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Light 'promising' in cancer fight

By James Gallagher Health reporter, BBC News



Can light cure cancer?

Light is a "promising" tool in the fight against cancer, say researchers in the US.

A study, published in *Nature Medicine*, showed how a drug could be created which sticks to tumours, but is then only activated when hit by specific waves of light.

It means a treatment can be highly targeted and not damage the surrounding tissue.

A cancer charity said the treatment showed early promise.

Currently, treatments for cancer can be separated into three categories: blasting it with radiation, surgically removing a tumour or using drugs to kill the cancerous cells. All have side effects and scientists are trying to come up with more precise therapies.

In this study, researchers at the National Cancer Institute, Maryland, used an antibody which targets proteins on the surface of cancerous cells.

They then attached a chemical, IR700, to the antibody. IR700 is activated when it is hit by near infrared light. This wavelength of light can penetrate several centimetres into the skin.

"This potential treatment has promise"

Laura McCallum Cancer Research UK

To test the antibody-chemical combination, researchers implanted tumours, squamous cell carcinoma, into the backs of mice. They were given the drug and exposed to near infrared light.

Shrinking tumour

The study said: "Tumour volume was significantly reduced... compared to untreated control

mice and survival was significantly prolonged.

"This selective killing minimises damage to normal cells."

The authors said the combination was "a promising therapeutic and diagnostic agent for the treatment of cancer".

"Although we observed no toxicity in our experiments, clinical translation of this method will require formal toxicity studies," they added.

Dr Laura McCallum, Cancer Research UK's science communications officer, said the research was promising.

"Using antibodies or photodynamic therapy to specifically target cancer cells have both been successful for treating some cancers, so combining the two together is certainly an exciting plan.

"But it's important to remember that this work was done in mice, so it's much too early to tell if it will work in people with cancer.

"This potential treatment has promise as scientists - including our own - are also looking at using antibodies to deliver other knockout punches, such as radiation, directly to cancer cells."