

The Telegraph

Junk food kills bacteria that protect against obesity, heart disease and cancer, study finds.

Strong link between good bacteria, diet and overall health discovered after researchers lived on McDonald's meals for 10 days straight

Tom, the subject of the experiment, spent 10 days on a fast-food-only diet of McDonald's hamburgers, chips, chicken nuggets and Coca Cola

Written by Luke Heighton, 10 May 2015

Eating junk food kills good stomach bacteria which protect against obesity, diabetes, cancer, heart disease and inflammatory bowel conditions studies have found. The human gut contains around 3,500 different microbial species, which together make up some three pounds in weight.

Scientists now believe a diet based on a limited range of highly processed foods, rather than those found in a balanced, healthy diet, can wipe out the number of good stomach microbes (stomach flora) by more than a third. The discovery could explain why some people put on weight while others don't, despite eating roughly similar amounts of fat, sugar, protein and carbohydrates. 5

The finding emerged from studies conducted by Tim Spector, professor of genetic epidemiology at King's College London. He enlisted the help of his 23-year-old genetics student son Tom, who agreed to spend 10 days on a fast-food-only diet of McDonald's hamburgers, chips, chicken nuggets and Coca Cola. 10

Tom said: "Before I started my father's fast food diet there were about 3,500 bacterial species in my gut, dominated by a type called firmicutes. Once on the diet I rapidly lost 1,300 species and my gut was dominated by a group called bacteroidetes. The implication is that the McDonalds diet killed 1,300 of my gut species." 15

However Professor Spector's findings appear to support existing research which indicates the problem is far more complex than simply eating too much. 20

Stomach flora also play a key role in warding off potentially harmful microbes - they regulate the metabolism. They produce digestive enzymes, alongside vitamins A and K, which are needed to aid the absorption into the body of important minerals such as calcium and iron. Bacterial imbalances have been linked to increased chances of developing conditions such as colitis and inflammatory bowel disease. 25

Yet the precise make up of our microbial populations may vary from country to country, and there are even suggestions that obesity may be contagious. Tests conducted by the University of Colorado in the US found that transferring bacteria from an obese human to a mouse led to the animal gaining weight, and lean mice placed in cages with obese ones also became fat. 30

Professor Spector said: "Unfortunately, microbes get a bad press, but only a few of the millions of species are harmful, and many are vitally crucial to our health. Alarmingly, what is emerging is that changes in our gut microbe community, or microbiome, are likely to be responsible for much of our obesity epidemic, with frightening consequences such as diabetes, cancer and heart disease". 35

Professor Spector oversees a UK registry of 12,000 twins who are monitored over the course of their lives for the effects of a variety of genetic and environmental factors. The findings are the result of early work carried out by the British Gut Project, of which he is a founding member. 40

Surprisingly, excluding fat and sugar is less important to a healthy diet than making sure the food we eat is as diverse and natural as possible, Professor Spector said. His advice chimes with studies suggesting that Belgian beer, garlic, coffee, leeks and celery are ideal foods for promoting healthy gut flora. 45

Professor Spector said: "Fifteen thousand years ago our ancestors regularly ingested around 150 different ingredients in a week. Worryingly, most people nowadays consume fewer than 20 separate food types and many, if not most, are artificially refined. Most processed food products come, depressingly, from just four ingredients: corn, soy, wheat or meat". 50

A spokesman for McDonald's said: "We have a wide range of foods available in our restaurants and McDonald's can be enjoyed as part of a healthy balanced diet. We have also reformulated our ingredients to reduce the amount of salt, fat and sugar and removed trans fats entirely from our menu."

Q1 [AO1]: Read lines 1 – 14. Choose four statements below which are TRUE.

- a) Eating junk food can cause obesity, diabetes, cancer, heart disease and inflammatory bowel conditions. [T]
- b) The human stomach contains over 3000 different microbial species, which together make up some three pounds in weight. [T]
- c) Scientists state that eating too much processed foods is harmful. [T]
- d) Scientists believe that eating too much fat, sugar, protein and carbohydrates is more harmful than eating junk food. [F]
- e) Tim Spector works at King’s College in Colorado. [F]
- f) Tim Spector persuaded his son Tom to help of his study into the effects of eating too much processed sugar. [F]
- g) Tom Spector spent 10 days eating only McDonald’s hamburgers, chips, chicken nuggets and Coca Cola. [T]

Q2: Using mostly your own words, write a summary of the article.

Q3: Re-read this extract, taken from the article.

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How does the writer use nouns, adjectives and adverbs to convey his concern about the effects of a limited diet?

- concentrated fruit juice**
- margarine**
- whole wheat bread**
- processed soy**
- GM corn**