

# Dental health

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Mr. Kazemi is a 50 year old male, who is single and works full time. He smokes 5 cigarettes a day and has type 2 diabetes. In order to control blood glucose level, Mr. Kazemi takes 5 mg Glyburide twice in a day. During my nutrition counseling I tried to work with Mr. Kazemi to assess his usual dietary intake and identify areas which required changes. I provided information, educational material, support, and follow up to help him make and maintain dietary changes. My nutrition counseling began with a 3-Day Food Diary which included two weekdays and one weekend day. Mr. Kazemi listed all the foods and beverages that he consumed within those 3 days.

The 3-Day Food Diary helped me to provide an estimate of energy and nutrient intake. Based on his 3 days nutrition analysis, his daily average total caloric intake is 1,337 calories, and his calculated body mass index (BMI) is 20.8, which is within normal range. Although Mr. Kazemi's body fat is within normal range, his lifestyle puts him at risk of developing health problems such as heart disease and cancer. The fact that Mr. Kazemi is diabetic and has a smoking habit increases his chances of developing other related health problems.

During my counseling, I explained to Mr. Kazemi that healthy eating would help him keep his blood glucose at a normal range. Based on his manual analysis I found out that Mr. Kazemi's average daily caloric intake was below the recommended daily amount. I congratulated him for that, but I also told him that based on his 3-Day Food Diary whereby, his carbohydrate is 137%, protein is 68%, and fat is 57%, the Accepted Micronutrient Distribution Range for fat and carbohydrate (AMDR) was lower (20-35) as compared to the recommended 45-65 per cent of energy for adults.

I further explained to Mr. Kazemi that carbohydrate counting with fat-gram counting is an effective way to improve the control of diabetes. Another nutrient that was above the DRI was sodium. At the initial visit Mr. Kazemi's blood pressure was 140/90. I advised Mr. Kazemi to see a physician, and I also gave him a referral. I also advised him to change his lifestyle and try to become more active and reduce sodium intake. I was very impressed that at reevaluation appointment Mr. Kazemi's blood pressure was down to 120/80. This was attributed to exercising and being more active.

Then I recommended Mr. Kazemi to increase fiber in his diet by eating more fruits and vegetables. By adding fruit and vegetables not only he can add more fibers, but also vitamin C. Cigarette smoking leads to depletion of vitamin C levels in the blood. Vitamin C is very important in preventing the development of various types of cancer, critical in the healing process, and preventing periodontitis. Vitamin C is vital in the formation of amino acids needed for the production of collagen, an important component of the tissues that supports the teeth.

Since Mr. Kazemi was diagnosed with Generalized Severe Periodontitis, an increase in vitamin C in his diet is absolutely crucial to help in healing the tissue. I did explain to Mr. Kazemi that people who have gum disease are at greater risk of developing type 2 diabetes. In addition, I mentioned to him that smoking reduces the ability of the body to fight infections. Another recommendation to Mr. Kazemi was to increase the amount of Calcium and Vitamin D to his diet.

I explained to him that deficiencies of Vitamin D and calcium may lead to resorption of the bone around the teeth and destruction of periodontal

ligament that anchor the teeth to the jawbone. Since Mr. Kazemi's protein intake was above the recommended amount I explained to him that high protein diet affects calcium metabolism. Precisely, too much protein in the diet can increase calcium excretion, which may lead to bone loss. I suggested that Mr. Kazemi add dairy food like milk, cheese, and yogurt to his diet. The recommended intake of calcium is 1, 200 mg a day for adults over 50 years old.

Mr. Kazemi's total daily energy expenditure was calculated to be 2518. 6 kcal. The calorie intake is lower than the total daily calories being used. Again this is a commendable practice for Mr. Kazemi. With these goals being met, outcomes will include improved insulin sensitivity, better cardiovascular health and a reduction in body fat. Mr. Kazemi scored 4 on his nutrition and oral health screening. This indicates that he may be at moderate nutritional risk. My advice to Mr. Kazemi was to quit smoking and reduce the amount of carbohydrate and sugar to control diabetes.

Also he needs to add more fiber by eating 3 to 4 servings of fruits and vegetables. Another health benefit for Mr. Kazemi is to reduce sodium intake to control blood pressure. I also recommended a simple meal plan for a day which included a variety of food groups. In conclusion, Mr. Kazemi has severe case of gum disease. It is very important for Mr. Kazemi to quit smoking to improve periodontal health and reduce tooth loss. At reevaluation appointment pocket depth didn't change significantly, because smoking decrease the response of gum tissue to periodontal therapy.

Majority of people with diabetes are likely to have gum disease. Diabetes increases the susceptibility to infection. It is very important for Mr. Kazemi to

recognize the signs of oral infection because the infection can worsen quickly. Mr. Kazemi needs frequent monitoring of his diabetes and oral health. His main goal was to eat healthy by reducing the number of carbohydrate, avoid sticky carbohydrate, sodas, with exercises. Last but not the least, while gum health depends greatly on Mr. Kazemi's dental hygiene and routine dental checkups, prevention and effective treatment of gum disease should include a smoke-free lifestyle.