

# Prevention of nutritional deficiencies after weight loss surgery

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## Description of the initiative

Integration of adequate nutritional interventions in the whole perioperative period, creation and implementation of nutrition protocol for pre- and post-weight loss surgery, focused on high-risk macro- and micronutrients (such as proteins, vitamin D). Using a modern technology approach to increase a rate of adherence to therapy.

## Background:

Potentially fatal protein calorie malnutrition and selected nutritional deficiencies can occur after operation bariatric/metabolic surgery. Some micronutrients may play an essential role in homeostasis and biochemical processes needed for life. Monitoring vitamin D status may represent a special health benefit for patients as this micronutrient has been appreciated for essential for health. Health care providers should ensure that patients undergo thorough, scheduled surveillance for nutritional deficiencies, recognise their specific symptoms and clinical presentations. Perioperative nutritional therapy is associated with shorter hospital length of stay. The adequate nutritional assessment of the patients during bariatric/metabolic surgery is therefore crucial and may prevent any nutritional deficiencies. The role and importance of the dietitian in a health care team can not be understated.

## Scope of project, activities, implementation

- Nutrition Assessment of each bariatric surgery patient
- Integration of programs of perioperative dietary interventions and medical nutrition therapy
- Creation of an checklist for each bariatric-metabolic surgery patient
- Nutritional interventions in preparation for bariatric surgery
- Nutritional monitoring in the whole perioperative period
- Implementation of nutritional protocol
- Use of modern technology to ameliorate patient's compliance with physical activity
- Perioperative monitoring of all signs and symptoms of selected nutritional deficiencies
- Special focus on patients with metabolic complications related to obesity (e.g. diabetes mellitus, hyperlipidemia, hypertension).
- Organisation of educational workshops

Using modern technology to improve therapy adherence:  
Monitoring food intake through patient's food diary



## Results/Outcomes, Conclusions

Careful monitoring of patients in long-term follow up is extremely time consuming and requires qualified health care provider with adequate competences. We need systemize specialized nutritional medical therapy that only can lead to improvement in patient outcomes and have long-term health benefits.

## **Demographic information:**

### **National society endorsing submission**

1st Faculty of Medicine Charles University and General Faculty Hospital in Prague

Head: Prof. MUDr. Štěpán Svačina, DrSc., MBA

### **Contact person with contact information (name, telephone number, email address)**

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### **Title of project:**

**Prevention of nutritional deficiencies after weight loss surgery**

### **Description of the initiative**

Integration of adequate nutritional interventions in the whole perioperative period, creation and implementation of nutrition protocol for pre- and post-weight loss surgery, focused on high-risk macro- and micronutrients (such as proteins, vitamin D). Using a modern technology approach to increase a level of therapy adherence.

### **Rationale/background of initiative**

Potentially fatal protein calorie malnutrition and selected nutritional deficiencies can occur after operation bariatric/metabolic surgery. Some micronutrients may play an essential role in homeostasis and biochemical processes needed for life. Monitoring vitamin D status may represent a special health benefit for patients as this micronutrient has been appreciated for essential for health. Health care providers should ensure that patients undergo thorough, scheduled surveillance for nutritional deficiencies, recognise their specific symptoms and clinical presentations. Perioperative nutritional therapy is associated with shorter hospital length of stay. The adequate nutritional assessment of the patients during bariatric/metabolic surgery is therefore crucial and may prevent any nutritional deficiencies. The role and importance of the dietitian in a health care team can not be understated.

### **What was/will be done (activities)?**

Nutrition Assessment of each bariatric surgery patient

Nutritional interventions in preparation for bariatric surgery

Nutritional monitoring in the whole perioperative period

Perioperative monitoring of all signs and symptoms of selected nutritional deficiencies

Special focus on patients with metabolic complications related to obesity (e.g. diabetes mellitus, hyperlipidemia, hypertension). All nutritional interventions are strictly individualized.

### **How it was/will be done (implementation)?**

Implementation of nutrition protocol

Integration of programs of perioperative dietary interventions and medical nutrition therapy  
Creation of an checklist for each bariatric-metabolic surgery patient  
Use of modern technology to ameliorate patient's compliance with physical activity  
Organisation of educational workshops , information resources for patients

### Resources expected

<b>Personnel resources</b> – dietitian, doctor, laboratory technician	5000 EUR
<b>Material requirements</b> - laboratory kits, blood sample collection material, laboratory requirement for nutritional markers, vitamins	11000 EUR
<b>Services</b> – mathematical statistics, maintenance costs, maintenance of database etc.	
<b>Travel allowance</b>	5000 EUR
<b>Overhead cost</b> - administration etc.	2000 E

### What makes the initiative innovative?

Utilisation of modern technology increase motivation and compliance with diet and postbariatric regimen. Focusing on self-care and self-monitoring devices in order to increase adherence to long-term follow up of patients.

### Success measures? What made this initiative successful?

- Lower dropout from long-term follow up in postoperative nutritional care process.
- Amelioration /prevention of alteration/ of laboratory markers for nutritional evaluation and nutritional status according to laboratory valid reference ranges
- Succesfull weight loss therapy without leading to any kind of malnutrition
- Patient's satisfaction measured by qualitative analysis using questionnaires and good health outcomes

### Key learnings from this initiative

Up to the present, only pilot study had been realised. The real selected nutritional deficiencies has been detected. Mainly serum vitamin D.

### How did this impact nutrition intervention, outcome and patient care?

The effective multidisciplinary nutritional intervention in weight loss surgery patients prevent selected nutritzional malnutriton in this high-risk group.

### What makes this an initiative that would be of interest on a national / international level?

Creation of patient's friendly education materials and modern technology communication approach is absent on the national level.

The „*no one size fits all*“ individual nutritional approach is crucial in the field of weight loss surgery.