

# Tumour expression of leptin associated with chemotherapy resistance

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Patients with the most common type of oesophageal cancer are less likely to respond to chemotherapy when their tumours are high in a protein called leptin, according to research published in the *British Journal of Cancer*.

Researchers from the University of Aberdeen studied more than 150 [oesophageal cancer](#) patients with adenocarcinomas and found that those tumours with higher amounts of [leptin](#) – produced by fat cells – were less likely to be shrunk by chemotherapy.

Patients whose tumours had low levels of the leptin protein were more likely to benefit from chemotherapy.

Researchers also found that while patients with tumours high in leptin responded poorly to chemotherapy, they did have better survival rates regardless of treatment, whereas those with less leptin were more likely to have more aggressive tumours.

The researchers believe that measuring levels of leptin could help doctors decide which oesophageal cancer patients would benefit from chemotherapy and may even be a target for new drug treatments. It may also help explain the link between increased body weight and increased oesophageal cancer risk.

Dr Russell Petty, a consultant medical oncologist and study author, said: "Our work suggests that having low levels of leptin means that the [tumour](#) is more likely to be aggressive but also that it is more likely to respond well to chemotherapy. Knowing who will benefit most from chemotherapy will prevent many patients from undergoing treatment unnecessarily, and could allow us to try alternative, and potentially more effective, treatments in patients in whom chemotherapy is unlikely to be successful – essentially tailoring the treatment to individual patients.

"Oesophageal cancers, particularly adenocarcinomas, are on the rise in the UK and we desperately need to do more research to help improve the outcome for our patients, which remains relatively poor."

Oesophageal cancer is the thirteenth most common cancer in the UK with around 8,300 new cases diagnosed in the UK every year. It is also the sixth most common cause of cancer death. Adenocarcinomas are the most common type of oesophageal cancer in the UK.

Martin Ledwick, Cancer Research UK's head information nurse, said: "We know that [chemotherapy](#) does not help all oesophageal cancer patients so any research that helps us understand who to target with other types of therapy will be a big help to doctors.

"Many people with oesophageal cancer are diagnosed too late for treatment to be successful which is why we're urging people to be aware of the symptoms. Things like difficulty swallowing or food coming back up, persistent heartburn, unexplained weight loss, a hoarse voice or persistent cough, coughing up blood, or a pain or discomfort in the throat or back should be checked out with your GP. It most likely won't be [cancer](#) but it's a good idea to get it looked at just in case."

**More information:** Bain, GH et al., "Tumour expression of Leptin is associated with chemotherapy resistance and therapy independent prognosis in gastroesophageal adenocarcinomas." (2014) *British Journal of Cancer*.

Provided by Cancer Research UK

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