

Melatonin improves chemotherapy effectiveness, increases survival and reduces side-effects

17 August 2020



Chemotherapy and radiotherapy effectiveness is improved significantly by oral melatonin supplementation with decreased side-effects; this is recorded in two meta-analyses and in a review by Sloan Kettering.

Melatonin improves chemo- and radiotherapy; reduces side-effects

In a meta-analysis (1) of 8 randomized controlled clinical studies published in 2012 by Y. Wang and team, oral melatonin supplementation of 20 mg daily almost doubled both complete and partial remission figures and also one year survival rates, when used with chemotherapy and radiotherapy; and it 'dramatically' decreased side-effects of neurotoxicity, thrombocytopenia and fatigue.

The research involved solid tumours and the results were reflected across all different cancer types and there were no adverse reactions to the melatonin recorded.

This followed a 2005 meta-analysis and a specific randomised, placebo-controlled study on breast cancer (2) that melatonin activates anti-neoplastic immune reactivity, has direct anti-cancer action and protects against chemotherapy damage.

Sloan Kettering confirm melatonin and chemotherapy benefits

In a Memorial Sloan Kettering review on melatonin with chemotherapy, MST conclude that there is a:

- 40% greater one year survival
- 93% greater chance of having a complete response (no tumour identified)
- 253% greater chance of having a partial response
- 15% chance of having stable disease after the combined therapy
- Significantly reduced weakness, fatigue, sickness and lowering of white cell count.

New clinical trials are now progressing.

"Everybody with cancer should take melatonin"

Professor Russel Reiter of UT Health San Antonio is an expert on melatonin and speaks regularly on the subject, saying how everybody over 60 should take melatonin; and how everybody with cancer should take melatonin, especially those having chemotherapy (7).

While it is produced by the pineal gland AND your gut bacteria while you sleep, it is not 100% certain that it is a sleeping aid! It is a huge antioxidant and an anti-inflammatory. It is made in the body in response to darkness and is suppressed by blue light (computers, TVs, mobile phones etc.) and promoted by warm, red light (put your electronic equipment onto 'Night Shift' whenever possible, even during the day).

It should be noted that in the UK, melatonin has to be prescribed by your Doctor who will only know it as 'a sleeping aid' and can prescribe no more than 3 mg.

High Dose melatonin in cancer treatment

There is now a move toward High Dose Melatonin - In a 2018 study by *Lissoni et al* (3) of 212 terminally ill cancer patients with common cancer types, high dose melatonin at night across 5 years brought the cancer of 111/212 patients (52%) under control, with a 5-year survival increase by 11% and 1 year by 46%. In a 2013 study (4), using 10-40 mg of melatonin at night, increased 1 year survival by 34%.

So is 'High Dose Melatonin dangerous? A report in Medscape (12) states that even 800 mg/kg of body weight was not found to be fatal. Humans given between 1 gm and 6.5 gm per day for 30-45 days produced no negatives when their blood was analysed.

Chris Woollams, former Oxford University Biochemist and a founder of CANCERactive added, "We repeatedly hear that you must not take anti-oxidants if you are having chemotherapy. This is totally misleading. There are a number of studies on how Turmeric improves the success of chemo (5), and a very good study on how IVC improves chemotherapy (6). Melatonin is the largest antioxidant we make ourselves in our bodies in response to darkness. It is also very, very anti-inflammatory. Add those two together and you understand why sleep is so healing. It regulates estrogen and growth hormone in our bodies. It has about 5 different actions against cancer. If you send a shot to your gut bacteria, they will know it is night time and they will go to sleep too - they have circadian rhythms. They will make about 400 times the melatonin you make. So don't eat late at night. Help them get to sleep! Given all this, why would anyone with cancer NOT take melatonin? And how wrong are UK health authorities and charities like Cancer Research to ignore it? We suggest people with cancer tumours start at 5 mg, increase to 10 mg, then 15 mg and finally 20 mg on a week by week basis".

Melatonin in the prevention and treatment of cancer

A 2014 study from a team at the University of Granada (8) showed melatonin was made in response to darkness not just by the pineal gland, but also by the retina, gastrointestinal tract/microbiome, skin, bone marrow and lymphocytes. And Professor Reiter showed (9) that production was regulated by a 'master biological clock' in the cells of the Hypothalamus.

Melatonin is not merely a hormone but a cell protector. In a 2017 review '*Melatonin for the prevention and treatment of cancer*' (10), it was shown to have antioxidant and immunomodulation abilities and the ability to increase the body's production of blood cells.

Melatonin also has important oncostatic properties through receptor-dependent mechanisms (MT1 and MT2 in the GPCR group). These are involved in the inhibition of adenylyl cyclase and cyclic AMP, which leads to a reduction in the uptake of linoleic acid, considered to be the crucial step in how melatonin restricts cancer spread.

Melatonin also shows benefits not dependent on receptors - it regulates cancer cell death, tumour metabolism and cancer immunity, melatonin inhibits the formation of blood supplies, and migration, and it is a strong antioxidant and prevents circadian disruption. For example, in **breast cancer**, melatonin has been shown to prevent breast cancer, restrict its spread and reduce the side-effects of chemotherapy and radiation. The researchers from Spain stated that '*melatonin had a virtual absence of contraindications*' and '*Melatonin would be an excellent adjuvant to chemotherapy*' (11).

There is also research showing that women taking Tamoxifen can use 25% less if simultaneously taking melatonin (13) and that melatonin makes tamoxifen more

effective. Other studies show that melatonin has strong epigenetic benefits against breast cancer (14).

Finally, according to researchers at Stamford University, women with higher levels of 'good sleep' survived significantly longer with advanced breast cancer (15). The reason given? Greater melatonin production.

[GO to: Melatonin - self-defence against cancer; a Review](#)



["Go here to buy: Practitioner strength probiotic designed specifically by Chris to help heal your gut"](#)

References

1. [The Efficacy and safety of melatonin in concurrent chemotherapy or radiotherapy for solid tumours: a meta-analysis of randomised controlled trials](#); Ye-min Wang et al; 2012, May; Cancer Chemo Pharmacol
2. [Mills, E., P. Wu, et al. J Pineal Res. 2005 November](#)
3. [5-year study with high-dose melatonin](#)
4. [Rondanelli et al, Update on cancer management using melatonin, 2013](#)
5. [Curcumin/turmeric can improve drug effectiveness](#)
6. [High Dose vitamin C improves Chemotherapy effectiveness](#)
7. Professor Russell Reiter You Tube video - click [HERE](#)
8. [Extrapineal Melatonin: Sources](#); Cell Mol Life Sc; 2014 Aug.
9. Reiter RJ; [Pineal Melatonin. Endocrin Rev 199: 12](#)
10. Oncotarget June 13 (28.4), 2017; [Melatonin for the prevention and treatment of cancer](#)
11. Expert Op Invest Drugs; 2012 June; [Melatonin uses in oncology](#)
12. Dr Samir Malhotra et al; The Therapeutic potential of Melatonin; [Medscape](#)
13. [Melatonin makes Tamoxifen work better](#)
14. [Melatonin shown to have strong epigenetic benefits in breast cancer](#)

15. [Higher levels of good sleep increase survival](#)