

# Tibb Position Statement: Diabetes

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## **Abstract**

One adult South African in four, or 1.5 million, now has confirmed diabetes<sup>1</sup>. Many more are unaware of it. Diabetes, especially type 2, is rising alarmingly in prevalence, not only here, but worldwide. Diabetes is a chronic, non-infectious disorder, whose main diagnostic feature is an abnormally high level of sugar in the blood<sup>2</sup>. Tibb is firmly convinced that the Western way of life, aggravated by unwise personal behaviour, is largely responsible for this alarming increase, which has become obvious over the last ten years or so<sup>3</sup>. The daily diet for many adolescents and adults, not only in the developed world, is typically associated with the intake of soft drinks laden with sugar and fructose syrup, consumption of plenty of red and processed meats, and fat-rich dairy products. The rapid increase within a generation or two in the number of overweight and inactive people has brought about an explosion in the numbers of mainly type 2 diabetics, by far the most common form<sup>4</sup>. Diabetes goes hand-in-hand with obesity. The cost of diabetes, both personal and community-wise, is enormous<sup>5</sup>. Quality of Life inevitably deteriorates, often rapidly. The build-up of sugar in the person's blood sooner or later leads to a whole host of medical problems, both physical and mental<sup>6</sup>. Some of these may be life-threatening. For Tibb, diabetes reflects a basic imbalance in the person's quality of moistness. Most people with diabetes have a sanguinous or phlegmatic dominant or sub-dominant temperament, reflecting the moistness associated with their temperament<sup>7</sup>. This means that the therapy adopted, Tibb or otherwise, should aim to reduce the quality of moistness. The main objective in the Tibb treatment of diabetes, as with all chronic or persistent disorders, is adopting a sound, suitable lifestyle, especially regarding food, drink and physical activity<sup>8</sup>. These actions help reduce the diabetic's excessive body mass. In addition to lifestyle and personal habit changes, a whole range of traditional herbs and spices, used effectively over the centuries, are available<sup>9</sup>. Tibb can also be combined, or integrated, with conventional medicine as an effective dual approach to combat diabetes<sup>10</sup>.

## **Overview on diabetes**

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Diabetes is a chronic, debilitating disease which has rapidly become a major problem in the healthcare of the South African nation – a “silent epidemic”. It has a major impact on the physical, social and working lives of those who suffer from it, and places a tremendous economic burden on them. The consequences of untreated diabetes are stark, and life changing: heart attack, stroke, kidney failure, amputation and blindness. In South Africa, the main drivers behind the alarming rise in diabetes are obesity and a change in food intake

favouring intensely processed foods which are high in sugar, fat and calories. The broad adoption of a more sedentary form of living has also contributed. Type 1 diabetes, which has a genetic source, arises because the person's pancreas is unable to provide the required amount of the hormone insulin. These factors account for a minority of diabetics. Type 2 diabetes accounts for the vast majority, and is generally related to increased migration to the city and a faulty lifestyle – poor diet, lack of exercise, and weight gain. This is entirely preventable, and can be reversed by relatively simple changes to lifestyle.

*This is where Tibb comes in.* The practice of Tibb is partly based on the modification of lifestyle in order to treat the patient suffering from a chronic or recurring disorder, such as type 2 diabetes. Changes are made to the nature and amount of the food regularly consumed, the form of physical exercise or daily activity undertaken, and other “Lifestyle Factors”. These changes are based on the diabetic's temperament. Other measures to support Physis, the person's power of inner healing, are also introduced.

***In this Tibb Statement we examine the nature of diabetes from both the conventional (allopathic) medical and the Tibb perspectives, placing special emphasis on its origin, prevention and treatment.***

### ***What is diabetes?***

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Diabetes is a complex metabolic disorder, with very definite short-term signs and symptoms. More important, however, is that it often leads to long-term complications. Diabetes is caused by a problem in the way the body makes or uses insulin. Insulin is needed to move blood sugar (glucose) into cells, where it is stored and later used for energy.

One dictionary defines diabetes as:

***“A disorder of carbohydrate metabolism in which sugars in the body are not metabolised to produce energy, due to a lack of the pancreatic hormone insulin”***

In all forms of diabetes, blood glucose levels rise abnormally (*hyperglycaemia*). When the blood glucose exceeds a certain level, it “spills over” the kidneys and into the urine (*glycosuria*). In the early stages of diabetes, people complain of feeling thirsty all the time, unexplained weight loss, and urinating frequently (*polyuria*).

As the diabetic person is unable to use glucose properly as an energy source, his or her body switches to an alternative supply – the *body fats*. Although fat metabolism does supply the required energy, there is a problem, because the acid balance in the body becomes disturbed. This leads to the build-up of certain toxic chemicals called *ketones*, or *ketone bodies*. The person develops *ketosis*, and this can lead to convulsions and eventually a *diabetic coma*, which can be fatal.

In type 1 diabetes, certain parts of the pancreas (the beta cells) produce little or no *insulin*. This is a hormone produced by special cells (*beta cells*) found only in the pancreas, an endocrine gland located near the stomach. Insulin is needed to move blood sugar (*glucose*) into all living cells, where it is stored and sooner or later used for energy. Without enough insulin, glucose builds up in the bloodstream instead of going into the cells. The body is unable to use this glucose for energy. This leads to the symptoms of type 1 diabetes.

In contrast, in people with type 2 diabetes, the fat, liver, and muscle cells do not respond correctly to insulin (*insulin resistance*). As a result, glucose does not get into these cells to be stored for energy.

### ***Diabetes in South Africa***

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South Africans originally from the Indian sub-continent or from Malaysia are particularly prone to diabetes, although it is becoming more common throughout the South African population. Of South African diabetics, 85% – 90% is type 2. This number will no doubt increase, due to accelerating urbanisation and the adoption of Westernised fast food and lifestyle.

The prevalence in each South African community is:

Indian community	11 – 24%	Genetic predisposition
Coloured community	8 – 10%	Lifestyle (diet, activity)
Black community	5 – 8%	Urbanisation (diet)
White community	4 – 6 %	Lifestyle (diet, activity)

The main focus in Africa remains infectious diseases, especially HIV/Aids, tuberculosis (TB) and malaria, because of their acute nature. There is relatively little awareness of diabetes and its complications, so many diabetics are undiagnosed, and receive no treatment. This creates a major healthcare threat for the future.

In addition, people of a certain temperamental type are more prone to developing diabetes. Studies conducted in South Africa have revealed that people with a sanguinous temperament which is either dominant or subdominant are more likely to develop type 2 diabetes. The risk is even higher if these people have a combination of sanguinous and phlegmatic temperaments – that is, either sanguinous / phlegmatic, or phlegmatic / sanguinous.

The impact of diabetes on South Africans generally and individually is enormous now, and likely to get much worse in the near future. Men and women with diabetes (both types) face not only reduced overall life expectancy, but also a higher number of years living with disability compared to those people without diabetes.

***South African lifestyles are becoming increasingly sedentary; obesity rates are rising.***

### ***The story of diabetes***

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The saga of diabetes goes back at least 3,500 years to the times of the ancient Egyptians and early Hindus in India. The unique presence of sweetness in the urine of diabetics was noted in those distant times, so bringing in the term “mellitus” (Greek for honey). The label “diabetes” was first coined by a Greek physician, Apollonius, and the distinction between type 1 (which was linked to onset in the young) and type 2 (linked to overweight in adults) was made about 1,500 years ago. A comprehensive description of diabetes was provided by another Greek physician, Areteus, early in the last millennium, which included the abnormally high urine flow.

The disorder was probably quite rare in that era, as Hippocrates, the early Tibb pioneer and acknowledged “Father of Medicine”, made scant mention of it. Galen, another early Tibb pioneer, also saw few patients with the disorder. This in itself suggests indirectly that our modern lifestyle plays a major part in its emergence – certainly the dominant type 2. It also suggests that type 1 was linked to a low survival rate, which persisted until the broad availability of injectable insulin in recent times.

Ibn Sina, another titan of Tibb who lived around 1,000 years ago, described diabetes in precise detail, and referred to both its primary and secondary forms. Specifically, he identified the presence of sugar in urine, and changes in both appetite and sexual drive. The bleak consequences of diabetes were noted: amputation of lower limbs due to gangrene and progressive blindness.

The prognosis for diabetes was most likely poor – Areteus commented that a diabetic’s life was “short, disgusting and painful”. Ibn Sina took the herbal approach, prescribing fenugreek and zedoary, with some success. The former is used to this day.

Treatment-wise, apart from the use of herbs by practitioners such as Ibn Sina and others, there was little to be done for patients with diabetes type 1 (the dominant type until quite recently). It was only early in the last century when a greater understanding of the biochemistry of sugar and the pathology of diabetes emerged, that treatment was put onto a rational footing. The major breakthrough came when the glucose-regulating hormone insulin was identified, isolated from the pancreas gland, and used clinically. Since then, the treatment of type 1 diabetes has advanced by leaps and bounds.

The treatment of type 2 diabetes has followed a different path. Originally this occurred in adults, especially those who were obese. However, this more benign form, previously called insulin-independent diabetes, has been appearing in greater numbers in young people, especially over the last 25 years. The culprit has been identified very firmly as our modern lifestyle, and the blame has been laid at the door of imprudent eating in content, amount and habits, sedentary living, reduced physical exercise, poor sleep hygiene and even intolerable stress levels.

Since then, there have been many advances in managing diabetes in general. Glucometers and dip-strips which quantify blood and urine glucose levels; insulin pumps which mimic natural insulin secretion; bio-engineered human insulin; and insulin skin patch delivery. Also, a plethora of drugs has been developed, some of which stimulate the pancreas into producing and secreting more insulin.

### ***Different types of diabetes***

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There are three basic types of diabetes: Type 1, Type 2, and Gestational. An additional type is under active clinical investigation

**Type 1 diabetes** is the more severe form, and affects the person far more than type 2 and gestational do. It has been calculated that it knocks 12 years off a person's life expectancy.

#### ***The main features are:***

- It is a progressive and irreversible disorder, affecting about 10% of all diabetics.
- It usually affects young people, those under 30 years of age. This is why it is sometimes called *juvenile-onset diabetes*.
- It results from limited or non-existent secretion of insulin from the pancreas, an endocrine gland.
- The progressive destruction of specific parts of the pancreas. Clumps of cells (*islets*) which are embedded in the pancreas (the *beta cells*) produce and secrete insulin are severely damaged, or even destroyed.
- The cause of this type is not known, although genetic make-up is a factor, especially if combined with unrelenting stress. Lifestyle does not appear to be involved in the onset of type 1 diabetes.
- A person with type 1 diabetes needs to inject regularly with insulin to keep blood glucose levels in the normal range.
- Type 1 diabetics start insulin treatment early on, and need to take it for the rest of their lives in order to survive. It is a tremendously difficult and tiring disease to manage, with its highs and lows and testing and injecting.
- Insulin is usually administered via several injections per day or through the use of an insulin pump.

**Type 2 diabetes** is not as severe as Type 1, and requires less drastic treatment. The features are:

- The pancreas does produce some insulin, but this is not enough. What's more, the body cannot effectively use the insulin that has been produced, because the body's cells have developed *insulin resistance*.
- Around 20% of people with type 2 diabetes have a normal, healthy body mass. Many of these need a little insulin. Even so, many of these can be controlled with changes to their Governing Factors, especially diet and weight control.
- There are drugs which lower blood glucose levels (*hypoglycaemic agents*), which work best when combined with dietotherapy.
- Type 2 diabetes usually develops relatively late in life – that is, after a person passes 40. This is why it is sometimes called *maturity-onset diabetes*.
- Most people with this form of diabetes are overweight or obese, often through poor lifestyle control.
- Persons who develop type 2 diabetes have a strong genetic pre-disposition with respect to their temperament.
- Up to 25 – 30 years ago, type 2 diabetes was uncommon in children. Since then, however, it has been seen more commonly in children and young adults. This is the result of poor eating habits, lack of physical exercise, and excess body weight. For this reason it is no longer called “adult-onset” diabetes.

***Fortunately, the type 2 form of diabetes is preventable and even reversible in most cases by simple, inexpensive changes to the sufferer's lifestyle and personal behaviour, supported by Physis-enhancing herbal products.***

**Gestational diabetes** occurs when pregnant women who were previously non-diabetic develop high blood-sugar levels. The features are:

- It has few symptoms relative to types 1 and 2 diabetes.
- It appears in about 3% to 10% of pregnancies.
- It may be due to interference with insulin receptors by a hormone secreted by the placenta, human placental lactogen. Its role is to ensure that the foetus receives energy in the form of fatty acids, even when the mother is malnourished. This leads to elevated blood sugar levels, and its consequences.
- After childbirth, the condition disappears.

**Type 3 diabetes** has been proposed for certain forms of Alzheimer's disease which seems to result from insulin resistance in the brain. At present, this is speculative, and needs further investigation to support this hypothesis or otherwise.

**Pre-diabetes** is a borderline condition where insulin resistance causes blood glucose levels to be higher than normal, but not high enough yet to be type 2 diabetes. In South Africa the lack of adequate screening services delays early diagnosis of pre-diabetes and diabetes. Most people are therefore diagnosed only once they develop complications from the disease, when damage to tissues and organs has occurred.

<b>Diabetes – the vital statistics</b>	
<b>Worldwide prevalence</b>	<b>One per-cent of the population</b>
<b>Prevalence of diabetes 1990 to 2013 compared</b>	<b>45% Increase worldwide (USA – 71%)</b>
“ “ “ (RSA) 1980 to present day	33%
<b>Type 2 diabetes compared to type 1 diabetes</b>	<b>90% type 2 : 10% type 1</b>
<b>Number of people with diabetes (both forms)</b>	CE 2013 – 387 million CE 2015 – 415 million CE 2030 – 552 million (est.) CE 2040 – 640 million (est.)
<b>Number of South Africans with diabetes</b>	3,500,000 (approx. 6% of population)
“ “ “ “ “ pre-diabetes	6,000,000 (approx. 10.3% “ )
<b>Prevalence of diabetes in Africa</b>	<b>14.7 million. Undiagnosed – 78%. Almost doubling by 2030</b>
<b>Prevalence of diabetes in TB patients (SA)</b>	25%
<b>Prevalence in the Cape coloured community</b>	Up to 52%
<b>Percentage of diabetics unaware of it</b>	<b>19% unaware of the disorder</b>
<b>Number of South African with pre-diabetes</b>	<b>5 million</b>

### ***The Tibb perspective on diabetes***

Tibb considers diabetes, especially type 2, to be linked to the qualities of moistness. Tibb accepts that diabetes is a common but threatening disorder which arises from greatly reduced or absent insulin secretion from the pancreas (type 1, or insulin diabetes), or is due to inhibited absorption of glucose into the body’s cells (type 2, or non-insulin dependent diabetes). It also regards diabetes as a self-manageable condition in many ways. Diabetic persons can do a great deal on their own to limit the symptoms, and to delay or even prevent the long-term complications that can follow. Tibb considers that the majority of cases of type 2 diabetes are preventable.

**Physis.** Tibb regards diabetes as a classic case of Physis failing to maintain inner harmony. The inner control mechanisms which normally operate to keep the person in good health have been overwhelmed by poor diet, abnormal lifestyle factors and imprudent behaviour over a sustained period of time. Type 2 diabetes is a form of inflammation, which is one of the mechanisms Physis brings in to counteract persistent irritation. Physis' control of blood sugar levels, a critical component in the overall health picture, has been severely disrupted by disregard for the basic Lifestyle Factors. The capacity for inner healing has been seriously disturbed.

**Lifestyle Factors.** Tibb is well placed to treat diabetes, either alone or in combination with conventional practice. As the main culprits are poor food and drink intake, lack of regular physical activity and inadequate quality sleep, these can easily be addressed by simple dietotherapy, changes to daily physical activities and improved sleep hygiene.

**Qualities.** Tibb considers diabetes, especially type 2, to be linked to the qualities of excess moistness. Metabolically generated heat is needed for the pancreas to secrete insulin, and this is dampened down by excessive moistness. In type 1, insulin secretion is impeded. In contrast, type 2 arises because the excess moistness generated in obesity or by a faulty lifestyle prevents effective absorption of glucose into the cells which need it for respiration to generate energy.

**Temperament.** Most people with diabetes have sanguinous dominant/sub-dominant temperaments because of the quality of moistness associated with their temperament. People with a sanguinous/phlegmatic combination are at even more risk, as this temperamental combination has a dominant quality of moistness. Diabetes therefore reflects an imbalance, namely, an excessive quality of moistness. This means that any therapy has to be directed at reducing moistness by increasing qualities of heat, together with dryness. Treatment of diabetes with Tibb therefore acknowledges the uniqueness of the person affected. Tibb also takes note of the patient's temperamental nature before treatment starts, and this awareness guides treatment.

**Therapy.** An important feature of Tibb's treatment of diabetes is that whatever measures are adopted, Physis has to be respected, and fully supported. Diabetes is managed in Tibb mainly by dietotherapy, the use of specific medications, changes to the Lifestyle Factors and physical therapies (*see later*). These have relatively little negative impact on daily life. The person is able to lead a normal life.

**Empowerment.** Tibb regards both education about the disorder and motivation of the sufferer as being important for a successful outcome. Many people are unaware of their diabetes until disturbing symptoms appear, by which time considerable damage may have been done. So information on early detection is essential. In addition, firm motivation for the patient to persist in the changes to lifestyle is crucial. This is best achieved by stressing the undoubted benefits of the Tibb-initiated changes. By taking the initiative for the management

of the disorder, the patient can expect an improved Quality of Life.

### ***Tibb treatment of diabetes***

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Tibb accepts that diabetes, especially Type 2, is a complex disorder, due to severe disturbance to the person's qualitative balance. Treatment, therefore, is based on a multi-faceted approach, which restores equilibrium to the diabetic person. Some treatments involve lifestyle modification, others behavioural changes, and yet others herbal therapy.

For this to be successful it is necessary for diabetics to have a basic knowledge of the disorder, the necessary skills to deal with it, and the positive attitude to deal with their condition successfully. They must know:

- (a) The basic facts about the disease as they affect them
- (b) What is needed to keep diabetes under control, and how to prevent deterioration?
- (c) How to become self-empowered in dealing with the disorder

Tibb does not consider diabetes a death sentence, or even a "passport to a wheelchair", if it is properly controlled.

The diabetic person should be made aware of the benefits that Tibb can bring about by applying the Lifestyle Factors, so that the person becomes empowered in the control of his or her condition.

**Dietary changes.** Tibb provides sensible and realistic eating advice, which could benefit most people. The main feature is to limit the consumption of moist foods, which include white, refined sugar and flour products and increase heating and drying foods. Diets which are made up of protein, vegetables, whole grains and nuts together with fish and low-fat dairy products are advised. Essentially hot and dry and cold dry foods are ideal. Eating oily foods high in saturated animal fats should be severely restricted. Regular and excessive fast food consumption should be curtailed.

**Physical activity.** Regular, appropriate physical exercise and reduced sedentary behaviour is a main element in the avoidance and treatment of diabetes. Not only does this produce a partial recovery of the insulin-producing power of the pancreas, it leads to a drop in insulin resistance. It also improves blood circulation in the limbs, so reducing the risk of complications.

**Other lifestyle changes.** Good sleep hygiene should be encouraged, aiming at a maximum of seven to eight hours' sleep nightly. This supports Physis in restoring homeostasis. Resolving stress-inducing situations should be attempted. These aggravate the disorder and can disturb other elements of the person's lifestyle and behaviour, such as diet, sleep and smoking.

**Changes to behaviour or habits.** Smoking is a contributory factor to diabetes, so should be reduced or, ideally, discontinued. Cigarette smoke contains agents which constrict blood vessels, and so reduce blood circulation and so promote ulcer formation. Foot hygiene is

essential. Damage to the feet's surfaces from bad fitting shoes, for example, should be treated immediately, and feet kept clean, dry and warm. These measures help prevent ulcers forming.

**Maintain a healthy body weight.** Obesity and diabetes, especially type 2, go hand-in-hand. Losing weight improves blood glucose levels and so is a central part of the treatment. Measures to gradually reduce excess body mass should be seriously considered and adopted. However, too rapid a loss of body mass is not advised, as this can confuse Physis, resulting in a rebound in body weight as compensation.

**Pharmacotherapy.** Several herbs and spices have been used to good effect over the centuries, and their clinical benefits have recently been confirmed in clinical studies. Interestingly, most of these possess heating and/or drying qualities. Amongst these are:

**Garlic.** Moderate amounts of raw, cooked or aged garlic benefit diabetics. It helps to regulate blood glucose and can stop or reduce the effects of some complications, as well as fighting infections, reducing high cholesterol, and boosting blood flow.

**Turmeric** contains *curcumin*, which has traditionally been used for centuries to treat the symptoms of diabetes. It also helps in the fight against obesity and high levels of cholesterol, which often accompany diabetes. When combined with black seed and onions it has a positive effect on blood glucose, body mass, cholesterol and other blood lipids.

**Cinnamon** improves blood glucose and lipid levels in people with Type 2 diabetes, and may reduce risk factors associated with diabetes and cardiovascular disease.

**Fenugreek** seeds are high in soluble fibre, which helps lower blood sugar and improve glucose tolerance by slowing down the digestion and absorption of carbohydrates. It can improve most metabolic symptoms associated with both main types of diabetes.

**Ginger** improves long-term blood sugar control for people with Type 2 diabetes. It increases the uptake of glucose into muscle cells without using insulin, and may therefore assist in the management of high blood sugar levels.

**Bitter melon or gourd** has long been used for a range of ailments, including type 2 diabetes. It contains at least three active substances with anti-diabetic properties, which work individually or together to help reduce blood sugar levels. It also suppresses appetite.

**Aloe vera** can help improve blood glucose levels of people with diabetes. It also decreases abnormally high blood lipids (fats). It is effective for treating diabetic complications.

**Others.** Indian gooseberry, Java plum and *Gymnema sylvestre* have benefitted diabetics in various parts of the world.

## ***Signs and symptoms of diabetes***

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In many cases there may be few, if any, symptoms. Fatigue, frequent infections and blurred vision may occur, but the person affected may blame something else, such as being “run down”, stressed, or not sleeping properly.

Most symptoms of diabetes are caused by abnormally high levels of glucose in the blood. When these levels become too high, the kidneys cannot re-absorb the excess glucose, so it leaks into the urine. This “pulls” water with it, so causing repeated urination. This causes thirst, and eventually dehydration.

Fatigue is also common, as the cells can’t get the glucose they need to provide energy. Instead, they use fat for energy, and this leads to weight loss and hunger.

*The diabetic person will usually complain of:*

- **Abnormal or excessive thirst** – due to loss of fluid through repeated urination, and dehydration.
- **Frequent urination** – the body’s attempt to reduce the excessive levels of glucose.
- **Unexplained weight loss** – due in part to poor glucose utilisation and increased urination.
- **Feeling tired or lethargic** – due to the failure of glucose to enter muscle cells.
- **Numbness in the digits** – due to damage to peripheral nerves and their supplying blood vessels.

*The above are the five main symptoms of diabetes. Others symptoms include:*

- **Blurred vision** – due to swelling of the eyes’ lenses, and optic nerve damage.
  - **Poor wound healing** – due to narrowing blood vessels and nerve damage.
  - **Recurring skin, genital infections** – due to excessive levels of glucose in the extra-cellular fluids.
  - **Erectile dysfunction** – aka impotence - due to nerve damage in the genital region.
  - **Confusion** – very common, often with irritability, lack of focus and reduced mental agility. Cognitive decline often soon follows, due to decreased blood flow to the brain.
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## ***Short term effects of diabetes***

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There are three serious situations which can arise if blood glucose is not controlled properly:

1. Abnormally **low blood glucose** (or *hypoglycaemia*)
2. Abnormally **high blood glucose** (*hyperglycaemia*)
3. **Build-up of ketones** in the blood (*ketoacidosis*)

If these complications are not attended to rapidly, an emergency will most likely follow.

### ***Hypoglycaemia***

This sometimes occurs if the patient skips meals, or takes unusually strenuous exercise. It can also happen if an overdose of insulin has occurred.

*During a bout of hypoglycaemia there are dramatic signs and symptoms:*

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| <ul style="list-style-type: none"><li>• Confused behaviour and speech</li><li>• Profuse sweating</li><li>• Noticeable shaking</li><li>• A pounding heart</li><li>• Nervousness and irritability</li></ul> |
|---|

This is a dangerous situation. Anyone showing signs of hypoglycaemia should raise his or her blood glucose levels quickly. Glucose (dextrose) tablets, sweets, soft drinks should be consumed, followed by a snack.

### ***Hyperglycaemia***

This can happen if too much starchy or rich food is eaten, or following a stressful episode. A prolonged illness can also lead to a rise in blood glucose levels. If the glucose level rises too high, hyperglycaemia will develop. This too is a dangerous situation.

*A number of signs and symptoms may appear:*

- *Signs* – dry skin, glucose and ketone bodies in the urine, raging thirst, increased appetite, and increased urination
- *Early symptoms* – weakness, tiredness, dry and itching skin, blurred vision
- *Longer-term symptoms* – loss of weight, frequent infections

## **Ketoacidosis**

If there is insufficient insulin to enable the transportation of glucose into cells and tissues, the body will begin to break down fats to provide energy. By-products of this process are *ketones*, which make the body more acidic. This situation is life threatening.

*Some of the signs and symptoms are:*

- A fruity smell on the breath
- Nausea and vomiting
- Deep, forceful breathing (*hyperventilation*)
- An upset stomach, often with cramping and spasms

## **Longer term effects of diabetes**

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If not treated early and effectively, someone with poorly controlled diabetes will probably succumb to one or more serious consequences, or complications.

*The main ones are:*

- **Deteriorating vision** – even blindness. The blood vessels in the eyes are damaged due to localised high glucose levels. This is called *diabetic retinopathy*.
- **Foot ulcers** – poor blood circulation inhibits the natural healing process, allowing ulcers to form. In addition, the nerves are affected. Amputation is unavoidable if gangrene develops. This is made worse if the person smokes.
- **Sexual impotence** – the blood supply to the genital areas becomes sluggish as fatty deposits build up in the blood vessels. The diabetic will likely complain of general weakness and tiredness.
- **Heart disorders** – the diabetic may develop pains in the chest (*angina*) and even suffer a heart attack.
- **Skin infections** – fungal infections are very common, as the conditions for their flourishing are ideal – warm, moist, rich in glucose and protected.

Most of these conditions are linked to high glucose levels which have encouraged the formation of fatty deposits in the blood vessels – *atherosclerosis* – which in turn leads to poor blood microcirculation.

*If the diabetic person has not been treated properly for a long period of time, even more serious complications can appear:*

- **Severe kidney damage** – this is called *diabetic nephropathy*, and usually leads to fatal kidney failure.
- **Severe nerve damage** – this results in pain in the fingers, feet, thigh and trunk. It is called *diabetic neuropathy*.
- **Psychological problems** – unexpected mood changes and confusion may affect the sufferer, as “mini-strokes” interfere with blood flow in the brain.

Many people, especially men, with untreated diabetes develop what is known as “*Syndrome X*”.

*This is a cluster of disorders which includes:*

- **Hypertension** – abnormally raised blood pressure. This can trigger a heart attack or stroke.
- **Atherosclerosis** – the build-up of cholesterol containing fatty deposits (plaques) in the major blood vessels, which leads to heart attacks and strokes.
- **Central obesity** – a “beer gut” develops.

### ***Tibb’s practical measures for diabetes***

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Tibb’s treatment of diabetes is *holistic*. That is, it involves changes according to the Tibb Lifestyle Factors, plus the use of herbal medication where appropriate. Specific therapy involves changes to the diet, exercise routine and sleeping patterns.

There are three scenarios in which Tibb can be brought into the treatment of diabetes.

1. In cases of mild diabetes without complicating disorders such as hypertension, angina or heart failure.

*These can be managed by changing aspects of the Lifestyle Factors and taking Tibb medication.*

2. In diabetics already taking hypoglycaemic drugs that are ineffective or causing side effects.

*These cases can be managed by tapering off the drugs gradually, and introducing Tibb medication slowly. Changes to the Lifestyle Factors may also help.*

3. In diabetics with co-existing disorders such as hypertension, circulation problems and angina, and who are overweight.

*These people can be managed by introducing Tibb medication alongside hypoglycaemic drugs. The Lifestyle Factors can be adjusted with benefit.*

### ***Tibb medication***

Tibb is very much involved in the treatment of diabetes, and especially the symptoms which may trouble the sufferer, and the complications which may develop. Tibb product that overcomes moistness of diabetes, associated with the phlegmatic humour, is available at pharmacies locally.

- **Glucostop**. This increases the peripheral utilisation of glucose, by exerting an insulin-like action. By doing so, it reduces the glycated haemoglobin level, normalises the micro-albuminuria and modulates the lipid profile. It minimises the impact of long-term diabetic complications.

The herbal medication assists by boosting the function of both the pancreas and the liver. It also aids in reducing insulin resistance, so that the cells can utilise the insulin more effectively. This allows the pancreas to start producing more insulin normally. Since the liver function is also important as a main metabolic organ for the supply of nutrients, these medications also help to increase the efficiency of the liver.

### **Managing diabetes with the Lifestyle Factors**

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Diabetes is linked to excess of the quality of moistness, which dampens down the heat necessary for the pancreas and other tissues to function well. When treating diabetics, therefore, this quality has to be reduced by adjusting the Lifestyle Factors so that body heat and dryness are increased.

*The following adjustments will benefit the diabetic person:*

#### **Environmental Air and Breathing**

- The patient should seek plenty of fresh air, but avoid exposure to cold, rainy or humid environments.
- The use of air-conditioners should be restricted to very hot weather.
- The home environment should be kept warm and dry, if necessary with heaters.
- Early morning rising should be gradual rather than sudden.
- Tibb Slow and Deep breathing exercises should be practiced when possible.

#### **Food and Drink**

- The diabetic should select food with a high protein content, and include fruit and vegetables.
- Eat mostly **Hot & Dry** foods - such as bittergourd, avocado, chickpeas, fenugreek and cinnamon, followed by **Cold & Dry** foods - like beef, fish, cauliflower and mushrooms.
- Eat less of **Cold & Moist** foods - such as carrots, pumpkin, rice and butternut.
- Eat the least amount of **Hot & Moist** foods - like bread, pasta, bananas and wheat cereals.
- Avoid cold/soft drinks, Cold & Moist foods, sweet, oily, greasy and dairy foods.
- High carbohydrate foods should be taken sparingly.
- Water – 1.6 to 2.0 litres (8 to 10 glasses) of *warm* water should be drunk daily.
- Light breakfast, lunch, and supper are suitable, with a low intake of carbohydrate-rich roti, bread and rice.

*Additional advice includes:*

- *Eat regularly* – take three meals a day (or five small meals a day, if the patient uses insulin).
- *The timing of meals and snacks* – eat at the same time of the day, if possible.
- *Have a small meal or snack just before going to bed* – especially if the person

is taking any form of medication. It stops blood glucose from falling too far during the night.

- *Keep an eye on the portions of a meal* – the bigger the size of the helping, the more likely the rise in blood glucose level.
- *Eat wisely* – reduce the amount of fat and salt, increase the fibre content of the meals.
- *Eat before exercising* – this will protect against the blood glucose level falling too rapidly.

### **Movement and Rest**

Regular, light exercise is very important for the diabetic. He or she is often overweight, so physical exercise and increased activity in general is one way of reducing this. (The other is by changing eating and drinking habits.)

*The other benefits of this form of exercise are:*

- The diabetic person's blood glucose level is controlled better.
- The risk of developing complications such as high blood pressure and heart disease is made less.
- In type 2 diabetics with a weight problem, regular exercise will help a lot.
- It provides a psychological boost to the person.
- The exercise need not be over-strenuous. It can even be enjoyable.

A diabetic person can improve his or her exercise level without joining a gym or undertaking an exercise programme.

*For example:*

- *Walk more* –by parking the car some distance from his or her destination.
- *Walk instead of ride* – the person can take the stairs rather than the lift, or walk instead of always using the car.
- *Walk while waiting* – rather than sitting down, the person could walk around.
- *Play more with their children.*

Time-wise, exercise generally should be for 30 to 45 minutes, 3 to 5 times a week.

Diabetic people often have foot problems and poor blood circulation. As they exercise more these problems should become less.

***Diabetics who exercise regularly can often reduce their medication. Regular, moderate physical exercise is known to delay cardiovascular disease, the main cause of death in diabetics. As with all lifestyle changes, physical exercise is most effective when combined with other Tibb Lifestyle Factors such as better nutrition and sleep hygiene.***

## **Sleep and Wakefulness**

- Duration of sleep – the diabetic should try for at least 7 - 8 hours nightly.
- Any nap after lunch should last around 15 - 20 minutes, not more.

## **The Emotional state**

- The diabetic's emotional climate should be free of stress, anxiety and fear.
- The patient will benefit from exercises and breathing exercises (20 – 30 minutes) daily.
- Prayer, meditation or contemplation effectively wards off anxiety and stress.

## **Elimination and Retention**

- The patient's colon should be kept clean by selecting a high-fibre diet.
- Good indicators of effective detoxification are vomiting, diarrhoea and excessive perspiration.
- Excess mucus and phlegm need to be cleared from the diabetic's lungs and digestive tract.
- Patients with co-existing oedema should try diuresis.
- Patients experiencing inflammation should try therapeutic cupping.

***It is part of Tibb's approach that the diabetic's family is informed about the value of self-care, the dangers of escape from blood sugar control, and the need to deal with problems as they arise. Also, they should be told about both diabetic treatment and the need for effective counselling, as they are often at the "front line" when problems or even emergencies arise.***

## ***Problems arising when treating diabetes***

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In South Africa, junk food is tasty, cheap, convenient and readily available. It is also very energy dense. There is therefore often a serious conflict of interest when trying to convince people of the long-term benefits of healthy eating when measured against the attractions of a faulty diet. The same applies to taking more exercise, or becoming more active.

Some of the hurdles to overcome when adopting a better, healthier lifestyle are:

**Cultural attitudes.** These play a big role. In many communities being obese is seen as a sign of prosperity or societal status. Gaining body mass rapidly is taken as indisputable evidence of achievement, whether in business or politics, and after retirement from sport.

***The challenge for Tibb (and other natural medicine providers) is to convince diabetics to move away from their present lifestyle by persuading them of the real advantages of lifestyle changes in providing a better quality of life now, and the likelihood of a longer expectation of life.***

**Reliance on hypoglycaemic drugs.** For many people, any meaningful change in lifestyle is simply unacceptable. Taking a couple of tablets a day is easier than eating differently or becoming more active. They would rather ignore the risks and live with the side effects linked to being overweight now than change their comfortable way of life for a longer future. Many have been conditioned into the philosophy that there is a pill for every disorder, so they hold out for the next wonder pill or miracle drug.

***The challenge for Tibb (and other natural medicine providers) is to convince diabetics to move away from prescription drugs by persuading them of the real advantages of lifestyle changes in providing a better quality of life now, and the likelihood of a longer expectation of life.***

**Poor compliance.** A major problem with dealing with any chronic medical disorder such as diabetes is poor compliance. That is, the patient will not, or cannot, follow instructions. Where the person is receiving drugs for diabetes, compliance is often very poor. There are several reasons:

- The patient felt well enough before treatment started.
- The patient loses interest because progress is slow.
- The patient is confused by the treatment guidelines.

*When drugs are part of the treatment, other factors come into play:*

- The patient forgets to take the drugs when he or she should.
- The drugs used do not agree with him or her, because of side effects.
- The patient is not convinced of the need for treatment lasting a long time.
- The treatment schedule is too complicated.
- The cost of treatment may be too high.
- The control of diabetes is not easily achieved over the long term with medication alone.

### ***Diabetes and co-existing diseases***

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Diabetes rarely occurs alone. In most diabetics, especially of the type 2 variety, it is usually present combined with other lifestyle-related diseases. In many patients it is often present as part of what is rather dramatically termed the “*deadly quartet*” – hypertension, lipid disorders and obesity. In most cases these too are largely brought on by a dysfunctional lifestyle over a long period. In addition, a diabetic in South Africa is frequently found to be suffering from tuberculosis (TB). This too is a chronic disease (with acute flare-ups) which is aggravated by a poor lifestyle, especially diet and the air that is breathed.

In treating people with these disorders, the basic Tibb principles remain constant: avoid damaging the patient's Physis, bring in measures to boost the Physis, do not interfere with the conventional treatment of the co-existing disorder, and take the patient's temperament into consideration.

### **Diabetes with hypertension**

There are two basic forms of abnormally high permanent blood pressure (*hypertension*): primary, or *essential*, which is by far the most common, and secondary. The former's origin is unknown, but most likely related to a poor diet, lack of exercise and being overweight. The latter is a consequence of another disorder, such as thyroid or kidney disease.

***Tibb sees hypertension as a lifestyle issue, as with most cases of diabetes. It results from an excess of moistness and/or heat due to a faulty lifestyle and poor habits. People most affected tend to be sanguinous, either as dominant or sub-dominant. This situation mirrors that of the type 2 diabetic person. The measures adopted by Tibb for dealing with diabetics therefore apply if they are also hypertensive.***

### **Diabetes with lipid disorders**

Diabetics often take a statin cholesterol-lowering drug in order to lower the risk of heart disease, on top of drugs to lower blood glucose. Unfortunately, statins, especially at the high dose level, have been linked to increased risk of developing diabetes. This may be due to their effect on insulin secretion. Also, the connection between high cholesterol blood levels and fatal heart disease is now shrouded in controversy. Another factor is that chronic intake of statins can deplete the diabetic's body of certain nutrients and co-factors (such as Co-enzyme Q10). A diabetic person who is taking long-term statins should be more rigorous in monitoring his or her blood glucose.

***Although Tibb is in favour of an integrative approach to treating complex disorders which result to varying degrees from a deficient lifestyle and poor personal habits, anyone taking lipid lowering medication should be counseled on this, and informed of their increased risk.***

### **Diabetes with obesity**

Diabetes is closely linked to being overweight, mainly from overeating, snacking between meals, lack of regular physical exercise, a sedentary lifestyle, and highly processed food, rich in energy-dense sugar, corn syrup and fats. In several countries as much as two-thirds of adults are already overweight, and their children are not far behind. More refined carbohydrates have entered the food-chain, and this has been accelerated by rapid urbanisation, so people are more affluent and can afford this sort of food.

Overweight diabetics may face job discrimination and often earn less than their slimmer colleagues. Diabetes can hamper productivity and hurt employment prospects among older sufferers. These factors contribute to deteriorating health.

***Tibb sees rapidly increasing body mass as a prime example of lifestyle dysfunction. It not only involves departure from the basic Lifestyle Factors, but often reveals personal bad habits, unmanaged emotional stress, lack of information about the nature of obesity and its effect on quality of life, life expectancy, job prospects and numerous other aspects of life.***

### **Diabetes with tuberculosis (TB)**

South Africa has a very high burden of TB, with an incidence of 500,000 cases reported recently. Also, around 75,000 South Africans living with diabetes develop TB annually. This makes it vital that all South Africans with TB are screened for diabetes, and high risk diabetics should be screened for TB. People with diabetes are not only more likely to get the disease, but they are also less likely to respond to its treatment. One reason is that the diabetic patient is more likely to be obese, so levels of anti-TB drugs in the bloodstream are likely to be lower than average. Also, TB can increase blood sugar levels, and so tip the pre-diabetic person into full-blown diabetes.

***Tibb accepts that major changes to lifestyle, especially diet, are necessary for these patients, alongside the accepted conventional treatment with antibiotics. TB is seen to be linked to the qualities of heat and dryness, expressed as inflammation, night sweats and weight loss. There is also the probability of a much reduced Physis action. Tibb therefore offers supportive measures which both support Physis and reduce the quality of heat. These include cold and moist dietary changes to reduce heat, as with some diabetics.***

### **Summary**

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Diabetes is developing alarmingly into one of the biggest global health disorders, and now around 1.2% of the population is diabetic. By 2030 deaths from non-communicable diseases, diabetes and associated disorders are expected to overtake those from infectious diseases such as TB, malaria and HIV/Aids combined. Worldwide, life expectancy will begin to decrease, and the death rate increase, for the first time since records began.

Tibb views diabetes as a chronic metabolic disorder which appears as the result of the pancreas's failure to secrete the major glucose regulating hormone insulin (type 1) or use it effectively for glucose absorption into body tissues (type 2). This failure is linked to an

excess of the quality of moistness, which subdues the heat needed for the pancreas and other tissues to work properly. This serious disharmony can be firmly placed at the door of an inadequate lifestyle in most cases, with a genetic default responsible for the remaining.

The number of South Africans with type 2 diabetes has been expanding so rapidly in recent times that it amounts to an epidemic. It has increased in lockstep with the rise in the incidence of obesity. In the past, this condition was quite rare, and was termed adult-onset diabetes. However, it is appearing more often in children and young adults, both here and in the rest of the world. Moreover, a large number of people are termed “pre-diabetic”, many of whom are destined to become diabetic in the near future.

Fortunately, we know that this form of diabetes is not only preventable, but reversible by lifestyle changes, especially involving nutrition, physical exercise and activity. This is important because if untreated, diabetes can wreak havoc on the body. Immediate responses are visual disorders, foot ulcers, skin infections, sexual impotence, and an increased risk of heart attack and stroke. If not treated in time, the diabetic is prone to kidney failure, serious nerve damage, blindness and the need for lower limb amputation.

By making sensible, reasonable and relatively simple changes to one’s lifestyle, the risks posed by diabetes can be reduced enormously. Conventional medicine has at its disposal a veritable armoury of potent drugs to bring down blood sugar. Although undeniably effective, they do bring with them a plethora of short term side effects and longer term metabolic upsets.

Tibb is ideally suited to treating diabetes, because as a chronic disorder it fits in well with Tibb’s lifestyle strategy of better diet and increased physical activity, supplemented by herbal therapy. An assertive dietary strategy, firmly based on the diabetic’s temperament, is devised. Distinct benefits are derived from a change in the nature, amount and qualities of food and drink consumed, especially when combined with appropriate physical exercise, and rejection of a sedentary way of life. A more active lifestyle will not only reduce excessive body mass, but will help reverse or slow down the frequently co-existing diabetes.

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