The Healing Power of a Low-Carb Diet

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Contents

Eight Principles for Good Health

The first letters of the eight words spell ‘NEW START’.

Nutrients

A well-balanced diet includes healthy fats, protein, and non-starchy vegetables for vitamins and minerals.

Exercise

Two types of exercise:

1. Cardio exercise can be running, dancing, skipping, or even a brisk walking twice a day. Walk so that you are not huffing and puffing, but so that you could speak a sentence while walking. Cardio exercise gets the heart pumping.

2. Weight-bearing exercise strengthens the bones and muscles. Examples are: walking up and down stairs, gardening, rowing, swimming and weight lifting.

Water

Drink water according to your body weight. For the average adult, 2 litres a day. Drink on rising and between meals, (not with meals). Drinking with meals reduces the action of the digestive juices necessary for good digestion. Herbal tea counts as water but not coffee or sweet drinks.

Sunlight

We need sunlight for Vitamin D. Avoid sun exposure during the middle of the day when sunburn is a risk.

Toxin-free

Have you ever wondered what the tiny numbers mean on many processed food packets? You will find them in very fine print. Most of these numbers represent artificial food additives, some of which can be toxic to health. Food additives are rated in four categories:

1. appears safe

2. adverse effects unknown

3. potentially unsafe

4. potentially dangerous

Why do food safety controllers allow potentially dangerous food additives in some foods? They claim that in such small amounts there will be no ill-effect. However food allergies are on the rise, and it is becoming evident that too much exposure can create health problems. Choose whole foods or make your own foods. Avoid highly processed foods and you will avoid the food additives. Also remember that toxins can penetrate the skin. The skin is a carrier of whatever chemicals we put on it. Be aware of toxins in personal care products.

Air

Engage in outside leisure activities in the fresh air – the beach, the bush, the forest. Keep the air in your home healthy by opening your windows.

Avoid pollutants like air fresheners, toxic cleaning products and perfumed personal care products. Use essential oils or vinegar and bi-carb soda.

Rest

Sleeping during natural hours of darkness is what our bodies are designed to do. Rise early and go to bed early. Sleep in complete darkness and avoid digital devices in the bedroom. Choose to rest from your normal working routine once a week.

Think happy thoughts and Trust in God.

Laughter releases hormones called endorphins. These hormones can relieve pain, reduce stress and give us feelings of pleasure. Mental health affects physical health. Research shows that people who have a faith experience better health. Having faith is more than just a support. It puts us in touch with the One who made us, and knows us. He is a personal God who has answers for us when we ask.

Psalm 139:13-14: For you formed my inward parts; you knitted me together in my mother's womb. I praise you, for I am fearfully and wonderfully made.

Carbohydrates, Protein and Fat

Roles of the three nutrients

1. Carbohydrates

Carbohydrates, (often abbreviated to ‘carbs’), are sources of energy. They provide fuel for the brain, muscles, and other tissues during physical activity and daily functions.

They are found in starchy foods like bread, potato, sweet potato, cassava, rice, pasta, lentils, vegetables, fruit and anything that contains sugar. There are ‘good carbs’ and ‘bad carbs’.

Good carbs

Good carbs, often referred to as complex carbohydrates, are found in natural, unprocessed foods. They are rich in fibre, vitamins, and minerals.

They digest slowly, and are taken up slowly by the blood stream. They do not cause huge spikes in blood sugar levels.

Examples: coloured vegetables, dried beans and lentils.

Bad Carbs

Bad carbs, often referred to as simple carbohydrates, are typically found in processed foods, especially foods containing refined grains and added sugar.

Examples: sweets, cookies, cakes and pastries; bread, rice, sweetened drinks, alcohol.

They are quickly absorbed, leading to spikes in blood sugar and subsequent crashes, which can cause fatigue and increased hunger.

Note that white potatoes, cassava, and taro should be limited. We would not give them the title of ‘bad’ because they are natural food sources and not addictive like sugar, but they still carry a high carb load.

Effects of carbohydrate overload

Sugar

Sugar is one of the greatest contributors to carbohydrate overload. Sugar is addictive. Processed sugar, (white or brown), contains no vitamins or minerals. It is pure carbohydrate, (sucralose).

Raw sugar, the sweet liquid that comes directly from the sugar cane plant without being processed, contains some vitamins and minerals but is still high in carb. Raw and brown sugar that you buy in the supermarket are devoid of minerals.

Sugar raises blood sugar very quickly. Unless used by the body through exercise, the body stores it as fat. Sugar also is the greatest cause of tooth decay.

Wheat

Wheat is very high in starch. Once digested, if not used through exercise, it turns to sugar and gets stored in the body as fat. Modern-day wheat is a hybrid, developed to get a higher yield. Ancient wheat was not nearly as high in starch or gluten. Modern wheat is very high in gluten. Many are becoming gluten intolerant.

2. Protein

Proteins are the building blocks for growth and repair of tissues, including muscles, skin, and organs. They also play a role in hormone production and immune function. While protein can provide energy, its primary role is not energy production but rather supporting growth and maintenance of body structures.

Examples of protein foods:

- Meat, fish, eggs, dairy products, nuts, and seeds, legumes

Things to note:

- Legumes (lentils, dried beans) are approximately 50% carb and 50% protein).
- Nuts contain fats and carbohydrates as well as protein.
- Meat and fish provide the highest amount of protein.

3. Fats

Fats provide the most concentrated source of energy. They are essential are crucial for various bodily functions. Fats help in the absorption of fat-soluble vitamins (A, D, E, K), provide insulation, protect vital organs, and are involved in hormone production. They also contribute to cell membrane structure. There are ‘good fats’ and ‘bad fats’.

Types of fats

Fats can be also be classified into:

- Saturated – found in animal meats, butter/cream, coconut oil
- Unsaturated – found in olive oil, vegetable oils, avocados, and fish

- Trans fats – fats that have been chemically altered, found in margarine, processed fried or baked foods, such as potato crips and pastries.

Until about 15 years ago, it was thought that saturated fats were good, and unsaturated fats were bad. Now we know that this is not true.

Coconut oil, butter and meat fats are good fats, even though they are saturated. They are protective and provide vitamins A, D, E and K. You can cook with these fats.

We now know that many unsaturated fats are bad fats, because they have been heated to high levels making them carcinogenic. That means they have the potential to cause cancer.

Examples of bad fats include margarine and all cooking oils in plastic bottles such as canola oil, peanut oil, soy oil. Do not cook with these fats. (Only olive oil in dark glass bottles is safe.)

Unfortunately, it takes a LONG time for revealed truth to be taken up by the public and even by some in the medical profession. This is partly due to manufacturers who continue to promote foods like margarine as heart-healthy in order to make sales.

The Food Pyramid - More myths from the past

This food pyramid was developed based on recommendations in 1992.

What's wrong with it?

1. Too many carbs on the bottom section. Adults do not need this percentage of carbs.

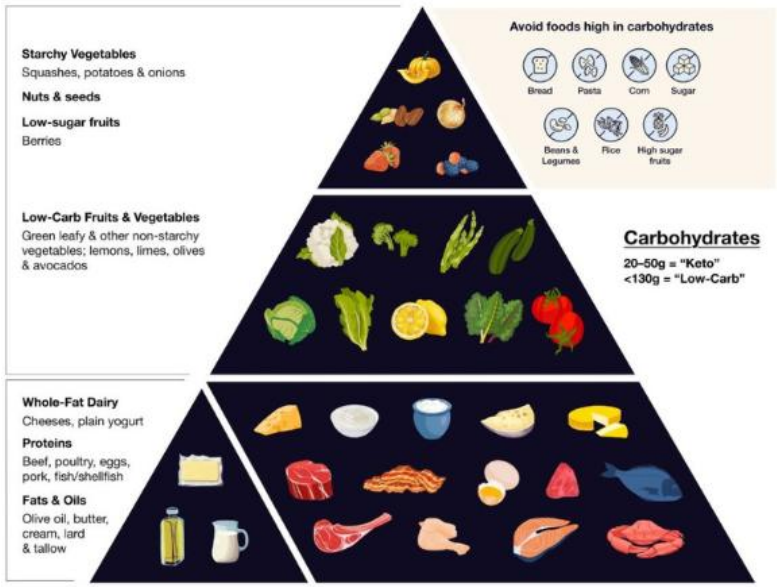
2. We do not need as much fruit as shown in the second layer.

3. We need more protein and fat than is shown in the third layer.

4. We do not need any sugary sweets as shown in the top layer.

The New Food Pyramid - for most adults

After 20 yrs of advising people to follow the 1992 pyramid, metabolic disease sky-rocketed. In 2018, in USA, only 1 in 14 adults had optimal metabolic health. In 2025 a research paper showing a new food pyramid was published.



Bottom level: whole fat dairy, meats, fish, good fats

Middle level: non-starchy vegetables

Top level: starchy vegetables, low-sugar fruit & nuts

Note that children and manual/farm workers need more good carbs than adults because they use more energy.

What is optimal metabolic health?

This is when a person has GOOD key metabolic health markers:

- Normal waist circumference
- Normal glucose levels
- Normal levels of fat in the blood
- Normal levels of good (HDL) cholesterol
- Normal blood pressure

Taking a closer look at the new food pyramid …

Bottom Level - eat most - protein and fats

- Meat – red meat, chicken
- Fish – better to buy fresh and cook it. Tinned tuna contains mercury. However, tinned sardines are good. Salmon is OK.
- Dairy – cheese, milk, yoghurt. Make sure the yoghurt is full-fat and has NO flavouring or sugar.
- Eggs
- Good fats – butter, cream, olive oil (in dark glass bottles), coconut oil

Middle Level - eat moderately - non-starchy carbs

- green leafy vegetables – cabbage, spinach, lettuce etc.
- capsicum, egg plant
- tomatoes, zucchini
- cucumber, celery
- legumes - beans, peas, lentils)
- cauliflower, broccoli
- avocadoes, coconut

Top level - starchy carbs and fruit - Limit these:

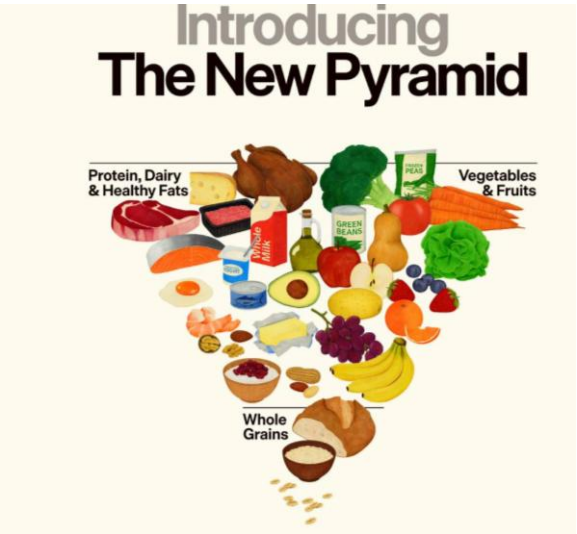
- pumpkin
- corn
- potatoes
- sweet or starchy fruits – e.g. bananas, mangoes

Foods not included

- Sugary sweets
- Bread
- Cakes, biscuits and sweet desserts
- Pastries
- Rice and pasta
- All kinds of “junk food” and processed take-away foods

The Upside-down food pyramid

Some nutritionists suggested that the 1992 Food Pyramid should be turned upside-down. Here is another example of a reformed Food Pyramid:



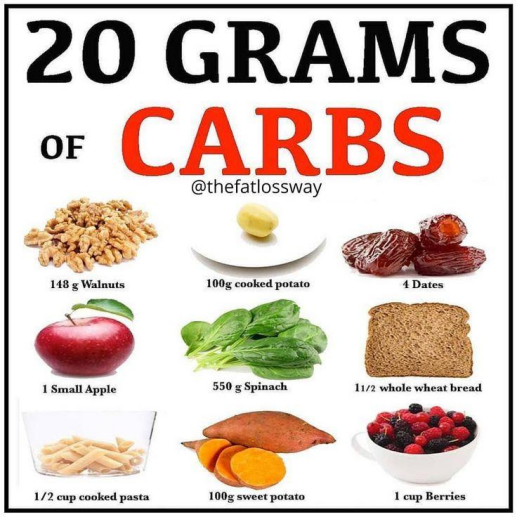
Note that the quantity of protein food has been increased, there are more good fats and more coloured vegetables. The bread and rice are very minimal.

How much carbohydrate do we need per day?

For adults on a low-carb diet we need 125g carbohydrate or less.

Why limit carbs?

Carbs are an energy source for us to use while active. If you are not doing a lot of exercise, the unused carbs get stored as fat.



What does 20g of carb look like?

(6 of these could make a day's intake)

- 1 cup of walnuts
- ¼ cup cooked potato
- 4 dates
- 1 small apple
- 3 cups cooked spinach
- 1 ½ slices whole wheat bread
- ½ cup cooked pasta
- ¼ cup cooked sweet potato
- 1 cup berries

How much protein do we need per day?

A good way to work out your protein requirements is: Your height (in cm) minus 100

e.g. If you are 160 cm tall, you need 60 g of protein.

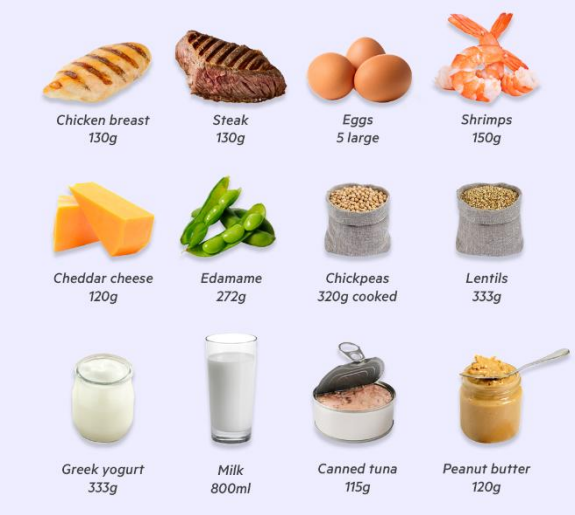
(Note that athletes and physical labourers need more.)

Good protein sources: meat, fish, dairy products, eggs, nuts, legumes

What does 30g of protein look like?

(3 of these could be a days' intake.)

- 130 g chicken (size of your palm)
- 130 g steak (as above)
- 5 eggs (6 g per egg)
- 150 g prawns (1 cup)
- 120 g cheese (1/2 cup)
- 320 g cooked legumes/lentils (4¼ cups)
- 330 g yoghurt (1½ cups)
- 800 ml milk
- 115 canned fish (1 can)



How much fat do we need per day?

We need approx. 100 to 130 g. of fat per day.

For weight control, eat fat with protein and not with carbohydrates. For examples, meat/fish with salad or low-carb coloured vegetables. Dark chocolate is okay on a low-carb diet if it's at least 80% raw cacao. (It contains less sugar.)

What does 30g of fat look like?

(4 of these could be a day's intake)

- Avocado – 1 whole
- Coconut – ¾ cup
- Salmon – 1 cup
- Olive oil – 3 tablespoons
- Almonds – 1/3 cup
- Walnuts - ¼ cup
- Butter – 3 tablespoons

Challenge

1. Meal Planning – Carbs and Protein

Make meal plans for a day, focusing on getting the right amount of carbs and protein. Plan for breakfast, lunch, dinner (no snacks).

Choose the foods, in the correct quantities, to give you the right amount of carbs and protein for a day.

Based on the following information showing quantities of protein, carb and fat, make meal plans for a day – 2 or 3 per meals (no snacks).

Choose the foods you would like to eat, in the correct quantities, to give you the right amount of protein and good carbs.

Use the Food Analysis Chart on pages 14-16 for a wider variety of foods.

Carbohydrates: recommended – 125g

Examples of carbohydrate content:

- 1 cup cooked oats – 28 g.
- 1 apple – 25 g.
- ½ cup cooked sweet potato – 28 g.
- ½ cup cooked potato – 20 g.
- ½ cup cooked pasta – 20 g.
- 2 dates – 12 g.
- 1 slice whole wheat bread – 12 g.
- 1 cup assorted non-starchy vegetables – 11 g.
- ½ cup of walnuts – 10 g.
- ½ cup berries – 7 g.
- ½ cup spinach – 3 g.
- 2 cups salad greens – 2 g.

Example of one-day carb intake for 125 g of carb

Food type	**Grams of carb**
1 cup cooked oats	28
1 small apple	20
4 cups salad greens	5
1 cup assorted non-starchy vegetables	11
¼ cup raw nuts	5
½ cup cooked legumes/ lentils	21
¼ cup sweet potato	27
Total carbs:	**125**

Protein: recommended – approx. 70 – 90 g

(or your height minus 100)

- **Examples of protein content:**
- Piece of chicken (size of your palm) – 30 g.
- Piece of steak (as above) – 30 g.
- Piece of fish (as above) – 25 g.
- 1 cup prawns or sardines – 30 g.
- ½ litre of milk – 20 g.
- 1 scoop protein powder -- 20 g. protein
- ½ cup nuts – 15 g
- ½ cup yoghurt – 7 g.
- ¼ cup of cheese – 7 g.
- 1 egg – 6 g.
- ½ cup cooked chick peas (cooked) - 6 g.
- ½ cup cooked lentils - 8 g. protein

Examples of one-day protein intake in grams:

Food type	**Grams of protein**
2 eggs	12
1 piece chicken	30
½ cup sardines	15
½ cup cooked lentils	8
1 protein shake (with protein powder & ½ cup yoghurt	25 g
Total Protein:	**90 g.**

Food analysis chart – Protein, Carbs, Fat

Food	Measure	Weight (g)	Protein (g)	Carbs (g)	Fat (g)
Dairy					
Cheese, cheddar	3 cm cube	20 g	5	0	7
Cheese, Cottage	Half cup	114	13	4	4
Yoghurt, plain whole milk	1 cup	245	9	11	8
Milk, whole milk	1 cup	244g	8	11	8
Fats, oils					
Butter	1 tblsp.	14	0	0	11
Olive oil	1 tblsp.	14	0	0	14
Coconut oil	1 tblsp.	14	0	0	14
Fruit & nuts					
Banana	1 large	152	2	36	1
Grapes	1 cup	160	1	28	1
Kiwi fruit	1	76	1	11	0
Orange	1	151	1	17	0
Apple	1	150	1	25	0
Pear	1	122	1	13	0
Peach	1	157	1	17	0
Strawberries	1 cup	144	1	10	1
Raspberries	1 cup	123	1	14	1
Papaya	1 cup (cubes)	140	1	14	0
Pineapple	1 cup (cubes)	210	1	21	0
Mango	1 whole	207	1	35	1

Food	Measure	Weight (g)	Protein (g)	Carbs (g)	Fat (g)
Guava	1 cup	165	1	20	1
Passionfruit	1	18	0	4	0
Lemon	1	100	0	5	0
Dates	Half cup	89	2	65	1
Dates	1	8	0	6	0
Almonds	Half cup	71	15	14	36
Coconut - fresh	Half cup	45	1	5	13
Starches/grains					
Bread, wholegrain	1 slice	26	3	12	1
Pasta-spaghetti	1 cup (cooked)	140	7	40	1
Oats (cooked)	1 cup	150g	6	28	6
Meat, Fish, Eggs					
Beef steak	1 portion	85	24	0	17
Lamb	1 portion	85	21	0	18
Chicken (breast)	1portion	85	21	0	0
Chicken (drumstick)	1medium	90	19	0	10
Fish- salmon	1 piece (cooked))	85	22	0	4
Fish - flounder	1 piece (cooked)	85	17	0	10
Fish – sardines	1 can	85	21	0	10
Eggs, boiled	1	50	6	1	5
Vegetables					
Broccoli	Half cup	36	2	4	0
Cauliflower	Half cup	54	1	2	0

Food	Measure	Weight (g)	Protein (g)	Carbs (g)	Fat (g)
Carrots raw	Half cup	64	0.5	6.5	0
Tomato	1	62	1	3	0
Pumpkin	Half cup	122	1	9	0
Potato (white cooked)	1 cup	242	4	37	3
Sweet potato (cooked)	1 cup	256	5	58	4
Chick peas /dried beans (cooked)	1 cup	240	12	54	1
Red lentils (cooked)	1 cup	198	18	40	1
Avocado	Half cup	75	1.5	5.5	11.5
Green beans	Half cup	83	1	6	0
Sweet corn	1 whole	77	3	19	1
Cabbage	1 cup	89	1	5	0
Celery	1 cup	150	1	5	0
Cassava	1 cup	206	3	78	1
Lettuce	1 cup	55	1	1	1
Spinach	Half cup	90	3	3	0
Capsicum	1 whole	148	1	7	0
Cucumber	1 whole	201	1	5	0
Egg plant	1 piece	50	1	6	0
Peas	Half cup	80	4	11	0
Okra	Half cup	92	2	5	0 (add for olive oil)
Zucchini	1 medium	196	0	7	0

Cholesterol

What is cholesterol?

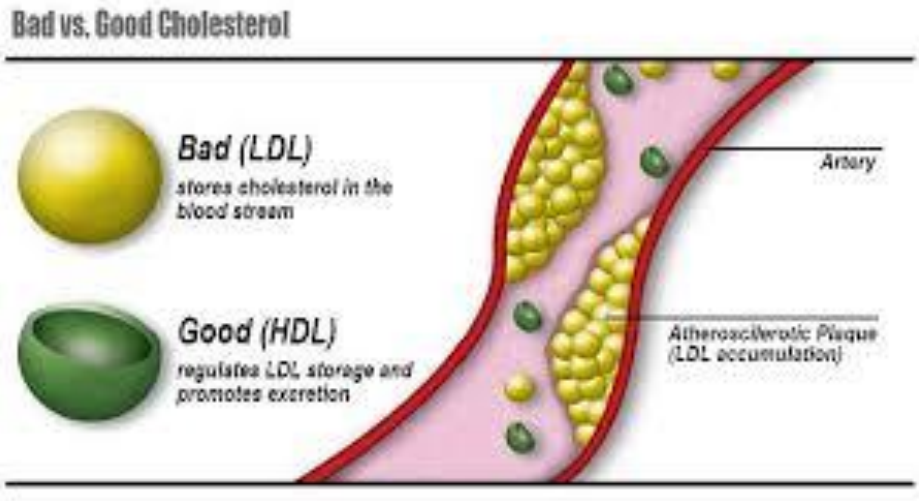
Cholesterol is a waxy substance found in the blood that is essential for building healthy cells, (a type of fat). It is produced by the liver and is also obtained from certain foods.

Cholesterol plays a crucial role in various bodily functions, including the formation of cell membranes and the production of hormones. There are different types of cholesterol, including "good" HDL cholesterol and "bad" LDL cholesterol.

HDL stands for *high-density lipoprotein* (‘Good’ Cholesterol)
LDL stands for *low-density lipoprotein* (‘Bad’ Cholesterol)

Why we need it

Cholesterol is made by the body for a purpose. LDL is often called “bad cholesterol”. Nothing the body makes is BAD. It has a purpose. That is to repair the inside of the blood vessels.



From the diagram, note that LDL collects on the walls of the arteries whereas HDL flows through the middle.

Benefits of LDL cholesterol ((Low-density lipoprotein)

If we did not have LDL cholesterol to plug up damage to the arteries, a person would bleed internally, into the tissues such as the heart or brain causing a stroke or brain haemorrhage.

How does the arterial wall become damaged?

Why does it need to be repaired? Here are some possible causes of arterial wall damage:

- Trans fats found in many processed high-carb foods such as fast food; cheap cooking oils in plastic bottles, such as canola oil and peanut oil
- Toxins – chemicals in the home, in food and in personal care products that we put on our skin; environmental toxins such as heavy metals like mercury, lead and aluminium
- Mould
- Drugs including pharmaceutical drugs
- Smoking and alcohol

All these can create little holes in the arterial wall. This is when the LDL cholesterol goes to the site of the damage and uses plaque to plug up the hole.

Danger! Too much LDL!

If the deposit of plaque continues, too much plaque will stop the flow of blood through the arteries, causing high blood pressure, heart attack, stroke.

A low-carb diet is crucial for keeping the arteries in good shape. Keep away from processed foods that contain the bad fats, such as chips, margarine and cookies. This will assist in keeping a good balance between the LDL and HDL cholesterol.

Benefits of HDL cholesterol

HDL cholesterol helps clean up unwanted LDL cholesterol and transports it to the liver for disposal.

Myths about the causes of high LDL cholesterol

The following DO NOT cause high LDL cholesterol, as shown by new research.

1. Eating foods containing saturated fat

2. Eating eggs

3. Eating foods with high cholesterol

Other factors contributing to high LDL cholesterol

- Being overweight
- Psychological/emotional stress
- Smoking
- Certain Medications
- Pregnancy (linked with gestational diabetes)
- Genetics

What if your doctor says your LDL is too high?

You will probably be given Statin drugs. But there are many associated risks with Statins. Statins block the pathway to the liver where cholesterol is made, so the body can't make it – that means it also can't make HLD.

Statin drugs also stop the making of CoQ10 which is a protective enzyme for the heart, so Statins may in some cases increase risk of heart attack.

Is there another way?

Prevention is the best policy. Eat more heart-healthy fats such as butter, avocados, almonds, flaxseeds, and fatty fish regularly. Do not eat anything containing trans fats. Do not eat deep fried foods such as chips, that may have been fried in cheap cooking oil. Do not cook with vegetable oil, canola oil, peanut oil or similar available in plastic bottles. Use olive oil or coconut oil instead. Never buy or eat margarine.

- Take on a a low-carb diet. Stay away from sugar and white carbs. High sugar intake is linked to low HDL.
- Exercise - Even brisk walking for 30 minutes a day can significantly raise HDL.
- Quit Smoking - benefits start within weeks.
- Quit alcohol
- Lose Visceral Fat - Focus on waist circumference, not just weight. A healthy waist size reduces inflammation and improves HDL-LDL ratios.

What is a healthy waist circumference measurement?

Half your height or less.

Cortisol

What is cortisol?

Cortisol is a hormone that controls our stress response.

A hormone is a chemical messenger.

In this case it tells our body how to respond to stress.

Fight or Flight

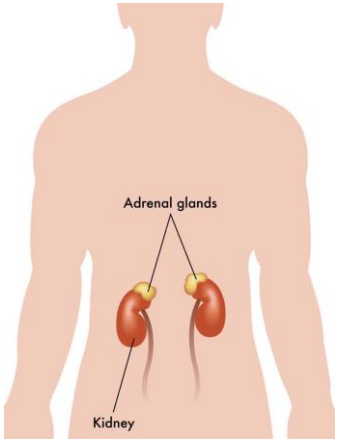
When we are under stress, or in the face of danger, the body has an amazing ability to provide enormous short-term strength to cope with what's to come.

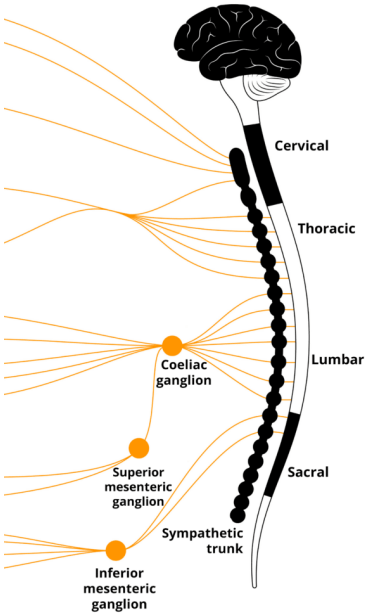
What triggers the fight or flight response?

The fight response is triggered by anger; the flight response is triggered by fear.

The Sympathetic Nervous System

Nerves are located in the lumbar region of the spine, (the lower back). Its role is to "turn things on".





These nerves send a message to the adrenal glands to release two hormones: adrenaline and cortisol. (Note that the adrenal glands sit on top of the kidneys.)

- Adrenaline increases alertness.
- Cortisol is to increase levels of sugar (glucose), in the bloodstream to give us energy for the situation.

The Body's Response to Cortisol

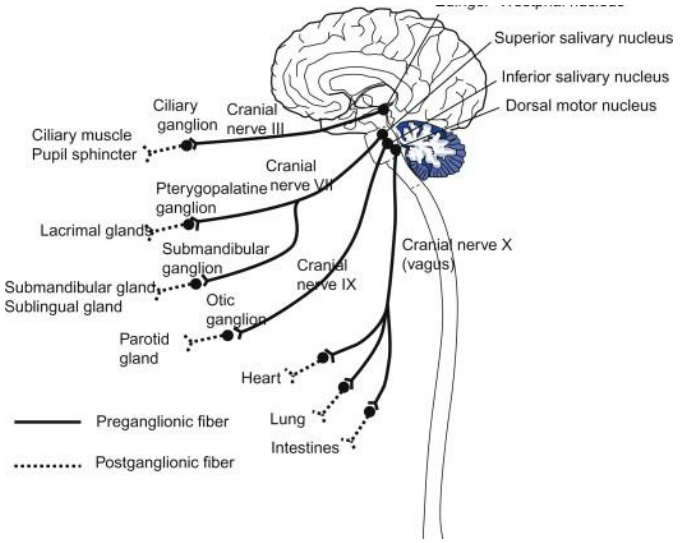
When released, Cortisol causes an increase in all of the following:

- heart rate
- blood pressure
- blood sugar
- muscle tension

The Parasympathetic Nervous System

The Parasympathetic Nervous System, located at the base of the brain, "turns things off". It calms you down and brings you back to normal again. Once the threat is out of the way, the adrenal glands stop releasing Cortisol and Adrenalin.

- Heart rate now normal.
- The digestive and the immune systems now normal.
- The body's ability to heal is able to take place.
- Reproductive function is now normal.



Constant Stress

When we are under constant stress, the adrenal glands are constantly pumping out Cortisol and Adrenalin. The parasympathetic nervous system does not get a chance to do its job. The joints and spine are being stressed and prevent proper signals getting to the brain. The body does not make healing a priority and reduces repair, leading to weakened tissues. This can lead to "burn out".

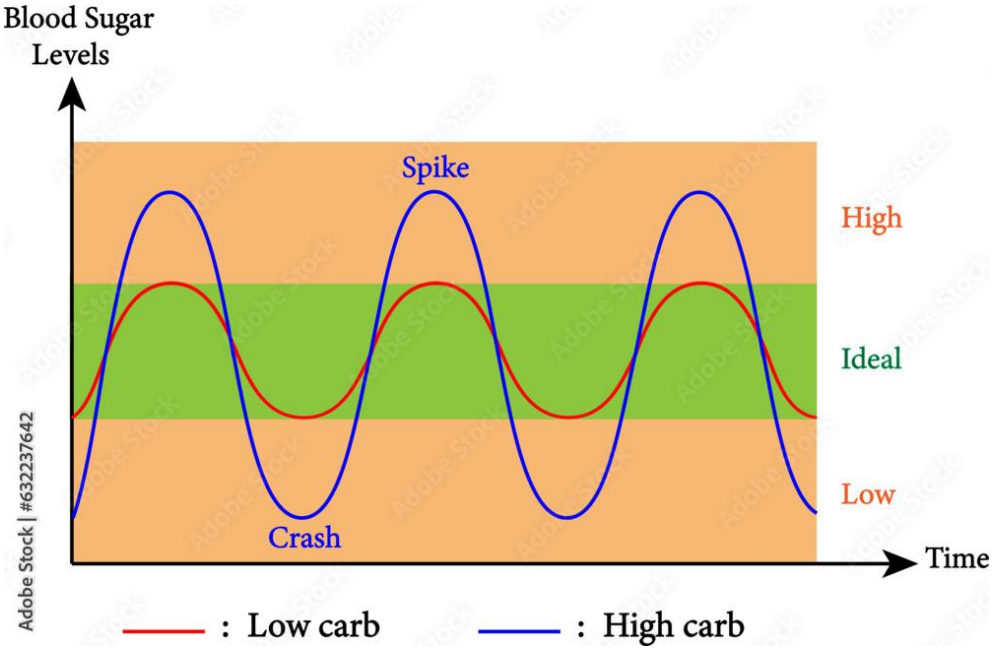
What else happens?

Remember that the job of cortisol is to increase levels of sugar (glucose), in the bloodstream?

The body keeps getting the message that you need to refuel after the stressful event, (which is ongoing because you are under constant stress.)

So you do as your body says, and eat sugar, (and you crave it constantly because you are constantly under stress.)

This results in constant highs and lows in energy, wearing out the pancreas.



Symptoms of Stress Response

- Tendency to gain fat around the middle
- Increased appetite
- Increased cravings especially sweets and carbs, caffeine and alcohol
- Energy slump in the afternoon
- Low functioning immune system – colds, infections
- Headaches
- Nail biting, Teeth grinding
- High LDL cholesterol
- Blood sugar swings
- Digestive problems
- Hair loss

- Irregular or absent periods
- Difficulty concentrating / forgetfulness
- Depression

Disease can have emotional roots. Stress may be a major contributor to the following:

- Cardiovascular diseases
- Gastrointestinal disorders (e.g. irritable bowel syndrome; stomach ulcers)
- Respiratory issues (asthma)
- Skin conditions (eczema)
- Cancer

The way out

Deal with the problem on 3 levels:

- Nutrition – Eat nutritious natural foods.
- Exercise – Create a daily exercise routine.
- Emotional support – Share your problems with friends you can trust.
- Spiritual support – The God of the Bible tells us that we can call upon him in times of need and he will answer. Find a friend who can stand with you and pray for you.

Some Bible verses of encouragement:

Asking God to supply your needs:

If you believe, you will receive whatever you ask for in prayer. (Matthew 21:22)

And I will do whatever you ask in my name, so that the Son may bring glory to the Father. You may ask me for anything in my name, and I will do it. (John 14:13-14)

Ask, and it will be given to you; seek and you will find; knock and the door will be opened to you. For everyone who asks receives; he who seeks finds; and to him who knocks, the door will be opened. (Matthew 7:7-8)

If you remain in me and my words remain in you, ask whatever you wish and is will be given you. (John 15:7)

Nothing is impossible with God. (Luke 1:37)

This is the confidence we have in approaching God: that if we ask anything according to His will, He hears us. (1 John 5:15)

Life's Problems:

God is our refuge and strength, an ever-present help in trouble. Therefore we will not fear, though the earth give way and the mountains fall into the sea, though its waters roar and foam and the mountains quake. (Psalm 46:1-3)

For I the Lord, who takes hold of your right hand and says to you, "Do not fear; I will help you." (Isaiah 41:13)

Cast all your cares on the Lord and He will sustain you; He will never let the righteous fall. (Psalm 55:22)

The righteous cry out, and the Lord hears them; He delivers them from all their troubles. (Psalm 34:17)

Cast all your anxiety on Him because He cares for you. (1 Peter 5:7)

Call to me and I will answer you, and will tell you great and hidden things that you have not known. (Jeremiah 33:3)

Disappointments:

The Lord is close to the brokenhearted and saves those who are crushed in spirit. (Psalm 34:18)

As a mother comforts her child, so I will comfort you. (Isaiah 66:13a)

Praise be to the God and Father of our Lord Jesus Christ, the Father of compassion and the God of all comfort, who comforts us in all our troubles, so that we can comfort those is any trouble with the comfort we ourselves have received from God. (2 Corinthians 1:3-4)

He heals the brokenhearted and binds up their wounds. (Psalm 147:3)

Come unto me, all you who are weary and burdened and I will give you rest. (Matthew 11:28)

Healing:

Praise the Lord O my soul, and forget not all His benefits – who forgives all your sins and heals all your diseases. (Psalm 103:2-3)

He (Jesus) was pierced for our transgression, He was crushed for our iniquities; the punishment that brought us peace was upon Him, and by His wounds we are healed. (Isaiah 53:5)

Reducing emotional stress from verbal abuse

When someone else is causing the problem, try to understand that it's not YOUR problem. It's the problem of the other person who may be verbally abusing you. If there's nothing practical you can do about it, then an option is to try and become detached from it. In other words, 'let it go!' You may want to pray for that person because they have the problem, not you.

Reducing emotional stress from physical or situational abuse

This one is more difficult to deal with. You may need to:

Change it – Ask yourself whether there is anything you can do to change the situation. Pray for God's wisdom in this. If not, you may have to …

Leave it – Exit the situation, whether if be a job or even a place of living.

You do not have to accept physical abuse.

What is your emotional stress is caused by your own actions?

If the problem is something that YOU need to take ownership of, and can do something about, work out some practical strategies of ways to deal with it.

- Forgive others where forgiveness is necessary. Do not harbour unforgiveness in your heart. Bitterness leads to ill-health.
- Don't hold on to guilt. Ask for God's forgiveness, forgive yourself and move on.
- Put aside feelings of inadequacy and inferiority. Remember that you are precious to God and he has a unique purpose for you. Put your trust in him and he will open up a new path.
- Pray with others about your problems.
- Don't give up!

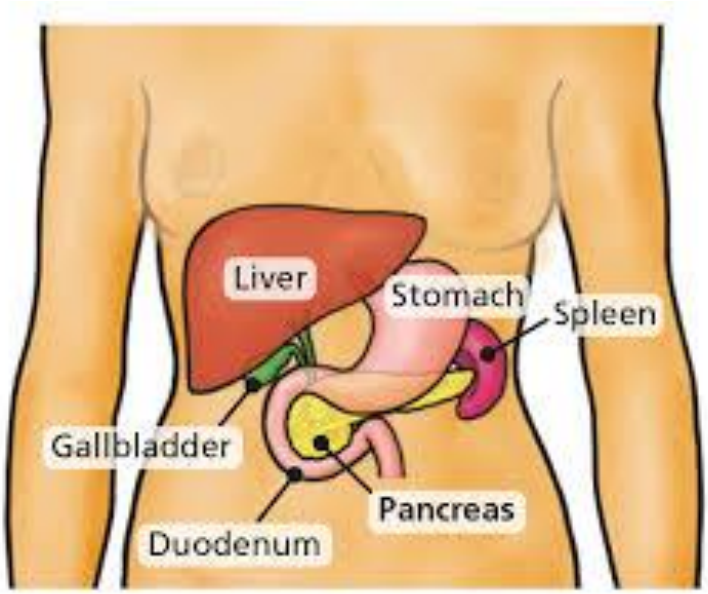
Remember – "I can do all things through Christ who strengthens me!" Philippians 4:13

Insulin Resistance

What is insulin?

Insulin is a hormone that your pancreas makes, essential for regulating blood sugar levels. Insulin helps move glucose from your blood into your cells so your body can use it for energy.

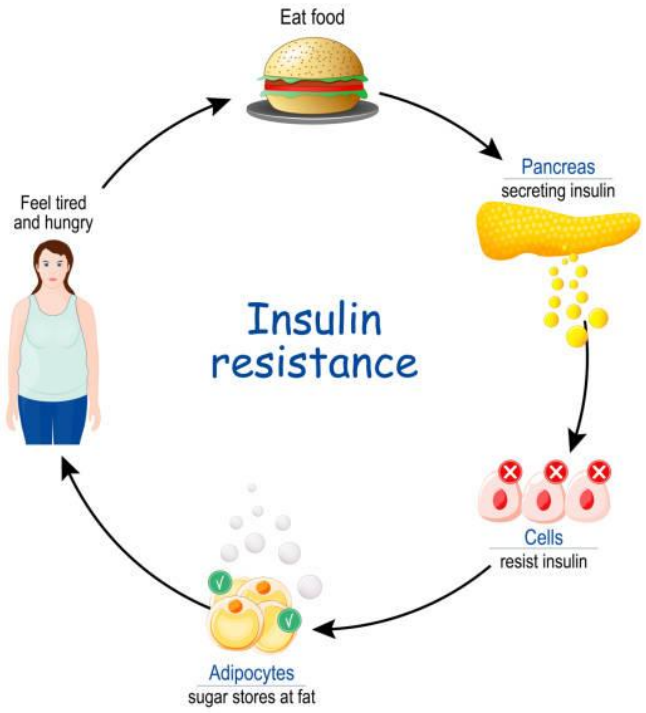
Insulin is made in the pancreas and regulates blood sugar.



What is Insulin resistance?

Insulin resistance is when your body doesn't respond as it should to insulin. Your pancreas works harder by making more and more insulin to help keep your blood glucose levels in a healthy range. Over time, your pancreas can wear out, and produces less and less insulin, leading to high blood sugar levels.

Steps in the Insulin Resistance Cycle:



1. You eat a high-carb meal, (top of the diagram).

2. The pancreas secretes insulin in response to glucose. (Glucose is sugar in food or starch that has converted to sugar).

3. The insulin allows cells throughout the body, particularly in the muscles, to absorb glucose from the bloodstream. Cells normally use this glucose as their main source of energy. metabolism. But in this case the cells are resisting the insulin. So instead of keeping your blood sugar levels stable and within a healthy range, your blood sugar levels will rise.

4. Because the glucose cannot be properly used by the cells, it gets stored as fat.

5. Fat builds up particularly around the middle.

Some symptoms of uncontrolled blood sugar

Resulting Medical Conditions:

- Hyperglycaemia (high blood sugar)
- Pre-diabetes
- Diabetes

Note: Some people can be prediabetic without having symptoms

Diabetes Type 1

(Not cause by lifestyle)

This type of Diabetes often begins in late childhood, but can occur at any age. It is the rarer form, (10% of all diabetics) but the more dangerous form. The pancreas loses its ability to make insulin, so insulin injections must be given, (for life). It is an autoimmune disease that occurs when the immune system mistakenly attacks and destroys the insulin-producing cells in the pancreas, leading to a lack of insulin production.

Diabetes Type 2

(A lifestyle disease)

This is late-onset diabetes, (although it is more recently seen in younger adults). The problem initially is not with the pancreas, but with the insulin receptors on the cell surfaces of certain body tissues, especially muscle tissue. The pancreas must work hard to increase insulin output to compensate, and eventually pancreatic function can fail.

Complications of uncontrolled blood sugar

- Heart disease or heart attack
- Stroke
- Kidney damage
- Nerve damage
- Eye damage
- Skin problems

The condition is also associated with:

- Obesity
- Liver disease (fatty liver)
- High blood pressure
- Polycystic ovary syndrome (PCOS)

The positive results of a lifestyle change

Changing to a healthy lifestyle can …

- Reduce insulin resistance
- Lower your blood glucose levels
- Decrease blood pressure

- Decrease LDL (“bad”) cholesterol levels
- Raise HDL (“good”) cholesterol levels

Foods to avoid

- Sugar and foods that contain added sugar
- Sweet drinks, fruit juice and alcohol
- Bread
- Potatoes
- Breakfast cereals
- Cakes, pastries and cookies
- Very sweet fruits such as watermelon and dates

Can Type 2 Diabetes be reversed?

Studies show it's possible for some people to reverse it. Through diet changes and weight loss, you may be able to reach and hold normal blood sugar levels without medication. Even if you're in remission, which means you aren't taking medication and your blood sugar levels stay in a healthy range, there's always a chance that symptoms will return.

So how can you reverse diabetes? The key seems to be weight loss. The odds of repairing the cells are best in the early stages (pre-diabetes).

(webMD.com)

Weight Loss

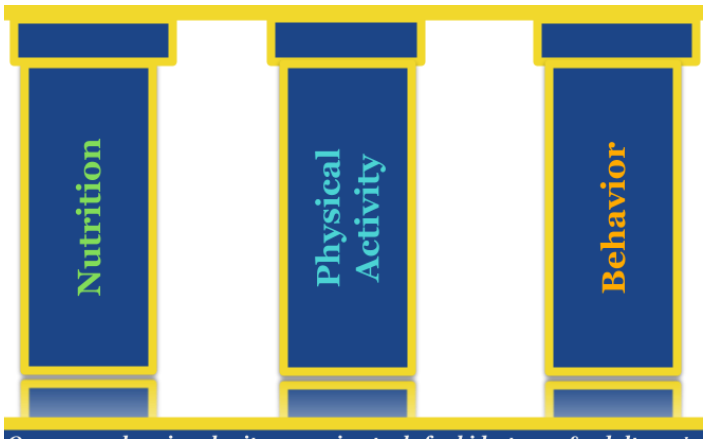
The best attitude to losing weight should be thinking about it as a lifestyle, not a short-term diet.

A diet that purely focuses on weight loss emphasises the quantity of food, (eating little), and not quality of the food. It is a short-term diet, to reach a goal. Once you've reached that goal you usually revert to your previous eating pattern. The purpose for the diet is more about changing your physical appearance than optimal health. While on the diet you experience hunger and deprivation.

We need a lifestyle change (contrasting with "a diet")

A lifestyle change focuses on the eating the best nutrients. It is a balanced diet that can be sustained long-term. The goal is to change your eating habits for life. It emphasizes both short-term and long-term health and focuses on eating foods that are enjoyable and satisfy hunger, but also nutritious.

3 pillars of weight loss



1. Nutrition - taking control of the type of food that you eat; making sure you have the right balance of vitamins, minerals, carbohydrates, protein and fats

2. Physical Activity - regular exercise, at least 60 minutes per day

3. Behaviour - signing up for a life-long change in habits. This will take determination, self-control, motivation and a commitment.

Some interesting statistics

Only about 5% of people who follow commercial diet programs actually lose weight and remain close to that weight. For most, one-third of the weight lost during dieting is regained within one year after the person stops the program. Almost all the weight is regained after five years.

Patience and perseverance

It is important to be patient about losing weight, expecting to lose no more than half a kilo per week. Losing weight too quickly creates a yo-yo effect, and soon those kilos will be back where they came from. If you fail, don't give up!

Nutrition Principles for weight-loss

- Be careful with portion size.
- Drink water between meals, (not with meals).
- No starchy carbohydrates, sugar or alcohol.
- Eat plenty of good quality protein and good fats (together)
- Don't eat a large meal late at night. (Undigested food while sleeping means you are not burning your own body fat.)
- Don't eat starchy carbohydrate/sugar and fat in the same meal.

Examples of foods combining high-carb and fat

Baked goods and pastries combine flour, sugar and fat.

Tomato is a low-carb vegetable but not good when combined with chips or pizza, both of which are high-carb and high fat.

Avocado is a healthy fat, but not good when combined with toast.

Think of some more foods that combine fat with sweet or starchy carbs. Do not eat these. But DO eat foods that combine protein and fat.

Examples of meals combining protein and fat

avocado with chicken

eggs with avocado & salad

steak with green veg and halloumi cheese

More tips for weight loss

- Chew food thoroughly.
- Avoid toxins (the fat cells want to store them and will not let go of them – so the body resists against shedding fat cells.)
- Keep sauces to a minimum. (They usually contain hidden sugar or starchy thickeners.)
- Don't eat the same foods every day – vary your menus.
- Exercise every day – at least 30 minutes cardio and 20 minutes weight bearing.

Are there "good" and "bad" foods?

Some people who promote special weight-loss "diets" say that there are no "good" or "bad" foods. This is because their program is only concerned about whether the food will put on weight or not. It involves complicated 'calorie counting'.

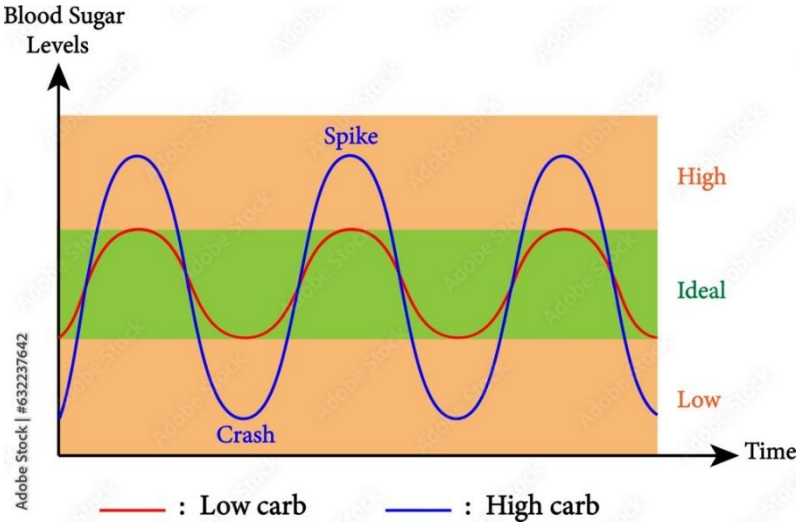
People who devise these "diets" do not consider the quality of food. They would have no problem with margarine, oils in plastic bottles and foods containing artificial sweeteners. From a natural health perspective, these are "bad" foods.

Beware of "no added sugar"

Aspartame in diet drinks is toxic to the brain.

Long-term use of artificial sweeteners increases the risk of weight-gain. A person's metabolism is affected by artificial or non-nutritive sweeteners. That means it affects your ability to burn fat.

How to avoid the glucose spikes.



Eat foods with a low Glycemic Index.

The Glycemic Index is a system that gives foods a score from 0 to 100, based on how quickly it raises blood sugar. A food with a low Glycemic Index would score under 50. A food with a high Glycemic Index would get a score of above 70.

High GI foods burn quickly and cause swings in the blood sugar levels. Low GI foods burn slowly and keep you going for longer.

Examples of foods with LOW Glycemic Index scores (under 55)

meat, chicken, fish, eggs, olive oil, coconut oil, butter - 0

lettuce – 10, cheese - 10

tomato, capsicum, celery, spinach, cabbage - 15

nuts – average 15, plain yoghurt - 15

carrots, raw - 20, egg plant – 20,

milk - 27

dried beans/legumes/lentils - 30

apple, (raw) - 38

carrots, cooked – 39

coconut - 45

Examples of foods with MODERATE Glycemic Index scores (56 – 69)

banana, basmati rice – 56

mango - 56

sweet potato (gold), cassava – 56

oats - 56

papaya - 60

dried fruits - 64

pineapple – 66

Examples of foods with HIGH Glycemic Index scores (70 or more)

soft drink, fruit juice - 70

wholemeal bread – 71

rice, (white jasmine); watermelon – 72

pumpkin - 75

refined breakfast cereals – 75 or more

biscuits & bakery foods – 80 to 100

white potato – 70 to 95 depending on variety & cooking method

Note that boiled potatoes & sweet potatoes have a lower Glycemic index than roasted.

jelly beans (and similar sweets) – 80

white bread - 100

Note that white bread is higher than sugar!

For a more extensive list of foods and their Glycemic Index, refer to page 39.

The benefit of low GI foods

They minimize blood sugar spikes. With less carbs, your body uses its own fat storage for energy.

The benefit of protein and fat

With less carbohydrates, protein and fat become the preferred energy sources for your body. Your body fat gets used up. Protein, and particularly fat, give satiety. That is the feeling of being full. They keep you going for longer and you won't get hungry so soon.

Fat does not make you fat

….IF you eat fat with protein, and/or low GI carbs such as salad or low-carb vegetables

A meal of meat and salad, or low-carb vegetables, is satisfying. You can add olive oil and lemon dressing.

Meat does not have to be low fat because you are not eating it with high GI carbs. But fat with starchy sugary foods WILL make you fat.

This is good news

Think of all the high-fat foods that you can enjoy: butter, cream, cheese, coconut oil, fatty meat, oily fish, eggs.

Examples of foods that combine protein with low-carb vegetables / salad. Can you think of other meal combinations?

Meat, soft cheese, avocado, roasted sweet potato

Beef, tomatoes, orange veg, roasted seeds, feta and dukkah

Lentil stuffed and roasted capsicum

Do we really need carbs?

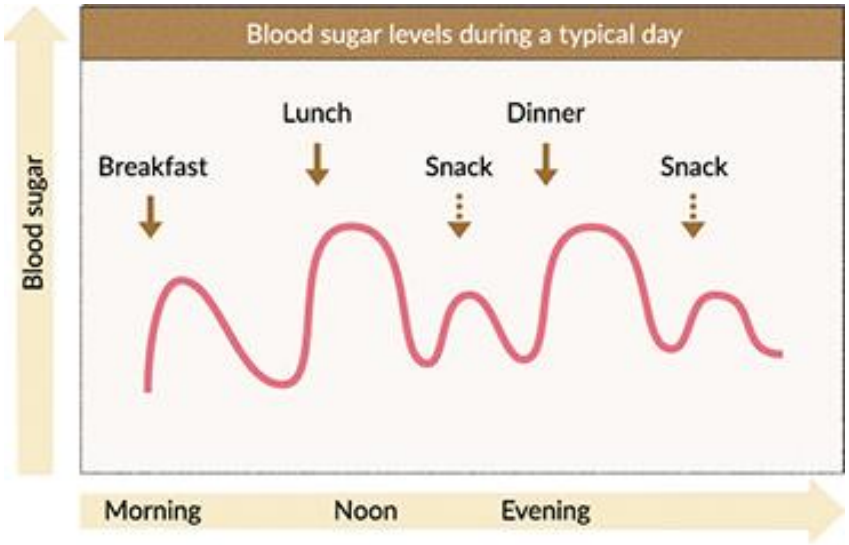
If carbs are designed for energy, but we can also get energy from fat, do we really need them? Good carbs give us extra fuel for the brain. Good carbs, found in coloured vegetables, are rich in vitamins and minerals. If you ate ONLY protein and fat for a period of time you would lose weight, but this is not sustainable. Your body would eventually suffer from vitamin & mineral deficiencies.

Is it possible to eat too much fruit?

Fruit is healthy because is it a great source of vitamins and minerals – particularly Vitamin C, and has good fibre. BUT most fruit is high in sugar – fructose - a natural sugar, and still high on the Glycemic Index scale. If you want to lose weight, keep fruit to no more than one or two pieces per day. Some fruits have low GI: lemons, grapefruit, berries. God gave us fruit as a special treat, and is good for fibre, but keep it in moderation!

Snacking

We should allow each meal to digest fully before starting up the digestion process again. This takes about 4 – 5 hours. If you interrupt the digestion process with snacking, the insulin spikes will be rising and falling continually.



Notice that there are more spikes and crashes with snacking? This means there is greater potential to wear out the cells of the pancreas.

Intermittent fasting

When you are fasting, the fat stores in your body are being used up, and therefore depleted. Everyone fasts when they sleep. That's why breakfast is called "break-fast". If you can extend the hours of that fast, more fat will be burned while you are not eating.

Examples of extending your fasting hours:

- Dinner finished by 6 pm and breakfast eaten at 9 am. (15 hours of fasting)
- OR skip breakfast and eat at 12 noon. (18 hours of fasting)
- OR skip dinner and eat breakfast at 8 am. (19 hours of fasting)

It's important to finish dinner early. As a normal routine, eat your last meal early. Allow time for your meal to digest before going to bed. Dinner should be a lighter meal than lunch. Don't go to bed with undigested food in your stomach. Overnight your body will be working hard at digesting that food instead of using up the stored fat.

Drinks

Drink plenty: on rising and between meals. Drinking with meals slows down the digestion process. How much water you need depends on body weight. The average is 2 litres. Apart from water, herbal teas are suitable, as well as black or green tea, or pure coconut water. Of course, no added sugar, sweet drinks or alcohol.

The cost of a low-carb diet

While it is true that meat, chicken and fish are more expensive than rice, potatoes and pasta, deleting processed foods and making your own will save you money. See if you can grow your own low-carb vegetables, or do a deal with someone who grows them. Dahl, made from lentils, is inexpensive and still a low GI food. Lentils are half protein and half carb and still in the low GI range. Eggs are excellent. Chick peas are another good option.

Project

Design food plans for 3 days, (3 meals per day). Use the Glycemic Index chart to help you choose low GI foods. Include plenty of good protein and good fats.

Glycemic Index Food Chart

Low GI foods: (under 55)	***Moderate GI foods: (56-69)***	***High GI foods: (70 & above)***
Vegetables: Avocado - 10 Lettuce – 10 Asparagus – 15 Broccoli – 15 Cucumber – 15 Tomato – 15 Capsicum – 15 Celery – 15 Spinach – 15 Cabbage - 15 Carrots, raw – 20; cooked – 40 Eggplant - 20 Green peas - 48 *Protein* Meat/chicken/fish - 0 Eggs - 0 Cheese – 0 to 10 Nuts – average 15 Dried beans/legumes/lentils - 30 Sausages - 30 Milk – 27 Plain yoghurt – 35 *Fats* Butter – 0 Olive oil – 0 Coconut oil - 0 *Fruit* Berries - 15 Grapefruit – 23 Apple, (raw) - 38 Peach – 42 Orange - 44 Grapes – 45 *Grains* Buckwheat – 50	*Vegetables* Parsnip – 52 Sweet corn – 54 Sweet potato – 56 Cassava – 56 Taro - 56 Pumpkin – 65 Beetroot – 65 *Fruit* Banana - 55 Mango – 56 Papaya - 60 Dried fruits – 64 Pineapple – 66 *Grains* Brown rice - 55 Quinoa - 55 Basmati white rice – 58 Wheat pasta – 45 to 60 Rye bread (sourdough) - 65	*Vegetables* Potatoes (white) – 70 to 95 *Fruit* Watermelon - 72 *Grains* Wholemeal wheat bread – 71 Rice, (white Jasmine) - 72 Commercial breakfast cereals - 75 Muesli – 80 Oats – 87 Bakery foods (wheat) – 80 to 100 Oats - 87 White bread - 100 *Other* Honey - 73 Jelly beans (or similar sweets) – 80

16 Low-carb meal ideas

Choose whether you want to eat these meals for breakfast, lunch or dinner. (Note that dinner must not be eaten late.) For frying, use olive oil, coconut oil or butter. For weight loss, vary your menus daily.

Meal idea 1: eggs or omelette

2 to 3 eggs – can be fried in olive oil or butter, or make an omelette, adding salt and pepper. Eat with salad or low-carb stir-fried vegetables such as tomato, capsicum, zucchini

Optional: add grated cheese

Meal idea 2: Yoghurt, nuts, seeds and fruit

Greek plain yoghurt with nuts (e.g. almonds, walnuts). and seeds (e.g. sunflower, pumpkin, sesame, flaxseeds). Add low sugar fruit such as sour green apple, passionfruit, kiwi fruit, plum or berries

Meal idea 3: Fish with low-carb cooked vegetables or salad

Meal idea 4: Meat/chicken with salad or cooked low-carb vegetables

Meal idea 5: Dahl (red lentils) with stir-fried low-carb vegetables or salad

Meal idea 6: Minced beef patties in tomato sauce

Make the sauce from stir-fried onion and add 1 can tinned tomatoes. Add salt, pepper, herbs and spices.

Meal idea 7: One pan minced beef and vegetables

Stir-fry onion, egg plant, capsicum, zucchini, cabbage. Set aside. Stir fry minced beef. Add the stir-fried vegetables and a can of tomatoes. Add salt and spices to your taste.

Meal idea 8: Zucchini Spaghetti Bolognaise

Coarsely grate a zucchini. Place in a large pan and stir-fry in olive oil and a little salt. Set aside. Chop one onion. Stir fry onion in the pan with olive oil. Add beef mince and continue to stir fry. Add a can of tomatoes, salt and Italian herbs. Place lid on pan and cook for half an hour. When done, serve the meat and tomato dish on top of the grated zucchini prepared beforehand.

Meal idea 9: Vege-lentil burgers

Drain a can of chick peas, or 1 cup cooked, drained brown lentils. Place them in a bowl and crush. In a pan, stir-fry onion, chopped zucchini, tomato, capsicum, or any other low-carb vegetables. Add them to the chick peas/lentils in the bowl. Add 2 eggs and mix. Place in spoonfuls into the hot pan, like making pancakes. Turn when ready.

Meal idea 10: Chia pudding

Mix 1 tablespoon chia seeds, ½ cup coconut cream, 2 passionfruit or ½ cup crushed berries. Let sit overnight.

Meal idea 11: Lentil soup

brown lentils, onions, garlic, diced carrot, zucchini, celery, cabbage, spices, salt,

Meal idea 12: Lettuce wraps

2-3 large lettuce leaves. Fill with chopped cooked chicken, 2 tablespoons hummus, tomato, red onion and 1 tablespoon pumpkin seeds, grated cheese

Meal idea 13: Avocado and egg salad

½ an avocado, chopped and sprinkled with salt, olive oil and lemon juice. Add chopped tomato, cucumber and celery.

Meal idea 14: Hummus with celery sticks

Blend, crush or whizz in a food processor: 1 can chick peas, 3 tablespoons tahini, 1 tablespoon olive oil, 1 tablespoon lemon juice, 1 teaspoon salt, pepper to taste or sweet paprika. Use as a dip for vegetable sticks such as celery or raw carrot.

Meal idea 15: Salmon or sardines and veg

Sardines and low-carb vegetables or salad – lettuce, cucumber, tomato, celery, avocado. Add olive oil and lemon dressing to the salad. (Salmon may be used instead of sardines, but avoid tinned tuna due to high mercury content.)

Meal idea 16: Chicken Tikka with cauliflower rice

Chop cauliflower very fine and stir-fry in a pan. Remove and set aside. Cook about half kilo of chicken pieces in the pan. Sprinkle with Moroccan or Indian spices while cooking. Remove from the pan and set aside. In the pan now stir-fry sliced onion. Add a can of tomatoes, 1 teaspoon salt, more spices and cook for about 10 minutes. Add the chicken to the pan. Stir in 1 cup coconut cream. Serve the chicken dish on top of the cauliflower rice.

Eating Disorders

Remember the difference between “going on a diet” and changing your lifestyle for health? People who “go on diets” often do this for the wrong reasons. They often fail and find themselves in a cycle of ‘yo-yo dieting’ with repeated failures. They After each failure they try another diet, it’s only short-term. Constant failure leads to depression and anxiety, and can lead to eating disorders.

Dieting for the wrong reasons

- I don’t like myself as I am.
- People won’t like me as I am.
- I won’t “fit in” if I am overweight.
- I want to look like a super model.
- I want to wear trendy clothes.

Changing your lifestyle for the right reasons

- I know that God loves me as I am, but I want to live a long and healthy life so that I can serve Him, and fulfil the purpose he has for me.
- If I don’t change my lifestyle, I am a sitting time-bomb for diabetes and heart disease.
- My worth as an individual is not based on how I look, but having good health will give me a better life.

Problems with short-term “dieting”

- obsession with eating or not eating
- feeling guilty when you eat the wrong foods
- punishing yourself for failure
- starving yourself with “low-calorie” foods hunger
- mood changes when you don’t have enough food for energy

Why do so many attempts to “diet” fail?

Apart from dieting for the wrong reasons, many people try to diet with incorrect health advice, or wrong preconceived ideas such as …

- “Restrict your food intake and you will automatically lose weight.” (Wrong!)
- “Don’t eat anything containing fat.” (Wrong!)

How is a low-carb lifestyle eating pattern different?

- You can eat normal quantities of food.
- You are careful about choosing the right nutrients.
- You can eat fat and protein together, which will satisfy you and make you feel satisfied instead of hungry.

Advantages of eating to change your lifestyle

- You learn which foods are optimal for your health.
- You don't have to "count calories" because you know the best foods to eat.
- Your goal is to lose weight gradually, and if you have occasional slips, you know how to get back on track.
- You will never feel starving or even hungry if you eat enough protein and fat.
- You will feel healthier because you are getting the right nutrients.

Diets that go too far can lead to health problems

When the diet becomes so restrictive, you have an imbalance of nutrients, so less energy. As this process progresses, you start to lose weight, but you're actually starving your body. This can lead to a preoccupation with food and urges to overeat. There are also mood changes including irritability, increased anxiety, distorted body image, fear of failure and shame.

Anorexia

Anorexia is very dangerous because your body doesn't get the nutrients it needs to stay healthy. As a result, you may develop problems throughout your body, including conditions that affect your heart, muscles, digestion, skin and hair.

Bulimia

This starts from submitting yourself to extreme hunger when dieting. This can lead to binge eating or a loss of control while eating. A person who binge eats consumes a large amount of food at one time and may not feel like they can stop even when they're full. To compensate for overeating, there are attempts to "get rid" of food consumed during a binge, include self-induced vomiting, over-exercising and laxative abuse. Driven by a desire to lose weight, a person may find themselves in a cycle of binging and purging.

Without treatment, bulimia can cause serious health problems like dehydration, tooth decay, ulcers and heart failure.

What are the symptoms and warning signs?

- emotional eating
- repetitive or obsessive dieting and binge eating
- thinking and talking about food, weight and body appearance a lot of the time
- preoccupation with exercise or body building
- feeling guilt and or shame about eating patterns
- fearing gaining weight
- difficulty concentrating

Overcoming eating disorders

- Self-acceptance – stop believing you're not good enough.
- Try to remember that you don't have to do things perfectly all the time. You have a long-term goal.
- Have a realistic perception of what your body looks like or should look like.
- Know that you are loved by God and others.
- Stay away from influences of the media and social pressures to look a certain way.
- When overwhelmed, ask for help.

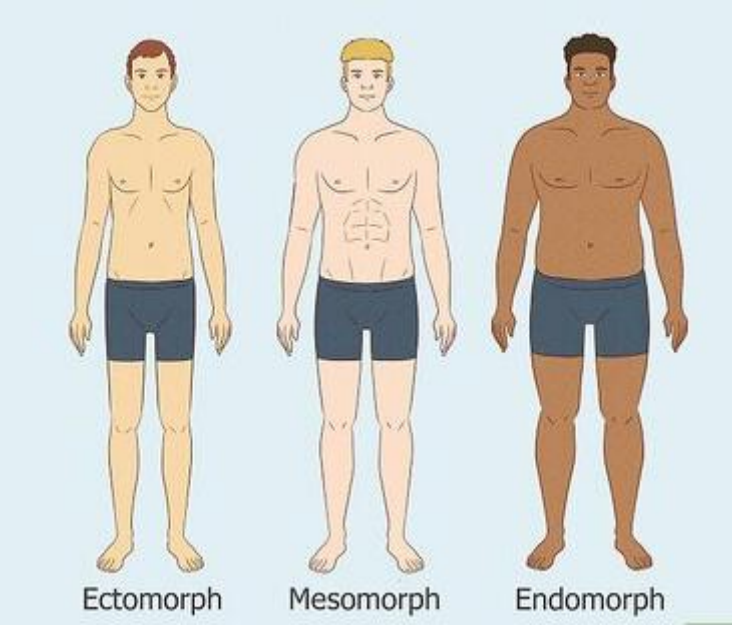
Challenge

If you're having negative thoughts about weight loss, here's something you can do. Try to turn it into a positive challenge by making a list of positive goals for improving your health.

Body Composition

Everyone is different

There are 3 main body types: ectomorph, mesomorph, and endomorph. Ectomorphs, have slim bodies with little muscle or fat. Mesomorphs, have lean, muscular bodies and tend to build muscle easily. Endomorphs, have softer bodies and more body fat.

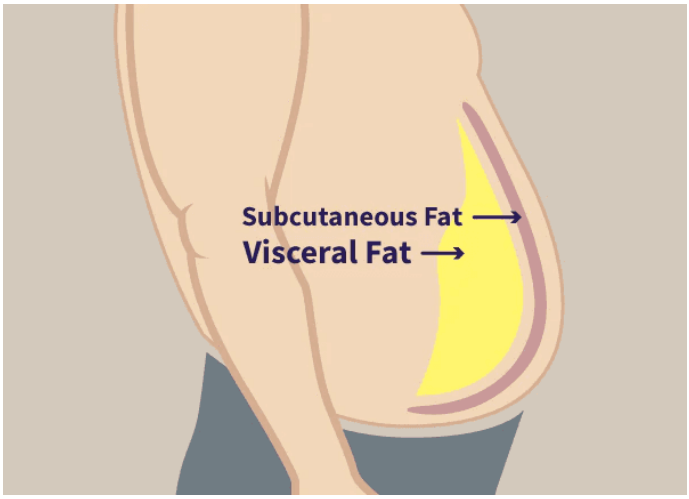


Focusing only on your ideal weight is not always helpful. Everyone has a different ideal weight, depending on height and frame size.

People with a larger frame will have larger bones and therefore will have a higher ideal weight.

Fat and Muscle

A person may be of ideal weight for their height and frame size, but still not have a good body composition, because they are carrying too much fat in certain areas, (like around the belly), and are lacking in muscle.



Body composition can be changed.

Through healthy eating and exercise, body fat can be converted to muscle.

Types of Exercise:

Cardio – gets the heart pumping

- walking
- swimming
- dancing
- running
- sports

Weight-bearing – builds the bones and muscles

- gardening
- physical work
- swimming
- walking up and down stairs
- lifting weights

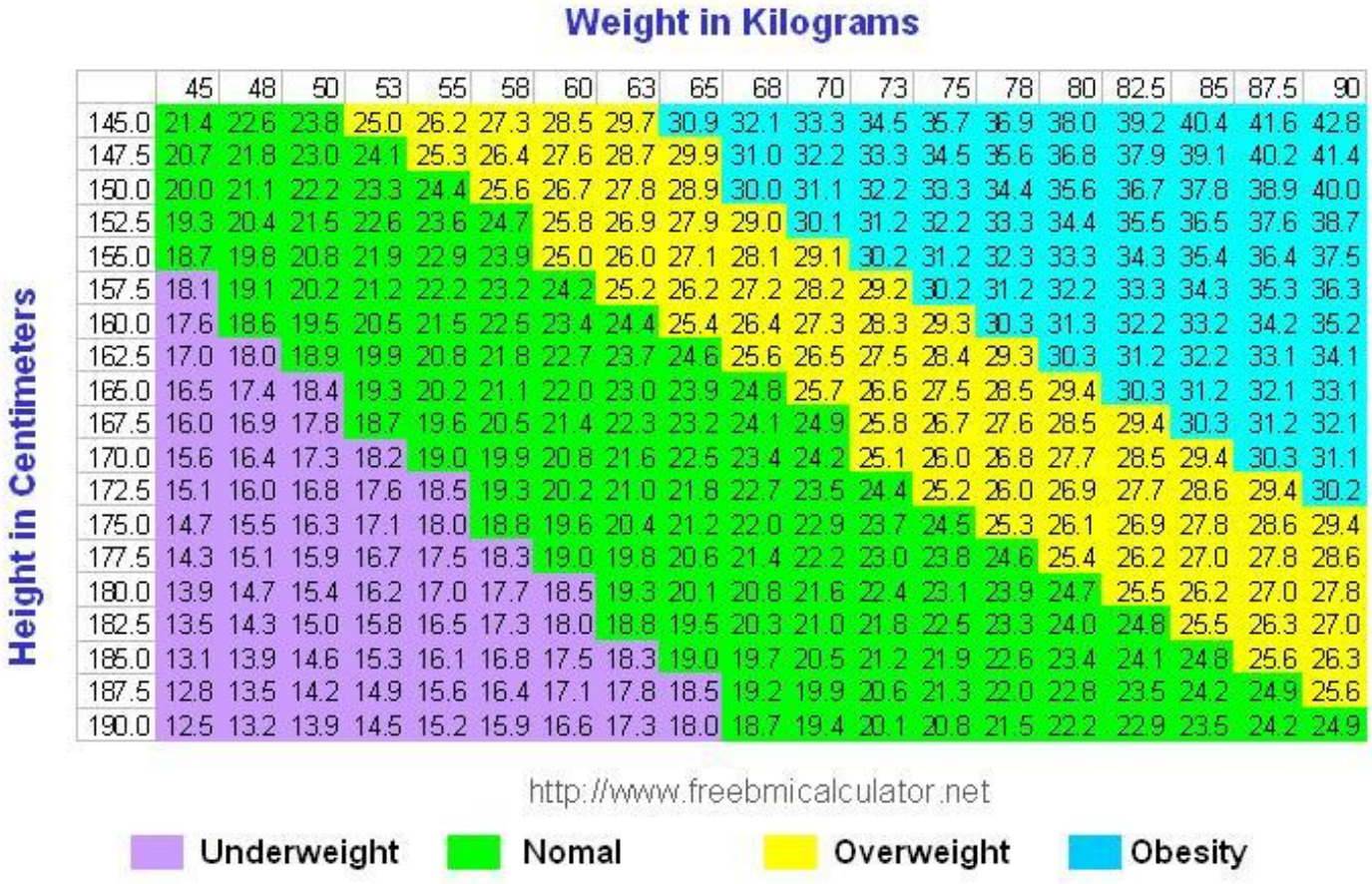
What is your correct height weight ratio?

Body Mass Index (BMI)

Your “body-mass index” is a number that takes into account your weight and height.

BMI = weight (kg) ÷ height (m)^2

Refer to the following height-weight chart for your ideas BMI:



	45	48	50	53	55	58	60	63	65	68	70	73	75	78	80	82.5	85	87.5	90
145.0	21.4	22.6	23.8	25.0	26.2	27.3	28.5	29.7	30.9	32.1	33.3	34.5	35.7	36.9	38.0	39.2	40.4	41.6	42.8
147.5	20.7	21.8	23.0	24.1	25.3	26.4	27.6	28.7	29.9	31.0	32.2	33.3	34.5	35.6	36.8	37.9	39.1	40.2	41.4
150.0	20.0	21.1	22.2	23.3	24.4	25.6	26.7	27.8	28.9	30.0	31.1	32.2	33.3	34.4	35.6	36.7	37.8	38.9	40.0
152.5	19.3	20.4	21.5	22.6	23.6	24.7	25.8	26.9	27.9	29.0	30.1	31.2	32.2	33.3	34.4	35.5	36.5	37.6	38.7
155.0	18.7	19.8	20.8	21.9	22.9	23.9	25.0	26.0	27.1	28.1	29.1	30.2	31.2	32.3	33.3	34.3	35.4	36.4	37.5
157.5	18.1	19.1	20.2	21.2	22.2	23.2	24.2	25.2	26.2	27.2	28.2	29.2	30.2	31.2	32.2	33.3	34.3	35.3	36.3
160.0	17.6	18.6	19.5	20.5	21.5	22.5	23.4	24.4	25.4	26.4	27.3	28.3	29.3	30.3	31.3	32.2	33.2	34.2	35.2
162.5	17.0	18.0	18.9	19.9	20.8	21.8	22.7	23.7	24.6	25.6	26.5	27.5	28.4	29.3	30.3	31.2	32.2	33.1	34.1
165.0	16.5	17.4	18.4	19.3	20.2	21.1	22.0	23.0	23.9	24.8	25.7	26.6	27.5	28.5	29.4	30.3	31.2	32.1	33.1
167.5	16.0	16.9	17.8	18.7	19.6	20.5	21.4	22.3	23.2	24.1	24.9	25.8	26.7	27.6	28.5	29.4	30.3	31.2	32.1
170.0	15.6	16.4	17.3	18.2	19.0	19.9	20.8	21.6	22.5	23.4	24.2	25.1	26.0	26.8	27.7	28.5	29.4	30.3	31.1
172.5	15.1	16.0	16.8	17.6	18.5	19.3	20.2	21.0	21.8	22.7	23.5	24.4	25.2	26.0	26.9	27.7	28.6	29.4	30.2
175.0	14.7	15.5	16.3	17.1	18.0	18.8	19.6	20.4	21.2	22.0	22.9	23.7	24.5	25.3	26.1	26.9	27.8	28.6	29.4
177.5	14.3	15.1	15.9	16.7	17.5	18.3	19.0	19.8	20.6	21.4	22.2	23.0	23.8	24.6	25.4	26.2	27.0	27.8	28.6
180.0	13.9	14.7	15.4	16.2	17.0	17.7	18.5	19.3	20.1	20.8	21.6	22.4	23.1	23.9	24.7	25.5	26.2	27.0	27.8
182.5	13.5	14.3	15.0	15.8	16.5	17.3	18.0	18.8	19.5	20.3	21.0	21.8	22.5	23.3	24.0	24.8	25.5	26.3	27.0
185.0	13.1	13.9	14.6	15.3	16.1	16.8	17.5	18.3	19.0	19.7	20.5	21.2	21.9	22.6	23.4	24.1	24.8	25.6	26.3
187.5	12.8	13.5	14.2	14.9	15.6	16.4	17.1	17.8	18.5	19.2	19.9	20.6	21.3	22.0	22.8	23.5	24.2	24.9	25.6
190.0	12.5	13.2	13.9	14.5	15.2	15.9	16.6	17.3	18.0	18.7	19.4	20.1	20.8	21.5	22.2	22.9	23.5	24.2	24.9

However, BMI may not always be the best way to calculate your ideal weight, because it does not take into consideration your frame size.

Frame size

Frame size can be small, medium or large.

People with a large frame have bigger bones and therefore it will be normal for them to weigh more than someone of the same height, but with smaller bones. So, frame size must be taken into consideration.

You can measure your frame size by measuring your wrist circumference.

Measuring frame size using wrist measurement

How to measure

Wrap the measuring tape around the circumference of your wrist, just above the knobby bone, until it overlaps.

	Small	Medium	Large
Men	< 15.25 cm	15.25 cm – 17.15	> 17.15
Women	< 14 cm	14 cm to 15.25 cm	> 15.25
Teen Boys	< 14.7	14.7 to 16.5 cm	> 16.5
Teen Girls	< 13.46	13.46 to 14.7	> 14.7

The table of the next page shows your ideal weight according to both height and frame size.

Height-Weight ratios according to Frame Size

Women

Height (cm)	Small Frame (kg)	Medium Frame (kg)	Large Frame (kg)
147.5	46 - 50	49.5 - 55	53.5 - 60
149.5	46.5 - 51	50.5 - 56	54.5 - 61
152.5	47 - 52	51 - 57	55.5 - 62
155	48 – 53.5	52 – 58.5	57 – 63.5
157.5	49 - 55	53.5 - 60	58 - 65
160	50 - 56	55 - 61	59.5 – 66.5
162.5	52 – 57.5	56 – 62.5	61 – 68.5
165	53 - 59	57.5 - 64	62 - 70
167.5	54.5 - 60	59 – 65.5	63.5 - 72
170	56– 61.5	60.5 – 65.5	65 - 74
173	57 - 63	61.5 – 68.5	66 - 76
175	58.5 – 64.5	63.5 – 69.5	67.5 - 77
178	60 - 66	64.5 - 71	69 – 78.5
180.5	61 - 67	65.5 - 72	70.5 - 80
183	62.5 – 68.5	67 – 73.5	71.5 - 81

Men

Height (cm)	Small Frame (kg)	Medium Frame (kg)	Large Frame (kg)
157.5	58 - 61	60 - 64	62.5 - 68
160	59 – 62.5	60.5 - 65	63.5 – 69.5
162.5	60 – 62.5	61 - 66	64.5 - 71
165	61 – 63.5	62 - 67	65.5 – 72.5
167.5	61.5 – 64.5	63 – 68	66 – 74.5
170	62.5 - 66	64.5 - 70	67.5 - 76
173	63.5 - 67	66 - 71	69 - 78
175	64.5 – 68.5	67 – 72.5	70.5 - 80
178	65.5 - 70	68.5 - 74	71.5 – 81.5
180.5	66 – 71	70 - 75	73 – 83.5
183	67.5 – 72.5	71 - 77	74 - 85
185.5	69 – 74.5	72.5 - 79	76 - 87
188	70 - 76	74 - 81	78 – 89.5
190	71.5 - 78	76 – 82.5	80 – 91.5
193.5	73.4 - 80	77.5 - 85	82 - 94

Waist circumference

This is another way to assess your body composition.

Ideal waist size refers to waist circumference a measurement that promotes optimal health and reduces health risk. The simple rule is to keep your waist circumference less than half your height:

Ideal waist size = height x 0.5

So, if you are 165 cm tall, your ideal waist circumference is 82.5 cm or less.

However, remember that this is "ideal" and does not differentiate between men and women, or differing frame sizes. It also does not take age into account. As you get older, your ideal waist measurement will increase.

The real value in keep track of your waist circumference is that you can easily see if you are losing weight around the middle, which is very important for avoiding or reversing type 2 Diabetes.

The following table shows average waist size according to age, (but does not take into account frame size, so you need to add or subtract about 2 cm for small/large frame.)

Average waist size by age

Age	Men	Women
20-29	89.2 cm	82.4 cm
30-39	94.0 cm	87.0 cm
40-49	97.1 cm	90.9 cm
50-59	101.6 cm	93.9 cm
60-69	104.5 cm	97.2 cm
70+	101.5 cm	94.4 cm

Words of encouragement

"Every step is progress, no matter how small."

"Consistency is the key."

"Your health is worth it."

"Results will come; be patient."

"Stay committed to your goals."

"It's not just about losing weight; it's about gaining life."

"Every healthy meal is a step towards your goal."