

An avo a day...

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23/12/20



An avo a day keeps the gut doctor away

New evidence suggests eating avocados as part of the daily diet can help to improve metabolic and gastrointestinal health ([1]).

The research, published in *The Journal of Nutrition*, suggests daily avocado consumption can improve the composition and metabolic function of intestinal microbiota in overweight and obese individuals ([1]).

Avocados are rich in dietary fibre and monounsaturated fatty acids (MUFAs), nutrients that have been independently connected to the gastrointestinal microbiota and metabolic health benefits ([1]). Previous studies have found regular avocado consumption is associated with lower body weight ([2],[3]) and can improve satiety and blood lipid concentrations ([4],[5],[6],[7]). However, the effects on the composition and metabolic function of the intestinal microbiota are not known.

In this 3 month trial, 163 adults between 25 and 45 years who were overweight or obese (BMI \geq 25 kg/m²) were randomised to an intervention group that received a daily meal with one fresh avocado or a control group that received an isocaloric meal without avocado. Apart from the daily meal replacements, participants consumed their regular diet. Faecal samples were collected throughout the study and analysed for bacterial composition and faecal metabolites, including short-chain fatty acids (SCFAs), bile acids and fatty acid concentration.

Avocado consumption increased microbiota diversity and enriched *Faecalibacterium*, *Lachnospira*, and *Alistipes* between 26% and 65% compared with the control group.

Faecalibacterium and *Lachnospira* have the enzymatic capability to utilise fibre to form SCFAs

([8],[9]), and in the current study, faecal acetate concentrations were 18% greater in the avocado group as compared with the control group ($P = 0.01$) at the end of the intervention.

The avocado group had enhanced fatty secretion and concentrations of stearic acid and palmitic acid were 70% and 98% higher, respectively than the control group.

Despite reporting higher total fat intake, the avocado group had diminished faecal bile acid concentrations, including 91% and 57% lower cholic acid and chenodeoxycholic acid concentrations, respectively. Concentrations of the secondary bile acids, deoxycholic acid and lithocholic acid, were also lower than in the control group.

Gastrointestinal microorganisms, as well as dietary fat and fibre intake, are implicated in bile acid regulation. Soluble dietary fibre increases faecal fat excretion, while high-MUFA intake can improve microbial diversity and reduce secondary bile acids ([10],[11],[12])

Conversely, saturated fat intake reduces microbial diversity ([13]) and increases bile acid synthesis ([14]), resulting in subsequent intestinal inflammation, and other potential health sequelae. Bile acids not only regulate the digestion of lipids but also act as signalling molecules to regulate systemic metabolism and insulin secretion. Greater bile acid concentrations are associated with obesity and diabetes ([15],[16]).

The current study has several limitations, including reliance on self-administered questionnaires and recall bias and a short follow-up period. Further, participants were overweight or obese adults but without physician-diagnosed chronic conditions and, as such, findings cannot be extrapolated to adults with chronic disease or who are within a healthy weight range. Nevertheless, the results provide valuable insight regarding the impact of avocado intake on the composition and metabolic function of intestinal microbiota. Future trials are needed to investigate the benefits of avocado intake in at-risk populations with metabolic and other chronic diseases.

References

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