CYTOPLAN

Health Information Series

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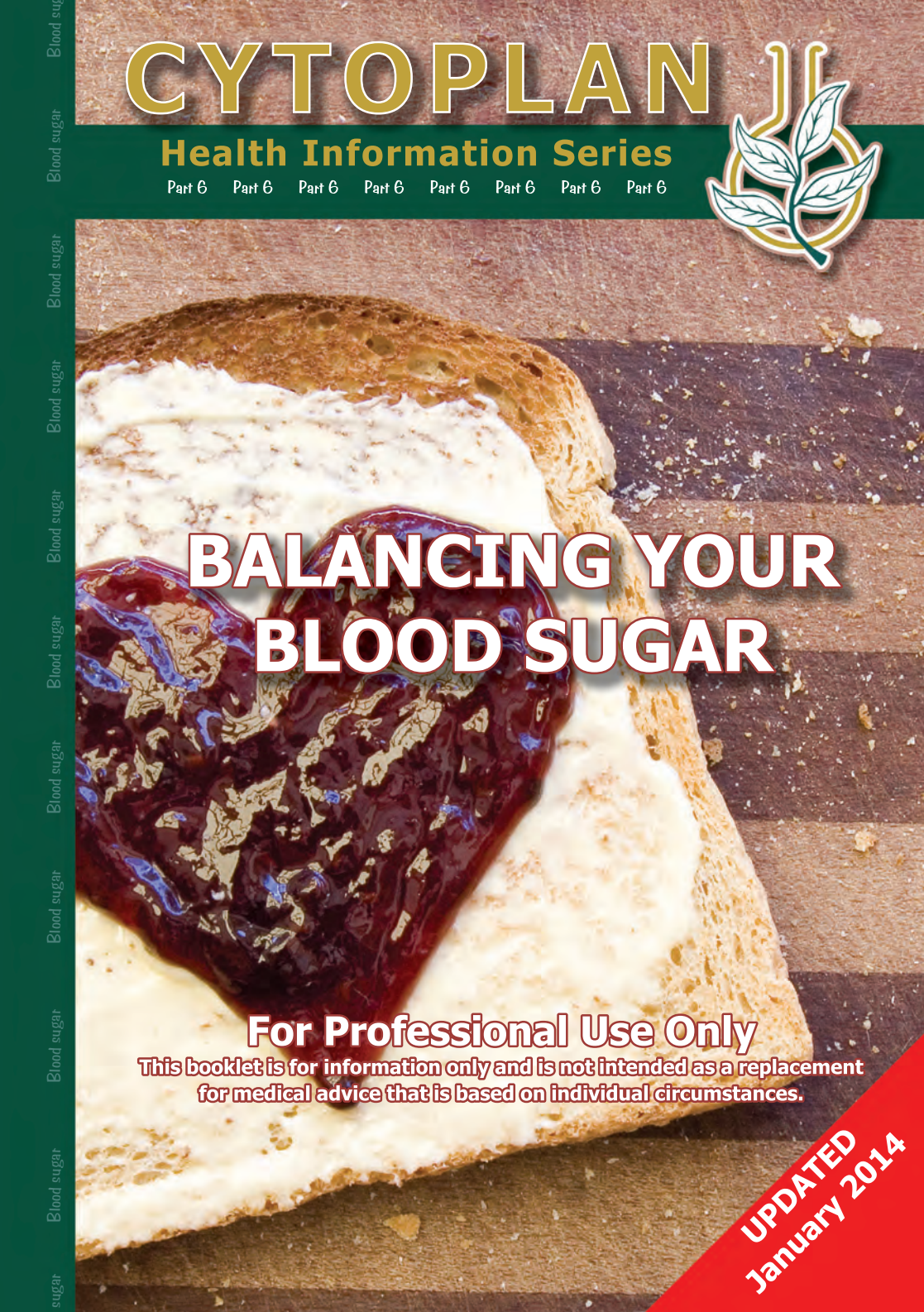

BALANCING YOUR BLOOD SUGAR

For Professional Use Only

This booklet is for information only and is not intended as a replacement for medical advice that is based on individual circumstances.

UPDATED January 2014

Balancing your blood sugar

Blood sugar imbalance is a condition where your body does not handle glucose effectively. Throughout the day, blood glucose levels may fluctuate outside of the body's desired blood glucose range, swinging from being very high, (after a meal, stimulant or stress), to being very low, (perhaps if you skipped breakfast). Insulin is a hormone responsible for keeping the blood sugar levels between the normal desired range. Insulin works by opening channels on cell membranes, allowing glucose to travel from the blood into body cells. During times of blood sugar imbalance, insulin is a little out of control.

In some situations, like after a carbohydrate or sugar-rich meal, too much insulin is produced. When insulin is high copious numbers of cell glucose channels open, which results in the blood glucose level dropping too low. During insulin resistance the cell membranes have difficulty recognising insulin and too few channels are opened. In this situation both insulin and glucose remain high in the blood and some cells stay deficient in glucose. Cells in the pancreas secrete insulin into the bloodstream. These cells can often become exhausted after long periods of producing excessive levels of insulin. Once tired, these cells can no longer produce adequate amounts of insulin to achieve perfect blood sugar balance. Low insulin production also leads to blood sugar imbalance.

Blood sugar imbalance can be a precursor to diabetes mellitus, and it is therefore important to address the contributory factors before the condition develops further.

Factors that may influence your condition include:

- Impaired insulin secretion
- Stressful or sedentary lifestyle
- Cellular insulin resistance
- Obesity
- Family history of type II diabetes
- Social drugs
- Diet high in saturated fat, sugar, refined carbohydrates or low in fibre
- Diet high in stimulants such as tea, coffee, cola, chocolate or alcohol

Symptoms you may experience include:

- Needing more than 8 hours sleep
- Feeling thirsty
- Needing coffee or tea to get you going
- Frequent urination in the morning
- Heavy sweating regularly during the day
- Fatigue
- Dizziness
- Mood swings
- Cravings for sweet foods
- Headaches
- Palpitations
- Energy dips

You might hear people referring to the "Glycaemic Index" of foods - this is a ranking of how foods affect blood sugar levels. Slowly absorbed foods have a low GI rating whilst foods that are more quickly absorbed have a higher rating. Choosing lower GI foods can help to maintain balanced blood sugar levels throughout the day. Here are a few broad guidelines to help you reduce the GI of your diet and ensure you include "healthful" options.

Recommendations

Foods to Avoid:

Carbohydrates
Avoid confectionery and all sources of simple sugars, particularly "hidden" sugars in processed food. Reduce intake of dried fruit that is high in sugar. Avoid refined carbohydrates such as white rice, white bread and white pasta.

Fats
Avoid all saturated & trans fats. Avoid processed foods high in fats.

Proteins
Avoid sources of protein attached to saturated fat (red meat, pork, bacon, processed meat, sausages).

Fluids
Avoid drinks containing sugar such as squashes, undiluted fruit juices, carbonated soft drinks. Reduce stimulating drinks such as coffee, tea and colas.

Foods to Increase:

Carbohydrates
Increase complex carbohydrates. The best sources are fruit and vegetables: bananas, dates, figs, prunes, beans, chick peas, parsnips, yams, (in fact all root vegetables), sweet corn. Potatoes should be avoided. Whole grains are a source of complex carbohydrates but there is evidence to suggest that components called “lectins” found in wheat and oats can upset glucose tolerance. But if you do get on with grains, the following less common ones area better choice: rye, millet, brown rice, quinoa.

Fats
Increase the intake of mono-unsaturated oil: olive oil is particularly effective. Increase omega-3 fats from oily fish, linseeds, hempseeds. Increase nuts and seeds.

Protein
Increase protein from sources unattached to saturated fats, such as lean chicken and turkey, white fish, oily fish (tuna, mackerel, herrings, pilchards, sardines, salmon), eggs, yoghurt, cottage cheese, feta, mozzarella, nuts and seeds. Include high quality protein with every meal and snack.

Fibre
Increase the intake of dietary fibre (both soluble and insoluble) from whole grains (if tolerated), lentils, pulses, fruit and vegetables: fibre has been shown to help balance blood sugar.

So, for instance, a high GI breakfast might be:
Cornflakes, toasted white bread, tea/coffee/sugar.

Whilst a low GI breakfast might be:
Smoothie made from nuts, seeds and fruits with almond milk and poached eggs on mashed sweet potato, or an omelette filled with vegetables.

Fluids
Drink two litres of water daily - taken away from meals and sipped slowly to avoid stress on the kidneys. For variety, drink diluted fruit juices, organic vegetables juices and herbal teas.

Supplements that can help and appropriate levels

Cytoplan Blood Glucose Support

Each capsule contains:

Nutrient	Strength	%RDA
Zinc	5.9mg	60
Copper	0.5mg	49
Manganese	0.5mg	27
Selenium	38.4µg	70
Chromium (GTF)	135µg	337
Molybdenum	36.0µg	72
Cinnamon Extract 20:1		
Equivalent to 500mg whole cinnamon	25.0mg	*

Permitted EFSA Claims for this product:
Chromium contributes to normal blood glucose levels.
Zinc contributes to normal carbohydrate metabolism.

GTF Chromium

Chromium enhances the action of insulin, your body's fat storage hormone. Insulin is also needed to metabolise carbohydrates, fat and protein in your body. The naturally-occurring form of chromium is called dinicotinic-acid glutathione complex, or GTF chromium. GTF is different from simple chromium compounds because it is more easily absorbed by your body and far safer than other forms.

Diets high in refined carbohydrates tend to be low in GTF chromium, which is why they also predispose to glucose tolerance problems. Complex carbs have higher levels of GTF Chromium.

Our "BLOOD GLUCOSE SUPPORT" contains 135µg GTF chromium per capsule.

Zinc

Zinc improves cell health, making up a component of the enzymes necessary for insulin to bind to cells so that glucose can enter and be utilised for energy. Diets high in refined carbohydrates are usually low in zinc, so this mineral has been added to our Blood Sugar Support formulation.

Cinnamon

Cinnamon is best known as a spice, sprinkled on toast and lattés. But extracts from the bark of the cinnamon tree have also been used traditionally as medicine throughout the world. Cinnamon facilitates glucose use in humans, enhances insulin sensitivity and uptake into muscle cells.[1] Our Blood Sugar Support contains equivalent of 500mg cinnamon per capsule, plus a wholefood base containing other minerals that help regulate blood sugar and support the action of the above mentioned.

1) Willoughby JJ 2008. Cassia Cinnamon for the attenuation of glucose intolerance and insulin resistance resulting from sleep loss/ J MED FOOD June 12 467-72

Dosage

1-3 capsules per day as needed, spread over the course of the day. Take with meals or half an hour before food.

Contraindications

Insulin-dependent diabetics should not take this product, except on medical advice.

Order code: 3637

Lifestyle Recommendations:

Stress
Identify any areas of stress: adopt more effective time management to allow time for relaxation. Join relaxation/yoga classes, breathing techniques etc. Find relaxation techniques that work for you.

Exercise
Exercise has been shown to have a significant blood glucose balancing effect. Start an aerobic exercise programme to be followed at least three days a week.

Other
It is very important to consider a weight loss strategy if overweight.

Nutrient Rich Foods for Blood Sugar Balance:

Vitamin C: Citrus fruits, kiwi fruit, sprouted seeds, blackcurrants, tomatoes and peppers.

B-Complex: Eggs, game, pumpkin seeds, blackstrap molasses, wheat germ and brewer's yeast.

Chromium: Egg yolk, molasses, brewer's yeast, fruit, broccoli, whole grains and nuts.

Magnesium:
Fish, lentils, nuts & seeds, dried fruits and green, leafy vegetables and almonds.

Zinc:
Richest food source: oysters, liver, brewer's yeast, eggs, pumpkin seeds and mushrooms.

Glycaemic Index

A low-glycaemic diet is a healthy diet, and many people nowadays are attempting to follow this ideal. If you are one of those people, the table opposite and guidelines below will help you understand the glycaemic index of many common foods, and hence the ones to eat and those to avoid.

The glycaemic index (GI) is a ranking of carbohydrates on a scale from 0 to 100, according to the extent to which they raise blood sugar levels after eating. Foods with a high GI are those which are rapidly digested and absorbed and result in marked fluctuations in blood sugar levels, which is both a stress on our immune system and pro-inflammatory. Low-GI foods, by virtue of their slow digestion and absorption, produce gradual rises in blood sugar and insulin levels, and have proven benefits for health.

Guidelines

It is quite difficult to use a table to make up a menu, so here is a simpler guide:

To bring down the glycaemic index of your diet, eat less confectionery, sweet biscuits and white bread. Cut down on potatoes and use more:

- Low GI breakfast cereals based on oats, millet or brown rice
- Other root vegetables and brown rice instead of potatoes
- Low GI fruits - pears, plums, apples and peaches
- Beans, pulses, nuts and seeds which are all low GI foods
- Green vegetables, all of which are low GI.

FOOD	INDEX
SUGARS	
Glucose	100
Honey	87
Sucrose (sugar)	59
Fructose (fruit sugar)	20
FRUIT	
Pineapples	66
Melons	65
Raisins	64
Bananas	62
Kiwi Fruits	52
Grapes	46
Oranges	40
Apples	39
Plums	39
Pears	38
Grapefruits	25
Cherries	25
DAIRY PRODUCTS	
Yoghurt	36
Whole Milk	34
Skimmed Milk	32

FOOD	INDEX
GRAINS & GRAIN PRODUCTS	
French Baguette	95
White Rice	72
White Bread	70
Wholemeal Bread	69
Ryvita	69
Pastry	59
Basmati Rice	58
Brown Rice	55
White Spaghetti	42
Wholegrain Rye Bread	41
Barley	26
CEREALS	
Cornflakes	80
Puffed Rice	73
Weetabix	69
Shredded Wheat	67
Muesli	66
Kellogg's Special K	54
Kellogg's All-Bran	52
Porridge Oats	49
VEGETABLES	
Parsnips (cooked)	97
Potatoes (baked)	85
French Fries	75

FOOD	INDEX
VEGETABLES continued	
Potatoes (new)	70
Sweetcorn	59
Sweet Potatoes	54
Peas	51
Carrots	49
PULSES	
Baked Beans	48
Butter Beans	36
Chick Peas	36
Blackeye Beans	33
Haricot Beans	31
Kidney Beans	29
Lentils	29
Soya Beans	15
SNACKS & DRINKS	
Lucozade	95
Corn Chips	72
Fanta	68
Mars Bar	68
Muesli Bar	61
Potato Crisps	54
Orange Juice	46
Apple Juice	40
Peanuts	14

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