

Frequent consumption of peanuts by cancer patients may increase risk of cancer spread

August 4 2021



Credit: CC0 Public Domain

A study by University of Liverpool researchers has identified new factors accompanying previous findings that frequent consumption of peanuts by cancer patients could increase risk of cancer spread.

The study, published in *Carcinogenesis* shows that Peanut agglutinin (PNA) – a carbohydrate-binding protein that rapidly enters into the [blood circulation](#) after peanuts are eaten—interacts with blood vascular wall (endothelial) cells to produce molecules called cytokines.

The cytokines in question, IL-6 and MCP-1 are well-known promoters of [cancer](#) metastasis. The increased cytokine production causes other [endothelial cells](#) to express more cell surface adhesion molecules, making them more attractive to the circulating tumor cells and thus potentially promoting metastasis.

In an [earlier study](#), Corresponding Author Professor Lu-Gang Yu and colleagues reported that circulating PNA binds to a special sugar chain, which occurs mainly on pre-cancerous and cancer cells, and interacts with a larger protein expressed on the surface of tumor cells in the bloodstream.

This interaction triggers changes in the larger protein, resulting in underlying adhesion molecules on the surface of the cancer cell to become exposed, making the cancer cells stickier and easier to attach themselves to the blood vessels. It also allows the cancer cells to form small clumps that prolong the survival of [cancer cells](#) in the body's circulation. Many epithelial cancers spread to the other organs through traveling through the bloodstream.

Professor Lugang Yu said: "Although further research and investigation are still needed, these studies suggest that very frequent consumption of peanuts by cancer patients might increase the risk of metastatic spread.

"Reassuringly though, a large US study reported no significant impact of peanut consumption on cancer mortality. In another study, peanut consumption was reported to have no significant effect on prognosis in men with established prostate cancer. In our previous healthy volunteer

study, substantial blood concentrations of PNA were only seen transiently one hour or so after consumption of a large dose (250g) of peanuts, so it may be that 'normal' peanut consumption yielding lower PNA concentrations is harmless.

"Nevertheless, the possibility remains that circulating PNA, at least at the relatively high levels found shortly after a large 'dose' of peanuts, could have a significant biological effect on tumor [cells](#) circulating at that time, with a potential for increased risk of metastasis. Heavy or very frequent peanut consumption therefore might be better avoided by cancer patients."

The possible impact of heavy [peanut](#) consumption by [cancer patients](#) on survival will need to be investigated in further population-based [epidemiological studies](#).

More information: Weikun Wang et al, Appearance of peanut agglutinin in the blood circulation after peanut ingestion promotes endothelial secretion of metastasis-promoting cytokines, *Carcinogenesis* (2021). [DOI: 10.1093/carcin/bgab059](https://doi.org/10.1093/carcin/bgab059)

Provided by University of Liverpool

Citation: Frequent consumption of peanuts by cancer patients may increase risk of cancer spread (2021, August 4) retrieved 23 April 2024 from <https://medicalxpress.com/news/2021-08-frequent-consumption-peanuts-cancer-patients.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--