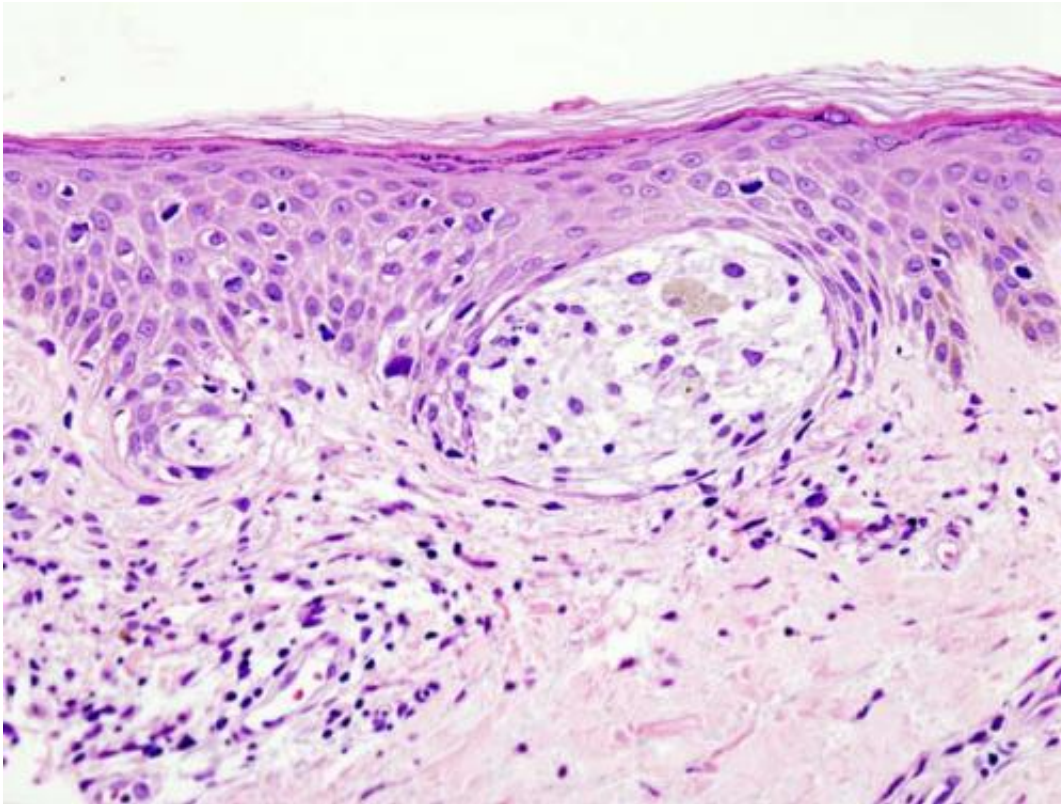


New data confirm antioxidants accelerate spread of malignant melanoma

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Melanoma in skin biopsy with H&E stain—this case may represent superficial spreading melanoma. Credit: Wikipedia/CC BY-SA 3.0

Now there is additional evidence of the connection between the intake of antioxidant supplements and increased tumor growth. Experiments on animals and human cancer tissue confirm that addition of some antioxidants increases the growth of the severe malignant melanoma type

of skin cancer.

"This is not the way to treat cancer. In the best case, the treatment makes no difference, but it can also exacerbate the disease," says Kristell Le Gal Beneroso, who has a Ph.D. in medicine from Sahlgrenska Academy, University of Gothenburg, Sweden.

The idea that antioxidants protect against cancer because they neutralize so-called [free radicals](#) has been challenged in several studies in recent years. It has become apparent that antioxidants protect not only healthy cells in the body, but also cancer cells.

According to previous studies from the current research team in Gothenburg headed by Professor Martin Bergö, the spread of both lung cancer and malignant melanoma accelerates with the addition of certain antioxidants. This takes the form of an increase in the number of metastases or daughter tumors.

Did not inhibit cancer

In work on her thesis, Kristell Le Gal Beneroso went a step farther and examined how lung cancer and malignant melanoma in mice and human cancer cells respond to the addition of certain compounds of antioxidants. The compounds bind to the cells' mitochondria, which are the main producers of free radicals.

"The theory behind this was that by binding the mitochondria, the production of free radicals could be reduced, blocking the DNA damage that free radicals cause and that, by extension, can accumulate and lead to cancer," says Le Gal Beneroso.

"But our results showed that this is not the case, that the compounds did not inhibit cancer. They either had no effect or they made the situation

worse. In a model with [malignant melanoma](#), the mice's tumors grew significantly faster than in the control animals that received no treatment."

Increased tumor growth

According to Le Gal Beneroso, the results of treatment with mitoTEMPO, the compound that triggered [tumor growth](#) in some experiments, further reinforce the view that antioxidants can have a harmful effect on cancer.

At the same time, many still have the impression of antioxidants as something positive and that dietary supplements with antioxidants are healthy for the body.

"Hypothetically, you might be helping your [healthy cells](#), but there is no strong evidence that this is the case. On the other hand, we know that once you have [cancer](#), even if it has not been diagnosed, [antioxidants](#) can contribute to increased [tumor growth](#)," she says.

More information: Kristell Le Gal Beneroso. Effects of antioxidant supplementation on cancer progression. hdl.handle.net/2077/55966

Provided by University of Gothenburg

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