

Drug that helps addicts may help treat cancer too, say experts

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Scientists at St George's, University of London, say the drug naltrexone (LDN), which is used to treat addicts, can have a beneficial impact on cancer patients if it is given in low doses.

Researchers discovered that not only does LDN cause cancer cells to stop growing, it also alters their internal machinery, making them more likely to kill themselves. This can lead to other treatments becoming more effective.

The research team, led by Dr Wai Liu and Professor Angus Dalglish and working with the company LDN Pharma, discovered that the drug, when used in these small doses, can alter the genes that regulate how a cancer cell behaves. LDN can reactivate genes that promote cell killing, as well as modify the genes that interact with the immune system to make it more unfriendly to cancer.

Dr Liu said: "We have shown that the genetic fingerprint of naltrexone differs according to the different doses used, which identifies new ways of using it as an anti-cancer treatment.

"Rather than stopping the cancer cells from growing, patients want to be rid of them. We saw that by giving the drug for two days, then withdrawing it, [cancer cells](#) would stop cycling and undergo cell death."

Dr Liu, who has spent 20 years researching cancer treatment, hopes his research will prompt clinical trials for the use of LDN on [cancer patients](#)

. He foresees LDN being used in conjunction with other cancer treatments.

At present [naltrexone](#) is licensed in many countries for the treatment of alcohol and heroin addiction, but the doses used is much higher than in this study.

However, it isn't licensed for the treatment of other illnesses, and patients are obtaining it 'off label' to treat conditions such as multiple sclerosis and fibromyalgia.

Dr Liu added: "We have taken a drug that is relatively safe in humans, and reformulated a new use for it; this has only been possible by understanding the dynamics of a drug. How many other drugs can be improved in this way?"

"We have shown a similar 'repackaging' benefit with the antimalarial [drug](#) artesunate and the cannabinoids. In both cases, drugs that are not classically cancer therapies are being trialled as such.

"This helps clinicians to devise new ways to tackle a disease that affects so many."

The research has been published in the *International Journal of Oncology*.

More information: Wai Liu et al. Naltrexone at low doses upregulates a unique gene expression not seen with normal doses: Implications for its use in cancer therapy, *International Journal of Oncology* (2016). [DOI: 10.3892/ijo.2016.3567](#)

Provided by St. George's University of London

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