

dnadiet
optimal weight for life

{ REPORT }

PATIENT NAME:

SAMPLE ID:

DATE OF BIRTH:

SAMPLE TYPE:

GENDER:

DATE COLLECTED:

REFERRING DOCTOR:

DATE REPORTED:

HI DANNY, WELCOME TO YOUR DNA DIET REPORT

The recent explosion in genetic knowledge has revealed new connections between genes and weight management. To fulfil your optimal weight loss potential, it is important to make lifestyle choices that match your unique genetic make-up. This pioneering service allows you to make precisely such choices. This report will help you to adopt the diet and exercise practices best suited to your individual needs.

⊛ INFORMATION INCLUDED IN YOUR REPORT

SUMMARY OF YOUR PERSONALISED DNA DIET AND EXERCISE PLAN

PART 1. UNDERSTANDING GENETICS AND NUTRIGENETICS.

An explanation of the connection between the genes covered by our screening, and how they relate to your weight management, including an explanation of how to read your genetic results tables.

PART 2. YOUR DIET. YOUR GENES.

We analysed a set of genes that impact your ability to lose weight and how you respond to different dietary components. This section reveals your genetic results and provides a gene-based weight loss plan.

PART 3. YOUR EXERCISE. YOUR GENES.

We analysed a set of genes that impact how exercise affects your ability to lose weight. This section gives your genetic results and provides gene-based guidelines as to the right amount and type of physical activity you require for optimal results. Part 3 also includes your genetic results for genes that help identify your potential as an endurance or power athlete.

PART 4. YOUR DIET AND EXERCISE PLAN.

To get you started, you will be provided with a diet plan, and 3 days of sample menus that match your genetic make-up. You will also be given guidelines for planning your exercise workouts to match your genetic results.

PART 5. FAQs AND KEY TERMS.

Answers the most frequently asked questions about our service, and explains key terms used in this report.

SUMMARY OF YOUR PERSONALISED WEIGHT MANAGEMENT PLAN

Your Diet Plan:

CARBSMART

Your Exercise Plan:

MODERATE INTENSITY

Your Exercise Performance Potential:

POWER

Your genetic makeup says you are more likely to lose weight by following a **CARBSMART** diet and a **MODERATE INTENSITY** exercise programme comprising **15 MET HOURS** of exercise per week.

Your exercise potential is as a **POWER** athlete.

SECTION 1. UNDERSTANDING GENETICS

Before reading your full assessment, please take a few minutes to review this background information which will help you better understand your results and enhance the overall value you receive from the information contained in this personalised report.

WHAT ARE GENES?

A gene is a segment of the DNA (short for deoxyribonucleic acid) molecule that contains the instructions for how, when and where your body makes each of the many thousands of proteins required for life. Each gene is comprised of thousands of combinations of four letters that make up your genetic code: A, T, C, and G. Each gene's code combines the "letters" A, T, C, and G in various ways, spelling out the "words" that specify which amino acid is needed at every step in the process of making the proteins required for your body to develop and function. Increasingly, your genes can also tell you whether you are predisposed to specific health risks.

WHAT ARE GENE VARIATIONS?

With the exception of identical twins, all people have small differences in the information their DNA contains, and it's these differences that make each of us unique. Gene variations are slight changes in the genetic code that are present in at least one percent of the population. For example, one genetic "letter" (A, T, C, or G) may be replaced by another. These variations can lead to different processes in the body, just as altering one letter in a word can completely change its meaning; for instance, from "g"oat to "c"oat. When the variation affects only one genetic letter, as in the goat/coat example above, it is called a "single nucleotide polymorphism" (or SNP, pronounced "snip").

ARE GENE VARIATIONS "BAD"?

For a given population, one genetic code for a given gene may be found more frequently than other genetic codes for that same gene. The genetic codes for those genes that appear less frequently are referred to as "variants". In most cases, these variants can increase our risk for a certain health condition, but in some instances the variants actually reduce our risk. For example, under Bone Health, one of the genetic variations we screen for is the "T Bsm1 C" variant of the Vitamin D Receptor (VDR) gene. In this instance, the absence of the variant is associated with lower bone density and higher bone fracture rates when dietary calcium is low, and so the presence of the variant reduces your risk of bone health disorders. Variations should not be thought of as "good" or "bad," rather, genetic variations are simply the differences in the forms of the genes present in our bodies. The key is to know which form of the gene you carry, so that you can make diet and lifestyle choices to reduce your health risks.

WHAT IS NUTRIGENETICS?

Nutrigenetics is concerned with the effects of our individual genetic variations in response to our diet and other sources of nutrients. Nutrigenetics testing enables us to identify where we are on our journey towards achieving our individual, optimal health potential.

HOW TO READ YOUR GENETIC RESULTS TABLE

The table in Parts 3 and 4 shows the results of your genetic screen. We took these results into account when drawing up your diet and exercise recommendations.

- * The first column, "Area of Activity," gives the metabolic process in which the gene is involved.
- * The second and third columns, "Gene Name" and "Variation," provide the name of the gene we analysed and the specific region within that gene that we are looking at.
- * The fourth column "Your Genetic Results," shows your actual DNA sequence at this region.

Gene variations uncovered by our screening process are not a sign of illness. In fact, these variations are quite common in healthy individuals, and some variations may be beneficial. Most people have one or more of these genetic features; however, identifying and analysing your unique pattern of genetic characteristics makes it possible to adjust your diet and lifestyle to match your specific needs for managing your weight.

REMEMBER, YOUR GENES CANNOT CHANGE, BUT YOUR DIET AND LIFESTYLE CAN.



PART 2. YOUR DIET. YOUR GENES.

This section includes your genetic results for the genes we have tested that impact your ability to lose weight and how you respond to different dietary components.

YOUR DIET GENE RESULTS

AREA OF ACTIVITY	GENE NAME	GENETIC VARIATION	YOUR RESULTS
Fat absorption	FABP2 Ala54Thr	G/A	GG
Fat and glucose metabolism	FPPAR γ Pro12Ala	C/G	CG
Fat mobilisation and metabolism	ADRB2 Arg16Gly	G/A	GA
	ADRB2 Gln27Glu	C/G	GG
Fat regulation and breakdown of fat stores	ADBR3 Trp64Arg	T/C	TC
Fat metabolism, obesity and satiety	APOA2 -265 T/C	T/C	CC

YOUR DIET PLAN

We have identified gene variations in your gene profile that indicate you have a tendency to gain weight easily and your weight loss may be slower than you would like. This is not all bad news! These gene variations also signify that you will be highly responsive to exercise as a weight loss intervention (provided it is the right type and amount of exercise!). If you follow the diet and exercise advice given in this report you will achieve a healthy weight loss. By following the right plan for your genetic make-up you will lose weight effectively and reach a healthy weight range.

Your gene profile has identified a variation in a gene that is involved in the mobilisation of fat from your fat cells for burning up as energy. It also helps regulate your body's energy expenditure. You also have gene variations that may slow your metabolism and increase your body's absorption of dietary fat. These variations have been linked to overweight and obesity in individuals who consumed a high carbohydrate diet, and those whose dietary fat intake (especially saturated fat) was high.

Scientific research has shown that individuals with this genetic pattern had an easier time losing weight when they decreased the carbohydrate and saturated fat in their diet. We therefore recommend you follow the GI-SMART programme which provides a lower carbohydrate, low Glycaemic Index, reduced fat plan as part of a healthy weight loss programme. The greatest benefits will be observed when you replace saturated fats with monounsaturated fats in your diet. Clinical studies have also shown that making these changes to your diet will improve your body's ability to metabolise fats and sugars.

To effectively implement your diet programme, we have provided you with a diet plan and 3-day menu plan personalised to your genetic profile. This plan has been developed by a dietitian, and will guide your daily intake. To calculate the exact number of kilojoules you require, and to account for dietary preferences, any allergies or intolerances you may have, or any medical conditions, we recommend that you consult with a dietitian that has been accredited to work with DNA Diet. To find a dietitian close to you, visit www.dnadiet.co.za or contact us on (SA) 011 268 0268.

PART 3. YOUR EXERCISE. YOUR GENES.

Part 3 includes your genetic results for genes that impact how exercise affects your ability to lose weight. This section gives your genetic results and provides gene-based guidelines as to the right amount and type of physical activity you require.

It also includes your genetic results for the genes that help identify your potential as an endurance or power athlete.

Remember to consult your physician before embarking on a new exercise programme, and to stop exercising if you feel nauseous or short of breath.

YOUR EXERCISE GENE RESULTS

AREA OF ACTIVITY	GENE NAME	GENETIC VARIATION	YOUR RESULTS
Fat metabolism and fat loss	ADRB2 Arg16Gly	G/A	GA
	ADRB2 Gln27Glu	C/G	GG
Fat metabolism and fat loss	ADBR3 Trp64Arg	T/C	TC
Endurance, power, speed	ACTN3 R577X	R/X	RX
Endurance, power	ACE Ins/Del	I/D	DD

YOUR EXERCISE PLAN

Individuals with this genetic pattern tend to lose less weight and body fat than those with the alternative genetic pattern. In these individuals following the right diet plan is fundamental to losing weight and body fat, but exercise also plays a role in achieving and maintaining your weight loss goal. You have a gene variation that requires moderate activity to help you manage your weight.

We recommend a MODERATE INTENSITY programme that includes 15 MET HOURS a week to help you lose weight. We also advise that each workout should meet or exceed 5 MET HOURS. Once you have achieved your weight loss goal you must maintain a consistent exercise programme to keep the weight off.

Your gene profile has identified two gene variations that have been associated with a very positive exercise training response to POWER, STRENGTH and SPRINT activities. These genes are involved in the production of fast twitch muscle fibres, helping athletes to produce explosive bursts of speed for short periods of time. Several research studies have shown that this gene variation is associated with greater muscle strength and growth and an increased percentage of fast-twitch muscle fibres compared to those that have not inherited this genetic pattern.

Having this genetic pattern has been shown to be advantageous in activities that are short in duration and high in intensity. While participating in all forms of physical activity are beneficial for health and weight loss, your potential lies in power based activities such as weight training and power lifting, and sprint versions of endurance activities, such as track running and cycling, and short distance swimming.

To effectively implement your exercise programme, we have provided you with the information you need to plan your exercise programme and calculate your MET HOURS each week. To include your exercise preferences and training goals, as well as any medical conditions you may have, we recommend you consult with a biokineticist or certified personal trainer. For more information on MET HOURS and how to calculate them see page 21.

PART FOUR. YOUR DIET AND EXERCISE PLAN

YOUR CARBSMART DIET PLAN

Below you will find a CARBSMART diet plan based on your genetic results. The sample menus and exchanges have been based on a 5500kJ plan made up of 40% carbohydrate, 35% fat and 25% protein.



YOUR DIET PLAN

ABOUT YOUR SAMPLE MENU

To get you started, we have provided you with 3 days of sample menus and recipes to match. This will give you a better understanding of how to use your exchange lists to plan your days. Your sample menu has been designed with flexibility, variety and – of course – enjoyment in mind!

ABOUT THE FOOD GROUPS

There are six food groups, which are classified as:

1. Starches (e.g. bread, crackers, cereal, rice, pasta, couscous, potato, sweet potato, corn)
2. Proteins (e.g. meat, chicken, fish, cottage cheese)
3. Dairy (milk and yoghurt)
4. Vegetables (non-starchy) (fresh and frozen)
5. Fruit (fresh, dried and canned in juice)
6. Fats (e.g. olive oil, canola oil, olives, avocado, nuts, seeds, olive oil margarine, canola oil margarine)

Each group has a list of recommended options. Foods in a group can be swapped for equivalent portion sizes **WITHIN THE SAME GROUP**. For example, if your meal suggests that you have one portion of rice, simply swap 1/2 cup cooked rice (one portion) for 3 baby potatoes (one portion).

ABOUT PORTION SIZES

Each food group has a portion list that indicates the equivalent of **ONE** portion of that food. The “no. of portions” column tells you how many portions of that food you should have in that specific meal or snack.

YOUR EXCHANGE PLAN lists how many portions you should have in total for the day.

In the example below, one portion of All Bran Flakes is 1/2 cup, but the recommended number of portions of All Bran Flakes is 2. Therefore, the total quantity recommended for that meal is 1 cup (1/2 cup x 2). The recommended quantity of milk is 1 portion (1 cup). Therefore the total quantity of milk for breakfast is 1 cup. Breakfast on Sample Day 1 therefore consists of 1 cup of All Bran Flakes and 1 cup of low fat milk. No fruit, fat or protein portions have been recommended at this meal.

SAMPLE MENU (EXAMPLE)

FOOD GROUPS BREAKFAST	NO. OF PORTIONS	SAMPLE DAY 1 (TOTAL QUANTITY)
Starch	2	1 cup All Bran Flakes
Dairy (LF)	1	1 cup low fat milk
Fruit	0	
Fat	0	
Protein (medium)	0	

FREE FOODS

The foods with a serving size listed should be limited to 3 servings per day and should be spread across the day. Foods on the list without a specified serving size can be enjoyed whenever desired.

FOOD	SERVING SIZE
Condiments, seasonings & flavouring	
Garlic	
Herbs	
Horseradish	
Lime juice	
Mayonnaise, fat free	1 Tbsp
Non-stick cooking spray	
Pickle relish	1 Tbsp
Pickles, gherkins	20g
Salad dressing, fat free	1 Tbsp
Salsa	1/2 cup
Soy sauce, regular and light	1 Tbsp
Spices	
Tabasco	
Vinegar	
Wine, used in cooking	
Drinks	
Cocoa powder, unsweetened	1 Tbsp
Diet drinks, sugar free	340 ml
Drink mixes, sugar-free	
Mineral water	
Soda water	
Other	
Consomme	
Jelly, sugar-free	
Sugar substitutes	

PART ONE: YOUR LOW CARB EXCHANGE PLAN

5500KJ LOW CARB MENU PLAN

Time	Starch Low GI	Lean Protein	Dairy Low Fat	Fruit	Veg	Fat
Breakfast	2		1			
Mid-am snack			1	1		
Lunch	1	3			1	2
Mid-pm snack				1		
Supper	1	4			2	2
Eve-snack						
TOTAL	4	7	2	2	3	4

YOUR SAMPLE MENU HAS BEEN DESIGNED WITH FLEXIBILITY, VARIETY AND, OF COURSE, ENJOYMENT IN MIND!



PART TWO: YOUR 3-DAY MENU PLAN

SAMPLE MENUS	SAMPLE DAY 1		SAMPLE DAY 2		SAMPLE DAY 3	
BREAKFAST	Portions Day 1		Portions Day 2		Portions Day 3	
Starch	2	1 cup All Bran Flakes	2	1 cup oats, cooked	1	1/2 cup baked beans
Dairy	1	1 cup low fat milk	1	1 cup low fat milk	0	
Protein	0		0		1	1 boiled or poached egg
Fruit					1	1 fruit of your choice
MID-AM SNACK						
Fruit	1	1 fruit of your choice	1	1 fruit of your choice	0	
Dairy	1	175 ml fat free yoghurt	1	150g low fat vanilla yoghurt	1	175 ml fat free yoghurt
LUNCH						
Starch	1	1 slice low GI bread	1	1 cup canned corn	2	3 whole-wheat crackers (e.g. Provita) + 1/2 cup chick peas
Protein	3	90g canned salmon	3	90g lean cold ham	2	1/2 cup low fat cottage cheese with chives
Protein	0		0		1	1/2 cup chick peas
Non-starchy vegetables	1	1 cup chopped tomato, onion, cucumber and celery	1	1 cup chopped carrots, green asparagus and red peppers	1	1 cup leafy greens, e.g. rocket, baby spinach, coriander
Fat	2	2 tsp olive oil + 2 Tbsp Balsamic vinegar OR 2 Tbsp DNA DIET Balsamic Vinaigrette (recipe)	2	1/4 avocado plus 1 tsp olive oil + 1 Tbsp Balsamic vinegar dressing	1	2 tsp tahini (sesame seed paste)

YOUR 3-DAY MENU PLAN cont.

MID-PM SNACK						
Fruit	1	1 fruit of your choice	1	1/2 cup fruit salad	1	1/2 cup fruit salad
Fat					1	6 cashews (added to fruit salad)
SUPPER						
Starch	1	1/2 cup brown rice	1	1/2 cup cooked pasta	1	1/2 cup sweet potato mash
Protein	4	120g skinless chicken thigh	4	120g lean beef mince	3	90g grilled salmon or 2 fresh sardines or 6 canned sardines
Vegetables	2	1 cup cooked broccoli and carrots	2	1 cup mushrooms, tomato and onion cooked	2	1 cup cooked green beans and baby carrots
Fat	2	1 tsp olive oil (for grilling chicken) + 1 Tbsp sesame seeds (to sprinkle on carrots)	2	2 tsp canola oil (for cooking)	2	1 tsp canola oil (for cooking) + 1 Tbsp flaked almonds sprinkled on fish)
EVE-SNACK						
Dairy	0		0		1	1 cup DNA DIET Cinnamon Soother (recipe)



PART THREE: YOUR FOOD GROUP PORTIONS

STARCH	1 PORTION
Roll	1/2
Pita, whole-wheat (6 inches across)	1/2
Cereals and grains	
Barley, cooked	1/3 cup (80 ml)
Bulgur wheat, cooked	1/2 cup (125 ml)
Cereal: bran, oats	1/2 cup (125 ml)
Couscous	1/3 cup (80 ml)
Muesli, low-fat	1/4 cup (60 ml)
Pasta, cooked	1/3 cup (80 ml)
Quinoa, cooked	1/3 cup (80 ml)
Rice, cooked: white, brown	1/2 cup (125 ml)
Wild rice, cooked	1/2 cup (125 ml)
Starchy vegetables	
Baked potato with skin	1/4 large or 1 small
Corn	1/2 cup
Corn on the cob, large	1/2 cob (medium ear)
Mashed potato	1/2 cup
Mixed vegetables with corn and/or peas	1 cup
Sweet potato	1/2 cup
Crackers and snacks	
Provita, Original or multigrain	3
Ryvita	2
Popcorn, low-fat microwave or popped with no added fat	3 cups
Beans, peas and lentils (count as 1 starch and 1 very lean protein)	
Baked beans	1/3 cup (80 ml)
Beans, cooked: black, garbanzo, kidney, lima, navy, pinto, white	1/2 cup (125 ml)
Lentils, cooked: brown, green, yellow	1/2 cup (125 ml)
Peas, cooked: black-eyed, split, green	1/2 cup (125 ml)

PROTEIN	1 PORTION
Beans, peas and lentils (count as 1 starch and 1 very lean protein)	
Baked beans	1/3 cup
Beans, cooked: black, garbanzo, kidney, lima, navy, pinto, white	1/2 cup
Hummus	1/3 cup
Lentils, cooked: brown, green, yellow	1/2 cup
Peanut butter	1 tablespoon
Peas, cooked: black-eyed, split, green	1/2 cup
Lean meat and meat substitutes	
Beef, select or choice, trimmed of fat: ground round, roast, round, sirloin, tenderloin	30 g

Biltong	15 g
Cheese, 3 grams of fat or less per 30 grams	30 g
Cottage cheese, fat-free, low-fat or regular	1/4 cup
Egg substitutes, plain	1/4 cup
Egg whites	2
Fish, fresh or frozen: catfish, cod, flounder, haddock, halibut, orange roughy, salmon, tilapia, trout, tuna	30 g
Herring, smoked	30 g
Hot dog, 3 grams of fat or less per 30 grams (Note: May be high in carbohydrate.)	1
Lamb: roast, chop, leg	30 g
Luncheon meat, 3 or less grams of fat per 30 grams: chipped beef, deli thin-sliced meats, turkey ham, turkey kielbasa, turkey pastrami	30 g
Oysters, medium, fresh or frozen	6
Pork, lean: Canadian bacon, chop, ham, tenderloin	30 g
Poultry without skin: chicken, Cornish hen, duck, goose, turkey	30 g
Sardines, canned	2 small
Shellfish: clams, crab, imitation shellfish, lobster, scallops, shrimp	30 g
Tuna, canned in water or oil, drained	30 g
Veal: loin chop, roast	30 g
Wild game: buffalo, ostrich, rabbit, venison	30 g
Medium-fat meat and meat substitutes	
Beef: corned beef, ground beef, meatloaf, prime rib, short ribs, tongue	30 g
Cheese, 4 to 7 grams of fat per 30 grams: feta, mozzarella, pasteurised processed cheese spread, reduced-fat cheeses, string	30 g
Eggs (limit to 3 a week)	1
Fish, fried	30 g
Lamb: ground, rib roast	30 g
Pork: cutlet, shoulder roast	30 g
Poultry: chicken with skin, dove, fried chicken, ground turkey, pheasant, wild duck or goose	30 g
Ricotta cheese	1/4 cup
Sausage, 4 to 7 grams of fat per 30 grams	30 g
Soy-based "bacon" strips	3
Veal, cutlet, no breading	30 g

DAIRY	1 PORTION
Milk, fat free	1 cup (250 ml)
Milk, low fat	1 cup (250 ml)
Yoghurt, fat free	2/3 cup (175 ml)
Yoghurt, low fat	2/3 cup (175 ml)
Cottage cheese, low fat	
Cottage cheese, fat free	

FRUIT	1 PORTION
Fresh fruit	
Apple, small	1
Apricots	4
Banana, extra-small	1
Blackberries, blueberries	3/4 cup (175 ml)
Cantaloupe, honeydew, papaya, cubed	1 cup (250 ml)
Cherries	12
Figs, medium	2
Grapefruit, large	1
Grapes, small	17 small or 12 large
Kiwi	1
Mango, cubed	1/2 cup (125 ml) or 1/2
Nectarine, small	1
Orange, small	1
Peach, medium	1
Pear, large	1/2 large
Pineapple, cubed	3/4 cup (175 ml)
Plums, small	2
Raspberries	1 cup (250 ml)
Strawberries	1 1/4 cup (310 ml)
Tangerines, small	2
Watermelon, cubed	1 1/4 cup (310 ml)
Dried fruit	
Apples, dried	4 rings
Apricots, dried	8 halves
Dates	3
Figs	1 1/2
Prunes	3
Raisins/sultanas	2 tablespoons (30 ml)
Canned fruit, unsweetened	
Canned fruit in fruit juice	1/2 cup (125 ml)

VEGETABLES	1 PORTION
Artichoke	1/2 cup cooked or 1 cup raw
Artichoke hearts	1/2 cup cooked or 1 cup raw
Asparagus	1/2 cup cooked or 1 cup raw
Baby corn	1/2 cup cooked or 1 cup raw
Bamboo shoots	1/2 cup cooked or 1 cup raw
Beans: green, Italian, wax	1/2 cup cooked or 1 cup raw
Bean sprouts	1/2 cup cooked or 1 cup raw
Beets	1/2 cup cooked or 1 cup raw
Borscht	1/2 cup cooked or 1 cup raw
Broccoli	1/2 cup cooked or 1 cup raw
Brussels sprouts	1/2 cup cooked or 1 cup raw
Cabbage: bok choy, Chinese, green	1/2 cup cooked or 1 cup raw
Carrots	1/2 cup cooked or 1 cup raw

Cauliflower	1/2 cup cooked or 1 cup raw
Celery	1/2 cup cooked or 1 cup raw
Cucumber	1/2 cup cooked or 1 cup raw
Eggplant	1/2 cup cooked or 1 cup raw
Green onions or scallions	1/2 cup cooked or 1 cup raw
Greens: collard, kale, mustard, turnip	1/2 cup cooked or 1 cup raw
Kohlrabi	1/2 cup cooked or 1 cup raw
Leeks	1/2 cup cooked or 1 cup raw
Mixed vegetables without corn and/or peas	1/2 cup cooked or 1 cup raw
Mung bean sprouts	1/2 cup cooked or 1 cup raw
Mushrooms	1/2 cup cooked or 1 cup raw
Okra	1/2 cup cooked or 1 cup raw
Onions	1/2 cup cooked or 1 cup raw
Pea pods	1/2 cup cooked or 1 cup raw
Peppers, all varieties	1/2 cup cooked or 1 cup raw
Radishes	1/2 cup cooked or 1 cup raw
Rutabaga	1/2 cup cooked or 1 cup raw
Sauerkraut	1/2 cup cooked or 1 cup raw
Soybean sprouts	1/2 cup cooked or 1 cup raw
Spinach	1/2 cup cooked or 1 cup raw
Sugar snap peas	1/2 cup cooked or 1 cup raw
Summer squash	1/2 cup cooked or 1 cup raw
Swiss chard	1/2 cup cooked or 1 cup raw
Tomato: raw, canned, sauce, juice	1/2 cup cooked or 1 cup raw
Turnips	1/2 cup cooked or 1 cup raw
Vegetable juice cocktail	1/2 cup cooked or 1 cup raw
Water chestnuts	1/2 cup cooked or 1 cup raw
Zucchini/baby marrow	1/2 cup cooked or 1 cup raw

FAT	1 PORTION
Mono-unsaturated fats	
Almonds	6
Avocado	1/4 or 2 Tbsp (30 ml)
Brazil nuts	2
Cashews	6
Filberts (hazelnuts)	5
Macadamia nuts	3
Nut butters, trans fat-free: almond butter, cashew butter, peanut butter (smooth or crunchy)	1 1/2 tsp (7.5 ml)
Oil: canola, olive, peanut	1 tsp (5 ml)
Olives, black	8 large
Peanuts	10
Pecans	4 halves
Pistachios	16
Polyunsaturated fats	
Margarine, lite	1 Tbsp (15 ml)

Margarine, canola or olive	1 tsp (5 ml)
Mayonnaise, reduced-fat	1 Tbsp (15 ml)
Canola oil	1 tsp (5 ml)
Pine nuts	1 Tbsp (15 ml)
Salad dressing, reduced-fat	2 Tbsp (30 ml)
Seeds: flaxseed, pumpkin, sesame, sunflower	1 Tbsp (15 ml)
Tahini (sesame paste)	2 tsp (10 ml)
Walnuts	4 halves



“CALCIUM IS VITAL FOR THE DEVELOPMENT AND STRENGTH OF BONES”

DNA DIET RECIPES

DNA DIET BALSAMIC VINAIGRETTE

INGREDIENTS:

- 1 cup extra virgin olive oil
- 1/4 cup Balsamic vinegar
- 1 clove of garlic, crushed
- 1/4 tsp sugar
- 1/2 tsp mustard powder or prepared mustard
- Fresh herbs, chopped
- Salt and pepper

METHOD:

- Mix all ingredients together and refrigerate. Will keep in the fridge for up to 2 weeks.
- Drizzle over salad or vegetables .
- Makes 1 1/4 cups.

DNA DIET TASTY TAHINI

INGREDIENTS:

1/4 cup canola oil to 1 cup sesame seeds

METHOD:

- Preheat oven to 170° C.
- Spread sesame seeds on a roasting tray, and toast in the oven for 15 minutes, stirring regularly to toast evenly. Do not allow to brown as this impairs the flavor.
- Remove the sesame seeds from the oven and allow to cool briefly.
- Put the toasted sesame seeds in your food processor and add half the oil.
- Process the mixture on a high setting for a minute, stopping regularly to clean the sides of the food processor with a spatula.
- Add the rest of the oil, and continue to process the seeds to a paste.
- When the mixture is evenly smooth, and further processing does not further refine the texture, transfer your tahini to a tight fitting glass jar using a flexible spatula.
- May be kept in the fridge for many weeks in a well sealed jar.
- Tip: Make tahini in bulk to reduce waste. Using the proportion in this recipe, increase the quantities to suit your needs.

DNA DIET SKINNY YOGHURT DRESSING

INGREDIENTS:

1 cup fat free yoghurt

1 Tbsp white wine vinegar

1/4 tsp sugar

1/4 tsp mustard powder

Salt and pepper

Fat free milk

METHOD:

- Mix all ingredients together.
- Thin to desired consistency with fat free milk.
- Makes about 1 cup.
- 1 portion dairy = 1 cup dressing

DNA DIET RECIPES

DNA DIET COCOA COMFORTER

INGREDIENTS:

- 1 cup Low fat milk
- 3 tsp cocoa powder
- 1 sweetener (optional)

METHOD:

- Heat 1 cup low fat milk in the microwave (approx 1 1/2 minutes)
- Add 3 tsp cocoa powder and sweetener if desired and stir.
- 1 portion dairy = 1 cup Cocoa Comforter.
- To make a Skinny Cocoa Comforter use Fat Free milk.

DNA DIET CINNAMON SOOTHER

INGREDIENTS:

- 1 cup Low Fat milk
- 1 tsp cinnamon
- 1/2 tsp vanilla essence
- 1 sweetener (optional)

METHOD:

- Heat 1 cup low fat milk in the microwave (approx 1 1/2 minutes)
- Add 1 tsp cinnamon, vanilla essence and sweetener if desired and stir.
- 1 portion dairy = 1 cup Cinnamon Soother.
- To make a Skinny Cinnamon Soother use Fat Free milk.



DNA DIET RECIPES

DNA DIET WALNUT, ALMOND AND OLIVE TAPENADE

INGREDIENTS:

- 30g (1/4 cup) walnut pieces
- 2 Tbsp slivered almonds
- 160g (1 cup) green olives
- 4 anchovy fillets, drained on paper towel
- 1 Tbsp drained capers
- 2 Tbsp extra virgin olive oil
- 2 Tsp fresh lemon juice
- Freshly ground black pepper
- Olive oil, to cover

METHOD:

- Place the olives, walnuts, almonds, anchovies, capers, oil and lemon juice in the bowl of a food processor and process until finely chopped. Taste and season with pepper. Transfer to a small airtight container and cover with a thin layer of olive oil to prevent discolouring. Store in the fridge until required.
- Spread on toasted baguette slices and top with baby rocket to serve, if desired.
- Store in an airtight container in the fridge for up to 4 days.
- Makes: 1 1/3 cups
- 1 portion fat = 1 Tbsp tapenade

DNA DIET MUESLI MUNCH

INGREDIENTS:

- 2 1/2 cups Rolled oats
- 1 1/2 cups Hi-Fibre bran cereal
- 1 cup Bran Flakes
- 2 Tbsp Raisins
- 5 Tbsp Sultanas
- 1/4 cup Dried apricots, chopped
- 1/4 cup Dried pears, chopped
- 1/4 cup Dried apple, chopped
- 4 Tbsp raw oat bran

METHOD:

- Mix all ingredients and store in an airtight container.

YOUR EXERCISE PLAN



By now you will know the amount of exercise we recommend you do a week to maximise your chance of weight loss. This recommendation would have been given as MET HOURS. Below you will find a detailed explanation of exactly what MET HOURS are, and a guide to plan your exercise week to meet your recommended MET HOURS. Remember to consult your physician before embarking on a new exercise programme, and to stop exercising if you feel nauseous or short of breath.

WHAT IS A MET?

MET stands for Metabolic Equivalent Task. METs are a way to measure how much energy you burn up during any chosen physical activity. Every activity, from watching TV to going for a run, has a MET value. The more vigorous the activity, the higher the MET value.

WHAT ARE MET HOURS?

Whereas METs are a way to measure the intensity of a particular activity, MET HOURS allow you to calculate how many hours of your chosen activities you need to do in a week.

3 EASY STEPS TO CALCULATING YOUR WEEKLY MET HOURS SCORE

1. Below is a list of activities divided into light, moderate and vigorous intensity. Find the activity closest to yours.

2. Use this equation to calculate the MET HOURS for each activity.

$$\begin{array}{c} \underline{\hspace{2cm}} \\ \text{MET value} \end{array} \times \begin{array}{c} \underline{\hspace{2cm}} \\ \text{duration (in hours)} \end{array} = \begin{array}{c} \underline{\hspace{2cm}} \\ \text{MET HOURS score} \end{array}$$

For example: if you play singles tennis for 1 hour and 40 minutes (1.60 hours) – 8 METS X 1.60 = 13 MET HOURS.

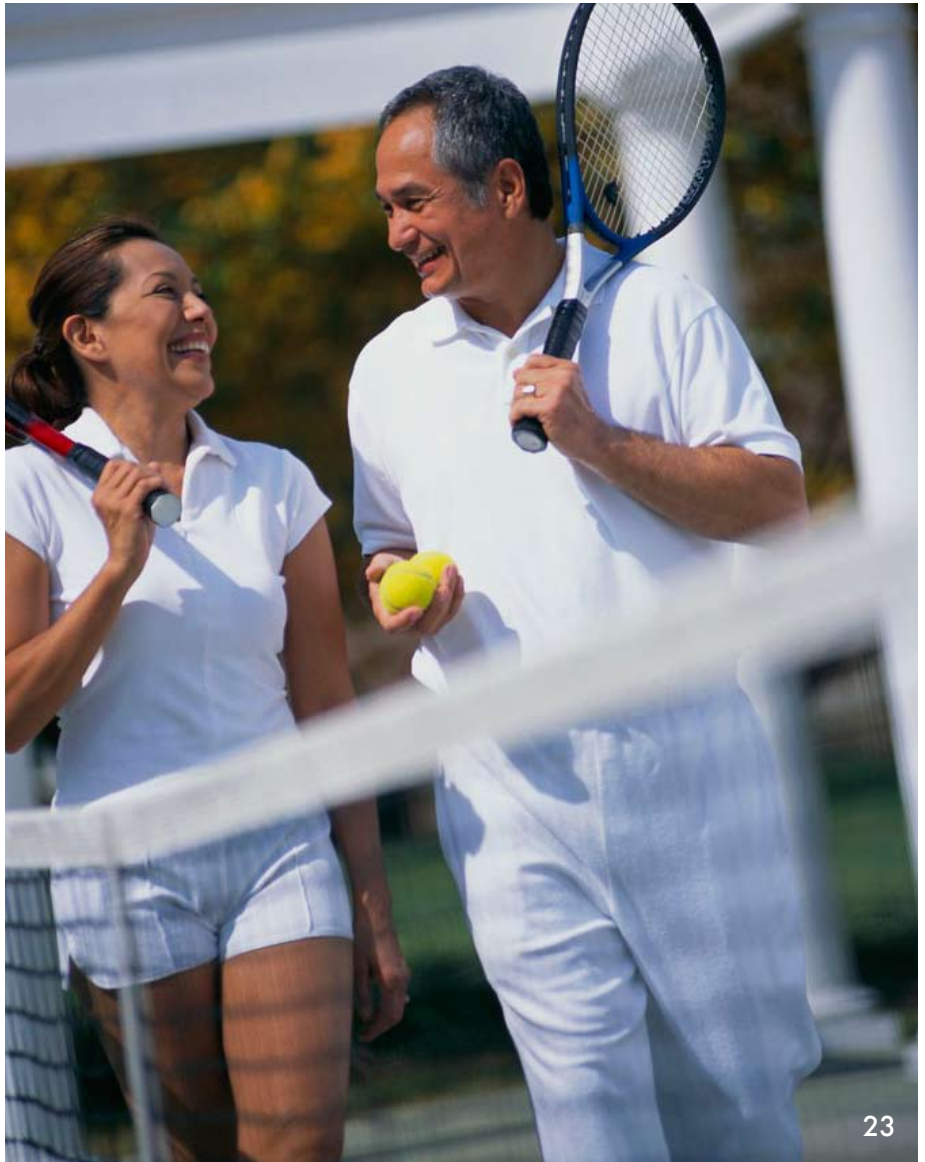
3. To calculate your weekly MET HOURS score, add the MET HOURS score of each workout for that week. For example, If you played singles tennis for 1 hour and 40 minutes, ran for 30 minutes at a pace of 8 km/hour ($8 \times .5 = 4$) and played 2 hours of golf ($4.5 \times 2 = 9$), then your weekly MET HOURS score will be 26 ($13 + 4 + 9$). See how this compares to the MET HOURS recommendations in your report.

Below is a list of MET VALUES, divided into light, moderate and vigorous intensity activities. Talking during exercise is a reliable way to measure your exercise intensity. If you can talk without puffing at all, you're not pushing too hard and it's very likely a light intensity activity. If you can talk but not sing, you're exercising at a moderate intensity. If you can't talk without gasping, then you are exercising at a high intensity.

LIGHT INTENSITY	<5 METS
Stretching, Hatha yoga	2.5
Horse riding	2.5
Walking, less than 3.2km/hr, flat ground	2
Walking, 3.2km/hr, firm, flat ground	2.5
Walking, 4km/hr, downhill	2.8
Cycling, less than 16km/hr, for leisure	4
Rowing, stationary, 50 watts, light effort	3.5
Tai chi	4
Walking, 5.6km/hr, brisk pace, firm surface	3.8
Water aerobics	4
Golf	4.5
Badminton	4.5

MODERATE INTENSITY	5-9 METS
Cycling, stationary, 100 watts, light effort	5.5
Weight lifting, vigorous effort	6
Jogging/walking combination, less than 10 minutes	6
Boxing, punching bag	6
Hiking, cross-country	6
Walking, 5.6km/hr, uphill	6
Mountain biking	8.5
Cycling, general	8
Cycling, stationary, 150 watts	7
Circuit training	8
Stationary rowing, 150 watts	8.5
Aerobics, high impact	7
Running, 8km/hr	8
Cross country running	8
Hockey	8
Tennis, singles	8
Mountain climbing	8
Swimming, freestyle, moderate	7
Walking, 8km/hr	8

VIGOROUS INTENSITY	>9 METS
Cycling, 22-26km/hr, vigorous	10
Running, 9.6km/hr	10
Running, 12.8km/hr	13.5
Kickboxing, judo, etc	10
Rollerblading	12
Cycling, ≥32km/hr	16
Stairmaster	9
Stationary rowing, 200 watts, very vigorous	12
Boxing, sparring	9
Soccer, competitive	9
Orienteering	9
Rope jumping, fast	12
Squash	12
Swimming, butterfly	11
Swimming, treading water, fast	10



PART 5. FAQS AND KEY TERMS EXPLAINED

FREQUENTLY ASKED QUESTIONS



HOW CAN TESTING MY GENES CONTRIBUTE TO A BETTER DIET AND LIFESTYLE?

Your health is a result of interactions between your genes and lifestyle factors such as diet, exercise, stress, smoking and alcohol consumption. It is your genetic makeup that determines which nutrients are used and how they are used, the way toxins are removed and how effective these key processes are within the body. However, by adjusting your lifestyle, you can have a great impact on how your genes work and compensate for areas in which your genes are functioning at an altered level.

ARE THERE ANY ADDITIONAL BENEFITS TO DNA DIET THAT I WOULDN'T GET IF I JUST FOLLOWED A HEALTHY DIET PRESCRIBED BY A DIETITIAN?

Today, every pharmacy, health food shop, magazine and supermarket is stacked with dietary and nutrition advice, much of it sound and healthy. But how do you know which guidelines are relevant for you? Besides, the problem is not only the quality but the large quantity of advice out there. In contrast, gene-based specific guidelines tailored to your particular needs are much more realistic. Our experience shows that personal advice provides people with that extra bit of motivation for making a stronger commitment to healthy living.

WHAT KIND OF GENE TEST IS DNA DIET?

The test focuses only on gene variations that may call for changes in your diet or lifestyle. By learning about the specific nature of some of your genes from your report, you will learn to focus on factors that could be of greatest benefit to your health. Our DNA analysis does not include genes that do not interact with your nutrition or lifestyle.

WILL THE TEST TELL ME IF I HAVE GENES FOR ANY SERIOUS INHERITED DISEASE?

No, our screening is not a test for inherited disorders or inherited predisposition to disease. We do not screen for disorders caused by a defect in a single gene, such as Huntington's disease, cystic fibrosis or sickle cell anaemia. Nor do we test for inherited genes linked to a specific disease – for example, genes associated with certain forms of breast cancer that run in families. If you think you may carry the genes for an inherited disease, you should speak to your doctor.

DNA Diet focuses on the presence of gene variations that influence a person's ability to derive maximum benefit from diet and lifestyle practices recommended by current medical research for managing their weight. While we cannot promise that if you take our advice you will definitely lose weight, the test allows you to make informed choices about your diet and lifestyle that give you a much better chance of losing weight and keeping it off.

IF I HAVE GENE VARIATIONS SHOULD I BE CONCERNED?

Most of the time, gene variations have no effect on our body systems or our health, and in certain cases these variations can even be beneficial. However, sometimes a variation can make the gene send a slightly altered message to the cell.

PART 5. FAQS AND KEY TERMS EXPLAINED

FREQUENTLY ASKED QUESTIONS

Upon receiving the altered message, the cell will manufacture a product – such as an enzyme – that doesn't work exactly as it should; the variant enzyme may, for example, work faster or more slowly than is best for the body. Combined with an unhealthy diet or lifestyle, such a gene variation may make a person more susceptible to developing health problems. By following advice that takes into account the presence of genetic variations, you can increase your chances of maintaining or achieving good health.

WHO WILL HAVE ACCESS TO MY DNA RESULTS OR QUESTIONNAIRE?

No-one. All of the personal information you choose to share with us (your DNA sample, your identifying details and personal health information) is kept strictly confidential. We are aware of the need for strong and appropriate privacy safeguards, and that is why we ensure that no one has access to your information without your prior consent. We de-identify the material you send us to make sure that your identity is separate from your information that undergoes evaluation. We do not sell information, nor do we disclose any details to third parties, such as insurance companies or medical aids. Your DNA is identifiable only by a barcode, so that even our lab staff do not know to whom the sample belongs. When the analysis has been completed, the sample is physically destroyed. We do, however, keep your contact information in our database for further communication with you.

DOES THE TEST LOOK AT MY COMPLETE GENOME?

The Human Genome Project, which involved an international network of research centers and took 13 years to complete, has accomplished a monumental task: deciphering the 3 billion "letters" of the human genetic code. Scientists are currently tackling the next frontier: understanding how these genes work and what functions they perform in the body. At present, deciphering a person's entire genome – would not be particularly useful. However, genetic science has already yielded sufficient knowledge to have an impact on our daily lives: an understanding of how gene variations affect the way our bodies process certain nutrients. What's unique about our service is that by analyzing these variations, it allows people to know enough about their genetic makeup to adopt a healthier lifestyle.

WHERE DO I GO IF I WANT MORE DIETARY ADVICE?

If you would like to receive further nutritional guidance after reading your personal report, you should consult a dietitian, a nutritionist or your doctor. This may be particularly valid if you have been diagnosed with a food intolerance, an allergy or any medical condition – or if you simply wish to continue learning about healthy eating and lifestyle habits. You will also have access to our online dietitian via our website (www.dnadiet.co.za) who is accredited as a DNAAnalysis practitioner and is trained in the field of nutrigenomics.

WHAT SHOULD I DO IF I HAVE QUESTIONS ABOUT MY RESULTS OR REQUIRE FURTHER INFORMATION?

If you have any questions regarding any aspect of our service, please call 011 268 0268 or email info@dnadiet.co.za.

KEY TERMS EXPLAINED

AMINO ACID • The basic building block of proteins. Each protein consists of a different set of amino acids, put together according to instructions in the corresponding gene. There are 22 amino acids, each encoded by a three-letter “word” of the genetic code.

ANTIOXIDANT • Any compound that prevents or neutralizes the damaging effects of free radicals – reactive oxygen molecules in cells. Some natural antioxidants are produced in the body while others, such as certain vitamins and phytochemicals, are found in a variety of foods.

CARBOHYDRATES • Organic compounds that contain carbon, hydrogen and oxygen. They include simple sugars such as fructose and glucose, as well as the more complex saccharides such as lactose, starch and cellulose. Carbohydrates are an excellent source of energy.

CELL • The basic structural subunit of any living organism. It is a tiny, watery compartment filled with chemicals and it contains a complete copy of the organism’s genome. Some organisms are made up of only one or two cells, whereas the human body consists of billions. Each cell is enclosed by a membrane and in most cases has a nucleus containing genetic material (DNA) organized in the form of chromosomes.

CHROMOSOME • A tightly coiled microscopic structure made up mainly of DNA. Chromosomes are found in most cells of the human body, inside the nucleus.

CLONING • The process of making an identical copy of something. The term is used when making copies of a piece of DNA, usually a gene (molecular cloning), culturing cells (cell cloning) or making copies of a living organism (for example, animal cloning).

DETOXIFICATION • The process by which the body rids itself of unwanted and potentially harmful substances, or toxins. These toxins can come from food, water or air – or from the by-products of normal metabolism. Detoxification generally happens in the liver or kidneys, where toxins are either broken down or attached to a water-soluble natural chemical so they can be easily excreted in the urine or sweat.

DNA • The genetic material of living organisms, an abbreviation for deoxyribonucleic acid. The DNA is known as a “double helix” because its molecules have the shape of a twisted ladder consisting of two intertwined coils. DNA forms the genetic blueprint; it contains the genes that carry all the information about our appearance, about how our bodies function and sometimes about the diseases we will get. The building blocks of DNA contain four different chemicals – adenine, thymine, cytosine and guanine, or A, T, C and G for short – referred to as the “letters” of the genetic code.

ENZYME • A protein that carries out the biochemical reactions essential for the body to metabolise food and produce energy for growth, repair and movement. Organisms could not function if they had no enzymes.

FATS • Organic compounds composed of glycerol and fatty acids that serve as the most concentrated source of energy in foods. Depending on the predominant type of fatty acids they contain, they are divided into saturated and unsaturated molecules.

FREE RADICAL • An extremely active portion of an oxygen or other molecule formed in the body as part of normal metabolism. If produced in excess, or not neutralized efficiently, it releases an electric charge that can damage cell structures and proteins.

GENE • A segment of the DNA molecule that contains instructions for making a protein. The sequence of genetic “letters” (e.g., ATT CGG) in our genes determine how, when and where our bodies make each of the many thousands of proteins required for life.

GENE VARIATION • A naturally occurring variation in the DNA that is present in at least 1% of the population. The variation means an alteration in one or more letters of the genetic alphabet. For example, where most people have the genetic letter A, the person with the variation may have a T. Scientists call such variations “polymorphisms.” Most gene variations are harmless and are part of normal human genetic diversity.



GENETIC CODE • The instructions in a gene that tell the cell how to make a specific protein. A, T, C and G are the “letters” of the genetic code; they stand for the chemicals adenine, thymine, cytosine and guanine, which make up DNA. Each gene’s code combines the four chemicals in various ways, spelling out three-letter “words” that specify which amino acid is needed at every step in making a protein.

GENETIC DISEASE • Any disorder caused by defects in genes. Single-gene disorders, which are relatively rare, are caused by mutations in a single gene – for example, cystic fibrosis or sickle cell anemia. More common are complex, or multi-factorial, diseases, arising from variations in several genes together with environmental factors. Examples of complex diseases include most types of cancer, heart disease and diabetes.

GENETIC ENGINEERING • The use of various experimental techniques to produce DNA that contains new or modified genes or combinations of genes.

GENOME • The total genetic code of a particular organism. The normal human genome consists of about 3 billion genetic “letters.”

GENOMICS • A specialized branch of science that studies the genome.

GM FOODS • Genetically modified (GM) foods have been produced using genetic engineering to modify, insert or remove one or more genes from the genome.

METABOLISM • The natural process by which all living organisms, including humans, transform food into energy and dispose of their waste products.

MOLECULE • The smallest part of any compound or substance that is chemically stable. It consists of two or more atoms joined together by chemical bonding.

NUCLEUS • The central cell structure; it contains the chromosomes.

OXIDATIVE STRESS • A situation in which the environment within cells becomes highly “oxidized” – that is, comes to contain reactive, unstable molecules, particularly those of oxygen. These reactive molecules called free radicals can attach themselves to proteins and DNA inside the cell and cause damage. Oxidative stress has been linked to the development of disease.

POLYMORPHISM • Scientific term for “gene variation.”

PROTEINS • Complex organic compounds that contain carbon, hydrogen, oxygen and nitrogen. It is the presence of nitrogen that differentiates proteins from carbohydrates and fats. The basic building blocks of proteins are amino acids. Humans need 22 amino acids for the synthesis of their proteins. The human body can make only 13, known as nonessential amino acids because we don’t need to get them from the food we eat. There are nine essential amino acids that are not made by the body and can be obtained only from food.

SNP • Single nucleotide polymorphism, pronounced “snip.” A gene variation that consists of alteration in a single genetic “letter,” or base: for example, GGT instead of GCT. Such common, though minute, variations occur in human DNA at a frequency of one in every 1,000 bases.

TOXIN • A harmful substance, specifically one produced by an animal, plant or bacterium. Toxins can enter the body from one of these sources or be generated as by-products of metabolism. Constant exposure to toxins can overwhelm the body’s detoxification mechanisms and lead to disease.

VITAMINS • Organic molecules essential for normal metabolism, growth and development, and for the regulation of cell function. Some vitamins activate specific enzymes in the body. Insufficient vitamins in the diet lead to deficiency.

WHERE TO NOW?

Now that you have identified the right diet and exercise plan for you, you can continue your commitment to health with DNA Health:



dnahealth
optimal nutrition for life

THE SCIENCE OF OPTIMISING ENERGY, WELLBEING AND LONGEVITY

DNA Health was designed to optimise energy, wellbeing and health through better lifestyle and diet choices. The DNA Health approach establishes the optimal individual nutrition necessary for good health, energy, longevity and risk mitigation. DNA Health tests for 20 genes and 25 gene variations involved in the following biological processes:

- cholesterol regulation
- bone health
- vitamin B metabolism
- inflammation
- detoxification
- antioxidant status
- insulin sensitivity

The results provide unique information to guide personalised dietary recommendations for optimal health and disease prevention. The outcomes of these tests provide the opportunity to manage wellness by:

- optimising energy, wellbeing and health
- making better lifestyle and dietary choices
- using supplements to offset a particular deficit in nutrition or genetic predisposition.

Visit www.dnadiet.co.za for more information

