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Editorial Open Access

# A Few Words about Properties of Inulin Controlling Weight and Health Function

**Iwona Rybakowska***

*Department of Biochemistry and Clinical Physiology, Medical University of Gdansk, Poland*

## Editorial

Sometimes to control our weight which cause cardiovascular disease we must use replacer in normal food. One of these is inulin the replacer of oil in mayonnaise [1] product which among others improve quality, life, sexual function, body composition and metabolic parameters in menopausal women [2] but also improves postprandial hypergliceridemia [3].

A few words about inulin, natural carbohydrate (Figure 1), present in more than 36000 species of plants including best known like wheat, onion, bananas, garlic, chicory. Inulin in them is used as an energy reserve [4]. One of important properties of inulin is its solubility in water and for this osmotically active. Inulin consists of heterogeneous fructose polymers. Inulin may be polimerizated from 2 to 60. The chain-terminating glucosyl moieties and a repetitive fructosyl moiety are linked by β (2,1) bonds not digested by enzymes in human system of food. It has not color and smell so has a little influence on sensory characteristics of food products. Inulin is weakly sweet however high efficiency inulin is not. Inulin is fiber but its solubility is higher than classical fibers, mixed with liquid forms white creamy structure which is similar to fat. Instead of replace fat, inulin may be substitute of sugar and flour.

Inulin may be used also beside creatinine to measure kidney function by determining the glomerular filtration rate (GFR).

Inulin has many beneficial effect on health starting with increase calcium absorption, and possibly magnesium absorption throughout promotion of intestinal bacteria growth [5,6].

Metabolic parameters change when we receive substances like inulin and isoflavones, calcium, vitamin D in menopausal women [2]. These women received 3 g of inulin for 12 months and we observed increase in serum levels of HDL [2] but we can see positive effects already after 2 weeks supplementation of 0.2 g/day/per mouse inulin [3]. A dyslipidemic profile includes hypergliceridemia, low HDL level and elevated level of LDL lead to cardiovascular diseases. In article Sophie Hiel published in Nutrients 2018 [3] we get interesting information about inulin. The authors investigated 9 weeks old mice fed control and high fat diet and they found that inulin does not influence body weight, adipose tissue and liver weight using ANOVA test. I think that it would be better to use student's test t, after using which we get statistical significant differences in control group getting inulin and not, both in subcutaneous, epididymal and visceral adipose tissue weight. This could show that on normal diet influence of inulin is greater than on high fat diet where we can see only trend decrease of adipose tissue after inulin supplementation. What is interesting inulin improves postprandial hyperglyceridemia induced by high fat diet. Two hours after olive oil load serum triglycerides gets almost optimal concentration and we can see statistical significant decrease in control and high fat diet group after application of inulin. While after four hours we can see significant decrease only in mice on high fat diet. Due to taking with food 90% of lipids in the form of triglycerides gives us that this result is more important than changing of concentration free fatty acids which postprandial concentration does not decrease statistical. It would indicate on interaction of inulin with triglycerides.

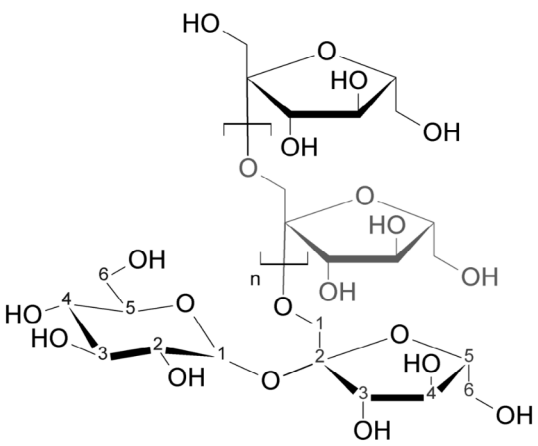


**Figure 1:** Structure of inulin.

These are not all functions of inulin in our cells but I think that knowing these it is a good idea to complete the diet in inulin which we get from eaten plants but which is also available in powdered form.

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***Corresponding author:** Iwona Rybakowska, Professor, Department of Biochemistry and Clinical Physiology, Medical University of Gdansk, Debinki 1, 80-211 Gdansk, Poland, Tel: (610) 457-5234; E-mail: iwonar@gumed.edu.pl

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