



**WHO IS THE DEVIL?
SUGAR
OR FAT?**



WHO WE ARE

N⁺E

Nutrition . Fitness . Rehab

SPECIALIST





CALVIN NG

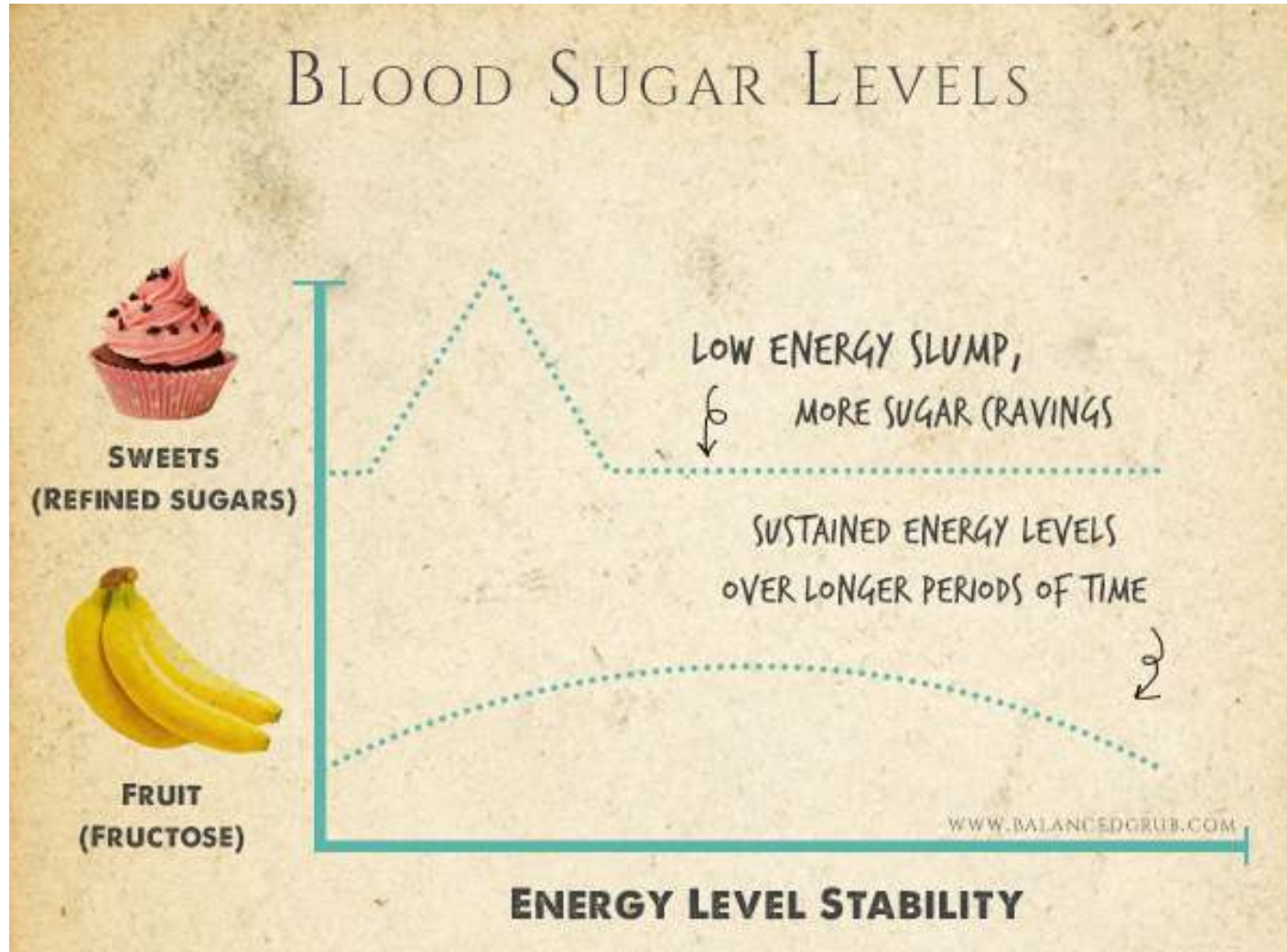
EIMS Clinical Fitness Professional
Nutrition & Exercise Specialist



WE BELIEVE

**Your greatest gift for
your loved one
is to take good care of
your health!**

ARE ALL SUGAR THE SAME?



WHAT IS SUGAR IN OUR BODY?

a basic unit of sugar in our blood is:

- glucose
- fructose (found in fruit)
- galactose



WHAT FOOD CONTAIN SUGAR?

Obvious Food Sources

- Table sugar & honey
 - Sucrose = glucose + fructose



- Milk
 - Lactose = glucose + galactose

How about the below?

- Starch
 - Grains:- pasta, crackers, bread, legumes in the form of beans, & peas, potatoes, rice, corn, & bulgur.



- Dietary Fiber
 - vegetables



WHAT THE BODY NEEDS

“ The human body **does not** require **additional sugars** to function. Proteins and complex carbohydrates such as brown rice, pasta, starchy vegetables, beans, legumes, and seeds are metabolized by the body into **glucose** which gives us energy.

ARE ALL **FATS** THE SAME?

EAT



AVOID



WHAT IS **FAT** IN OUR BODY?

Fat is the storage of **triglycerides** in the body:

- **Visceral** Fat around organs
- **Subcutaneous** Fat below the skin

TYPES OF **FATS**?

- Fats (solid at room temp)
- Oils (liquid at room temp)





VS



**WHO IS THE
DEVIL?**



WHO IS THE DEVIL?

- Glucose
 - Burnt in cell to produce energy (via metabolism process)
 - *1g of glucose = 4 kcal*
 - extra glucose not burned will be stored as glycogen and **FAT**
- Fructose
 - metabolized in liver
 - where it is directed toward replenishment of liver glycogen and **triglyceride (=fat)**



WHO IS THE DEVIL?

- **Energy yielding:** fats are a concentrated source of energy
 - *1g of FAT = 9 kcal*
- **Muscle fuel:** fat can be burnt for energy in low-to-medium intensity exercise
- **Many other functions:**
 - Emergency reserve
 - Padding
 - Insulation
 - Cell membranes
 - Raw materials
 - Carriers for vitamins
 - Essential Fatty acids

WHO IS THE DEVIL?



Chicken rice, with roasted chicken

Alternate Name:	Roasted chicken rice
Description:	Chicken, roasted, with skin, served with rice and chilli sauce
Edible Portion:	88%
Per Serving:	330 g
Household measure:	1 portion

Values Per Serving

Chicken rice, with roasted chicken	
Energy (kcal)	524.72 kcal
Protein (g)	21.78 g
Total fat (g)	19.75 g
Saturated fat (g)	7.55 g
Dietary fibre (g)	1.74 g
Carbohydrate (g)	64.47 g
Cholesterol (mg)	40.66 mg
Sodium (mg)	1112.23 mg

Calorie Intake Calculation :

- 19.75g of Fat = 177.75 kcal
- 64.47g of Carb = 257.88 kcal



WHO IS THE DEVIL?

Hokkien mee

Alternate Name:	Hokkien prawn mee, FR, Fried hokkien noodles, with prawn
Description:	Fried mixture of yellow noodle and thick rice vermicelli, with added prawn and cuttlefish
Edible Portion:	100%
Per Serving:	442 g
Household measure:	Bowl-soup (16 and 1/2 cm)

Values Per Serving

Hokkien mee	
Energy (kcal)	521.56 kcal
Protein (g)	18.12 g
Total fat (g)	19.01 g
Saturated fat (g)	7.34 g
Dietary fibre (g)	4.42 g
Carbohydrate (g)	69.39 g
Cholesterol (mg)	132.6 mg
Sodium (mg)	1423.24 mg

Calorie Intake Calculation :

- 19.01g of Fat = 171.09 kcal
- 69.39g of Carb = 277.56 kcal



WHO IS THE DEVIL?

	Watermelon	Orange	Apple	Total
	1 slice	1 whole	1 whole	1 bowl
Grams (g)	119	235	150	504
Energy (kCal)	24.69	61.47	79.24	165.4
Protein (g)	0.53	1.5	0.41	2.44
Total Fats (g)	0.2	0.17	0.28	0.65
<i>Sat fats (g)</i>	NA	NA	NA	NA
Dietary Fiber (g)	0.13	3.84	3.17	7.14
CHO (g)	4	11.51	16.84	32.35
Cholesterol (mg)	NA	NA	NA	NA
Sodium (mg)	2.67	3.34	1.38	7.39

Calorie Intake Calculation :

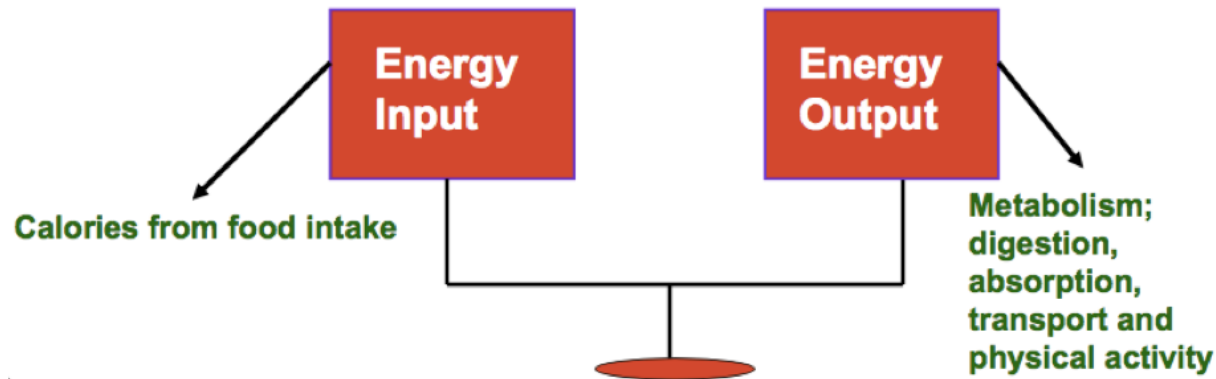
- 0.65g of Fat = 5.85 kcal
- 32.35g of Carb = 129.4 kcal



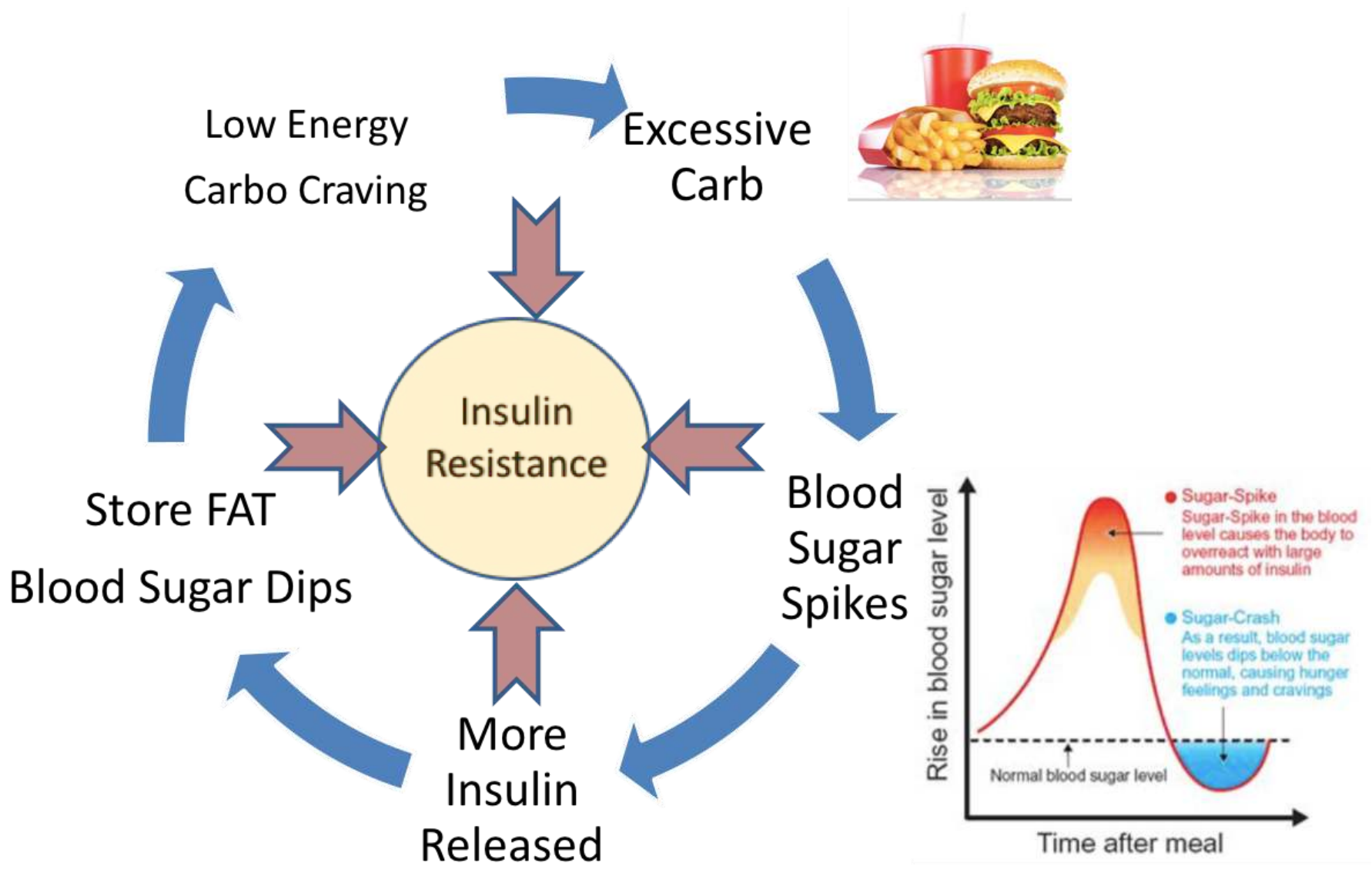
ENERGY CONTINUUM

Simplistic Energy Expenditure & Obesity

- If Energy Input = Energy Output → **CONSTANT WEIGHT**
- Energy Input > Energy Output → **WEIGHT INCREASES**
- Energy Input < Energy Output : **WEIGHT DECREASES**

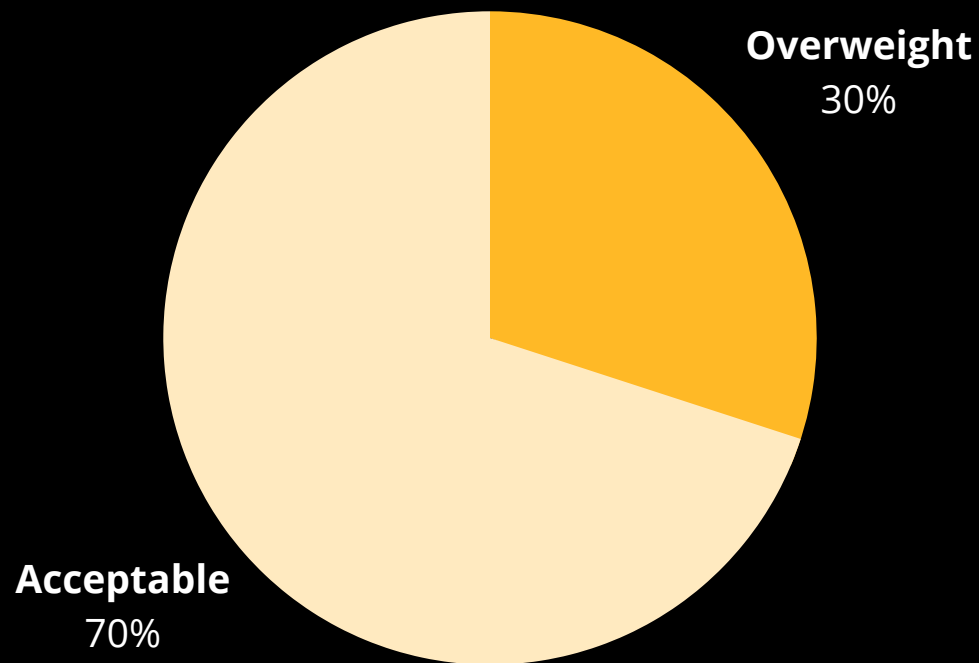


COMPLICATED TWIST TO OBESITY



OVERWEIGHT

A SURVEY ON SINGAPOREANS





VS



WHO IS THE DEVIL?

- What actually can cause obesity?
Sugar (aka carb) or FAT?
- Does obesity come first or insulin insensitivity ?
- How do we get out of the vicious cycle ?
- How to eat to minimize unnecessary weight gain?
- How about impact of exercise vs food intake?





**IT IS HEALTH THAT IS
REAL WEALTH AND NOT
PIECES OF GOLD AND
SILVER.**

MAHATMA GHANDI

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**MANY
THANKS**