

# Diets affect the microRNA in fatty tissue

PhD candidate Charlotte Michielsen of Human Nutrition and Health discovered this.

Michielsen compared the effect of two restricted energy intake diets designed to help you lose weight. The diets differed in quality: the high-quality diet contained more nutrients known to have a positive impact on health. However, both diets had the same number of calories. Michielsen: 'You'd expect the weight loss to be the same for both groups, but that was not the case.' The high-quality diet resulted in more weight loss (an average of 8.5 kilos as opposed to 6.2 kilos).

The researchers could explain some of that difference 'but that still left a gap of 1.2 kilos that we couldn't explain,' says Michielsen. 'Apparently the saying "once past the lips, forever on the hips" is not always true.'

Michielsen investigated the trial subjects' fatty tissue. 'We found that the quality of the diet and the weight loss affected the expression of various types of microRNA in the fatty tissue.' MicroRNA is short sequences of transcribed DNA that influence processes in the body. Some of the microRNAs were expressed more and

some less compared with a normal diet; some only changed with the high-quality diet and others only with the low-quality diet.

## Effects

'Associations have been found between abnormalities in the presence or expression of microRNA and certain kinds of cancer and cardiovascular diseases,' says Michielsen. 'However, this is a new field in nutrition research.' Michielsen cannot yet say whether the microRNA explains the differences in how people respond to a diet. Too little is known about microRNA as yet for that. 'We hope eventually to be able to measure the effects of nutrition on the body based on the changes in microRNA expression.' TL