

Research on Effects of Salt on the Lipid Absorption

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Summary

In Japan, the region where the salt intake is high and the region where Body Mass Index (BMI) is high show the tendency to look like. The salt intake in the Tohoku region is high. Moreover, BMI is also high. Some relations were guessed to the salt intake and the lipid absorption efficiency because there were not too a lot of lipid dietary intakes in the Tohoku region. Neither the salt intake nor the lipid absorption has been examined before. Then, this study examined the influence that the salt (NaCl) intake caused for the lipid absorption of rats. The rats were bred by the NaCl solution for one week, and the forced oral dosage of soybean oil (4 mL/kg b.w.). The rats were collected blood by decapitation administering 0, 3, 6 or 9 hours later. The plasma was prepared from the obtained blood, and the concentration of the triacylglycerol was measured. As a result, the plasma triacylglycerol levels have increased by the NaCl intake. Next, pancreas and the small intestine mucous membrane of rats were collected nine hours after the soybean oil administering. And, the levels of mRNA expression of the molecule that related to the lipid absorption by qRT-PCR method. The levels of the mRNA expression of the lipid absorption related molecule in the small intestine of rats has increased in the NaCl intake group. In addition, the pancreas digestive enzyme, the gastrointestinal hormone, the lipase concentration of the small intestine and pancreas, and the bile acid concentration of the small intestine contents have increased by the NaCl intake. Therefore, the possibility that the absorb efficiency of the lipid increases by taking the salt was thought.