Physiological effects of Dietary fibre

- Appetite and body weight regulation
- Insulin sensitivity and prevention of type 2 diabetes
- Blood lipids
- Prebiotic effects

Denise Robertson
Nutritional Sciences
Appetite and Body Weight Regulation: Mechanisms

Fibre

- Luminal viscosity
- Stomach emptying

Energy density

- Fermentation to SCFA
- Gut endocrine system

Energy intake

Satiety/satiation
Cholesterol lowering effects

Dietary Fibre

↓ Absorption of dietary cholesterol

SCFA

Enterohpetic circulation

 ↑ Cholesterol 7α hydroxylase
 ↑ Conversion of cholesterol to BA
 ↑ Bile acid secretion

BA (cholesterol) “lost”

↑ LDL receptors
↑ LDL and VLDL removal

↓ LDL Cholesterol
SCFA from fibre fermentation linked to insulin sensitivity

Canfora et al 2015
Changing gut bacteria to reduce inflammation

Prebiotic?

Burcelin et al 2011

Faculty of Health & Medical Sciences