

# Survival Kit: The Five-minute Education Kit. A Document for Health Care Providers and Patients

Diabetes Education Study Group of the European Association for the Study of Diabetes

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## Introduction

'Yes, patient education is important, but we do not have time for teaching patients. . .' This reaction from health care providers is present everywhere, throughout the world, even among those who are involved in diabetes therapy and who speak quite highly about the important role of patient education.

The Diabetes Education Study Group (DESG) of the European Association for the Study of Diabetes was founded in 1979. Over the years many efforts have been devoted by diabetologists and their health care teams to promoting the role of patient education as a key to success of therapy. We decided to choose some significant educational concepts and skills important for the education of patients and then transfer them to selected, experienced, diabetes teams. After a training period, they were asked to disseminate, in their own region, what they had learned. This kind of snowball effect has been quite productive. In almost all European countries very active patient education programmes have been initiated among diabetes health care teams. Many aspects of these educational programmes have been summarized in guidelines entitled *The DESG Teaching Letter*, covering 20 different topics. They were sent to all members of the DESG, comprising more than 2000 doctors, nurses, and dieticians in Europe. These letters have since been translated into 25 different languages. A success? Hopefully, but. . .

*Lack of time* is, and always will be, a frequent excuse for not educating patients with diabetes. The Executive Committee of the DESG has decided to approach this problem in a very pragmatic way. After extensive enquiries, many physicians told us that they *would be* willing to spend five minutes to teach their patients but they *did not*, because of lack of specific guidelines. This is the reason why we have organized two seminars to deal with the difficult problem of 'Five-minute education for patients with diabetes'. Even five minutes can be part of life-long learning. Shortage of time makes it even more necessary to identify the most efficient strategies. This is why we have developed the concept of the *Survival Kit for Health Care Providers and Patients*, the concept being, 'Don't teach, but at least give just the key information to your patient'. With this objective in mind two groups of doctors, nurses and dieticians, all having large experience in the field of diabetes care and patient education, attended two workshops held in Switzerland. The first workshop was devoted to the selection and editing of significant topics to be taught; the second workshop focused on the optimal use of this survival kit among health care teams. The two workshops totalled 57 participants, including doctors, nurses, dieticians who came from 24 different countries. Altogether, their centres have totalized approximately 250 000 hours experience of teaching to patients! This document is the fruit of this large clinical experience in patient education and care.

This *Survival Kit* has been edited as follows: there are 9 topics, each of which has 2 parts:

- a guideline for the health care providers
- a summary under the form of a handout for patients

This handout has been written in larger letters than that of the guideline in order to facilitate reading by patients.

We hope that this document will be helpful to you. Remember that the efficiency of education is measured by its outcome: control of blood glucose, control of acute and long-term complications. Having selected diabetes as a medical speciality, it is incumbent upon us to educate our patients in order to improve the outcome of diabetes therapy. And remember, that the lack of precise and pertinent information may well lead to serious accidents involving your patient. In certain countries physicians have already been prosecuted for not having correctly informed their patients with diabetes.

The activities of the DESG for the past 3 years, as well as this Survival Kit, have been made possible thanks to a grant of NOVO NORDISK whom we would like to thank for this generous support.

Note that there may be important local cultural variations related to the different national health systems but we think that these recommendations may still serve as guidelines for the majority of countries.

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## Five-minute Patient Education: What Strategies?

Lack of time is a frequent excuse for not educating diabetic patients. However even five minutes can be part of life-long learning. As an educator, one must choose topics and methods. Shortage of time makes it necessary to identify the most efficient strategies and does not justify prescriptive attitudes. We should remember that the efficiency of education is measured by its outcome, i.e. how the patient will behave in the long term.

### *Strategies*

Diabetic patients need to acquire knowledge and skills about several topics. When time is limited, you gain by asking the patient for his major complaints and needs.

Choose one objective: the most urgent, according to your clinical evaluation and the patient's demands, and defer for less urgent objectives to the next consultations.

You have a choice between different methods: prescriptive instruction, one-way communication (lectures) and learner-centered methods. Both educational research and clinical practice are definitely in favour of the latter. Thus, try to build on the patient's previous knowledge, skill, behaviour and health beliefs.

Look for secret doors to reach inside the patient's mind (observe and listen).

Promote an atmosphere facilitating communication and, whenever possible, include the family in the education.

Of course one cannot fully reach any educational objective in 5-minutes. The patient will best learn from his own experience: arrange so that he goes home with a problem to solve or a task to experiment with. You may well count on the next appointments for evaluation and the accomplishment of the chosen objective.

### *Methods and Tips*

Use open questions in order to make the patient reflect and understand. Allow enough time for the answer.

#### **Encourage the patient's curiosity and do not anticipate all answers.**

**To improve knowledge**, show the whole picture, then work on short pieces of information (not more than two or three) and summarize them at the end. If possible, give a written summary to the patient.

Prepare pertinent metaphors to start with different objectives and chose one, according to the patient's understanding. Listen actively and reformulate the patient's sentences to clarify his, as well as your understanding.

**To improve skills**, prepare materials and devices for practical exercises and let the patient practice in conditions as similar as possible to real life, e.g. test strips and meters, log books, insulin syringes and pens, glucagon kit, food samples (buffet or models), scales, foot-care materials, old shoes. . .

**To improve behaviour**, work with the patient's internal representations of phenomena like: health, diabetes, food, insulin, hypoglycaemia, late complications. . . Changing behaviour is always difficult: role playing, examples of great achievements by other diabetic patients (marathon races, Pavarotti, . . .) can help to improve motivation.

**To improve your own educational technique**, one possibility is to record the consultation and analyse it afterwards, ideally together with an observer/expert.

**The evaluation of results** should deal with knowledge (representation of diabetes and its complications. . .), skills (insulin injection, blood glucose monitoring. . .) and motivation (changing dietary habits, keeping regular notes in the logbook, coming regularly to consultations. . .) as well as the measurement of the glycated haemoglobin. Necessary outcomes should be: absence of ketoacidosis and severe hypoglycaemia, prevention of foot lesions, weight loss when appropriate.

Do not be afraid of preparing your own teaching materials but remember that it is advisable to test it with a selected group of patients before using it at large.

## *Guidelines for Healthcare Providers*

### **Prevention of Hypoglycaemia Initiating an Insulin Treatment**

#### *Understanding of Hypoglycaemia*

Start with open questions to identify the patient's knowledge of hypoglycaemia and to assess the educational reinforcements necessary. Some suggested opening questions are as follows:

**1. QUESTION: 'Have you ever experienced an episode of hypoglycaemia?'**

**2. QUESTION: 'What do you know about the effect of insulin on you?'**

In your discussion, emphasize the following:

- (a) Normal range of blood glucose.
- (b) The changes in the level of blood glucose as a result of meals and exercise.
- (c) The effect of insulin on blood glucose.

On the handout to be given to the patient, illustrate by means of diagrams what is meant by hyperglycaemia and hypoglycaemia and the effect of insulin in these circumstances. (Diagrams to be made according to the doctor.)

**3. QUESTIONS: 'Do you know what happens to you when your blood sugar is too low, a situation we refer to as hypoglycaemia?'**

**'Do you know anybody who takes insulin and how they feel, or what happens to them when they have hypoglycaemia?'**

You should discuss symptoms of hypoglycaemia such as sweating, hunger, anxiety, dizziness, feeling strange, loss of concentration, double or blurred vision.

If the patient is aware of hypoglycaemic coma, you should stress its good prognosis and reassure the patient.

**4. QUESTION: 'What events or situations might result in low blood sugar?'**

Discuss the effect of insulin on blood glucose and relate it to the insulin regimen prescribed, with emphasis on the dose and time of insulin administration. Illustrate how blood glucose levels are affected by the time and quantity of meals and snacks.

The patient's normal pattern of physical exercise and its effect on blood sugar should be discussed. Do not omit the possible hypoglycaemic reaction several hours after the end of the physical activity or even the following day. Mention the effect of alcohol and its association with hypoglycaemia.

**5. QUESTION: 'How do you think you can prevent hypoglycaemia?'**

Stress the need not to omit or delay meals or snacks.

Advise the ingestion of extra carbohydrate before exercise. Provide examples of carbohydrates that are commonly available in your country.

Only introduce the subject of self-monitoring of blood glucose and its role in the adjustment of the dose of insulin. Do not cover this subject too deeply because there is another handout on this.

If the discussion suggests that the patient requires further reassurance or explanation, you should devote a further five minutes.

#### **6. TAKE IMMEDIATE ACTION:**

- **Give dextrose to the patient to be carried by him at all times and explain when to take it. Three lumps of sugar, in an empty film box for example, should be given to each patient.**
- **Give diabetes identification card and summary sheet.**
- **Fill in the patient's hypoglycaemia risk times on this summary sheet.**
- **Advise 2–3 days away from work, school and driving.**
- **Give the contact telephone number.**
- **Finally, inform patient's usual doctor.**

*NB. The subject of 'GLUCAGON' has purposely not been mentioned in this initial handout.*

## *Handout for Patients*

### **Prevention of Hypoglycaemia Initiating an Insulin Treatment**

#### *Remember:*

1. Blood sugar goes up and down: **insulin lowers blood sugar.**
2. When **blood sugar is too low**, you may feel:  
**sweaty, hungry, anxious, dizzy, strange, a loss of concentration, blurred or double vision, you may feel your heart beating.**  
If you experience such a situation:  
**take sugar immediately (3 lumps or 3 teaspoons) otherwise your blood sugar would go so low that you could become unconscious.**
3. This may occur:
  - (a) If you *eat too little* to balance your insulin.  
**-Don't omit or delay meals or snacks.**
  - (b) With heavy or *strenuous exercise*.  
**-Take extra carbohydrate.**  
(e.g. 2 biscuits, sandwich, minimars bars)
  - (c) If your *insulin dose is too high*. (Your blood tests will help you adjust this.)

#### *General Advice:*

**Carry sugar close to hand** (e.g. 3 sugar lumps in an empty film box, or if not available, Dextrose, biscuits, sweets).  
**Always check that you have sugar with you in some form.**  
Carry diabetes identification card. Inform family and colleagues about the potential danger of hypoglycaemia. They should be advised to keep sugar at hand.

While getting used to your insulin treatment it is advisable to take a day or two off work/school. **Avoid driving a car** until you are confident with your insulin treatment. Be careful with alcohol.

With your type of insulin treatment, the risk of hypoglycaemia is greater:

- in the morning between..... and .....
- in the afternoon between..... and .....
- in the evening between ..... and .....
- at night between ..... and .....

#### **ANY QUESTIONS, RING US:**

Telephone:..... day Telephone .....night

## Guidelines for Healthcare Providers

### Intercurrent illness, sick day rules and acetone Insulin treated diabetes

#### *Important Rules when Your Patient is Ill*

As a health care provider, it is important to be aware that any illness can lead to instability of diabetes control and there is a risk of ketoacidosis. Diabetes control is particularly important when the patient is vomiting, has diarrhoea or fever. If bacterial infection is present, treatment with antibiotics should be commenced immediately; in viral infections, such as influenza, symptomatic treatment is given. Medical advice should be sought to determine the nature of therapy required. The following advice relates only to Type 1 diabetic patients and *not* to Type 2 on insulin.

#### 1. Never Stop Insulin!

Persons with diabetes often think that they do not need their insulin when their appetite diminishes and/or they vomit. It is therefore vital to inform them to continue taking their usual dose of insulin and to expect to alter the dose during the course of the illness.

#### 2. Increase Testing

It is important that you advise the patient to test blood glucose levels every 2 to 3 hours. The patient should test urine for acetone. If the level is +++ (3-plus) and the patient is vomiting, arrange for emergency admission even if the blood sugar is not high.

#### 3. Contact Immediately

Tell the patient to always seek medical advice in the event of an illness; hospital admission may sometimes be necessary. It is mandatory in case of +++ acetone and vomiting. It is important to establish close medical supervision until the situation is under control. Make sure the relevant name and telephone number is marked on the patient's handout.

#### 4. Adjust Insulin Dosage

Based on the results of home blood glucose monitoring, you should advise the patient to adjust the dose of a fast acting insulin, using the following guideline, which should be given to the patient as a handout. This regimen is suitable only for patients taking 40–50 units of insulin per day.

<i>If there is no acetone in the urine</i>	{	5–9 mmol l <sup>-1</sup> , or 90–160 mg 100 ml <sup>-1</sup>	:	no additional insulin
		10–14 mmol l <sup>-1</sup> , or 180–250 mg 100 ml <sup>-1</sup>	:	2 extra units of fast acting insulin
		15–19 mmol l <sup>-1</sup> , or 250–350 mg 100 ml <sup>-1</sup>	:	4 extra units of fast acting insulin
		20–25 mmol l <sup>-1</sup> , or 350–450 mg 100 ml <sup>-1</sup>	:	6 extra units of fast acting insulin
		>25 mmol l <sup>-1</sup> , or >450 mg 100 ml <sup>-1</sup>	:	6 extra units of fast acting insulin, plus tell the patient to contact you immediately.
<i>If acetone and blood glucose &gt; 100 mm l<sup>-1</sup> (180 mg 100 ml<sup>-1</sup>)</i>	}	add	:	10 units of fast acting insulin for 2 plus (++) acetone
		add	:	15 units of fast acting insulin for 3 plus (+++) acetone

*These dosages may need to be individualized. These doses do not apply to children, the elderly and first diagnosed. Patients should be advised to re-test blood glucose three hours after each injection and to review insulin requirement and adjust as above.*

#### 5. Food and Fluid Replacement

Advise the patient to follow regular meal habits as far as possible. In the event of an inability to eat, provide simple advice on how to replace solid meals by taking sugars as a drink; this should be given to the patient in the handout. Suitable substitutions are, sugar in tea (50 g sugar in 1 litre of tea—15 g of sugar corresponds to three full teaspoons); other liquids with sugar (50 g of sugar corresponds to half a litre of ordinary coke, lemonade or fruit juice).

Advise the patient to drink at least 2 to 3 litres of water within 24 hours. A salty soup, e.g. Bovril, consommé, is highly recommended if there is thirst. Explain that fluid and salt are needed to replace losses of water as a result of vomiting, diarrhoea or perspiration due to high body temperature.

## Handout for Patients

### Intercurrent illness, sick day rules and acetone Insulin treated diabetes

#### Important Rules when You are Ill

An illness may result in your diabetes getting out of control and this is particularly so if you are vomiting, have diarrhoea or a fever.

#### 1. Never Stop Insulin!

You should never omit your normal dose of insulin. It may be necessary to adjust your dosages.

#### 2. Increase Testing

When you are ill it is usual to see higher levels of blood glucose than when you are healthy. Blood glucose testing therefore gives you vital information. It is important that you test every 2 to 3 hours. Test your urine for acetone and if +++ (3 plus, deep purple) seek advice at once. Call also in case of doubt.

#### 3. Contact Immediately

If vomiting occurs, with +++ acetone, seek medical advice immediately. You may have to go to the hospital straight away. If you have contacted health care providers, be assured that there will be a follow-up immediately.

NAME: ..... Telephone: .....day; Telephone: .....night

#### 4. Adjust Insulin Dosage

In response to your test results it may be necessary to take more fast acting insulin. Below is a guideline (valid for persons taking 40–50 units per day), on how to manage the adjustment of insulin. *These dosages may need to be individualized.* Remember to re-test your blood glucose after 3 hours, review insulin requirement and take action as detailed below.

#### IF THERE IS NO ACETONE IN THE URINE:

5–9 mmol l <sup>-1</sup> , or 90–160 mg 100 ml <sup>-1</sup>	: no additional insulin
10–14 mmol l <sup>-1</sup> , or 180–250 mg 100 ml <sup>-1</sup>	: 2 extra units of fast acting insulin
15–19 mmol l <sup>-1</sup> , or 250–350 mg 100 ml <sup>-1</sup>	: 4 extra units of fast acting insulin
20–25 mmol l <sup>-1</sup> , or 350–450 mg 100 ml <sup>-1</sup>	: 6 extra units of fast acting insulin
more than 25 mmol l <sup>-1</sup> , or 450 mg 100 ml <sup>-1</sup>	: for blood glucose values higher than above, inject 6 extra units and contact your doctor immediately.

mmol l<sup>-1</sup> = millimoles per litre. mg 100 ml<sup>-1</sup> = milligrams per hundred millilitres)

#### IF ACETONE AND BLOOD GLUCOSE ARE MORE THAN 10 mm l<sup>-1</sup> (180 mg 100 ml<sup>-1</sup>)

add	: 10 units of fast acting insulin for 2 plus (++) acetone
add	: 15 units of fast acting insulin for 3 plus (+++) acetone

#### 5. Food and Fluid Replacement

Try to have your normal amount of food at your regular mealtimes. If you cannot eat, take your food in the form of fluid: sugar in tea (50 g sugar in 1 litre of tea, 50 g sugar corresponds to ten full teaspoons) or other liquids with sugar such as normal coke or lemonade (50 g of sugar corresponds to half a litre of ordinary coke, lemonade or fruit juice). Drink at least 2–3 litres of water within 24 hours or more if thirsty. Especially recommended is salty soup, e.g. Bovril, consommé, etc. Fluids and salt are needed to replace losses of water as a result of vomiting, diarrhoea or perspiration due to high body temperature.



## Guidelines for Healthcare Providers

### Meal planning Type 1 (Insulin Treated) diabetes

This first introduction to meal planning for patients with insulin treated diabetes is **to be given in a very POSITIVE way** based on the idea that the person can probably maintain most food habits. However, you should make the patient aware of the side effects of treatment—mainly hypoglycaemia.

The first step would be to interview the patient about food habits, especially carbohydrates, when he/she eats, what he/she eats, what he/she drinks and alcohol intake. You should also know the insulin programme as well as the type of daily exercise made. Write on the patient's meal plan (to be found on the handout) a semi-quantitative dietary recommendation including time of snacks.

*Example of Meal Plan for the Coming Days:*

	Type of exercise	Insulin dose
BREAKFAST: .....	.....	.....
SNACK: .....	.....	.....
LUNCH: .....	.....	.....
SNACK: .....	.....	.....
DINNER:.....	.....	.....
SNACK: .....	.....	.....

Briefly inform the patient that food is divided into three categories: carbohydrates, protein and fat. However, **on this first day you should concentrate on providing information about carbohydrates** that the patient needs.

**Make sure that the patient understands:**

- FOOD WITH CARBOHYDRATES INCREASES BLOOD SUGAR
- INSULIN LOWERS BLOOD SUGAR
- EXERCISE LOWERS BLOOD SUGAR
- WHAT TO DO IN CASE OF HYPOGLYCAEMIA: PATIENT NEEDS: 3–4 LUMPS OF SUGAR, OR A FRUIT JUICE

Ensure that the **patient takes enough carbohydrate at each meal**, e.g. bread, pasta, rice, potatoes, or fruit. However, sugar, honey, sweets and soft drinks are to be consumed only to compensate for extra exercise, or when the level of blood glucose is low.

**Snacks:** The most important snack is before bedtime, to prevent nocturnal hypoglycaemia. At the time of diagnosis of Type 1 diabetes, it is common for patients to have been drinking a lot of sweet drinks, such as Coca-Cola or milk; with this meal plan they should now be advised to drink water, diet drinks, tea or coffee without sugar.

**BEFORE THE PATIENT LEAVES YOU, REMEMBER THAT IT IS YOUR RESPONSIBILITY TO GIVE HIM/HER SOME SUGAR FOR SAFE KEEPING ON HIS/HER PERSON, JUST IN CASE HYPOGLYCAEMIA DEVELOPS.** (See handout on 'Prevention of Hypoglycaemia'.)

Ask the patient to record his/her own observations on how the treatment, including meals, affects him/her, by testing blood glucose regularly.

Ensure that the patient's survival kit meal plan is completed. Give the patient a follow-up appointment, sign the handout and give it to the patient.



## *Handout for Patients*

### **Meal planning Type 1 (Insulin Treated) Diabetes**

#### *Introduction*

Since you have diabetes, you have an increased level of blood glucose. Insulin will help your body to use it. It is your task to balance your blood glucose with the help of insulin (which lowers the blood glucose), and what you eat, which brings the sugar level up.

IT IS IMPORTANT TO EAT ENOUGH CARBOHYDRATES TO GIVE YOU ENERGY such as: bread, pasta, rice, potatoes and fruits. These should be divided into 3 meals and 2/3 snacks during the day. Sugar, honey, sweets and soft drinks should NOT be a part of your normal diet but MAY BE used TO COMPENSATE EXTRA EXERCISE or, WHEN YOUR BLOOD SUGAR GOES DOWN.

#### *Remember*

- Food with carbohydrates increases blood sugar.
- Insulin lowers blood sugar.
- Exercise lowers blood sugar.
- Not eating enough carbohydrate = hypoglycaemia.

#### *Your Meal Plan for the Coming Days:*

	<i>Exercise type*</i>	<i>Insulin dose</i>
BREAKFAST: .....	.....	.....
SNACK at: .....a.m. ....	.....	.....
LUNCH: .....	.....	.....
SNACK at: .....p.m. ....	.....	.....
DINNER: .....	.....	.....
SNACK at: .....p.m. ....	.....	.....

\*Carbohydrates in case of special exercise.

#### *Tips*

- **Do not omit a meal and take it at the correct time.**
- **Try to eat the same amount of food every day.**
- **If you increase your physical activity, your blood sugar will go down** and you must therefore eat extra carbohydrates, e.g. one fruit juice, or one slice of bread for one hour normal walking.
- **By testing your blood sugar you will see and understand** the effect of exercise and food on your blood sugar levels. This will give you a greater flexibility in the future.
- **Alcohol will reduce your blood sugar if you drink it without eating: DANGER!** (NB: One cannot treat diabetes with alcohol.)
- **You may take diet drinks.**
- **Always carry sugar with you.** If your blood sugar goes too low, you will feel dizzy and shaky (HYPOGLYCAEMIA). Immediately eat 3–4 lumps of sugar, or drink a fruit juice.

These are your first simple instructions. The next time we meet we will discuss this subject further.

NEXT APPOINTMENT: .....

DOCTOR'S SIGNATURE: ..... DATE: .....



## Guidelines for Healthcare Providers

### Meal planning Type 2 diabetes

The following guidelines should not be considered as a strict prescription but more to present you ways to give the patient the initial understanding and skills for the type of diet they have to follow. This includes some simple tips useful to the patient before they officially see a dietician.

#### Aims of Meal Planning

Diabetes Mellitus Type 2 is a chronic disease with an increased risk of macro- and microvascular complications (myocardial infarction, stroke, foot lesions, blindness and renal failure). To reduce these risks, treatment should be aimed at:

- Improving metabolic control (blood glucose and lipids).
- Reduction of body weight in patients with excess weight.

Nutritional content of food can be divided into the three main groups:

1. **High calorie food:** **fat** (*butter, salad oil, frying oil, sausages, fat cheese, meat and fish with high fat content, canned, or fried, meat and fish, fried potatoes, sauces, crisps, nuts*)  
**alcohol** (*wine and beer*)  
**sweets** (*cakes, chocolate, honey, etc.*)
2. **Medium calorie food:** **carbohydrates** (*bread, potatoes, rice, cereals, pasta, pulses, fruits, soft drinks*)  
**protein** (*low fat meat, fish and low fat cheese, eggs, milk and dairy products*)
3. **low or no calorie food:** **vegetables, some berries, light drinks and sweeteners** (*except fructose and sorbitol*),  
**tea and coffee.**

BEFORE ADVISING YOUR PATIENTS ON THE DIET, CHECK THEIR EATING HABITS

#### Main Principles of the Diet are:

1. Daily calorie intake should be divided into **at least three and ideally five meals**.
2. Intake of **free sugars should be avoided** (including sweet drinks, fruit juices).
3. **Fat intake should be reduced**; unsaturated fat is preferable.
4. **Avoid alcohol.**
5. **Increase fibre** intake (vegetables).
6. Reduce salt intake, especially in hypertensive patients.
7. To make the diet tasty, advise the use of spices and aromatic herbs.

**OBESE TYPE 2** diabetic patients should reduce daily calorie intake by:

- **avoiding food from the high calorie group;**
- **reducing by one-half food from the medium calorie group;**
- **eating freely low calorie food to reduce hunger.**

**NON-OBESE TYPE 2** patients should maintain their usual calorie intake, but further increase the number of meals, bearing in mind the general principles given above.

Type 2 diabetes is often a 'silent' disease. Therefore, to estimate patients' compliance and to improve their motivation, you should perform regular measurements of blood glucose, HbA<sub>1c</sub>, lipids, and body weight.

Do not forget to inform patients about their results, and to discuss their significance with the patients.

## *Handout for Patients*

### **Meal planning Type 2 diabetes**

This handout does not replace a formal dietary prescription but should help you to initiate some nutritional changes before you officially see a dietician.

In order to deal with your diabetes, it would be good for you to follow the next few simple rules. They can help you to improve your health, reduce your blood sugar, and prevent complications of diabetes.

1. **Your daily food intake** should be divided into at least **3 meals plus 2 snacks**. This will prevent hunger and diminish the rise of blood sugar that normally follows after a meal.
2. You may **freely eat vegetables** (tomatoes, cucumbers, cabbage, spinach, salad, carrot, etc.), as well as drink tea, coffee, water, tomato juice or drinks with sweeteners. Such food contains few or no calories. Also, vegetables are rich in fibre which may improve your blood sugar, and they contain all the necessary vitamins.
3. Remember to **decrease by half the amount of bread**, potatoes, rice, cereals, pasta, pulses, lentils, fruits. Try to decrease the amounts of low fat meat, fish, milk and milk products (e.g. cheese).
4. If you need to lose weight, **you should avoid fat** (butter, margarine, oil, sausages, fat cheese, fatty meat and fish, sauces, cream, canned meat and fish, crisps, nuts), and **avoid alcohol** (whiskies, liqueurs, wine and beer).
5. **You should not eat or drink sugar and sugar-containing food** such as chocolates, cakes, honey, sweets, Coca-Cola and other soft drinks; even natural fruit juices contain the sugar of the fruit itself.
6. Be aware of some **'diabetic' products** containing fructose or sorbitol, which are 'hidden sugars'. These products **can sometimes be rich in fat**.
7. Try to **diminish salt intake**, especially if your blood pressure is high.
8. **Make your food tasty** with spices, aromatic herbs, lemon, etc.

## *Guidelines for Healthcare Providers*

### **Weight loss Type 2 Diabetes**

Counselling for losing weight is not usually included in educational 'survival kits'. Therefore this item is often delayed, and eventually forgotten.

It is necessary to provide precise advice immediately in order to improve:

- motivation; • weight loss; • maintenance of results.

#### *Motivation*

Rationale: reduction of excess body weight is essential for improving hyperglycaemia, hyperlipidaemia and reduces hypertension and even more, plays a fundamental role in correcting one's cardiovascular risk factor. As far as diabetes is concerned, weight loss may allow the patient to avoid the need for insulin and/or tablets. It may also improve back pain, joint pain and self-esteem. Soon after having made the diagnosis for weight loss, it is important to look for keys (tips) to improve the patient's motivation.

#### **Examples of possible questions are:**

1. Have you made the decision to lose weight?
2. What was your body weight when you were 18–20 years old? What was your maximum body weight?
3. What do you think is your ideal body weight?
4. How much weight would you like to lose? How fast?
5. How many times have you tried to lose weight in the past? With what results?
6. Do you like your image as it is now?
7. Do you have any troubles that can be associated with overweight: e.g. joint pain, breathing difficulties, perspiration, sexual difficulties, somnolence?
8. Do you eat more when anxious, frustrated or depressed?

#### *How to Lose Weight*

If intake of excess alcohol or of a given food (e.g. cakes, rice, pasta, pulses, bread, meat, sausages, cheese) is admitted by the patient, then reduce it.

If any excess is denied it will be difficult to persuade the patient to eat less. Never tell the patient that you do not believe him. Instead, recommend analysis of the exact amount of total food intake for 2 to 3 days and discuss that with him at the next appointment. The aim is to let him eat less in general and encourage moderate exercise from the beginning.

Confirm that losing weight is indeed possible!

Other necessary advice for patients: Eat breakfast and one or two snacks during the day. Eat more vegetables and less fat.

Possible behaviour tips: Eat slowly and be seated while doing so. Train yourself to leave some food in the dish. Take a snack before parties and before shopping for food. Seek help from family and friends. Do not keep food reserves at home, particularly in the 'fridge.

#### *How to Maintain Results*

Excess weight is a chronic disease: to lose weight is easy, to maintain the result is difficult and needs permanent change of habits.

The restricted diet is to be followed only during a limited period of time (months). Weight loss should not be more than 1–3 Kg per month for a period of 1–6 months. Such changes are mandatory in order to obtain changes in life-style so as to assure permanent results.

- Start exercise every day, at first gently then progressively increase until you are able to walk for an hour or cycle for half an hour. Strenuous efforts should be avoided, namely in the first few months, until a reasonable fitness is obtained.
- Decreasing fat intake and increasing complex carbohydrates are the long-term nutritional goals.

## *Handout for Patients*

### **Weight loss Type 2 diabetes**

Decreasing body fat will improve your blood sugar and reduce the need for medication (insulin or tablets). It can also help to treat other related problems such as high blood cholesterol, high blood pressure, back pain and joint pain. Nobody should lose more than one kilogramme per week: one to three kilos per month is the ideal rate.

It is well known that **the main way to decrease body fat is to decrease food intake.**

If you know that you are eating **a given food in excess** (e.g. pasta, pulses, bread, rice, pastries, meat, sausages, cheese, ...), **cut it by half**. If you drink wine, beer and other alcoholic beverages, try to avoid them during the weight-loss period.

**If you are already eating very little** and not drinking wine, it should still be possible to identify nutritional mistakes: for two to three days try to **write down the exact amount of what you are eating**. You may well discover unforeseen mistakes which you can discuss with your doctor at the next appointment.

#### *Some Useful Tips to Help you Follow a Restricted Diet:*

- Consider that weight reduction can be achieved in two phases; firstly during a limited time period when you eat less, and secondly, by eating the correct amount of calories in order to maintain this new, reduced weight level, you will be forced to control yourself and not to go back to your previous eating habits.
- Eat breakfast and one snack between main meals.
- A snack can also help before a party or before shopping for food.
- If you become so hungry that you cannot wait until the next snack or main meal, eat some vegetables (celery branches, cucumber, carrots, etc.).
- If you are thirsty, drink water or sugar-free beverages.
- Do not keep large stocks of food at home, especially in the 'fridge and avoid leaving cakes and pastries around.
- Seek help from your family and friends and do not hesitate to leave some food in the dish on any occasion.
- Certain people are afraid of losing weight because they are afraid of appearing sick. It is true that *undesired* weight loss can be associated with disease (e.g. uncontrolled diabetes), but on the other hand *desired weight loss is associated with health and youth*.

#### *Decreasing Weight is Easy, Maintaining Results May be Difficult*

- The main way to do so, is to **introduce some physical exercise in your daily habits**: e.g. 1 hour walking or half an hour bicycling. . . but avoid strenuous efforts until you are well trained (and less heavy!).
- **Eat as little fat as you can** in items such as butter, oils, cheese, cold meats, nuts (including peanuts), fried foods.

## *Guidelines for Healthcare Providers*

### **Prevention of foot lesions for patients having no vascular and/or neuropathic involvement**

*This is particularly important for newly diagnosed NIDDM patients.*

Check for decrease of pain sensation. If 'yes', refer to the handout on **Loss of pain sensation. Long-term complications**. The graduated tuning fork\* appears to be a valid semi-quantitative method. While looking at the feet (and shoes) of the patient for the first time you can take the opportunity to discuss the methods of preventing foot problems. These guidelines are also appropriate for healthy people and in particular for those having static problems: flat feet, curved feet, hallux valgus.

We suggest you might ask some questions such as:

#### **'What do you know about diabetes and the foot?'**

Emphasize that: (1) foot care is a fundamental part of the treatment of diabetes mellitus;  
(2) foot problems **are** preventable.

#### *Use the Patient's Experiences to Identify Objectives*

##### **Look at the patient's foot and ask:**

##### **'How do you usually take care of your feet?'**

Then show the patient how he may inspect his own feet using a strong light and a mirror. He must check for:

- corns
- hard skin
- breaks in skin
- infections (including fungal)
- infections between the toes
- change in colour
- ulcers

Mention:

- General hygiene (daily washing and drying of feet, regular changes of socks, stockings, and tights, avoiding elastic socks and self-supporting stockings).
- If skin is too dry, use neutral creams.
- Demonstrate cutting of nails and advise on instruments.
- Careful choice of footwear; shoes should be comfortable and fit perfectly from the start.
- Demonstrate how to check the shoes.

Advise the patient:

- Not to walk barefoot; this is essential when there is loss of pain sensation.
- Not to use astringent lotions and corn cures.
- To examine each time before wearing the inside of the shoes for defects and foreign bodies.

Give the patient any illustrated leaflets you may have received from the industry and complete the patient's hand-out.

**If the patient should have established problems affecting the feet he should be referred to a foot specialist and/or a recommended chiropodist.**

\*Article: *The Tuning Fork Revisited*, C. Liniger et al., Eds. *Diabetic Medicine*, 1990; 7: 859–864. For more information contact Professor Jean-Philippe Assal (see page 1023).

## *Handout for Patients*

### **Prevention of foot lesions for patients having no vascular and/or neuropathic involvement**

*Remember:*

- **Foot problems**, hospitalisations for infections and vascular problems are **preventable**.
- Attend **regular check-ups** every year to detect foot problems at an early stage.
- Look after your **diabetes control**.
- Stop smoking!

*You Should:*

- **Inspect your feet every day** (if difficult, use a mirror or ask a friend).
- **Report:** hard skin, corns, breaks in the skin, infections, colour changes, ulcers.
- **Keep feet clean and dry.** If skin is very dry, use neutral creams, if humid, use powder.
- **Change daily your socks, stockings or tights.**
- **Wear soft, comfortable** and well fitting shoes.
- **File your nails instead of cutting. No bathroom surgery!**

*Important:*

- Avoid extremes of temperature; wash your feet with **lukewarm** water.
- **Do not walk barefoot.**
- **Do not use** sharp instruments.
- **Do not use** strong astringent lotions and **corn cures**.
- Mention to the podiatrist that you have diabetes.

*If in any doubt please consult your doctor.*

NAME: ..... TELEPHONE: .....

## Guidelines for Healthcare Providers

### Loss of pain sensation

#### Long-term complications and prevention of amputations

#### General Information

Chronic hyperglycaemia is associated with nerve damage, resulting in peripheral and autonomous neuropathy, which may lead to decrease and final loss of pain sensitivity. As a result, foot lesions and myocardial infarction may remain undetected, contributing to a high amputation rate and cardiovascular mortality. Good metabolic control is still the only preventive measure for the loss of pain sensation.

#### How to Detect the Loss of Pain Sensation

1. **Test pain sensation with a pin.** Measure **the vibration sensation with a graduated tuning fork\***. Make a double check (upper and lower limbs) on both sides. Do it at the first visit and then yearly. Patients at risk are those with vibration sensation of <4. Repeat measurements yearly. Patients having 2 and <2 are completely insensitive to pain and foreign bodies in their shoes. NB: When using a non-graduated tuning fork, patients at risk are those who feel the vibration less at the level of malleoli than at the wrist.
2. **Record ECG yearly** in case of any of the following complaints (dyspnoe, sweating, fatigue, vomiting), and/or after surgery and in other conditions which may favour myocardial infarction. 30% of diabetics may have silent myocardial problems.

#### General Advice

Whenever you detect a patient with decrease or loss of the pain sensation, **you must inform him about it**. Demonstrate to the patient the difference in the pain sensation by pinching and pricking him in a place with normal and then a place with decreased pain sensation (i.e. foot and hand).

Pain is the alarm signal which protects the body: pain = danger, no pain = safety. **The absence of normal pain sensation exposes a diabetic patient to the risk of getting lesions which may remain undetected.** Therefore, it is essential to make patients understand that the absence of pain is dangerous.

Look at patients' feet for any lesion at every visit and inspect their shoes. **Put a red label on the cover of the patient's chart saying: 'Loss of pain sensation'.**

**Patients with loss of pain sensation** have to be informed about the following:

1. They have to inspect their feet every day in order to detect even small changes of colour or skin integrity.
2. They must not use cutting instruments, electric devices (except those operated by batteries whose engine is weaker) or chemicals for their foot care.
3. They must **not go** barefoot or without socks, especially on the beach.
4. They have to measure the temperature of water with a thermometer before bathing (less than 37°C). They must not use hot water bottles and electric devices to warm their feet, but wear socks instead.
5. They have to choose shoes which do not produce pressure on their feet. Look how a patient examines shoes with his hand before putting them on.
6. If a patient has a foot lesion, he must relieve the pressure on the foot (change the shoes or stop walking). Patients with foot problems must be referred to a foot clinic whenever available. Every diabetologist should know a podiatrist who is knowledgeable about diabetes.
7. Patients have to be seen by a doctor or a nurse every 2 months.

\*Article: *The Tuning Fork Revisited*, C. Liniger et al., Eds. *Diabetic Medicine* 1990; 7: 859–864. For more information contact Professor Jean-Philippe Assal (see page 1023).



## *Handout for Patients*

### **Loss of pain sensation Long-term complications and prevention of amputations**

Your doctor has demonstrated to you that your diabetes has led to loss of pain sensation in your feet. This means that you have lost **THE ALARM** in case of injury or burn. Therefore, if you injure your feet, it will hurt very little, or even not at all. In your case, absence of pain is dangerous. The injury may become infected and cause serious problems. Therefore any small injury can worsen, but remain undetected. The infection may worsen to such an extent that your foot could risk amputation.

*Remember:*

- **You have lost 'The Pain-Alarm System'**
- **You need to substitute for this loss yourself, so**
- **Check your feet for injuries EVERY DAY, morning and night**

*You Can Protect Your Feet:*

1. **Examine your feet each time you take off your socks.** Look for small injuries or signs of pressure (redness).
2. **Check the inner part of your shoes** with your hand each time before putting them on.
3. Draw the shape of your feet on a piece of cardboard. Cut them out and insert them in your shoes to **make sure that they are long enough and broad enough.**
4. **Never go barefoot, especially on the beach** and never wear shoes without socks.
5. **Do not use hot water bottles** and electric devices to warm up your feet, put on socks instead. Measure the temperature of water with a thermometer before bathing! Do not exceed 37°C.
6. You should use an **emery board to shorten your nails** and pumice stone to remove calluses. Never use cutting instruments, electric devices or chemicals for foot care! **No bathroom surgery.**
7. If you **have an injury, contact your doctor immediately.** Until that, stop walking!
8. Ask about the possibility of attending a foot clinic and/or a podiatrist who is aware of the problems of diabetes.

**GOOD DAILY FOOT CARE PREVENTS AMPUTATION!**

## *Guidelines for Healthcare Providers*

### **Follow-up of eye problems Long term complications**

#### *Introduction:*

The diabetologist plays a crucial role in prevention: he has to make sure that his patient sees an eye doctor every year. Put questions to the patient to find out how much he knows and if he has any fears about eye complications, e.g: if the patient has a grandmother who went blind from diabetes, he could be scared.

#### *Background:*

Tell the patient that today blindness due to diabetes is preventable. Years ago many diabetic patients went blind, but today the situation has totally changed. Even so many patients will have eye complications, but they may not worsen if blood glucose is kept in good control and a good screening system is set. This good outcome is the result of:

- **Regular annual eye checks** by an ophthalmologist or a trained doctor
- **Better diabetes control** helped by home monitoring and HbA<sub>1c</sub> evaluation.
- **Laser treatment** in case of pre-proliferative and proliferative retinopathy

#### *Information:*

Initial treatment of diabetes can be associated with **transitory visual problems**. This is due to the fluctuations of the blood sugar. It has nothing to do with retinopathy. Patients usually complain of difficulties in reading. You should recommend them not to get glasses or to change glasses that they already may have, before the diabetes has stabilized. Inexpensive reading glasses may be useful.

Retinopathy is always a silent disease in the early stages, because visual acuity is not affected by the lesions. It is very important to detect lesions at this stage in order to give proper treatment. Therefore regular examination must be done by an ophthalmologist or trained doctors who are able to make a fundus examination.

**For the patient, retinopathy usually shows no signs but retinal haemorrhage does!**

#### *What to Do:*

Generally speaking patients should be checked ONCE A YEAR. Nevertheless, intervals can be shorter if they get complications.

You must make sure that the patient understands the importance of keeping the appointments for follow-up and you yourself should organize the appointment with the specialist so that you and your patient will know the date of the next appointment. Fill in this information on the patient's hand-out sheet.

#### *You Have to Tell the Patient:*

- that fundus examination has to be made with dilated pupils induced by eye drops
- that he must inform the specialist that he has diabetes
- that regular examination cannot be made by an optician
- that if his vision is suddenly impaired he must contact his doctor immediately
- to be reassured in case of background retinopathy signs
- indication for laser treatment may be earlier than proliferative
- something about the fundi picture taken and a fluoroangiogram

***Handout for Patients***

**Follow-up of eye problems  
Long-term complications**

Now you know that patients with diabetes can get eye complications. Having **REGULAR ANNUAL EYE CHECKS** helps to prevent major visual eye problems.

Eye complications can be prevented thanks to the new treatments which are available today.

Eye complications are frequently **SILENT**. You may not feel or see any change in your vision. They can only be discovered by a special examination.

*Important Things to Remember Are:*

- You must **attend regular annual eye checks**. Remind your doctor at the correct time.
- Tell the **eye doctor that you have diabetes**.
- The examination must be made on **dilated pupil**, induced by eyedrops.
- Avoid driving for 3 hours after an eye examination, especially at night.
- **Only an ophthalmologist** or a trained doctor can conduct proper examination of your eyes: the optician cannot do this.
- If your vision is suddenly impaired, contact your doctor immediately.
- Be aware of and make a note of your **next eye appointment**.

Date of the next eye appointment: .....

Signed by:

Patient: ..... Doctor: .....

## *Guidelines for Healthcare Providers*

### **Pregnancy and diabetes**

#### *Type 1 Diabetes and Pregnancy*

Women with diabetes and their families are sometimes reluctant to ask questions. To help overcome this reluctance you should provide a handout covering some of the questions.

#### *Information Every Young Diabetic Woman Should Receive*

Pregnancy and diabetes are perfectly compatible. The risk of the child becoming diabetic is less than 3%. Newborn babies are almost never diabetic. Good control during pregnancy is achievable thanks to modern management.

Before conception blood glucose should be near normal. Therefore pregnancy must be planned. Reliable contraception is important.

**If the mother has optimum control of diabetes** at conception and during pregnancy the following statements can be made:

- The **baby will be normal and healthy**.
- The **risk of malformation** is somewhat greater than for babies of mothers without diabetes but still **very small**.
- **Neither the baby's nor the mother's risks are relevantly increased** during the delivery, although caesarian section may, in some cases, be necessary.
- **Delivery must be made in hospital**.
- **Diabetic complications** are normally **not aggravated**.

#### *Preconceptional Counselling*

Every opportunity should be taken to discuss the importance of a planned pregnancy when you meet women of child-bearing age. They should know that at the time of conception it is of the utmost importance to strive for near normal glycaemic control.

#### *Treatment Before and During Pregnancy*

**Physiological blood sugar control is the aim:** multi-dose insulin injections and intensified self-monitoring are essential. Additional information about diet is needed as calorie adjustment is often necessary. Prevention of hypoglycaemia and instruction on the use of glucagon must be given. Do not forget to instruct the patient's partner and family members. Glycosylated haemoglobin or fructosamine should be performed on a regular basis, aiming at normal values. During pregnancy you must be prepared to discuss social factors. **Specialized care by an experienced diabetologist and obstetrician is recommended.** The need for consistent information is especially important; conflicting advice should be avoided among the health care team.

The pregnant woman must, **in case of illness, immediately contact her doctor because potential ketoacidosis** is extremely dangerous for the unborn baby and the mother.

#### *Postpartum Management*

**The mother ought to be informed about the special-care baby unit** and about the need to return to pre-pregnancy insulin doses after delivery. The importance of treatment of urinary infection should be stressed.

**If a new pregnancy is planned, reinforcement of the information given above is necessary.**

## *Handout for Patients*

### **Pregnancy and diabetes**

#### **Common questions raised by women who wish to have a child:**

**1. Will my baby have diabetes?**

The risk is small. For you as a woman with diabetes, there is almost no greater chance that your child will have diabetes, than that of a non-diabetic woman. There are virtually no cases of newborn babies having diabetes.

**2. Will my baby have malformations?**

Provided your blood sugar is well controlled before and during your pregnancy the risk is only a little above average. If the diabetes is controlled, the risk is almost the same as in a non-diabetic pregnancy.

**3. What is important before I get pregnant?**

Blood glucose should be as near normal as possible before you get pregnant. Therefore you may need adequate training to learn how to adapt your insulin dosage to the blood glucose values. Plan pregnancy and use reliable contraception. For those with diabetic complications special consultation is needed.

**4. Will I experience special difficulties with control of diabetes during my pregnancy?**

The use of modern management (blood glucose monitoring, frequent insulin injections and following a proper diet) has made the control of diabetes during pregnancy not more difficult than usual, but you need special care throughout pregnancy.

**5. Will I have a normal delivery?**

Yes, that's the aim. You may however be admitted a couple of weeks before term.

**6. What shall I tell my family members?**

That to have a healthy baby is possible provided good control is achieved. You should encourage your family to join you during your consultations. We would be more than willing to reply to any questions they wish to raise.

**7. Can I breast feed?**

Yes, just like a non-diabetic woman.

**8. What about late complications of diabetes?**

They cannot be induced by pregnancy. If already present, with appropriate care, they usually do not worsen.

**9. Remember:**

Consult your doctor while planning, as well as during your pregnancy, especially as soon as you become pregnant. Don't wait!

**Enjoy your pregnancy!**

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