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Diet and colorectal cancer: Black raspberries prolong life

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Diet plays a significant role in the aetiology of colorectal cancer (CRC). High fat/low fibre diets are associated with increased risk whereas high fruit and vegetable intake decreases the risk of this disease. We have a limited understanding of the chemopreventative mechanisms that underpin these associations. Previous research has indicated a protective role for bioactive phytochemicals, such as the polyphenols found in high levels in black raspberries (BRB); however there is very little research on the effect of diet on a malignant intestinal stem cell (ISC) population. Using a range of Wnt-deregulated mouse models of CRC, we have shown that dietary BRB attenuates the intestinal phenotype which occurs as a consequence of Apc deletion and gross Wnt misregulation. Additionally, we have shown that the BRB diet can significantly improve the survival of Lgr5Cre Apcfl/fl mice, which develop macroscopic stem-cell derived Wnt-driven adenomas. We have also investigated the effects of BRB diet on ISCs, which are considered the "cell of origin" of CRC, *in vivo* and *in vitro*. Our results suggest that dietary BRBs play a role in CRC prevention by protectively regulating the ISC compartment. These findings further support BRBs as a cancer-preventing tool.

Biography

Stephanie May is currently a PhD student at the European Cancer Stem Cell Research Institute in Cardiff. She has received her Bachelor's degree in Biochemistry from Cardiff University in 2010. Her research focuses on the effect of dietary components on intestinal cancer with particular interest on the intestinal stem cells. She also enjoys participating in science engagement and communication activities.

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