

# OXYGEN KILLS CANCER

## Doctors hail exciting new breakthrough

A NEW way of destroying cancer, radically increasing effectiveness of radiotherapy, was last night heralded as a "very exciting" breakthrough by scientists.

If the oxygen supply within a tumour is increased, cancerous cells become far more sensitive to treatment.

Experts hailed the discovery as ground-

By **Jo Willey** Health Correspondent

breaking and said it would allow drugs to "prime and soften up" potentially deadly tumours before they are targeted with intensive treatment.

Research was carried out on breast, head and neck cancers as well as carcinomas that line the surface of the skin and organs. But

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# 'New cancer treatment gives hope to patients'

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it is hoped the treatment will be as effective in all radiotherapy-treated tumours, including those notoriously hard to treat such as pancreatic cancer.

Previously experts have tried to cut off the blood supply, fuelling tumour growth to starve and kill it. But the new method improves the blood vessels within the tumour, increasing the concentration of oxygen.

Instead of boosting a tumour's growth potential, it has the opposite effect and weakens the cancer from the inside, making it far more sensitive to harsh radiotherapy.

### Survive

Usually cancer cells fight to survive, but the new treatment makes them weak and less resistant to treatment.

Cancers low in oxygen are three times more resistant to radiotherapy. So, by restoring oxygen levels to that of a normal cell, the tumours become three times more sensitive to treatment. And a better, more stable blood supply in the tumour enables improved delivery of chemotherapy drugs.

Professor Gillies McKenna, said: "We have discovered a new way of overcoming the major reason most cancers be-

## A NEW VICTIM EVERY TWO MINUTES

**CANCER TYPES 200** cancers - each with different causes, symptoms and treatments. 293,000 new cases diagnosed each year in UK.

**MOST COMMON** Breast, lung, bowel and prostate cancers account for more than half of all new cancers. Every two minutes victim diagnosed.

**DEATHS** Causes one in four UK deaths. Three-quarters in over 65s. In 2007, 155,000 died in UK. Death rate fallen 10 per cent in last decade. One in five die from lung cancer.

**NEW FEAR** Increase in potentially avoidable cancers malignant melanoma, uterine (womb) and kidney.

**CHEMOTHERAPY** Anti-cancer drugs to destroy cancer cells.

**RADIO THERAPY** High energy X-rays to try to destroy tumour and cure cancer. Can also be given to help pain.

**CURE** If both given at same time treatment is called chemoradiation. It can cure some cancers and reduce chance of it coming back.

come resistant to treatment with radiation or chemotherapy.

"Early results from a trial in patients with advanced pancreatic cancer suggest that this method can greatly improve the outcome in this disease, which is very difficult to treat.

"Clinicians in Oxford are pressing on to expand their trials to include patients with lung, cervical and rectal

cancer, and they hope to begin adding patients to new trials later this year.

"If successful, these methods could bring new hope to patients with some of the most difficult to treat cancers."

The research, published today in the journal *Cancer Research*, was carried out by scientists from the Cancer Research UK-MRC Gray Institute for Radiation Oncology & Biology at the

University of Oxford. They treated mice with certain drugs that improved the stability of blood vessels in the tumours.

Professor Gillies McKenna, director of the Institute, said: "We are very excited to have uncovered this brand new approach to cancer treatment - where the drugs prime the cancer cells for radiotherapy."

Previous work by the researchers had shown that treatment with some of these types of drugs could improve radiotherapy, but it was not understood how.

### Potential

Dr Lesley Walker, Cancer Research UK's director of cancer information, said: "For a long time scientists have been looking for ways to boost the oxygen supply to tumours to improve response to treatment and make radiotherapy even more effective.

"We still need to do more work on this technique, but boosting the effects of radiotherapy and chemotherapy are very exciting developments that hold real potential for use in patients."

There are more than 200 types of cancer with 293,600 new cases diagnosed each year in the UK and causing one-in-four of all deaths.