

## Clinical Cardiology 2018 :Gut microbiota and cardiovascular risk factors: Moscow study - Daria A Kashtanova -Russian Clinical Research Center for Gerontology

Daria A Kashtanova

Russian Clinical Research Center for Gerontology, Moscow, Russian Federation

**Introduction:**The human body's largest population of microorganisms resides within the intestine and is collectively called the gut microbiota. Although initially it had been thought that there have been more microbial than human cells within the body, recent estimates show microbial and human cells are present in comparable numbers. Most research on the human microbiota focuses on the microorganisms within the gut, as they're thought to influence health in various ways. The microorganisms present within the gut play an important role in digestive health, but also influence the system. Gut health refers to the balance of microorganisms that sleep in the alimentary canal. These bacteria, yeasts, and viruses of which there are around 100 trillion also are called the "gut microbiome" or "gut flora." Many microbes are beneficial for human health, and a few are even essential. Here are five tips to detox your gut this month in order that you'll head into 2020 feeling sort of a happier, healthier, and more inspired you! Diet, antibiotics, and age can change gut microbiota, and lots of studies have shown the connection between disorders of the microbiota and a number of other diseases and reported some ways to modulate that balance. It helps us combat aggressions from other microorganisms, maintaining the wholeness of the intestinal mucosa. It plays a crucial role within the system, performing a barrier effect. A healthy and balanced gut microbiota is vital to making sure proper digestive functioning. Drinking many water and staying hydrated may be a good way to manage digestion. People that support a water flush for colon cleansing recommend drinking six to eight glasses of lukewarm water per day. Also try eating many foods high in water content. Food from animals — including meat, dairy, and eggs — offer many health benefits. They're rich in protein and other nutrients, like choline. However, people that eat diets very high in animal protein may suffer harmful changes in their gut microbiome. TMAO may be a byproduct of gut bacteria. Because of their significant seed count, tomatoes contain an outsized number of lectins which may trigger digestive issues if protein binds to the stomach wall. Ms Taylor suggests replacing a number of your tomato intake with mineral rich alternatives like leafy greens. Rich in omega-3 fatty acids, B-complex vitamin vitamins, calcium, manganese, magnesium and fibre. Flaxseeds and chia are high in both insoluble and soluble fibre, which helps to market gut motility and regular bowel movements. They're both great prebiotics and nourish our good gut bacteria. Berries and citrus fruits, like oranges and grapefruit, contain less fructose, making them easier to tolerate and fewer likely to cause gas. Bananas are another low-fructose fruit that are fiber-rich and contain inulin, a substance that stimulates the expansion of excellent bacteria within the gut.

**Materials & methods:** The study included 92 Moscow residents, 66 women and 22 men aged 25 to 78y/o carefully selected through

exclusion of CVD by means of clinical and laboratory evaluation, ECG, treadmill test, ECHOCG, carotid ultrasound examination (including IMT measurement). CVR factors were considered as follows: 1st grade AH, dyslipidemia, obesity, except morbid, impaired glucose metabolism, smoking. Gut microbiota was studied by 16S rRNA sequencing; diet – by quantitative assessment. Statistical analysis was performed using the R3.1.0., Mann-Whitney tests (with FDR) and generalized linear models. Fruits – eating high fiber fruit is one of the easiest ways to maintain good bacteria in the gut and improve digestive health. Apple Cider Vinegar – stimulates and improves digestion. Turmeric Powder – has great anti-inflammatory properties that can help with gut inflammation and permeability. Cleansing proponents promote two ways to clean the colon. One method involves taking bowel-clearing laxatives, powders or supplements; using enemas; or drinking herbal teas purportedly release colon waste and discharge toxins. Most dietitians recommend starting your morning with a glass of lemon juice and honey on an empty stomach. These ingredients help in removing toxins from the body and improving your immunity. Even Ayurveda stands by this remedy to be a great morning health tonic. Get good fat. Take extra omega-3 supplements, which help cool inflammation in the gut. Heal your gut lining. Use gut-healing nutrients such as glutamine and zinc to repair the lining in your gut so it can resume its normal function. Drinking plenty of water and staying hydrated is a great way to regulate digestion. People who support a water flush for colon cleansing recommend drinking six to eight glasses of lukewarm water per day. Also try eating plenty of foods high in water content. Negative changes in the gut microbiome have been previously linked to obesity, and green tea has been shown to promote healthy bacteria. Catechins, anti-inflammatory polyphenols found in green tea, have been linked to anti-cancer activity and lower risk of heart and liver disease.

**Results:** Impaired glucose metabolism was detected in 23%, 1st grade AH in 37%, dyslipidemia in 78%, obesity in 25%, abdominal obesity in 55%, there were 17% of smokers. Average age was  $52 \pm 13$  y/o. The number of risk factors was associated with high prevalence of the genus *Serratia* ( $\square < 0.001$ ). *Prevotella* were more presented in patients with newly diagnosed AH than in normotensive subjects ( $p < 0.001$ ). Obesity, abdominal obesity, and glucose metabolism impairment was associated with an increase in *Serratia* ( $\square = 0.004$ ,  $p = 0.004$ ,  $\square = 0.003$  respectively), *Prevotella* ( $\square < 0.001$ ,  $\square < 0.001$ ,  $\square = 0.003$  respectively) genera and decrease of *Oscillospira* ( $\square < 0.001$ ). We did not find significant differences in smokers and patients with dyslipidemia, gender, and age risks. In 20 participants IMT was  $\geq 0.9$  mm (average  $0.84 \pm 0.4$  mm), thickening was associated with higher abundance of *Serratia* ( $p = 0.009$ ) and *Blautia* ( $p = 0.004$ )

genera. The average daily caloric intake was  $2156.2 \pm 544.9$  kcal; intake of carbohydrates  $210.3 \pm 91$  g; proteins  $78.7 \pm 19.9$  g; fat  $106.5 \pm 32$  g. Bifidobacterium ( $p=0.008$ ) representation was increased and Serratia decreased ( $p=0.008$ ) in those who consumed more starch. High fat consumption was associated with high Serratia ( $p=0.014$ ) and low Oscillospira ( $p=0.004$ ) abundance.

Conclusion: High representation of opportunistic bacteria was associated with CVR factors and subclinical atherosclerosis. These

bacteria were more presented among those who consumed smaller amounts of starch, and beneficial bacteria abundance was lower in those who consumed a lot of fat.

shyams2u@yahoo.co.uk