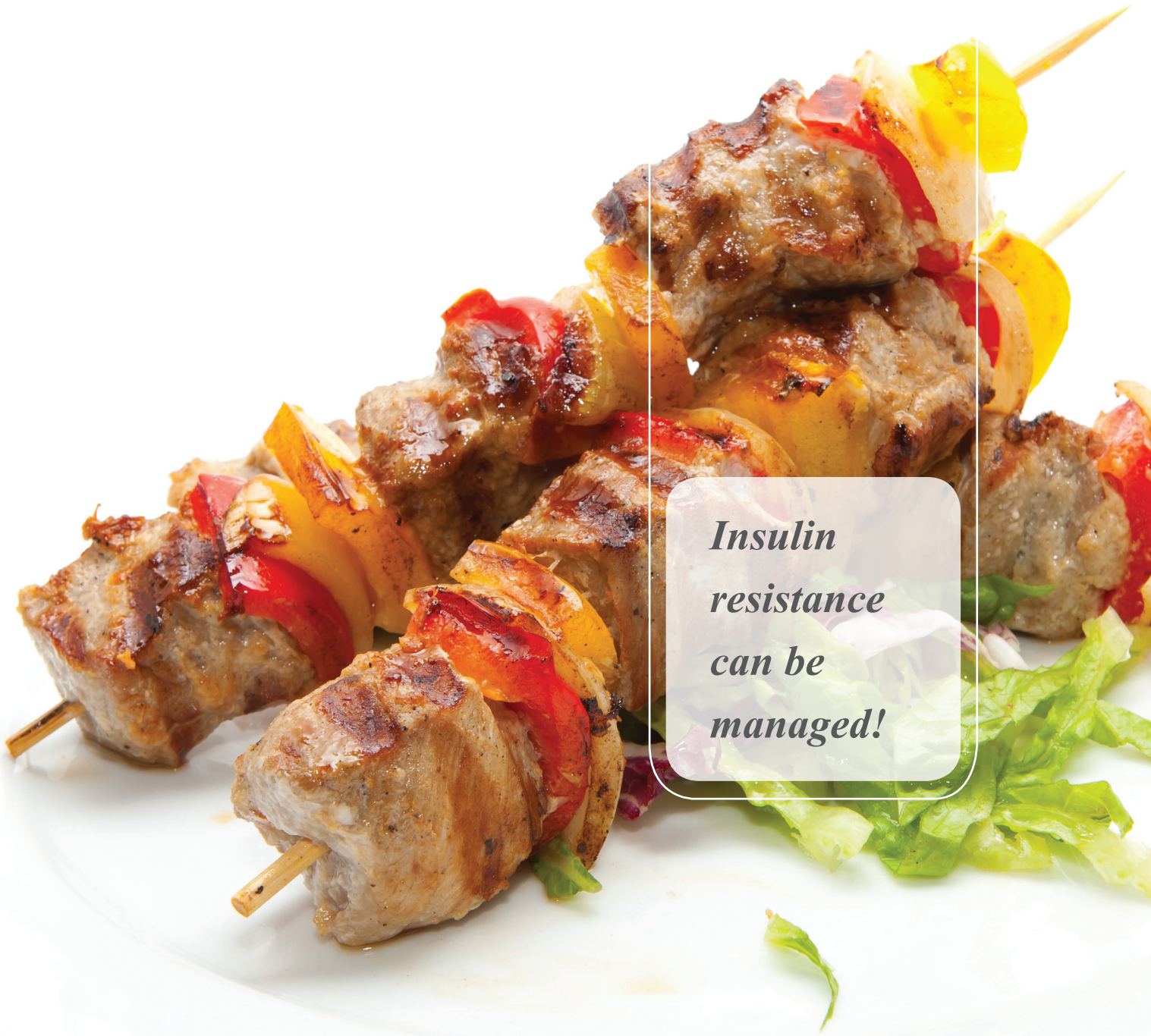
C·A·P·E Meal Plan

Carbohydrate Adjusted, Protein Enriched



Insulin resistance can be managed!

mni
Medical Nutritional Institute

Your health is our priority

The C.A.P.E meal-plan

Which diet will give you the best weight-loss results? Will these results be sustainable over the long term and will any harm be done in the process?

This topic has caused intense debate and no medical condition has generated as many proposed solutions as obesity. In essence, the terms 'diet', 'meal-plan' and 'eating style' all boil down to an attempt to help you eat in a more structured, healthy manner and reduce the total amount of calories you consume. In the metric world these are measured in Kilojoules (KJ). Hundreds of different diets are available and opposing opinions are quite common. Not surprisingly, for anyone without a degree in dietetics, this topic can become somewhat overwhelming.

How can the C.A.P.E meal-plan help you lose weight?

With the C.A.P.E meal-plan our aim is to assist you with successful and perhaps even enhanced weight-loss, both over the short and long term, as well as to improve your general health. We believe that by optimising certain metabolic, biochemical and hormonal pathways that collectively influence body fat regulation within the extreme complexity of human biochemistry, better weight-loss results can be achieved. We also believe that this can be done without exposing yourself to any health risks and by helping you make better food choices, actually improve your health. In designing this diet, we have incorporated several modern dietetic concepts in one simplified platform.

What are the modern trends in dietetic science?

Although not all opinion leaders with an interest in obesity-related diseases are in agreement with every novel concept, there are an increasing number of researchers who suggest that some of the conventional opinions that several mainstream dietetic regulatory and advisory boards have been suggesting should be reviewed. This has also been our personal experience at the Medical Nutritional Institute, gained from working with a large number of overweight and obese patients in pharmacy clinics, corporate health, diabetic prevention and weight-loss programmes. In addition, with several other scientific research projects, many new discoveries relating to other factors that also play an important role in body-fat accumulation and overall health have been made. These include new information on how certain plant molecules called polyphenols positively influence our health and help regulate body-fat accumulation. Another new concept relates to the active role that trillions of micro-organisms living within our intestines play and how they help determine how our body either stores or burns fat.

What are the basic principles behind the C.A.P.E meal-plan?

As a healthcare organisation, we developed the C.A.P.E meal-plan over a decade ago and have been using it in a clinical setting since then. The acronym C.A.P.E stands for Carbohydrate Adjusted, Protein Enriched. The principals we adopted in the original meal-plan have been reaffirmed by recent research. This updated version offers you a simplified programme which incorporates the following principles:

- A general shift towards food quality rather than quantity which includes consuming fewer processed vegetable oils and foods, and where possible, eating foods in their natural form.
- Adjusted macronutrient composition can shift your metabolic rate from your default setting, which is predominantly fat storing, to a more active fat burning metabolic orientation. This is specifically so in the case of higher protein, lower carbohydrate diets.
- Certain eating styles and supplements help you optimise your blood sugar and blood insulin levels and therefore help you to control your appetite far better.

- As we have advocated, diets should be more focussed on alleviating insulin resistance, a medical condition that leads to the development of metabolic syndrome, a condition that poses a significantly increased cardio-vascular risk in itself, than lowering your dietary intake of fat. This change of opinion is based on new findings collected through several recent studies that indicate that saturated fat does not threaten our health to the extent that was generally accepted in the past.
- The regular intake of plant based foods. These are high in healthy substances such as fibre and molecules called polyphenols. These not only offer you a wide variety of health benefits, but also actively help you lose weight. This was documented in a large study involving over 124,000 men and women over 24 years. We believe that you should be able to eat as many vegetables which have negligible amounts of carbohydrate as you like. Fruits on the other hand, while still high in these molecules, are also loaded with sugar, and so should not be eaten excessively.
- Optimising the delicate balance of the microbiome, the large colony of bacteria that lives in our intestines. Whilst investigation is ongoing, it is now clear that the microorganisms living inside obese and naturally slim individuals differ significantly, and research suggests that a shift in the composition of the microbiome will likely have a weight-loss benefit. This can be done by eating plant foods high in fibre and polyphenols, as well as reducing your total carbohydrate intake and improving the quality of your choices.

How does the C.A.P.E meal-plan work?

The C.A.P.E meal-plan stimulates your body to burn more fat whilst simultaneously reducing the production and storage of fat. This is achieved by not only limiting the total amount of calories that you consume on a daily basis, but also minimising your intake of energy-dense carbohydrates. Protein consumption is encouraged at every meal for the reasons explained below. Total fat intake is still restricted, whilst the increased intake of omega 3 fat in the form of oily fish, olive oil, flaxseed or nuts is encouraged. The advantage of this approach is that protein is metabolically processed immediately and not generally stored under normal conditions. Protein also increases your metabolic rate through a process called thermogenesis. In addition, several studies have shown that higher protein consumption helps to control hunger.

Over four decades ago researchers started to propose that a high-protein diet would enhance weight-loss results. Not surprisingly, since this idea was so radically different from traditional thinking, the concept was initially rejected by the orthodox dietetic fraternity. Some early criticism was based on opinions regarding the potential detrimental effects of higher protein intake on blood cholesterol levels, kidney function, blood pressure and osteoporosis. In recent years, however, numerous high quality academic studies have examined the effects of protein-enriched diets on energy expenditure, energy intake and actual weight loss, compared to diets containing less protein, debunking many of the concerns regarding the side effects associated with a higher protein intake.

The C.A.P.E meal-plan also puts emphasis on the regular intake of a variety of certain plant food sources, due to the numerous benefits that plant derived chemicals have been shown to have on the human body. It is well known that plants are an essential source of micronutrients such as vitamins and minerals. However, the actual reason you should eat certain plants is not to derive vitamins and minerals alone, since many of these are also available in protein sources, but to ingest several other unique plant based molecules, collectively called polyphenols as well as to increase the fibre content of the diet. These polyphenols can only be obtained from plants, and research suggests that they can improve our immune system, prevent overeating by regulating our appetite, suppress excess fat storage, regulate metabolism, alleviate chronic diseases, and allow us to feel healthier and more energetic each day.

What is thermogenesis and why does it matter?

'Thermogenesis', or the 'thermic effect' of food, is the amount of energy required for the digestion, absorption and disposal of nutrients and their waste products after a meal. In other words, it is the energy that is burnt in the body's metabolic furnace to process and nutritionally assimilate food. Since obesity is known to be a disorder of energy imbalance, any strategy that will increase energy expenditure over the long term immediately becomes attractive.

Thermogenesis is influenced by the composition of different food groups. In general, the typical thermic effect of protein is 20 - 30 % of energy consumed, whilst for carbohydrates this number is much lower at 5 - 10 %, and only 0 - 3 % for fats[1]. Protein therefore has the highest metabolic energy requirement of the three macronutrients, resulting in an increased resting metabolism and less energy available for storage[2,3]. What this means in real terms is that although you might eat the same calorific amount of protein as carbohydrate, you actually retain less at the end of the day. Researchers from Harvard Medical School reviewed 15 studies on the topic and found that in all studies protein had a greater thermic effect than either carbohydrate or fat[4].

On average, it was estimated that the usual difference between a high and low protein diet was 126 KJ a day. Although this may not seem that much, the cumulative effect, if sustained over a year, becomes a 45 990 KJ deficit, significant for anyone struggling to control their weight.

The importance of hunger control (satiety)

Battling hunger all day will prove a real uphill struggle for anyone trying to shed some weight. It is therefore important to prevent hunger by regulating levels of satiety, the sensation of being sufficiently "filled with food". Several studies have compared the effect of a protein-enriched diet on hunger levels[2,5]. In almost all studies it was found that protein significantly reduces hunger by increasing satiety levels in comparison to at least one other macronutrient (carbohydrate or fat). Increased protein also helped to reduce food consumption at subsequent meals.

Total weight-loss - the crux of the matter!

The most effective way to lose weight is still through total calorific restriction[6], in other words, you need to eat less, especially if you generally tend to overeat. However, your food choice and the ratios of the macronutrients carbohydrate, protein and fat are for various biochemical and hormonal reasons important, and may help you eat less even if it doesn't feel like it. Several studies have now convincingly established that a higher protein intake leads to greater weight-loss over both the short and long term[5]. The type of weight lost is also more favourable – it is fat rather than muscle[7], which is lost in higher carbohydrate diets.

Kidney function – should you worry about it?

There have been some concerns that a protein-enriched diet will have a negative effect on kidney function. This was based on the medical principle that protein intake needs to be reduced in individuals with poor kidney function. However, several studies have found no evidence that an increased protein intake has a negative effect on normal kidney function[5].

What about total fat content?

Several new studies have indicated that unsaturated, low fat diets, in preference to saturated fat, do not offer the perceived cardiovascular benefit that was generally assumed in the past[8,9]. Highly processed vegetable based fats and oils in the form of spreads, oils and margarine are therefore no longer considered safer alternatives to butter, ghee, coconut oil or lard, and in some cases are suggested to even prove more

harmful due to their high concentration of trans-fats[10]. Dietary focus is therefore not centred on the concept of avoiding foods that contain fat in preference to eating highly processed food that offer a low-fat option. This new evidence is good news for those who want to lose weight by increasing their protein intake. Since many sources of animal protein contain saturated fat, a reduced concern with saturated fat allows for a far greater range of dietary choices.

Food that contains slightly more fat, especially saturated fat, also tastes better, since many crucial natural flavours are fatty molecules and therefore only fat soluble. Without them, food can taste rather bland. Many plant based molecules are also fat soluble, and so their uptake into the body is improved if eaten with some kind of fat. We do not, however suggest an excessive amount of fat, as high fat intake will definitely lead to weight gain.

The bottom line is that an eating plan will only work if the foods we eat are as delicious and as satisfying as those we ate which led to obesity. Bland diets are hardly sustainable over the long term.

Blood cholesterol, cardiovascular and osteoporosis risk

An area of controversy has been the effect of a higher protein intake on blood cholesterol levels, and thereby cardiovascular risk. While more research is still needed in this area, it appears from the analysis of many new studies that a higher protein intake does not elevate blood cholesterol levels. Other studies have demonstrated that the exchange of protein for carbohydrate may in fact be beneficial for blood cholesterol levels[11].

Another concern has been the development of osteoporosis. A review of 61 studies conducted over the past 30 years found that protein intake does not have a negative effect on bone health[12]. The Framingham Osteoporosis Study actually found that protein had a positive impact on bone health. Other papers have corroborated this effect[5].

The opinion that an increased saturated fat intake leads to elevated blood cholesterol and heart disease is a topic of some debate, but it appears that the risk is less, although not absent[9]. It is our personal opinion that it often does, based on our own research on individuals consuming a high fat diet. We are therefore NOT in favour of the recommendation that you can consume as much fat as you want on the condition that you reduce your carbohydrate intake to a minimum. Increased fat intake may increase blood cholesterol and triglyceride levels, which the majority of advisory healthcare bodies still believe causes cardiovascular disease, in spite of the fact that some individuals claim the opposite. In addition, while carbohydrate has essentially been given a free run in terms of cardiovascular health, new evidence shows that it may in fact promote disease[8,10]. It is suggested that where fat is supplemented, except in high temperature cooking (where saturated fat is better), it should be mono or polyunsaturated[9,10] (found mostly in nuts, seeds and fish, especially olive oil). Recent evidence suggests that saturated fats derived from dairy are less harmful than previously accepted[8]. The bottom line is that our bodies have a highly efficient system to store fat and consuming excess fat may therefore lead to weight gain. We therefore suggest that your fats come from "real food sources", which can be described as food that is unprocessed and in its natural form, preferably be unsaturated (not trans) and that fat is not deliberately added or consumed excessively.

What are polyphenols and how do they benefit our health?

Polyphenols are a diverse group of naturally produced chemicals made by plants. The major categories of polyphenols are: i) non-flavonoids, ii) flavonoids, and iii) tannins. These are further divided into sub-classes (table 1). Some well-known polyphenols include resveratrol from red wine and ellagitannins from tea. These chemicals contribute to the aroma, taste and colour of plants. Due to their diverse structures, polyphenols serve many biological functions, including acting as signalling molecules, antioxidants and assisting with the prevention of infections.

With the recent decline in eating whole, raw, and unprocessed foods, especially plants, we are often missing out on providing our bodies with chemicals which they have relied on for most of human history, and in turn are neglecting our health. At the cellular level, many biochemical processes are similar and shared between humans and plants, and so many chemicals will perform the same or similar functions in us as they do in plants. This is good, as plants are the most chemically diverse organism on our planet, meaning that we have thousands upon thousands of compounds available which may help us improve our health.

How do polyphenols affect weight-loss?

Two recent, large scale studies, conducted on over 124,000 individuals for up to 24 years, provide strong evidence that the consumption of certain low-carbohydrate containing plants is associated with better weight management because of the presence of a range of polyphenols. The first suggests that weight gain is prevented by a greater amount of non-starchy fruit and vegetables, especially berries, apples, pears, soy, cauliflower, and green leafy vegetables[13]. A follow up study focussed specifically on which polyphenols were responsible for these effects[14]. They found that weight change was most affected by two classes of polyphenols, namely anthocyanins and flavonoids. Plants which contain a large amount of anthocyanins are usually dark red in colour, and include blackberries, red pepper and red grapes, strawberries, raspberries and cherries. Flavonoids also form the biochemical basis for plant pigmentation, especially of flowers, and may be yellow, red or blue. However, flavonoids are also abundantly present in green leaves, of which green tea will be a good example, and white fruits or vegetables like apples and onions. An important note is that there are often more and unique polyphenols in the coloured portion or skins of fruits and vegetables, and therefore peeling should be avoided.

Polyphenols regulate fat storage in the body and improve health in a number of ways. Many are antioxidants, which prevent dangerous by-products of metabolism from damaging cells and DNA, and even act to increase the body's natural antioxidant capabilities[15]. They also reduce inflammation[16], appetite, the uptake of calories and modulate blood glucose levels[15,17]. In addition, plant bioactive compounds may increase thermogenesis and energy expenditure[16]. These compounds also directly moderate fat storage through reducing the number of fat cells and increasing fat breakdown[15]. Polyphenols can also influence fat and protein absorption and digestibility[18], reducing nutrient uptake and slowing digestion.

The fact that various polyphenols have different effects, and often are more effective in combination, means that the best strategy is to consume a large amount of diverse plant species. Even a single serving per day of many of these fruits and vegetables may provide valuable amounts of polyphenols[14], especially if consumed raw. Additionally, many polyphenols are fat soluble and so it is best to eat them with some fat to improve absorption in the gut and availability in the body[18].

Why is fibre important?

Besides filling you up without adding calories, fibre offers many other health benefits, including combatting cardiovascular disease and cancer[19], metabolic syndrome[20] and improving digestion[21]. The strongest medical evidence for the health benefits of fibre relate to a reduction in cardiovascular disease, where cholesterol and other blood lipid levels are better controlled, and blood pressure is reduced[21,22]. In terms of metabolic syndrome, fibre leads to an improvement in blood sugar control and a reduction in body weight[21]. The evidence is also strong that type 2 diabetes may be prevented by fibre intake[23,24].

Fibre may also aid in controlling appetite and satiety[25]. This is primarily through creating the illusion that you are eating more than you actually are, as fibre has very little nutritional value in humans. Fibre does however provide a food source to the microbiome (the good bacteria which live in our gut) which research is showing is the key to weight and disease management. Fibre also increases the time food takes to be digested, and slow glucose uptake from the gut, further preventing large spikes in glucose and insulin resistance. Higher fibre will therefore result in eating less, and thereby prevent weight gain or aid in weight loss, as has been shown in a number of studies[26 27].

You should have at least 20 to 35 grams of fibre a day, which you can get from fruit, vegetables, whole grains, and supplements. As with polyphenols, there is often more fibre in the skins of fruits and vegetables.

What role do the micro-organisms in our intestine play in our health?

A recent finding is that our metabolic well-being, likelihood for chronic diseases, immunity, and numerous other biological functions is not entirely in our own body's hands. Without us being aware, a large proportion of our biochemical functions are controlled by living micro-organisms, such as bacteria and yeasts, living within our own intestines. Collectively, all these different micro-organisms are called the microbiome. The gut microbiome is crucial for digestion and nutrition, and can metabolise normally un-digestible nutrients to more available forms, synthesize novel nutrients, and contribute to signalling pathways which control hunger, nutrient uptake, and the efficiency of energy use[28,29]. Our diets, genetics and our exposure to other humans, especially family members, are the major factors determining what our microbiome consists of. This is important as the specific ratios and types of different micro-organisms in our gut may determine our likelihood to gain or lose weight, and develop a number of chronic diseases including allergies[30].

How does the microbiome influence our body fat percentage?

New research suggests that the microbiome may be one of the biggest determinants of variability among humans in the specific effects of nutrients on disease and weight gain[31]. Some of the most compelling evidence is the fact that the microbiomes of lean and overweight individuals differ significantly[32]. Additionally, it has been found that people with a "lean" microbiome are less efficient at processing and absorbing energy, and so can eat more while still keeping weight off[33].

Research has indicated that the microbiome is involved in the development of a number of chronic diseases, including cardiovascular disease[34-36], cancer[37], rheumatoid arthritis[38], as well as metabolic syndrome related disease[39, 40] including inflammatory disease, insulin resistance, diabetes and obesity.

The most effective way to improve our microbiome health is through diet[41], on which it's composition is highly dependent[42-44]. In terms of improving microbiome health, it is generally accepted that lower carbohydrate, high fibre, plant based diets are best. Dietary fibre plays a large role in producing a healthy gut microbiome. Fibre and a number of other plant based chemicals are able to selectively alter the gut microbiome toward a healthier state, and are collectively termed prebiotics[21]. It is also thought that oils rich in omega-3 are

able to contribute to a healthier gut microbiome, partially explaining their anti-inflammatory and health promoting effects[30,45]. Microbiome composition can change rapidly, within days, but longer adherence to a diet is required to ensure long term and stable change, perhaps explaining why it is so difficult to keep weight off once it is lost [46].

How important is fluid?

An adequate intake of water is essential for proper bowel function, fat oxidation and weight-loss. In addition to its well-known health benefits, water has been shown to have a number of beneficial effects on weight loss[47-49]. These include increasing resting metabolism (especially if the water is cold)[50,51] and satiety, and decreasing calorific intake through both appetite reduction if consumed before meals and reduced consumption of sugary beverages.[52-55]

Generally, it is accepted that you should drink at least 2 litres of water a day, and that having 500 ml of this 30 minutes before a meal should both increase resting metabolism and reduce appetite. Additionally, thirst may often be associated with hunger, so drink a glass of water and wait half an hour before having a snack. Water should therefore be consciously consumed in preference to any other fluid. Avoid all fruit juices as well as soft drinks and sweetened beverages such as sodas. In addition, also avoid all sports drinks, energy drinks, flavoured waters and all vitamin waters. These products all contain large quantities of sugar, fructose and other carbohydrates, often under various deliberately misleading technical guises. Tea, coffee and cocoa with milk is fine at meal times but eliminate milk and sugar between meals. Tea and coffee are also rich sources of polyphenols. Herbal & Rooibos teas can be consumed as a water substitute during colder days provided they have NO milk or sugar added to them. Note that this is not true for flavoured Ceylon & Green teas since they contain caffeine which can cause dehydration through stimulation of the kidneys and urine production.

Can I have any sugar?

No. It is important that all forms of refined sugars such as table sugar, fructose, syrup and honey must be excluded from you diet. This includes sweets, ice cream, desserts, chocolate, sweet sauces, "diabetic chocolates and sweets", etc.

What about sugar substitutes and artificial sweeteners?

Whilst artificial sweeteners (e.g. aspartame, phenylalanine, sucralose, stevia and xylitol) were generally considered to be good sugar substitutes in the past, new research has indicated that they all have a negative impact on the microbiome and may therefore lead to excess body fat accumulation. Research has also shown that simply a sweet taste has the power to trigger an appetite or craving for sweet foods. It is therefore our advice to best avoid these artificial chemicals.

Condiments are a good idea

Bland food is terribly boring, so please don't deprive yourself for no scientifically justifiable reason. Put some effort and planning into your meals. Spices, herbs, pepper, garlic, pickles, gherkins and chilli are excellent ways of ensuring that you have a pleasurable culinary experience. This advice does not extend to condiments such as tomato sauce and chutney, which are often high in sugar and salt. Most spices are also plant based, and therefore contain valuable phytochemicals which further add value to any meal. Spices known to be especially beneficial include turmeric, ginger, cinnamon, black pepper and chillies. Sticking with current advice on cardiovascular health, however, excessive amounts of salt should be avoided.

Can I have alcohol?

Yes, but do keep in mind that alcohol is so rich in energy value that you can run a car on it! You will therefore need to limit your alcohol consumption if you want to obtain the best weight-loss results. Limit your alcohol intake to (five) 5 units per week for men and (four) 4 for women. (1 Unit = 120 ml Wine, 50 ml Dessert wine, 200 ml Beer, 280 ml Lite Beer, 1 Tot Distilled Liquor, 20 ml Cream-Based liqueur)

How can AntaGolin® assist me?

AntaGolin®, designed to combat insulin resistance, will help to optimise your metabolism and blood insulin levels, thereby helping to control your body fat. The product is plant-derived and rich in several health-beneficial molecules including polyphenols such as tannins and flavones, which actively helps alleviate insulin resistance. **Anta**Golin® is also beneficial to pre-diabetic and type 2 diabetic individuals. An independent study done at Scion Clinical Research indicated that the use of **Anta**Golin® demonstrated a reduction in insulin resistance between the placebo and active groups.

Specifically, **Anta**Golin® contains barberry root extract (rich in berberine), banaba leaf extract, and inositol. Berberine has been shown to reduce blood sugar levels and promote fat loss, while banaba leaf extract is known to lower blood glucose levels and inhibit the uptake of carbohydrates and the formation of fat cells. Inositol improves insulin sensitivity.

What can I do to decrease my chance of cardiovascular disease?

The **C.A.P.E meal-plan** is designed to incorporate all proven trends in terms of improving cardiovascular health, and so following this diet alone should improve your longevity. Supplements aimed at improving blood cholesterol may also be helpful. **Ry**Chol® is designed to stabilise blood cholesterol and triglyceride levels by targeting multiple biological pathways. A blend of plant based ingredients, including polyphenols, target unique pathways involved in cardiovascular disease. Specifically, plant sterols mimic cholesterol, preventing its absorption, barberry root extract (rich in berberine) aids in the clearance of cholesterol through the liver, and apple polyphenols aid in reducing the absorption of fat and therefore triglycerides.

What else can I do to ensure success?

Weight-loss does not happen overnight. It requires perseverance and motivation, which is dependent on many factors, including mood and stress levels. These are not static processes and it is difficult to maintain optimism, self-control and emotional tranquillity. We all deal with difficult people and situations on a daily basis and become drained by our numerous responsibilities. Mood plays a dominant role in our lives. Being in a good mood makes us feel better and become more optimistic and enthusiastic about life with all its responsibilities. It also strengthens our level of commitment and determination. Numerous negative emotions, like stress and frustration, have the opposite effect, tending to derail us and make us abandon our goals. This is when appetite control becomes a real uphill struggle.

For this reason, we recommend the use of **Neuro**Vance®, designed to reduce your response to stress and enhance brain function during times of stress, greater workloads, concentration difficulties and mood-related symptoms. **Neuro**Vance® contains two plant based chemicals, roseroot extract and inositol, as well as magnesium and zinc. Roseroot extract has been associated with improved concentration and awareness, and has a of number components including polyphenols. Inositol is known to reduce stress and improve emotional wellbeing, while zinc and magnesium are required for optimal brain function.

Download your FREE insulin-friendly (C.A.P.E) Meal plan from www.mnilifestyle.co.za

Polyphenols and where to find them[56]

CLASS	SUB-CLASS	MAIN DIETARY SOURCES
i. Non-flavonoids	A. Hydroxycinnamic acids	• Fruits: blueberry, cranberry, pear, cherry (sweet), apple, orange, grapefruit, cherry juice, apple juice, lemon and peach • Vegetables: potato, lettuce and spinach • Others: coffee and tea
	B. Hydroxybenzoic acids	• Fruits: strawberry, raspberry, grape and pomegranate
	C. Stilbenes	• Fruits: grapes and rhubarb • Others: red wine and peanuts
	D. Lignans	• Cereals: rye, wheat, oat, barley • Fruits: apricots and strawberries • Vegetables: broccoli and cabbage • Others: nuts and seeds and soybean
ii. Flavonoids	E. Flavones	• Fruits: olives • Vegetables: celery, hot peppers and celery hearts • Spices and herbs: parsley, oregano, rosemary and thyme
	F. Flavonols	• Fruits: apples, apricots, grapes, plums, bilberries, blackberries, blueberries, cranberries, olives, elderberries, currants, cherries and blackcurrants • Vegetables: capers, celery, chives, onions, red onions, fennel, hot peppers, cherry tomatoes, spinach, sweet potato leaves, turnip (green), endive, leek, lettuce, celery, broccoli and kale • Legumes: beans • Cereals: buckwheat • Spices and herbs: dill weed • Others: red wine, tea (green, black) and cocoa powder
	G. Isoflavones	• Fruits: grape seed/skin • Legumes and derived products: soybean, soy nuts, soy flour/bread, tofu, miso, soy milk and tofu yogurt
	H. Flavanones	• Citrus fruits and juices: lemon, lime, orange, grapefruit and tangerine • Spices and herbs: peppermint
	I. Anthocyanidins	• Fruits: blackberries, black currant, blueberries, black grape, elderberries, strawberries, cherries, plums, cranberry, pomegranate juice and raspberry • Others: red wine
	J. Flavanols	• Fruits: apples, apricots, grapes, peaches, nectarines, pears, plums, raisins, raspberries, cherries, blackberries, blueberries and cranberries • Others: red wine, tea (green, black), chocolate (dark, milk), white wine and cocoa
iii. Tannins	K. Procyanidins (Condensed tannins)	• Fruits: grape (dark/light) seed/skin, apple juice, strawberries, raspberries, walnuts, muscadine grape, peach, blackberry (juices/jams/jellies) and plum • Legumes: chick pea, black-eyed peas and lentils • Others: red wine, white wine, cocoa, dark chocolate, oak-aged red wine, tea, cider, and coffee
	L. Ellagitannins (hydrolysable tannins)	• Fruits: pomegranate

Portions

MEN

	MORNING MEAL	MIDDAY MEAL	EVENING MEAL
Water (half an hour before)	2 glasses of water	2 glasses of water	2 glasses of water
Supplement	1 tablet **Anta**Golin®	1 tablet **Anta**Golin®	1 tablet **Anta**Golin® (optional)
Protein	2 portions	3 portions	5 portions
Carbohydrate	3 portions	2 portions	0 portions
Portion swap	Carbohydrate portions can be exchanged for protein portions. However, protein may not be exchanged for more carbohydrate	Carbohydrate portions can be exchanged for protein portions. However, protein may not be exchanged for more carbohydrate.	
Starchy vegetables		1	1
Fat*		1	1
Free vegetables	Unlimited	Unlimited	Unlimited

WOMEN

	MORNING MEAL	MIDDAY MEAL	EVENING MEAL
Water (half an hour before)	2 glasses of water	2 glasses of water	2 glasses of water
Supplement	1 tablet **Anta**Golin®	1 tablet **Anta**Golin®	1 tablet **Anta**Golin® (optional)
Protein	2 portions	2 portions	4 portions
Carbohydrate	2 portions	2 portions	0 portions
Portion swap	Carbohydrate portions can be exchanged for protein portions. However, protein may not be exchanged for more carbohydrate.	Carbohydrate portions can be exchanged for protein portions. However, protein may not be exchanged for more carbohydrate.	
Starchy vegetables		1	1
Fats*		1	1
Free vegetables	Unlimited	Unlimited	Unlimited

* Fat will be provided for either as part of the food type or in food preparation. Try to use lean food preparation methods including dry frying, roasting, and grilling. When choosing extra lean cuts of protein such as fat free dairy, white fish or game meats an additional serving of fat may be used.

Food Choices

Protein

One (1) portion consists of: (all cooked weights)

FISH		
Anchovies*	35 g	
Calamari	45 g	
Haddock	70 g	1 small piece
Hake	80 g	1 fillet
Herring (pickled)		1/3 jar
Kingklip	75 g	
Kipper	35 g	1 small piece
Mussels*	45 g	½ tin
Salmon*	40 g	Half a steak
Sardines* (in brine)	40 g	1/3 tin
Shrimp/prawns	80 g	
Sole	70 g	1 baby
Tuna* (in brine)	70 g	½ tin

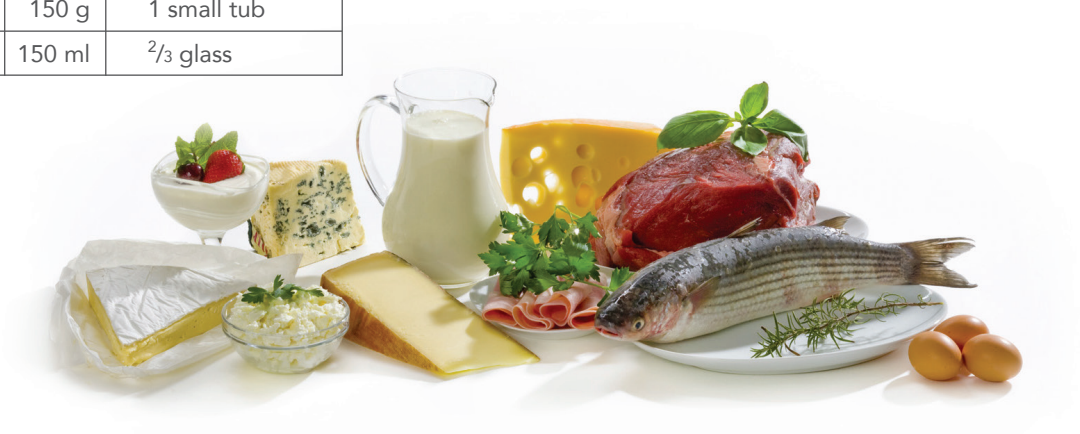
*high in omega 3 and therefore best

RED MEAT		
All red meat should be lean and have the excess fat removed (Cooked weights)		
Bacon		2 rashers
Beef burger	30 g	Half medium
Beef fillet/rump (visible fat removed) lean beef strips	40 g	40g
Beef biltong (lean)	30 g	¼ cup
Frikkadel / meatballs	30 g	½ (5 cm dia.)
Minced beef	30 g	2 Tbs cooked
Mutton (lean)	40 g	2½ Tbs
Parma ham	60 g	4 thin slices
Pastrami	45 g	4 slices
Pork	40 g	No fat/crackling

POULTRY		
All poultry should have the skin removed		
Chicken thigh	45 g	1 small
Chicken breast	45 g	½ medium
Turkey	50 g	
Chicken liver	50 g	
Duck	30 g	

DAIRY		
Dairy should be regular fat and unsweetened		
Eggs		1 large
Yogurt (full cream)	150 g	1 small tub
Milk (full cream)	150 ml	2/3 glass

CHEESE			
1 x 30 g portion is about the size of a matchbox			
Blue / Roquefort	20 g	Gouda	25 g
Brie	25 g	Haloumi	35 g
Camembert	25 g	Mozzarella	30 g
Cheddar	20 g	Paneer	25 g
Cottage (regular fat)	65 g	Parmesan	20 g
Cottage (creamed)	25 g	Pecorino	20 g
Emmentaler	25 g	Provolone	25 g
Feta	40 g	Ricotta	60 g



Carbohydrate

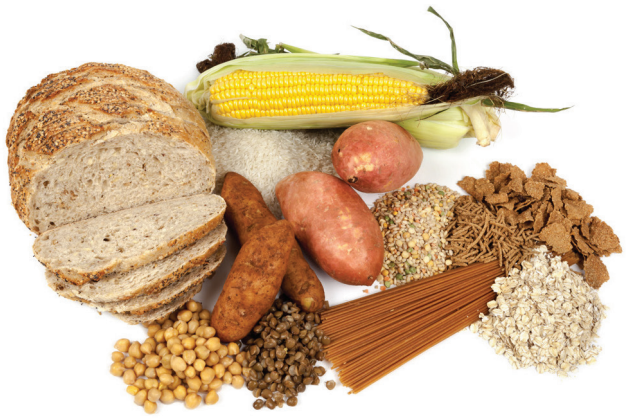
CEREALS AND GRAINS	
Cooked – unrefined and unprocessed	
Barley	1/2 cup
Brown rice	1/2 cup
Bulgar wheat	3/4 cup
Corn Flakes	20 g (2 Tbs)
Pasta durum wheat	1/3 cup
Mealiemeal porridge	1/2 cup
Sorghum porridge	3/4 cup
Oats-so-easy porridge* (original)	1/2 packet
Bokomo Oats porridge* (cooked)	1/2 cup
Kellogg's All Bran*	1/2 cup (25 g)
Kellogg's High Fibre Bran*	1/3 cup

***Please stick to suggested brands.**

BREAD AND STARCHES	
All breads should be wholegrain	
Baby corn/Corn from cob/Frozen corn	1/3 cup
Beans	1 Tbs (25 g)
Bread (brown or wholewheat)	1 slice (35 g)
Chick peas	1/4 cup
Lentils	1/3 cup
Low GI Bread	1/2 slice
Parsnip	1/3 cup
Pro-vita	3
Potato (baby)	3
Potato (baked)	1 medium (90 g)
Rye bread	1 small slice
Ryvita cracker	2
Sweet potato	2/3 cup (80 g)
Wrap/Tortilla (wholewheat)	45 g

STARCHY VEGETABLES	
Cooked – unrefined and unprocessed	
Beetroot	1/4 cup
Butternut	1/2 cup
Carrots	1/2 cup
Peas	1/4 cup
Pumpkin	1/2 cup
Snow peas	1/4 cup

FRUIT	
Portion size: although these are rich in fibre and polyphenols, they are also high in sugar and **should only be eaten once a day** as part of a meal i.e. as part of your carbohydrate portion. All fruits must be eaten raw, unprocessed and unpeeled where possible.	
Apple	1 average
Apricots	4 average
Banana	1 medium
Berries	1 cup
Cherries	1 cup
Gooseberries	1 1/3 cups
Grapes	1/2 cup
Guavas	2 average
Kiwis	2 average
Mango	3/4 cup (120 g)
Naartjies	2 average
Nectarines	1 medium
Orange	1 average
Papaya / papino	1 1/2 cup
Peaches	1 medium
Pear	1 medium
Pineapple	3/4 cup
Plums	3 small
Prickly pear	1 average
Strawberries	1 1/2 cups



Fats, seeds, nuts & dressings

Butter	1 tsp
Coconut oil	1 tsp
Olive oil*	1 tsp
Peanut oil*	1 tsp
Avocado*	1/4 medium (30 g)
Olives*	8
Mayonnaise (regular)	1 tsp
Mayonnaise (lite)	1 Tbs

Almonds*	1 Tbs
Cashews*	1 tsp
Peanuts*	1 Tbs
Linseed*	2 tsp
Pumpkin seeds*	2 tsp
Sesame seeds*	1 Tbs
Sunflower seeds*	1 Tbs
Basil pesto*	1 Tbs

* Preference should be given to unsaturated fats as your additional fat choices.

Free Vegetable List

Portion size: unlimited, which means that you may eat as much as you feel like. These are rich in fibre and polyphenols and **must** therefore **be consumed with each meal** and used to fill you up.

Artichoke	Cauliflower	Leeks	Spring onions
Asparagus	Celery	Lettuce variety	Sprouts (any)*
Baby marrow	Cucumber	Mushrooms	Sugar snap peas
Bamboo shoots	Eggplant / aubergine	Onion	Tomato
Bean sprouts	Gem squash	Patty pans	Turnips
Broccoli	Gherkins	Peppers	Zucchini / courgettes
Brussel sprouts	Green beans	Radishes	
Cabbage	Kale	Spinach	

* Research has shown that sprouting increases the protein and fibre content of raw seeds during the growth cycle.

The C.A.P.E guide to oils

Some oils can withstand much higher temperatures than others. The more saturated the fats in an oil are, the more stable they are when heated. Avoid cooking oils that contain large amounts of polyunsaturated fats since these react with oxygen and form toxic compounds when exposed to high heaat which may be harmful to your health.

Extra virgin olive oil

- **Made from:** the extracted juice of crushed olives. It is one of the only cooking oils made without the use of chemicals and industrial refining.
- **Best for:** dressing salads, drizzling over pasta, baking.
- **Worst for:** frying at high temperatures, because of its low smoke point.

Regular olive oil

- **Made from:** lower-quality oil than extra-virgin oil extracted from pressed whole olives. This oil is typically a blend of virgin olive oil and refined olive oil (which refers to oil where heat and/or chemicals are used in the process of extracting oil and removing flaws from the fruit).
- **Best for:** light frying and salad dressing, baking, dressings.
- **Worst for**: high temperature frying.

Vegetable oil (including sunflower oil)

- **Made from:** the oils extracted from seeds like soybean, corn, sunflower seeds, canola and safflower.
- **Best for:** the latest advice suggests that we should avoid these altogether (except flaxseed oil).
- **Worst for:** high temperature frying.

Coconut oil

- **Made from:** most coconut oils are made from smoke drying, sun drying, or kiln drying the meat of the coconut called 'copra'.
- **Best for:** high-temperature frying, baking.
- **Worst for:** drizzling over food, although it can be combined with other ingredients to make a dressing.

Snacks

Any form of hunger must be addressed by drinking a glass of water immediately. Wait for half hour before deciding to consume a snack. Also check if you consumed the correct number of portions at your previous meal – if not, top up with what you left out before adding more snacks.

The best snacks are:

- Any item from the free vegetables section
- One rollmop - pickled herring wrapped around a gherkin. (Crunchy, tasty and rich in omega 3)

Other snacks to be eaten only once per day (if absolutely necessary).

- Nuts (almonds, cashew, hazelnuts, macadamia, pecan, pine nuts, and pistachios)
  Portion size: 1 Tbs only

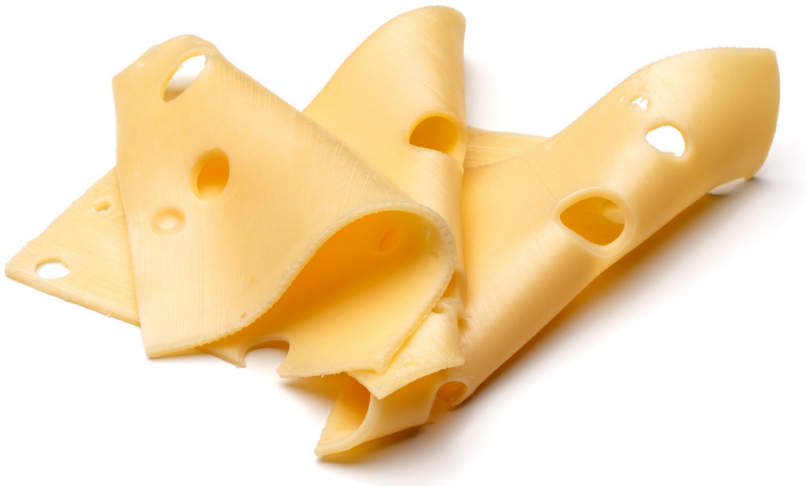
- Seeds (flax, linseed, pumpkin, sunflower, sesame)
  Portion size: 1 Tbs only

- Cheese (your favourite)
  Portion size: ½ matchbox only. Add some gherkins and cocktail tomatoes.

- Olives
  Portion size: 1 matchbox. Add some cocktail tomatoes and celery sticks.

- Biltong stick (lean)
  Portion size: two index fingers long

- Droëwors (thin)
  Portion size: one index finger long



Menu

MORNING MEALS

The following choices have been voted the most popular by our customers. They can be prepared fresh or from left-overs from the previous evening meal.

ALL MEALS ARE STRUCTURED ACCORDING TO PORTION SIZES FOR WOMEN, MEN CAN ADD AN EXTRA CARBOHYDRATE PORTION ACCORDING TO PAGE 11 (MEAL PORTIONS FOR MEN).

Choose one of the following:

ON THE GO:

YOGURT FRUIT SALAD

two small plain yogurts, ¼ apple, ¼ of an orange, banana, and 50 g berries

SARDINES ON TOAST

⅓ can of sardines (40 g), a matchbox feta (40 g), onion, tomato, pepper, all mixed, on 1 slice of low GI toast

BANANA SMOOTHIE

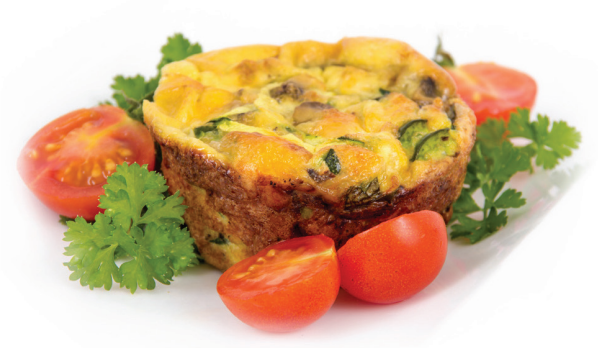
150 ml milk, 150 g plain yogurt, a small banana, 2 heaped teaspoons raw oats, blended

APPLE MEALIEMEAL PORRIDGE

180 ml milk, ½ cup cooked mealiemeal porridge, 1 medium apple or banana chopped & 3 cashew nuts crushed over the top

BERRY ALL-BRAN FLAKES

180 ml milk, ½ cup all bran flakes (Kellogg's high fibre), 1 cup of fresh berries & 5 almonds crushed over the top



COOKED:

CHEESY EGG ON TOAST

an egg, a serving of cheese, a slice of wholegrain toast, a scraping of butter, grilled mushrooms and tomato

BACON, EGGS AND FRIED HALOUMI

an egg, a rasher of bacon, a matchbox fried haloumi, tomato, rocket, spring onion

MUSHROOM AND EGG STACK

large mushroom topped with two poached eggs, a serving of brie cheese, spinach

EGG MUFFINS

two beaten eggs, a rasher of bacon roughly chopped, a ½ serving cheese, spinach, tomato, onion, poured into a muffin tray and baked

CHEESY OMELETTE

two beaten eggs, a ½ serving of feta cheese, 2 rashers of bacon, onion, mushrooms, pepper, tomato, fresh rocket

AVO AND ASPARAGUS EGGS

two eggs, a quarter of a medium avocado, asparagus, lemon juice, a slice of wholegrain toast

EGG SOLDIERS

2 eggs boiled so they are still runny, a slice of low GI toast cut into 4, asparagus for dipping in the egg

Menu

MIDDAY MEAL

The following choices have been voted the most popular midday meals by our customers. They can be prepared fresh or from left-overs from the previous evening meal.

ALL MEALS ARE STRUCTURED ACCORDING TO PORTION SIZES FOR WOMEN, MEN CAN ADD AN EXTRA PROTEIN PORTION ACCORDING TO PAGE 11 (MEAL PORTIONS FOR MEN).

Choose one of the following:

ROAST MEAT SANDWICH

2 portions roast pork or rare roast beef, 2 slices of wholegrain bread, a scraping butter, tomato, gherkins, onion, mixed lettuce, mustard

TUNA SALAD

½ a can of tuna, a serving of feta, 2 portions brown rice, 1 teaspoon regular mayonnaise, pepper, tomato, cucumber, onion, mixed lettuce

CHICKEN AND ORANGE SALAD

2 portions chicken, ½ portion lentils, ½ portion corn, ½ portion orange, pepper, spring onion, celery, mixed lettuce, a dash of olive oil

PREGO ROLL

1 portion steak, a serving cheese, a small wholewheat seeded bread roll, a portion of avocado, rocket, onions, red pepper

CHICKEN BURGER

1 portion chicken, a serving of cheese, a wholewheat seeded bread roll, pineapple slice, tomato, onion, gherkins, mixed lettuce

STIR-FRY

2 portions chicken or pork strips, 2 portions brown rice, a dash of olive oil, mushrooms, pepper, carrots, broccoli, shredded cabbage, ginger, chilli, and soya sauce

ASIAN CHICKEN SALAD

2 portions chicken, 1 portion chickpeas, 1 portion brown rice, a dash of peanut or coconut oil, shredded cabbage, spring onions, pepper, carrot, garlic, chilli, ginger, lemon juice

BEEF BURGER

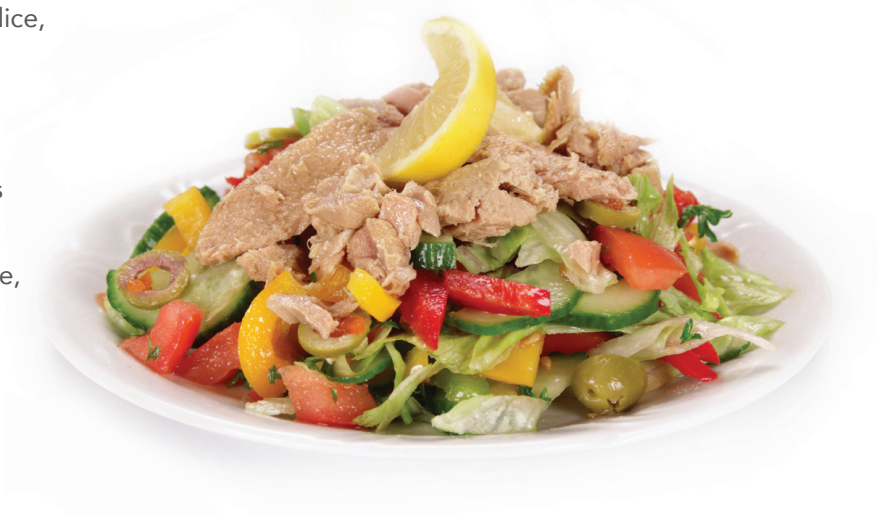
1 portion beef patty, a matchbox cheese, a wholegrain bread roll, homemade tomato and onion relish, mushrooms, mixed lettuce

BEEF CHILLI TORTILLAS

beef chilli mince (1 portion beef mince, 1 portion kidney beans, tomato, onions, peppers, celery, carrots, cumin), a wholegrain tortilla or wrap, a slice of avocado, fresh coriander, lemon juice

CHICKEN PASTA SALAD

1 portion chicken, a serving of feta cheese, 1 portion durum wheat pasta, 1/3 cup carrots, cabbage, 1 teaspoon regular mayonnaise.



Menu

EVENING MEAL

SUPPERS ARE STRUCTURED ACCORDING TO PORTION SIZES FOR WOMEN, MEN CAN ADD AN EXTRA PROTEIN PORTION. COOK A BIT EXTRA FOR LUNCH TOMORROW TO MAKE YOUR LIFE EASIER.

Choose one of the following:

ROAST LAMB

4 portions lamb, a dash of olive oil for vegetables, pepper, asparagus, courgette, onion, patty pans, radishes, rosemary, roasted

BACON WRAPPED CHICKEN BREAST

3 portions chicken breast, 3 bacon rashers wrapped around chicken, a dash of olive oil with vinegar on mixed salad

FILLET STEAK TOPPED WITH BRIE & RED ONION BALSAMIC REDUCTION

3 portions fillet steak, 25 g brie or camembert, red onion, balsamic vinegar and a dash of olive oil for sauce, celery, cucumber, tomato, garlic, and lemon juice finely chopped as a salsa on a bed of lettuce

STIR-FRY

4 portions chicken or pork strips, a dash of olive oil, mushrooms, pepper, carrots, broccoli, shredded cabbage, ginger, chilli, and soya sauce

FISH BAKE

4 portions firm fish, basted (a dash of olive oil, sugar free apricot jam, garlic, lemon juice), asparagus, spinach

EGGPLANT PARMIGIANA

1 portion mozzarella cheese, 1 portion parmesan, an egg, a dash of olive oil, garlic, oregano, thyme, blended, layered with eggplant, cherry tomato, spinach, before baking

BEEF KEBABS

4 portions beef kebabs, a dash of olive oil for vegetables, pepper, courgette, onion, patty pans, radishes, mushrooms, rosemary, roasted

BEEF CHILLI MINCE STUFFED GEM SQUASH

beef chilli mince (4 portions beef mince, tomato, onions, peppers, celery, cumin) in halved gem squash, topped with fresh coriander

FETA AND SPINACH STUFFED CHICKEN

3 portions chicken breast stuffed with a matchbox feta and spinach, with a side salad

Shopping List

AntaGolin®		Parmesan		Pear	
RyChol®		Pecorino		Pineapple	
NeuroVance®		Provolone		Plums	
PROTEIN		**CARBOHYDRATES**		Prickly pear	
FISH		**CEREALS AND GRAINS**		Strawberries	
Anchovies		All Bran high fiber (*Kellogg's)		**FATS, SEEDS, NUTS & DRESSINGS**	
Calamari		Barley		Butter	
Haddock		Brown rice		Coconut oil	
Hake		Bulgar wheat		Olive oil	
Herring (pickled)		Corn Flakes		Peanut oil	
Kingklip		Pasta durum wheat		Avocado	
Kipper		Mealiemeal porridge		Olives	
Mussels		Oats porridge (*Bokomo)		Mayonnaise (regular)	
Salmon		Oats-so-easy, original		Mayonnaise (lite)	
Sardines (in brine)		Sorghum porridge		Almonds	
Shrimp/prawns		**BREAD**		Cashews	
Sole		Bread (wholegrain)		Peanut	
Tuna (in brine)		Bread roll (wholegrain)		Linseed	
POULTRY		Pro-vita		Pumpkin seed	
Chicken thigh		Ryvita cracker		Sesame seed	
Chicken breast		Rye bread		Sunflower seed	
Turkey		Tortilla (wholegrain)		*Basil pesto	
Chicken liver		**STARCHY VEGETABLES**		**FREE VEGETABLES**	
Duck		Baby corn		Artichoke	
RED MEAT		Beans		Asparagus	
Bacon		Beetroot		Baby marrow	
Beef burger		Butternut		Bamboo shoots	
Beef fillet/Rump/Lean beef strips		Carrots		Bean sprouts	
Beef biltong		Chick peas		Broccoli	
Frikkadel / meatballs		Lentils		Brussel sprouts	
Minced beef		Parsnip		Cabbage	
Mutton		Peas		Cauliflower	
Parma ham		Potato (baked)		Celery	
Pastrami		Potato (baby)		Cucumber	
Pork		Pumpkin		Eggplant / aubergine	
Veal		Snow peas		Gem squash	
Venison		Sweet potato		Gherkins	
DAIRY		**FRUIT**		Green beans	
Eggs		Apple		Kale	
Yogurt		Apricots		Leeks	
Milk		Banana		Lettuce variety	
CHEESE		Berries		Mushrooms	
Blue / Roquefort		Cherries		Onion	
Brie		Gooseberries		Patty pans	
Camembert		Grapes		Peppers	
Cheddar		Guavas		Radishes	
Cottage (regular fat)		Kiwis		Spinach	
Emmentaler		Mango		Spring onions	
Feta		Naartjie		Sprouts (any)	
Gouda		Nectarines		Sugar snap peas	
Haloumi		Orange		Tomato	
Mozzarella		Papaya / papino		Turnips	
Paneer		Peach		Zucchini / courgettes	

***Please do not stray from suggested brand choices. Brands are carefully selected based on nutritional value.**

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