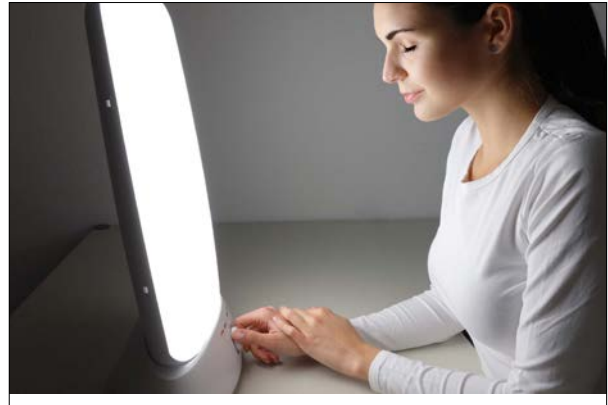


## Effectiveness of Light Therapy in Treating Seasonal Affective Disorder

Seasonal affective disorder (SAD) is a subtype of recurrent major depressive or bipolar disorder defined by a regular temporal relationship (over at least two years) between the onset and remission of affective episodes and a particular time of the year. The most frequent pattern is fall-winter depression with onset of depression during fall or winter with spontaneous remission or, optionally, hypomania/mania during the subsequent spring/summer period. Bright light therapy has been used as a treatment for seasonal affective disorder for over 30 years. An analysis published in *Psychotherapy and Psychosomatics* documents the value of light therapy in treating seasonal affective disorder.

This meta-analysis, including randomized, single- or double-blind clinical trials investigating Bright light therapy ( $\geq 1,000$  lx, light box or light visor) against dim light ( $\leq 400$  lx) or sham/low-density negative ion generators as placebo, assesses the efficacy of bright light therapy in the treatment of seasonal affective disorder in adults. Treatment effectiveness was evaluated as the post-treatment depression score measured by validated scales, and as the rate of response to treatment.

A total of 19 studies met inclusion criteria. Re-



sults showed that bright light therapy was superior over placebo with a standardized mean difference of  $-0.37$  (95% CI:  $-0.63$  to  $-0.12$ ) for depression ratings (18 studies, 610 patients) and a risk ratio of 1.42 (95% CI: 1.08–1.85) for response to active treatment (16 studies, 559 patients).

Authors concluded that bright light therapy can be regarded as an effective treatment for seasonal affective disorder, but the available evidence stems from methodologically heterogeneous studies with small-to-medium sample sizes, necessitating larger high-quality clinical trials.

## Iron Chelation Therapy for Iron Overload Treatment in MDS

According to a study by researchers in Italy, Iron Chelation Therapy (ICT) seems beneficial for iron-overloaded patients with low- or intermediate-1-risk myelodysplastic syndromes (MDS). The study is published in the *Annals of Internal Medicine*.

Emanuele Angelucci, M.D., from the IRCCS Ospedale Policlinico San Martino in Genova, Italy, and colleagues randomly assigned 225 patients with serum ferritin levels  $>2,247$  pmol/L to either deferasirox dispersible tablets or matching placebo (149 and 76 individuals, respectively) to assess event-free survival (EFS) and safety of ICT.

The researchers found that the median time on treatment was 1.6 years and 1.0 year in the deferasirox and placebo groups, respectively. With deferasirox versus placebo, median EFS was prolonged by about one year (3.9 versus 3.0 years; hazard

ratio, 0.64). Adverse events occurred in 97.3 and 90.8 percent of deferasirox and placebo recipients, respectively. In deferasirox versus placebo recipients, exposure-adjusted incidence rates of adverse events ( $\geq 15$  events per 100 patient treatment-years) were 24.7 versus 23.9 for diarrhea, 21.8 versus 18.7 for pyrexia, 16.7 versus 22.7 for upper respiratory tract infection, and 15.9 versus 0.9 for increased serum creatinine concentration.

“The results of TELESTO represent an important contribution to the field because it is unlikely that, in the current treatment landscape, a similar placebo-controlled study could be conducted,” the authors write. “Since the TELESTO trial was initiated, more evidence has become available on the deleterious effects of iron overload in patients with MDS, and therefore similar placebo-controlled trials would be unethical.”

## Yoga Reduces Testosterone by 29% in Women with PCOS

Women with Polycystic Ovary Syndrome (PCOS) should consider adopting a mindful yoga practice to help ease symptoms and improve androgen levels. Researchers found a one-hour mindful yoga class, done three times a week, reduced testosterone levels by 29% over a three-month period.

Other androgen levels, like DHEA, were also reduced, and depression and anxiety levels improved by 55% and 21%, respectively, according to the study in *The Journal of the American Osteopathic Association*.

“There are effective pharmacologic options for managing PCOS. However, they come with



the potential for some significant side effects,” says Diana Speelman, Ph.D., Associate Professor of Biochemistry at Lake Erie College of Osteopathic Medicine and lead author on this study.

“Mindful yoga appears to be a promising option for treating PCOS in a way that can improve several aspects of the disorder.”

Researchers recruited women with PCOS aged 22-43 and randomly assigned them into a

group, either with no intervention or one in which they would participate in mindful yoga practice for three months. The latter group was given a course in practicing mindfulness one week before beginning the 3-month mindful yoga practice.

Mindful yoga sessions were an hour long and took place three times a week, over three months. The benefits of improved androgen levels, as well as reduced depression and anxiety, occurred in the absence of weight loss.

Some participants also reported fewer acne breakouts and improved menstrual regularity, following the mindful yoga intervention.

## Citrus Aromatherapy Inhibits Liver Cancer

A main component of essential oils, terpenes can inhibit the growth of different cancer cells. Researchers from the Ruhr-University Bochum headed by Prof Dr Dr Dr Hanns Hatt have analysed this process in liver cancer cells in detail. They shed light upon the molecular mechanisms that resulted in cancer cells stop growing, following the application of (-)-citronellal, and they proved that the olfactory receptor OR1A2 is the crucial molecule for that purpose. In future, the olfactory receptor could serve as target for liver cancer diagnosis and therapy. The researchers report their findings in the journal *Archives of Biochemistry and Biophysics*.

Terpenes can trigger signalling processes in cells by activating olfactory receptors. Those receptors are mainly located in the nose, but they have been proved to occur in all types of human tissue, including skin, prostate and spermatozoa. Carcinogenesis and cancer growth are likewise significantly affected by terpenes, even though it has not been understood which function exactly they fulfil.

In order to find this out, the researchers from Bochum utilised a cellular model of hepatocel-

lular carcinoma, a common liver tumour. They exposed the cells to a subset of terpenes with different concentrations, and monitored their reactions. It emerged that two of the eleven terpenes tested resulted in a significant increase in calcium concentration in the cells: (-)-citronellal and citronellol. During a follow-up analysis, the researchers focused on (-)-citronellal and scanned for a receptor into which the terpene has to fit like a key into a lock. They demonstrated that the decisive olfactory receptor OR1A2 occurs in liver cells and is responsible for detection of the citrus scent and cellular reaction. If the option for producing that receptor had been removed from the cells, they did no longer react to the terpene. The researchers, moreover, succeeded in tracking the signalling pathway which the terpene uses for increasing calcium concentration inside the cells, thus reducing cell growth. “These results are yet another example for the significance of olfactory receptors outside the nose, and they give rise to hope that new drugs with no severe side effects may be developed for cancer therapy.”