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Patient Profile: 'Scott Chopping'

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Introduction

This seminar traces a [hypothetical] patient through the identification of symptoms of diabetes, diagnosis and hospitalisation and finally his discharge and education. Parts 1 and 2 of the seminar should provide you with an idea of some of the symptoms associated with diabetes in addition to basic information in regard to the associated clinical diagnostic tests. Parts 3 and 4 are more nursing orientated and focus on the hospitalised care of the newly diagnosed diabetic and the post hospital education and information required by the patient.

Part 1 — Home Visit:

What are the main issues for Scott?

What data supports your choice of issues and why?

What actions would you take and why?

In the short conversation with Scott he has disclosed a number of symptoms and some personal and family history;

Symptoms:	Excessive urination Increased thirst Increased hunger Weight loss
Medical history:	Recent bout of the mumps
Personal history:	Married with five children
Age:	42
Family history:	Brother has been a diabetic from childhood Mother is being treated for varicose ulcers

The above data seems sparse at first glance but on closer review provides the nurse/health practitioner with a wealth of information. Excessive thirst (polydipsia), hunger (polyphagia) and urination (polyuria) are classic markers for diabetes (Phipps, Sands & Marek, 1999: 1133; Price & Wilson, 1997: 958). Scott's brother has been a diabetic since childhood and his mother is being treated for varicose ulcers that may be secondary to some form of diabetes (Price & Wilson, 1997: 962). Both of these factors suggest a genetic predisposition to diabetes. Scott also reported that he had suffered a recent bout of the mumps, a viral infection. Viruses have been identified as possible

triggers for beta cell (insulin producing cells) destruction in the pancreas in genetically predisposed individuals (Patel, 1999; McCance & Heuther, 1998). Scott's age, 42, in addition to his increased thirst, hunger and urination would suggest that he is suffering from type 2 diabetes, however as type 2 diabetes tends to develop as a result of a high fat diet, patients tend to be obese. Therefore, considering Scott's weight loss in addition to his recent viral infection, he is most likely suffering from type 1 diabetes.

Regardless of the above preliminary diagnosis there is one main nursing issue for Scott; it is crucial at this point that he seeks further medical advice. As both a friend and nurse there is little one can do at this time except ensure that Scott understands what is happening to him and appreciates the importance of seeing his doctor as soon as possible. The nurse may choose to make this appointment for him immediately thereby ensuring he does not fail to receive medical attention. The nurse may also wish to take a blood glucose reading if the equipment is available, but as a doctor and further testing will be required to confirm the diagnosis it is far more important that he/she ensures that Scott seeks a medical consultation.

Part 2 – Assessing the situation

Scott has now been assessed and is currently in hospital. The following findings are available:

What do these results suggest and why?

Results related to Scott Chopping

<u>TEST (Normal Limits)</u>	Result	
Urinalysis		
pH <i>(4.6 – 8.0 average 6.0)</i>	6.0	This is within normal limits
Specific Gravity <i>(1.005 – 1.030 usually 1.010 – 1.020)</i>	1.030	This is a slightly elevated result. Pagana & Pagana (1994: 224) state that a specific gravity over 1.025 is abnormally high. High specific gravity may indicate low fluid intake or excessive water loss (Fischbach, 1995: 317) both of these imbalances are consistent with Scott's symptoms as he reported feeling excessively thirsty and urinating frequently. High specific gravity may also be due to fever, vomiting, diarrhoea, increased ADH secretion, diabetes mellitus or to a range of medications (eg. IV Dextran or Albumin) (Fischbach, 1995; Pagana & Pagana, 1994;

		LeFever Kee, 1987).
Blood (Negative)	Negative	This is a normal result.
Glucose (Negative)	++++	Glucose in the urine (Glycosuria) is always pathologic. (Phipps, Sands & Marek, 1999). Glycosuria may be due to brain injury, myocardial infarction, diabetes mellitus (Fischbach, 1995).
Urobilinogen	Negative	Urobilinogen is a pigment formed by bacterial action on bilirubin in the intestine. Normally the urobilinogen is absorbed into the blood stream and excreted via the urine (Youngson, 1992: 614). Urobilinogen is absent from the urine in partial and/or complete obstruction of the bile ducts such as cholelithiasis, cancer of the pancreas and severe inflammatory disease (Fischbach, 1995: 207).
Bilirubin (Negative)	Negative	This is a normal result.
Ketones (Negative)	Large amount	Ketones are a group of acidic compounds that form during states of carbohydrate deficiency such as starvation or anorexia (McCance & Heuther, 1998). The presence of abnormally high levels of ketones in the blood is called ketoacidosis, ketones in the urine are indicative of this state. Ketoacidosis can occur in diabetics when fats are catabolised for fuel in the absence of carbohydrates (Youngson, 1992). Ketonuria is thus used as an indicator of diabetes.
Biochemistry		
Fasting Blood Sugar	16 mmol/L	Patel (1999), states that a blood sugar level of >7.8 is considered poor. She also states that 2 consecutive measurements above 11.1 mmol/L are considered positive in the diagnosis of type 1 diabetes.
Test 1	18.2 mmol/ l	
Repeat Test		
Glycosylated haemoglobin (%)	>10 %	The glycosylated haemoglobin test is a complex test based on the measurement of

<p>(4 – 7%)</p>		<p>haemoglobin derivatives. The quantity of the derivate HbA1c is directly proportional to the average blood glucose level that the red blood cell is exposed to during its 120-day life span. Thus in long term hyperglycaemia, HbA1c constitutes a higher percentage of total haemoglobin. Transient elevations in blood glucose have little or no effect on HbA1c levels (Kaplan, et. al., 1996). Scott's results are above normal a limit, which indicates long term hyperglycaemia, thus further compounding the diabetic diagnosis.</p>
<p>Fasting plasma triglyceride (40 160 mg/dL)</p> <p>Fasting plasma cholesterol (140 – 199 mg/dL)</p>	<p>>2.4 mmol/L >7.5 mmol/L</p>	<p>2.4 mmol/L = 212.4 mg/dL [conversion: mmol/L / 0.0113 = mg/dL] (Kaplan, et. al., 1995).</p> <p>7.5 mmol/L = 663.7 mg/dL [conversion: mmol/L / 0.0113 = mg/dL] (Kaplan, et. al., 1995).</p> <p>In the absence of insulin Scott is unable to utilise carbohydrates for fuel, instead his body begins to breakdown other compounds in order to gain energy. The resulting increased fat catabolism causes an increase in free fatty acids that, when combined with glycerol in the liver, form an increase in triglycerides, hence Scott's result displays a hypertriglyceridaemic state (Phipps, Sands & Marek, 1999: 1132). Scott also has a dangerously high cholesterol level that may be secondary to the diabetes but may also may be a long-term unrelated condition (Fischbach, 1995). Scott's high cholesterol makes him susceptible to heart disease and atherosclerosis.</p>
<p>Electrolytes</p>		
<p>K+</p> <p>(3.5 – 5.0 mEq/L)</p>	<p>5.5 mEq/L</p>	<p>Scott has increased Potassium levels most probably secondary to ketoacidosis (Fischbach, 1999: 131). Hyperkalaemia is defined as K+ above 5.5 mEq/L (Price & Wilson, 1997; 269). Alterations in potassium balance are extremely dangerous, as potassium is a primary energy source for both</p>

		the heart and brain. However, pseudohyperkalaemia is very common. Pseudohyperkalaemia may be caused by increased exercise prior to blood sampling or by an excessively tight tourniquet whilst sampling (Price & Wilson, 1997: 269). Serum potassium levels may be high following ketoacidosis due to transcellular shifts, despite there being an actual net loss of potassium secondary to osmotic diuresis (Phipps, Sands & Marek, 1999: 1132).
Na+ <i>(135 – 145 mEq/L)</i>	131 mEq/L	Scott has a slightly decreased sodium level. Increased glucose levels above renal threshold cause glucose to stay in the filtrate. Glucose within the filtrate causes an osmotic diuresis and therefore increased water loss, in an effort to maintain equilibrium the sodium is drawn into the filtrate via osmosis and is lost in urine (Phipps, Sands & Marek, 1999: 1399).
Urine Output in 24 hours <i>(1-2 L)</i>	2686 ml	The normal daily urine output is regulated by the kidney and usually ranges from 1 to 2 Litres/day. This is an abnormally high output most probably due to osmotic diuresis secondary to high glucose levels in the renal filtrate.

(Table 1.0)

What is the significance of each of these results to Scott?

Scott's laboratory results confirm his diagnosis of diabetes. Glucose in the urine indicates that blood glucose levels have surpassed the renal threshold (180mg/dl), thus the glucose remains in the filtrate. The glucose in the filtrate attracts water, an osmotic diuresis occurs, hence Scott complains of polyuria. Polyuria is also evident in Scott's results; he has recorded a 24 hr urinary output of 2686ml, well above the normal range of 1 - 2 L (Phipps, Sands & Marek, 1998: 1399). The high specific gravity further compounds the notion of high fluid loss (Fischbach, 1995; 317).

The polyuria also results in a net loss of water and electrolytes, particularly potassium, magnesium and phosphorus, sodium and chloride. The loss of water and sodium manifests as polydipsia. Polyphagia begins as cells become starved of their fuel source. In type 1 diabetes, where insulin is not being produced, there is a resulting inability to catabolise glucose for energy, this results in rapid weight loss as experienced by Scott (Phipps, Sands & Marek, 1998: 1132). The reduced fasting blood sugar, (16mmol/L and 18.2 mmol/L) above 11.1 mmol/L, also indicates diabetes (Patel, 1999). The large amount of ketone's in Scott's urine is very concerning as he is at high risk of developing complications of ketoacidosis, eg. coma.

What other information do you require and why?

Before commencing treatment we require more information about Scott.

- A more detailed medical history including current medications. There are some medications that are contraindicated with insulin. We will need to know if Scott's current medications will cause further problem and if so, the medication/s will need to be altered prior to beginning insulin therapy. Though it may be hard to pinpoint, any information with respect to Scott's compliance to medications and drug therapy will be helpful as after discharge from hospital Scott will be required to take charge of his condition.
- A detailed family history, particularly in relation to his brother's diabetes would be useful in estimating Scott's prognosis.
- Any information pertaining to Scott's lifestyle, including his diet, current exercise habits, stressors and health practices will be useful in determining a care plan for Scott.

Part 3: Managing the problem

Scott will require ongoing assessment and management for diabetes. You are caring for him during this hospitalisation.

1. What assessment data will you need to manage his care adequately?

Diabetes can cause damage to blood vessels and nerves if it is undiagnosed or not controlled (Calder 1978:62-63). Therefore, it is crucial that Scott has ongoing assessment and management for his diabetes, so that he can lead a normal healthy lifestyle (Phipps, Sands & Marek 1999:1148). There are multiple responsibilities related to the nursing care of a patient with diabetes. These include an assessment by collecting the history and performing a physical examination (Phipps, Sands & Marek 1999:1148-9) & (Burrell, Gerlach & Bless 1997:1185-1187). This assessment would therefore be performed on Scott:

Assessment:

This includes things such as:

- History - current medical problems and their management, Inquire about the current diabetic management regimen including diet, medications and exercise in order to assess the aspects of management relevant to the current problem.
- Family History - any family members have diabetes?
- Past Medical History - A review of coexisting medical problems may reveal diseases, such as hypertension and obesity, which are contributing factors to patients with diabetes.
- General information about their understanding of diabetes, how they feel, what causes the most problems for them.
- Diet - Do you eat away from home a lot, who prepares the meals, what does your diet consist of, has there been a change in your weight recently.
- Exercise - How much exercise do you perform in your work and during your leisure activities, what type of exercise do you do
- level of education - concept of diabetes

Physical Examination:

- Cardiovascular System
 - Assess for the presence and quality of posterior and doralis pedis pulses and assess the blood pressure
- Musculoskeletal System
 - Assess for foot deformities (bunions, ingrown toenails, and amputation) and also assess for abnormal gait
- Skin
 - At the injection site
 - Assess for redness or swelling and assess for indication of tissue and tenderness
- Feet and lower legs
 - Assess for cleanliness and condition of toenails, assess for pressure points and ulcers, blisters and calluses and assess for hydration, warmth and oedema
 - Assess for moistness, discolouration
- Eyes
 - Examine the fundus
- Neurologic

Assess for the absence or presence of Achilles tendon reflex and also compare patient's perception of light touch, sharp point and vibration sensation on feet versus a proximal area of the body

2. *What nursing care will Scott require?*

Drawing conclusions from the above assessment, issues would be revealed and from this we would be able to see what nursing care Scott would require, such as foot or eye care. Prior to discharge, however, Scott will need to know the following basic knowledge and skills:

The basic nature of his diabetes

Insulin and its use

patient support to self-inject insulin

support him with his home blood glucose monitoring system

instruct him on frequency and timing of home blood glucose monitoring

essentials of food management

review his dietary intake

refer him to a dietitian

hypoglycemia, its prevention and treatment

complications

The nursing actions would therefore, be teaching Scott measures that would help him achieve control of blood glucose (diet, exercise and insulin) and teaching him to detect, prevent and treat hypoglycemic reactions and also addressing the above points (Phipps, Sands & Marek 1999:1179). The nursing care that he will require while in hospital will also include regular blood glucose monitoring and administration of insulin injections. He would also require daily inspection of his

feet etc, to prevent any long-term complications. A person from the Diabetes Centre should also be recommended to come and see him; therefore it would be the nurse's responsibility to book an appointment if needed.

3. *What is the significance of the assessment data to Scott's care?*

The significance of the nursing assessment data for Scott's care is to:

Identify physical findings related to diabetes

Identify needed psychosocial interventions

Identify education needs

To avoid any complications

Part 4 - Returning to the Community

Scott is to go home and will require information about managing his diabetes.

1. *Outline what information you would include when addressing nutrition, exercise and medications with Scott?*

Diabetes management involves a balance between nutrition, exercise and medication (Phipps, Sands & Marek 1999:1133). When discussing these issues with Scott I would discuss the following information.

NUTRITION:

When discussing the issue of nutrition with Scott we would inform him that, diabetes is directly related to how the body uses food and that nutrition is thus an essential component of management for all people with diabetes (Lutz & Przytulski 1997:344). Therefore, it is important for all people with diabetes to watch what they eat. Their diet, just like insulin injections, is necessary to control diabetes.

When discussing the issue of nutrition with Scott, we would therefore tell him that healthy eating and a balanced diet is essential for him to be able to keep his blood sugar level as close to the normal range as possible. The healthy Food Pyramid is a good guide to food choice (Vener 1997:31). To help control his diabetes and provide adequate nutrition we would tell him that his meals should be:

- High in carbohydrate
- High in fibre
- Low in fat
- Low in sugar

CARBOHYDRATES - these provide the best source of energy for the body. When your body digests them they form glucose. Providing his body with regular supplies of glucose helps him to perform at peak level (Anderson 1981:86). We would therefore, advise Scott to include high amounts of carbohydrates in his diet. This can include foods such as bread, cereals, rice and fruit and vegetables that are the major sources of carbohydrates in the diet with milk supplying a smaller amount. Grains such as wheat, oats, rye, bread, vegetables, rice, seeds, lentils and peas and beans are also excellent carbohydrate foods (Vener 1997:31).

We would also tell Scott when addressing the issue of nutrition, that while sugar does not cause diabetes, sugary foods such as sugar, sweets, chocolate, jam, fizzy drinks are not encouraged. Also, fruit and milk should be in the diet each day but not too much as it could adversely affect the blood glucose level. Fruit is best eaten fresh and raw to ensure that fibre and vitamins remain rather than as juice. We would let him know that it is easier to control blood glucose levels if he distributes his intake of carbohydrate foods throughout the day into five or six small meals (Anderson 1981:86).

FIBRE - helps to control blood glucose levels. We would therefore recommend Scott to consume high fibre foods in his diet, as they are more filling and also help to control weight (Anderson 1981:90).

PROTEIN - is used by the body for growth and repair. It also provides energy. It is therefore important to tell Scott to choose protein rich foods. Protein foods, however, may contain fat and contribute to weight gain. We would therefore, recommend to Scott to choose protein foods that are low in fat, such as lean meat, poultry without the skin and pulses. He should remember to use low fat cooking methods with minimal added fat (Anderson 1981:86-7).

FATS - eating too much fat can affect overall diabetes control, may raise blood fats (cholesterol and triglycerides) as well as lead to weight gain. The golden rule is to use as little fat as possible when preparing or cooking food and to choose low fat alternatives where possible (Dietitians Association of Australia 1998:2). We would therefore discuss with Scott to reduce visible fat from his diet -

- reducing butter, margarine, oils, dripping, and cream. When you need to use fat choose small amounts of polyunsaturated or monounsaturated oils and margarines
- choosing low fat dietary products including milk, yoghurt, cheese and ice cream, choosing lean meat and trimming fat from meat and skin from chicken.

WHEN COOKING:

- Grill, bake, dry roast or barbecue.
- if he needs to fry foods, either stir fry in a small amount of oil or use non-stick pan and lightly coat with a cooking oil spray

REDUCE HIDDEN FATS BY LIMITING USE OF:

- processed meats and sausages
- take-away foods
- cakes, pastries, biscuits, chocolate
- full-cream dairy products
- gravies and creamy sauces
- salad dressings and mayonnaise
- nuts, seeds, olives

SNACKS - When commencing insulin some people may require a snack containing at least some carbohydrate foods. Supper is very important, including suitable choices of toast or bread thinly spread with margarine or butter, wholegrain cereal or biscuits. This is important for Scott to be told when informing him about nutrition, as Scott would have just commenced insulin therapy.

ALCOHOL - can interfere with diabetes control and can cause hypoglycemia if taken without food. He should avoid drinking alcohol on a daily basis and limiting himself to two drinks at one time is

endorsed. As well as mentioning this information to Scott, it would also be appropriate to mention to Scott to eat some carbohydrate foods while drinking alcohol to avoid hypoglycemia (Dietitians Association of Australia 1998:2).

It is important that when grocery shopping, to read the ingredients on food that you are purchasing!!

EXERCISE:

Exercise plays an important role in the management of diabetes (Lutz & Przytulski 1997:343). If you increase your activity you will feel healthier and find diabetes management is more effective (Carpenito 1997:445). Exercise requires energy and uses up extra kilojoules and so will help you achieve and maintain his ideal weight. Increased activity can also improve his body's response to insulin and may delay or prevent the need for medication. However, it is important not to strain or over exercise. These points would be appropriate to include when talking to Scott about exercise. It would also be appropriate to tell him to aim to include 20-30 minutes of enjoyable activity 4 or more times a week, such as walking, swimming, cycling which are good examples of healthy exercise (Burrell, Gerlach & Bless 1997:1155).

We would explain to him that by following a regular exercise program he can reduce the risk of developing long-term complications of diabetes and related health problems. For example, exercise or increased activity can reduce the amount of fats and cholesterol in the blood and decrease blood pressure.

It is important to tell Scott to inspect his feet daily and after exercise for any sign of open areas, blisters, swelling and if any of these signs are present they should be reported to the physician immediately. During exercise proper footwear is necessary to prevent the above points from occurring (Lutz & Przytulski 1997:343). It is also important to point out to Scott that in anticipation to exercise it is necessary to increase caloric intake or decrease insulin dose to avoid hypoglycemic reactions during or after exercise (Nathan & Lauerman 1997:128). It is important also not to exercise before consulting his physician.

MEDICATION:

Insulin is one type of medication that diabetics use and is the one that is significant to Scott's care. It is important for him to know that insulin is administered by a needle either subcutaneously or intravenously, but most commonly subcutaneously. It can be injected into the thighs, buttock abdomen and upper arm (Lutz & Przytulski 1997:344). The best place is where there are loose folds of skin that can be pinched up. The abdomen is the preferred general area, but it is important to change the place of the injection on the abdomen to avoid local damage such as toughening of the shin, hypertrophy etc (Lutz & Przytulski 1997:344).

It is also important for Scott to know that insulin has to be stored in the refrigerator (2-8 0C) away from the freezer or freezing coils. It should not be exposed to excessive heat and should never be frozen. He can keep insulin that he is using out of the refrigerator for up to one month (Phipps, Sands & Marek 1999:1158). This way he can avoid injecting cold insulin that may sting. Before storing his cloudy insulin in the refrigerator, shake the vials to resuspend any settled insulin. Vials of clear insulin do not need to be shaken before storage. Prior to use, his cloudy insulin should be

resuspended by gently inverting the vial or by rolling the vial between the palms of his hands. If he draws up more than the required amount of insulin, he should not squirt the excess into the vial. The insulin vial may become contaminated with syringe lubricant.

It is important for him to know that he should do not use any vial if - the clear soluble insulin turns cloudy, the expiry date has been reached as shown on the vial, the insulin has been frozen or exposed to extreme heat, lumps or flakes appear in the insulin, the insulin is discoloured or the deposits of insulin remain on the side of the vial after being shaken (Phipps, Sands & Marek 1999:1159).

It would also be advised to Scott that he should purchase a blood glucose monitor to be able to test his blood glucose level. He would also need to purchase a device that delivers insulin eg. - A Novopen 3 that is an insulin-delivering device.

How would you advise both Scott and his family to recognise abnormal blood glucose levels and what would you advise them to do when they observe the signs and symptoms of abnormal blood glucose levels?

The aim of diabetes treatment is to keep blood glucose levels within the normal range as much as possible (Martini 1998:623). If you have diabetes your body is no longer able to maintain this control. It is likely that diabetics will develop hyperglycemia and they are also subject to hypoglycemia (Kelleher 1988:18-19). These are abnormal blood glucose conditions and it is important that Scott and his family are able to recognise these.

HYPERGLYCEMIA - this relates to a high blood glucose level above 15 mmol/L and is caused by the pancreas not making enough insulin to meet the body's requirements (Anderson 1981:18). It can occur in any person with diabetes. We would advise Scott and his family to recognise abnormal blood glucose levels if Scott experiences any of the symptoms below:

- feeling tired and unwell
- increase urine output
- thirsty
- blurred vision

Hyperglycemia can be caused by:

- eating too much sugary or starchy food at one time
- being inactive, causing medication to work less effective
- omitting his dose of medication or if the dose is too low
- overweight
- have an illness or infection
- experiencing emotional stress
- drink too much alcohol

It is important to advise Scott and his family that if they observe any of the above signs and symptoms to check what Scott has eaten etc, to see whether a cause can be found. If Scott has a high blood glucose level and feeling unwell it is important to contact his doctor or diabetes nurse.

HYPOGLYCAEMIA - this often occurs 1 - 3 hours after a meal. It is a result of very low blood glucose levels, below 3mmol/L. Warning signs and symptoms that Scott and his family should be aware of include, Scott becoming:

- nervous
- irritable
- hungry
- headache
- weak, dizzy
- shaky
- skin becomes clammy, pale and sweaty (Nathan & Lauerman 1997:135).

If not treated speech can become slurred and Scott may appear confused and drowsy. If it is severe it can cause loss of consciousness (Nathan & Lauerman 1997:136). It is advised that if Scott experiences hypoglycemia and is conscious, he should eat or drink something with sugar in it, such as glucose tablets, sweetened orange juice, jelly beans. This should be followed by carbohydrate foods like a wholemeal sandwich or a piece of fruit. If however, he is unconscious, it is important that his family are advised not to try to give him fluids or foods. He will require a glucagon injection, which will increase their blood glucose level. If glucagon is unavailable they (his family etc) should take him to hospital immediately by ambulance. If however, he is awake but groggy, putting honey or cake icing around his mouth between the gums and cheeks will effectively arouse him. This is because the honey or what ever is used is absorbed through the oral mucosa (Phipps, Sands & Marek 1999:1160).

It is important for Scott and his family to be aware that hypoglycemia can occur if he is taking insulin and he:

- misses or delay meals and snacks
- drinks too much alcohol
- has a significant weight loss
- does strenuous activities without eating extra carbohydrates

It is therefore important that Scott is advised that he should carry around sweets such as glucose tablets or jelly beans and eat them at the first sign of hypoglycemia. The effect of hypoglycemia should be explained to Scott's relatives, friends and workmates, so they will know how to help him if he is unable to treat yourself. They should know to give glucagon and to call an ambulance (Nathan 1997:140). Also if he becomes unconscious it is important that the family and relatives know to turn him on his side and check that he is breathing properly. They should not attempt to give anything by mouth. If glucagon is available (Scott should have an emergency glucagon kit) and one of his family members knows how to give a simple injection of a substance such as glucagon that can increase his blood glucose level, it is advised they do so with care and that they take Scott to hospital or seek medical assistance if he does not recover after 10 minutes (Phipps, Sands & Marek 1999:1161).

Now that Scott has diabetes there are some issues related to his ongoing health, which need to be discussed with him and his family.

What are the issues?

All people with diabetes should have access to ongoing care, ideally delivered by a multidisciplinary diabetes team, which aim at normalising the metabolic state to reduce the development of complications (Vener 1997:33). Access to information and education to assist the acquisition of skills to assist management of the disorder is critical. These are therefore, issues that need to be address to Scott. He needs to be aware of the different types of self-monitoring glucose devices and insulin devices, as blood glucose levels and insulin are an integral component of Scott's treatment plan for diabetes (Vener 1997:34). It is also necessary to address the long-term complications with Scott and tell him that a key goal of diabetes treatment is to prevent the complications, which can result from poorly controlled diabetes (Lutz & Przytulski 1997:340-1). Scott also needs to be aware of the services available to him.

He needs to be aware that careful oral hygiene is important for people with diabetes, to prevent teeth and gum infections, also foot care is essential, regular eye checks etc. Other issues could include insurance, work and legal obligations such as life insurance or Superannuation, Motor Vehicle Licences etc. As discussed above diet, exercise and medication would also be issues that need to be addressed.

What information would you give Scott and his family to manage them?

We would refer Scott and his family to the Diabetes Centre, as they would have the resources to provide him with a health care team and be able to talk to them about Scott's condition and management. They could then be referred to health professionals such as:

- diabetes nurse
- dietitian
- endocrinologist
- general practitioner
- ophthalmologist
- optometrist
- podiatrist
- physiotherapist

The above health professionals would be able to help Scott manage and treat his diabetes. We would also tell him to visit his GP for regular check-ups because annual checks are the most effective way of detecting the progress of complications and with prompt management a great deal can be done to prevent the damage from getting worse. It is important to tell Scott that he is not on his own and that there are people out there to help him manage his diabetes, so he can continue to life a healthy life.

Conclusion:

It can be concluded from the information presented that diabetes is a chronic condition where the body does not produce enough insulin or the cell's in the body do not respond to insulin as well as they should. People that develop diabetes should have a management plan worked out to keep a balance between diet, exercise and medication. The key to successful management of diabetes is to perform regular blood glucose testing. It provides information that can help people with diabetes to determine the effect of food, exercise and medication. Blood glucose results will allow people with

diabetes to keep their blood glucose levels within normal limits, to prevent hypoglycemia or hyperglycemia.

Diabetes can cause damage to blood vessels and nerves if it is undiagnosed or not controlled and therefore it is important that people with diabetes manage to control their diabetes. Assessment, including physiological and social data, is essential in identifying the client's educational and physical needs. Regular checks with a health care team are an essential tool in the avoidance any long-term complications that can develop as a result of diabetes.

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