

New type of bowel cancer discovered

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(Medical Xpress)—A unique sub-type of bowel cancer has been discovered which has a worse outcome than other types of colon cancer and is resistant to certain targeted treatments, according to research published today in *Nature Medicine*.

Researchers from the Cancer Research UK Cambridge Institute at the University of Cambridge and the Netherlands analysed tumours from 90 separate patients with stage II [colon cancer](#) and found that they could group the samples into three distinct sub-types.

They then developed a panel of 146 genes that could distinguish these sub-types, and confirmed their findings by analysing a further 1100 patients with the disease.

Two of these sub-types were already known, but in more than a quarter of the patients a new kind of cancer was detected, which was previously

not regarded as a separate sub-type. These patients were more likely to do worse than those with the other types of [bowel cancer](#). Furthermore, their tumours were more aggressive and resistant to the drug [cetuximab](#), which can be used to treat the disease. Cetuximab targets a molecule called epidermal growth factor receptor ([EGFR](#)), whose link to cancer was discovered by Cancer Research UK scientists in the 1980s.

Further experiments showed that this third group of bowel tumours are likely to develop in a different way from the other types, which may explain their aggressiveness. This highlights the need for further research to understand this particular sub-type of bowel cancer and develop new treatments to target it.

Dr. Louis Vermeulen, lead researcher on the study, said: "We identified a new sub-type of bowel cancer by studying how the genes in tumours behaved. This allowed us to develop a quick and easy test to identify this sub-type, which has a [poor prognosis](#) and responds poorly to anti-EGFR therapy – a recognised treatment for many bowel cancers.

"When we further examined what properties described the three sub-types we found that this third sub-type was already primed to spread from an early stage, something that was previously only thought to occur much later in [tumour](#) development. We speculate these differences between the different sub-types may arise from the cell of origin for the tumour rather than any specific mutation."

Kate Law, Cancer Research UK's director of clinical research, said: "As April is bowel cancer awareness month, this kind of research reminds us of the importance of looking not just at specific mutations, but also how certain genes behave.

"Bowel cancer survival rates have doubled over the last 40 years – research and a better understanding of the disease has been core to this.

Studies like this one are essential for uncovering the basic building blocks of cancer, allowing us to adopt a more personalised approach to curing cancer and develop better treatments sooner."

More information: Melo, F. et al. Poor-prognosis colon cancer is defined by a molecularly distinct subtype and develops from serrated precursor lesions (2013) *Nature Medicine*. [DOI: 10.1038/nm.3174](https://doi.org/10.1038/nm.3174)

Provided by Cancer Research UK

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