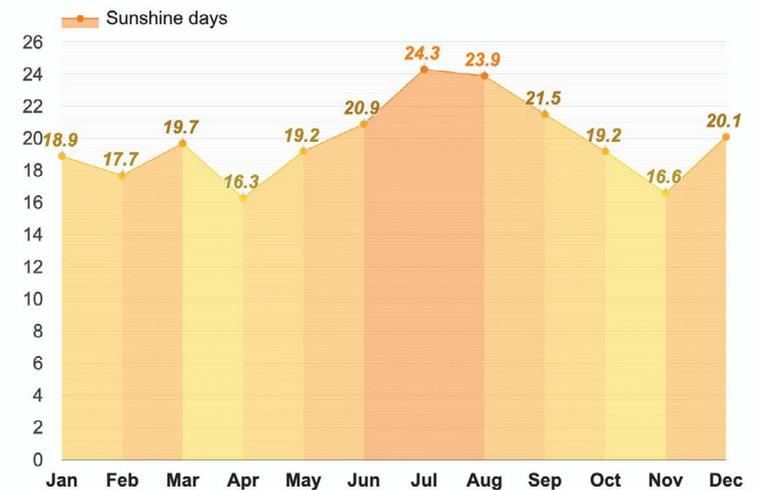


Fig 2: Sunshine days in Marseille, France

In January, people in Eindhoven only get to enjoy 3.9 hours of sun a day while in Marseille at the same time of the year, the sun is out for 6.1 hour a day in average.

The amount of sun per day increases during spring and summer in both cities but we can clearly see that Eindhoven's curve is significantly lower.

This means that people in Eindhoven are more prone to suffer from Seasonal Affective Disorder than people in Marseille. Moreover, people in Eindhoven might experience a lack of energy, difficulties to wake up in the morning and troubled sleep patterns, things that people in Marseille are less likely to suffer from.

This is why I believe the people of VGNP need a little extra light to compensate for the lack of sun.

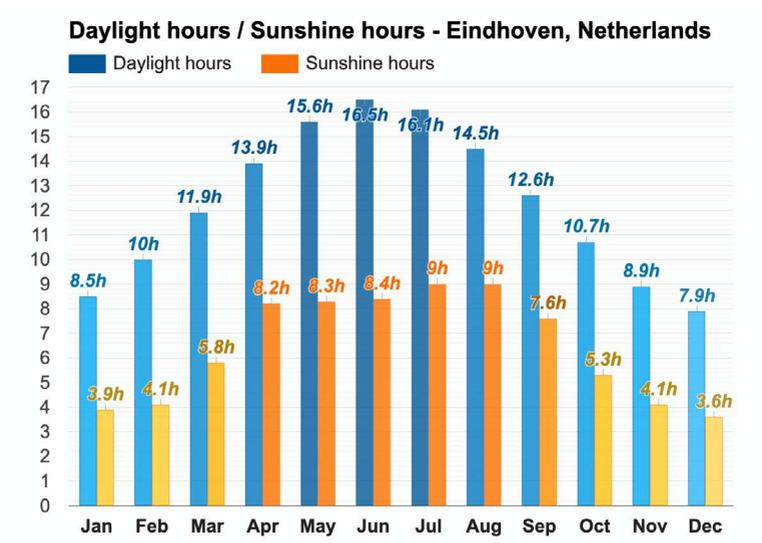


Fig 3: Daylight and sunshine hours in Eindhoven, Netherlands

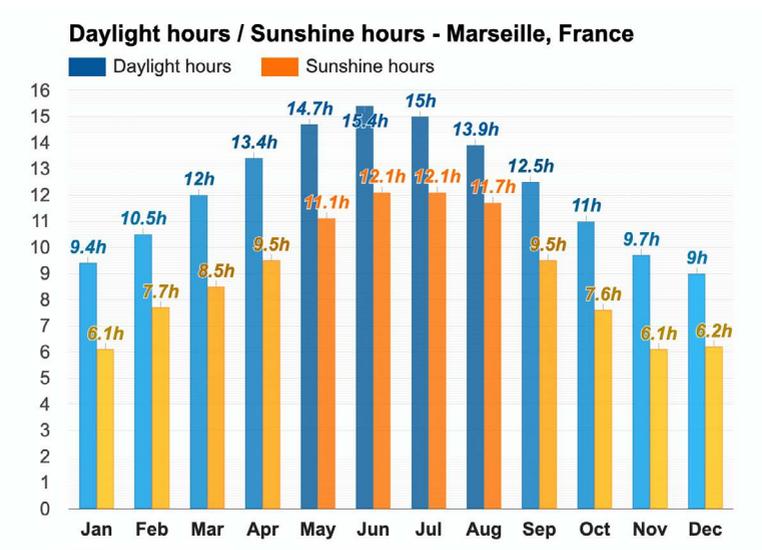
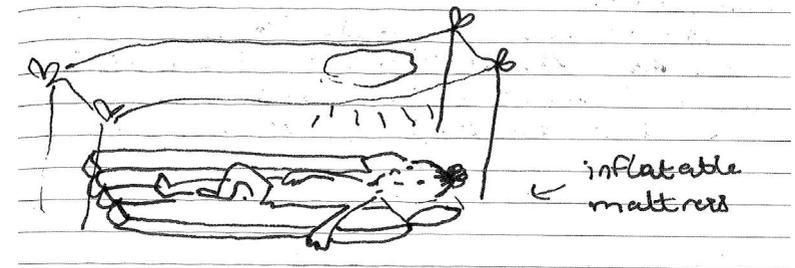
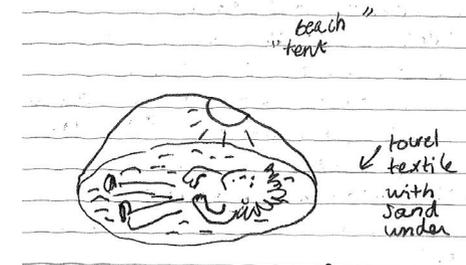
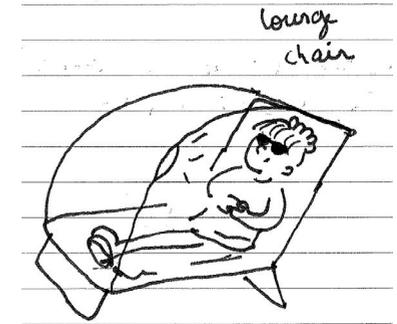


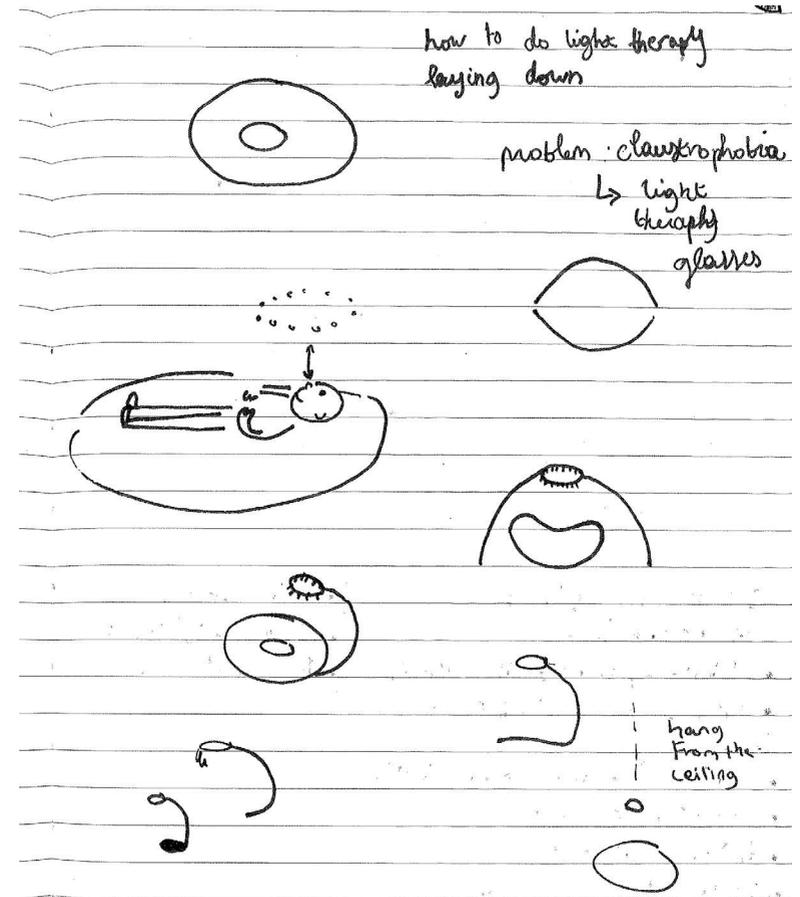
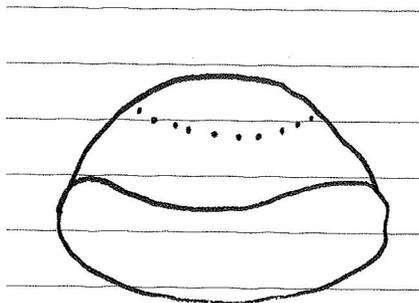
Fig 4: daylight and sunshine hours in Marseille, France

How might we recreate the feeling of being on a sunny beach?

I wanted to create an environment for light therapy that would give to the patients a moment of escapism while they soak up the therapeutic light.



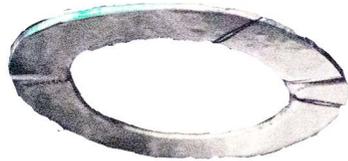
Early sketches of an immersive light therapy device that would allow the patient to lay down comfortably on a bean bag while looking through a ring light.



Ring light:

- Reminder of the shape of the sun
- Possibility to face it and look in the middle -> no need to look to the side
- Hanging from the ceiling -> distance adjustable

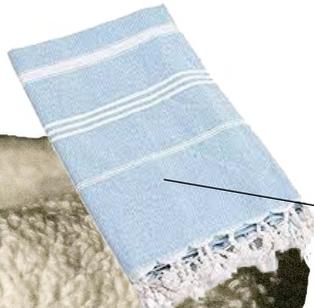
Can I build the lamp myself and make sure it reaches 10000 lux or do I have to buy a lamp? If I do have to buy a lamp, would it be ok to disassemble it to shape it into a ring? Do cheap lamps work?



Fouta (cotton towel):

- Hygienic layer between user and bean bag
- Beachy vibe
- Mediterranean culture

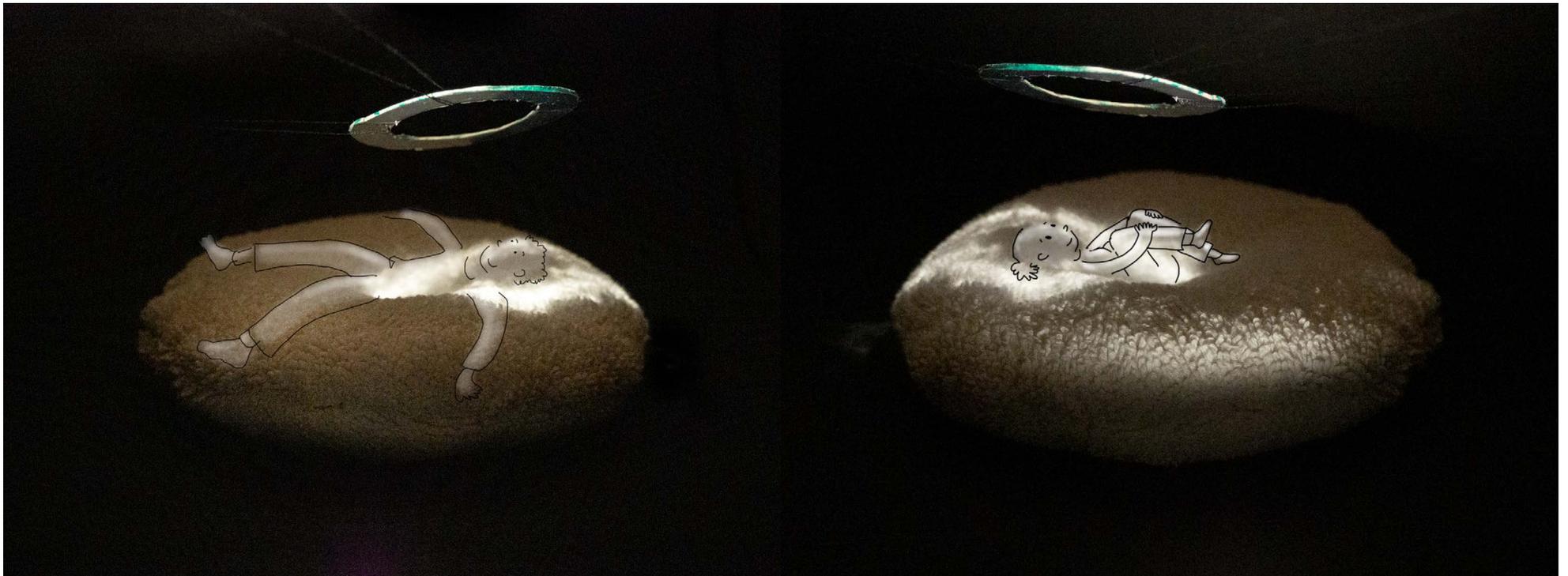
Is that enough for sanitary regulation? Each patient would be provided with a clean one



Bean bag:

- Terry/towel fabric -> feeling of being at the beach
- Comfy and comforting
- White color -> reflects light



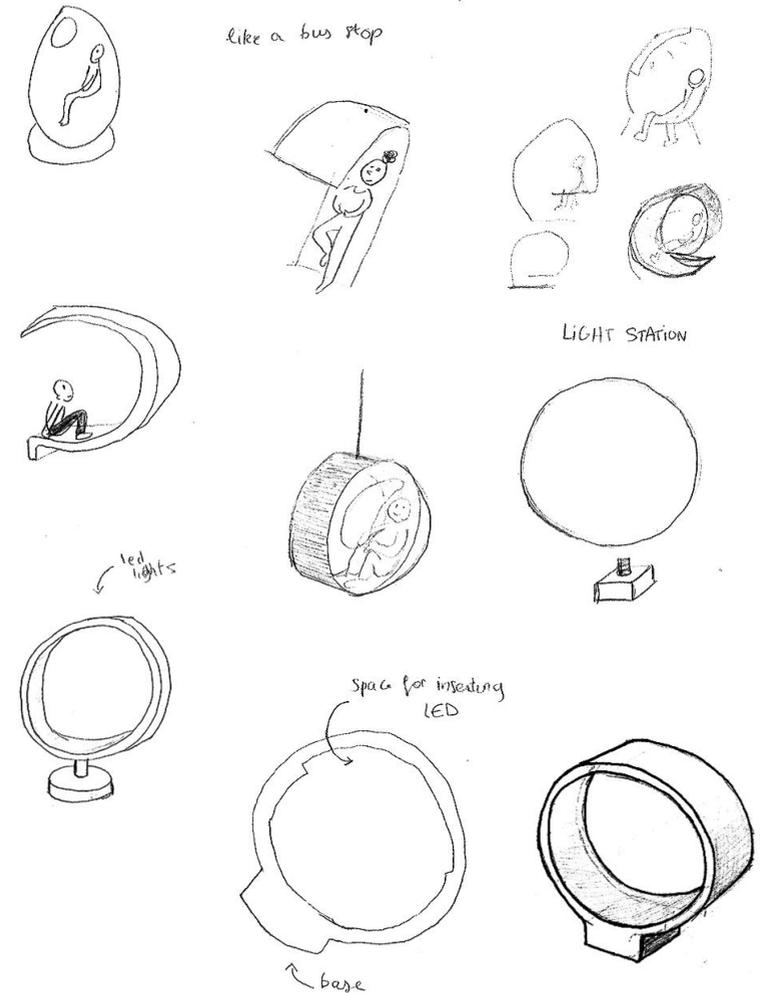


When I talked with Jasmijn Van Kooten, she mentioned that light therapy works best when the patient is active. When patients come to the light café, they have to get out of bed, have breakfast, get on their bike and once they are there, they talk to people and have something to drink. All this adds to the effects of the light. This is why having a SAD light at home is not exactly the same. The device I was trying to design was going in the opposite direction as it invited patients to relax and daydream. I had to rethink my concept to create something a little bit less...comfortable.

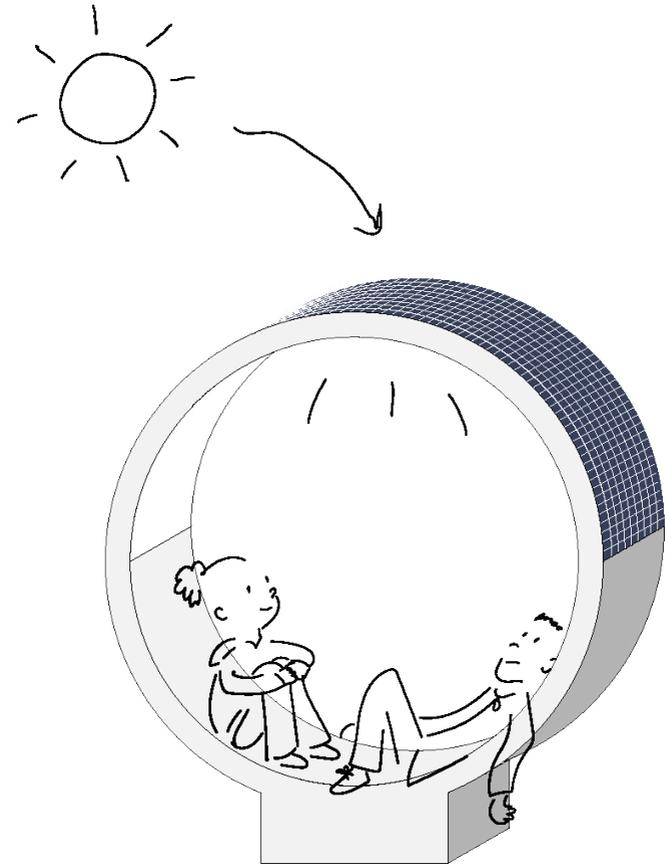
Over the course of our conversation, Jasmijn also mentioned that light therapy could be beneficial for everyone during winter. Light therapy at 10 000 lux is what people who show depressive symptoms need, but light therapy at 6000 lux can give healthy people an energy boost in the morning and help with their sleep schedule.

What if stopping for 20 min at a sun station before getting on a train became as normal as getting a cup of coffee? Jasmijn believes that light therapy needs to be normalized.

Following this talk, I started sketching "Sun Stations" for the public space of VGNP where people can get their light boost in the morning.



The Sunrise Stations are to be scattered around VGNP in spaces of flux for people to get their light boost in the morning. A solar panel placed on the top of the ring soaks up all the sun available to power the light that shines for people before they start their day. The stations can be seen as sun tanks that store and convert the natural rays we couldn't catch into artificial ones.



Conclusion

VGNP cannot use the name of Van Gogh without addressing these issues. Van Gogh died because of a lack of knowledge and care, but we can now do better and use our creativity and new technologies to protect the ones who are vulnerable.

The design of a public space has an effect on people's mental health and architects have a responsibility to not only not harm but provide solutions.

The light stations are not medical devices but if used properly, they can be very efficient in preventing Seasonal Affective Disorder or the degradation of the mood of people with other kinds of disorders due to a lack of sunlight. Light therapy has a great potential, it needs to be implemented in cities that do not get enough sunlight and its use has to be normalized.

Sources

Harvard health blog, *Seasonal affective disorder: bring on the light*, By Michael Craig Miller, M.D., Senior Editor, Mental Health Publishing, Harvard Health Publishing.

Van Gogh's Letters, Vincent Van Gogh, 1875-1890

The Illness of Vincent Van Gogh, R E Hemphill, published in 1978 in the Journal of the Royal Society of Medicine.

The American Journal of Psychiatry, *The Illness of Vincent van Gogh*, Dietrich Blumer, M.D., April 2002.

The Color of Truth - Kate Baldwin, M.D., wrf.org

Light Therapy in Mood Disorders: A Brief History with Physiological Insights, Jérémy Choukroun, Pierre Alexis Geoffroy, published in www.chronobiologyinmedicine.org

Therapy with light, A practitioner's Guide, Adolf Deppe

<https://rarehistoricalphotos.com/history-of-light-therapy-1900-1950/>

<https://northernlighttechnologies.com/wp-content/uploads/2012/11/History-of-Light-Therapy1.pdf>

Bustle, *This Is How Cold Weather Affects Anxiety & Other Mental Health Issues*, By Kyli Rodriguez-Cayro, November 8, 2017.

Cured by colour, Christopher Turner, 1st May 2005

Soaking Up the Rays, Light Therapy and Visual Culture in Britain, c. 1890–1940, Tania Anne Woloshyn.

Rays of hope: light therapy through the ages,
By Leah Samuel August 3, 2017.

Light therapy lamps can ease seasonal depression. Here's what you need to know, By
Allyson Chiu and Lizzy Raben, November 18, 2020.

Light treatment of mood disorders, Barbara L Parry, University of California, San Diego, Eva Maurer, December 2003.

<https://litlighttherapy.com/about/history/>

<https://www.swissinfo.ch/eng/alpine-goodness-gives-clean-bill-of-health/3721448>

<https://www.bioptron.com/Professionals/Doctors-Corner/18-Years-Of-Intensive-Study-Into-Bioptron.aspx>

