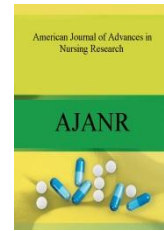




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### LIGHT THERAPY IN SEASONAL AFFECTIVE DISORDER

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#### ABSTRACT

Seasonal affective disorder (SAD) is a type of depression very much common during winter due to lacking of light. Light therapy is more effective when it's used with other therapeutic measures. There are so many options are available for light therapy e.g. light boxes, dawn simulator, phototherapy boxes etc. light therapy exert it more effects if it used in morning 30 to 60 minutes after waking. Many studies suggest that light therapy is effective in treating seasonal depression by balance sleep wake cycle.

#### INTRODUCTION

Light therapy or phototherapy, classically referred to as heliotherapy consists of exposure to daylight or to specific wavelengths of light using polychromatic polarized light, lasers, light emitting diodes, fluorescent lamps, or very bright, full spectrum light. The light is administered for a prescribed amount of time and, in some cases, at a specific time of day [1].

#### How It Works

If lack of sunlight causes or contributes to seasonal affective disorder, then getting artificial light may reverse it. Bright light works by stimulating cells in the retina that connect to the hypothalamus, a part of the brain that helps control circadian rhythms. Activating the hypothalamus at a certain time every day can restore a normal circadian rhythm and thus banish seasonal symptoms [2].

#### Best time for light therapy

Light therapy is typically best used early in the

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morning within the first 30-60 minutes after waking. Most individuals suffering from seasonal affective disorder also experience sleep phase disorders and have a difficult time waking in the morning. The use of light therapy upon waking in the morning helps to regulate circadian rhythms and melatonin/serotonin levels believed to be responsible for seasonal disorders. Avoid exposure to bright light and light therapy late in the day and evenings to prevent difficulties in going to sleep at night

#### Length for light therapy

- With the most efficient lights (e.g. powerful SAD light boxes designed to provide 10,000 lux at arm's length) only need around 30 minutes or less each day. LED devices with blue-enriched white light are also quick to use.
- Mid-power lights (around 5000 lux at arm's length) take around 1 hour and appeal to a wide range of users.
- If person can spend longer in front of a light box (at desk) or can dip in and out throughout the day, the lowest power 2500 lux lights typically take 2 hours and are a very economic alternative.
- If symptoms have improved, then gradually cut down see if notice any difference.



## Types of Light Therapy

### Dawn Simulators

Mimic the gradual rising of the sun. There are two kind of dawn simulator first which simulate a natural springtime dawn & second which simulate sigmoid shaped dawn which last for half an hour to two hour. By dawn simulator person can sleep through the dawn and wake up in the simulated sunrise.

### Light Boxes

Are flat screens that produce full-spectrum fluorescent light of 10,000 lux. Its recommended to use the light boxes at same time each day for 30 to 60 minutes

### Natural Spectrum Light Bulbs

Provide the spectrum of natural daylight and can easily be used as lamps of desk and floor with an intensity of at least 10,000 lux. They reportedly help to adjust circadian rhythm and elevate mood.

### Bluewave Lights

Studies have proven that bluewave light, is superior to other kinds of light in maintaining circadian rhythms, researchers of Harvard compared effect of exposure to blue light and bright green light for six and half hours. They found that blue light is twice effective than bright green light.

### Bright Light Sun Visors

These can be worn as hat and functions as a personal light source, But due to the close proximity to eyes physician less likely to recommend it and it should be use with caution.

### A Light on a Timer

Can be use for specific time period with timer facility, person can activate it according to choice i.e. for morning, evening, once in a week, weekend etc [3].

## Procedure for Light Therapy

Start light therapy as soon as possible after awakening in the morning & avoid stare on light source. During initial sessions there should be less intensity of light and time duration should be more, intensity of light should be increased gradually. There should be approximately 40 inches distance from the light and gradually move closer by week approximately 18 inches, maintain comfortable position and eyes should be open & avoid sleep during the session of light therapy to attain maximum result [4].

## Side Effects

People who have sensitive eyes or skin should not use light therapy without consulting a doctor. There are no reported harmful effects on the eyes with light therapy as described, but the long-term effects are under study. In beginning people may experience headache, nausea, or eye strain when using the lights these symptoms subside in few days, if do not get subside then reduce the exposure time length to light or maintain some more distance from light therapy source [5].

## CONCLUSION

Light therapy relieves suicidal ideation in patients with SAD consistent with overall clinical improvement. For people who are interested in light therapy, and believe that it can help their depression it is very effective (Placebo effect). Talk to your health care professional about light box options and recommendations, so you get one that's best suited to your needs.

## STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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