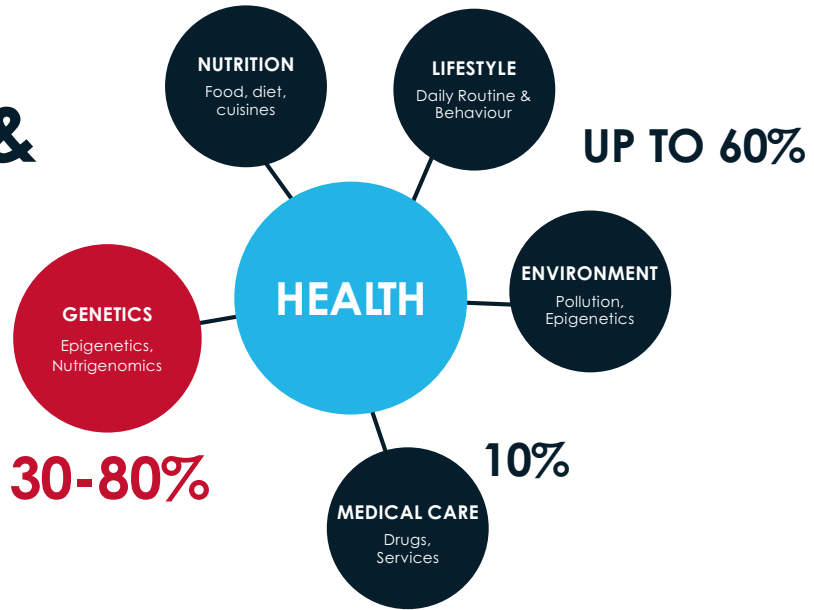


# COMPREHENSIVE WELLNESS

## THE IMPORTANCE OF GENETICS FOR HEALTH AND WELLNESS

### GENETICS & HEALTH



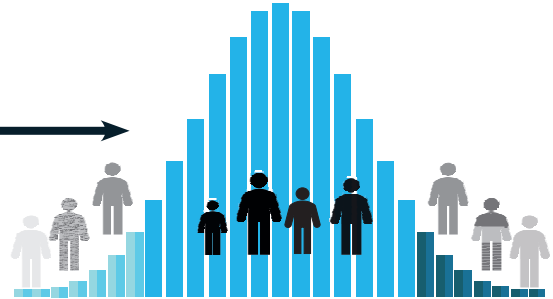
ONE SIZE FITS ALL



NUTRIGENOMICS TEST

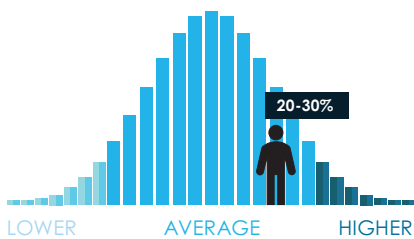


PERSONALISED WELLNESS



## EXAMPLE OF TEST APPLICATION

PRE TEST



FTO VARIATIONS LINKED TO 20-30% INCREASED RISK OF OBESITY

FACTORS THAT MODIFY THE EFFECT OF FTO



30 MINUTES MODERATE ACTIVITY PER DAY



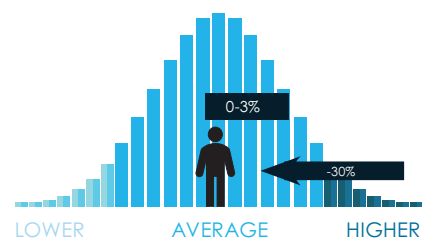
NO LESS THAN 25% PROTEIN AT EACH MEAL



NO MORE THAN 30% FAT AT EACH MEAL

IMPLEMENTATION OF DIETARY AND LIFESTYLE CHANGES KNOWN TO MODIFY THE FTO EFFECT

POST TEST



ACCORDING TO THE EVIDENCE, FTO CONTRIBUTION TO OBESITY RISK DECREASES BY ALMOST 30%

## SETTING THE RIGHT EXPECTATION FOR YOUR PATIENTS

### WHAT THIS TEST WILL TELL

This test will **NOT** predict the risk of a disease or condition, but will identify the individual's lifestyle factors that can modify the gene effect and improve health.

#### WHAT THE PATIENT SHOULD EXPECT:

- To be guided to **make dietary and lifestyle changes for a healthier life** by choosing the nutrition and exercise regimens that are more in line with **their genetic make up**
- To learn about the interactions between their genes and their lifestyle and be recommended the actions that can **help modify the effects of their genes**.
- To identify those genetic factors that contribute to, **without being the cause of**, their body weight, vitamin needs and other aspects of their wellbeing.

#### WHAT THE PATIENT SHOULDN'T EXPECT:

- Will not confirm or exclude the suspected diagnosis of a medical condition, intolerance or allergy.
- Will not identify whether they are carriers of a condition they could pass onto their children.
- Will not establish whether they are biologically related to other people.
- Will not predict a quantifiable risk of a disease or condition, such as breast cancer, Alzheimer's, cardiovascular disease, obesity, diabetes.

## REPORT

### 45 SNPs COVERED OVER 37 GENES

FTO	FADS1	ADORA2A	COL1A1	DHCR7
PPARG	GRK4	CYP1A2	COL5A1	GC
MTIF3	NOS3	AHR	BCM01	VDR
ADIPOQ	CD36	ACTN3	SLC23A1	TMPRSS6
MC4R	TAS2R38	AGT	NBPF3	TF
UCP1	TAS1R2	AMPD1	MTHFR	
APOA5	MCM6	PPARGC1A	FUT2	
LIPC	CYP1A1-CYP1A2	IL6	CYP2R1	

### 5 HEALTH AND WELLNESS AREAS COVERED

TASTE PREFERENCE & FOOD RESPONSE	FITNESS	HEART HEALTH
WEIGHT MANAGEMENT	VITAMINS	

# TEST IMPLEMENTATION

## HOW TO USE THIS TEST

**1** Identify the primary focus of the patient (Weight Loss, Vitamin levels, Heart Health, Food response, Fitness)

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**4** Include relevant "Recommendations" from the results in your patients treatment plan

GENETIC WEAKNESSES		These can be easily managed with training	
FITNESS TRAIT	YOUR PROFILE	PREDICTED IMPACT	RECOMMENDATIONS
Power vs Endurance Stamina	● AGT	<b>Muscle strength</b> Your gene variation predicts normal muscle contraction and muscle strength. You are expected to have normal muscle power.	<ul style="list-style-type: none"> <li>Follow general training recommendations.</li> <li>Train more frequently.</li> </ul>
Power vs Endurance Recovery	● AMPD1	<b>Muscle energy</b> Your muscles are moderately equipped to produce energy in short bursts. With this gene variation, you may also experience some muscle soreness after intense training.	<ul style="list-style-type: none"> <li>Combine high and low intensity training to improve your fitness and strength.</li> </ul>
Power vs Endurance Stamina	● PPARGC1 A	<b>Endurance</b> Your genetic finding is associated with some growth of slow-twitch muscle fibers in response to exercise. Your aerobic fitness is also moderately high. As such, you are moderately suited to endurance training.	<ul style="list-style-type: none"> <li>Combine high and low intensity training.</li> </ul>
Power vs Endurance Stamina Recovery	● IL6	<b>Recovery time</b> Your gene variation is associated with slightly less optimal muscle fibers recovery and regeneration. You may experience some muscle soreness after intense training and may require additional time to recover.	<ul style="list-style-type: none"> <li>Allow 1-2 recovery days between training sessions.</li> <li>Consider food/drinks that can help your recovery. For example:                             <ul style="list-style-type: none"> <li>Milk (before exercising).</li> <li>Turmeric.</li> </ul> </li> </ul>

**2** Consider primarily utilising the "Your Genetic Summary" section



### WEIGHT MANAGEMENT

The balance between the number of calories you consume and the calories you burn is important for your weight management. This balance is controlled by a combination of your DNA and your environment. Your DNA controls your weight from within by influencing your appetite, your food choices, how quickly you burn calories and how fat is stored around your body. For each person, the relative influence that their DNA has on their body is different and unique.

Based on the scientific literature that investigates the interaction between DNA and nutrients, we have created your personalized profile to help focus your attention on the dietary and lifestyle factors that are most relevant for you. We hope to empower you to make better decisions in your everyday life that will influence your long-term weight and health.

#### WHAT DO YOU NEED TO FOCUS ON TO BETTER MANAGE YOUR HEALTH?

Based on your DNA markers, the following dietary/ lifestyle factors are important for your health and weight management. This information is unique to you, so please consider these factors when making decisions about your health and wellbeing.

MODERATE IMPACT Pay close attention: more effort required			
DIETARY/ LIFESTYLE FACTORS	YOUR PROFILE	PREDICTED OUTCOME	RECOMMENDATIONS
Total Fat Polysaturate	● PPARC	<b>Fat storage</b> Your gene variation suggests that when you	<ul style="list-style-type: none"> <li>Limit total calories.</li> <li>Limit total fat intake.</li> </ul>

**5** Find additional information on each result in the Genetic Result summary

### WEIGHT, APPETITE AND OBESITY

GENE	SNPs	YOUR RESULT	NORMAL RISK OF OBESITY
FTO	r1558902 r3993809	TT Two normal alleles*	<p><b>PREDICTED IMPACT</b> Normal regulation of hunger and feeling full. No influence on appetite and food choices; and No influence on risk of obesity.</p> <p><b>DIETARY AND/OR LIFESTYLE FACTORS</b> Protein Intake Physical Activity</p> <p><b>RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li>Limit total calories.</li> <li>Lower protein intake (15% of total calories).</li> <li>Regular moderate exercise.</li> </ul>

**ABOUT THE GENE**  
The FTO gene is linked to body size, body fat storage and obesity. This gene affects eating habits, food preferences, appetite and the feeling of being full in the brain's control center (the hypothalamus). The FTO gene is also linked to your chance of being overweight.

**GENETIC INTERPRETATION**  
Your genetic finding is:  

- Not associated with obesity.
- Associated with normal regulation of appetite.

 Your genetic result is only one factor that influences your risk of obesity. Other factors, such as dietary and lifestyle choices (e.g. the amount of calories you consume) are equally as important and may influence your body weight.

**EVIDENCE RATING ★★**

**3** Focus on the results in High Impact group (Red) and Moderate Impact (Orange)

HIGHEST IMPACT Focus on these			
NUTRITIONAL FACTORS	YOUR PROFILE	PREDICTED IMPACT	
Salt (Sodium)	● GRK4	<b>Salt influence on blood pressure</b> Your gene variation indicates that you are likely to have a reduced ability to clear dietary sodium, especially when your sodium intake is high. You may be more sensitive to the effects of too much sodium in your diet, which may also affect your blood pressure.	<ul style="list-style-type: none"> <li></li> <li></li> <li></li> <li></li> </ul>
MODERATE IMPACT Pay close attention: more effort required			
DIETARY/ LIFESTYLE FACTORS	YOUR PROFILE	PREDICTED OUTCOME	
Total Fat Polysaturate d Fat	● PPARC	<b>Fat storage</b> Your gene variation suggests that when you eat more food than your body needs, you are likely to store the excess calories as fat.	<ul style="list-style-type: none"> <li></li> <li></li> <li></li> </ul>

**6** Find all References and Evidence Rating explanation at the end of the report

★★★★	Systematic review of multiple RCT (meta-analysis) Systematic review of meta-analyses Single RCT (random controlled trial) with narrow confidence intervals	
★★★★	Meta-analysis of cohort studies Prospective cohort with 80% follow up. Single RCT not in 5	<b>MTHFR</b> Nassi FH, Smeier AS, Ganje BA. Folate: metabolism, genes, polymorph 2014;53(1):11-20.
★★★★	Good quality ecological research Genome-wide association studies	Cabo R, Haines S, Seltzer A, Haugan M, Ye S, Blomhoff R, et al. Effect of metabolism on the concentration of serum folate and plasma total homocysteine: a randomized, double-blind, controlled trial. <i>Am J Clin Nutr</i> . 2014;99(5):1037-44.
★★★	Multiple case control studies Meta-analysis of case-control Follow up cohort <80% Cross sectional studies >1000 people Case control good quality	McNulty H, Davey L, Ward M, Strain JJ, Troulton TG, Holton G, et al. R hypertension in patients with the MTHFR 677T genotype: a 4-y follow-up study. <i>Am J Hypertens</i> . 2013;26(10):2013-20.
★★	Single case control not in 3 Case-series Cross sectional <1000 people	Wilson CP, Ward M, McNulty H, Strain JJ, Troulton TG, Holton G, et al. R hypertension in patients with the MTHFR 677T genotype: a 4-y follow-up study. <i>Am J Hypertens</i> . 2013;26(10):2013-20.
*	Single case report Expert opinion Biochemistry Fist principle Animal/bacteria analogy	Ra, V., Methylenelethylmalonyl-CoA reductase C677T polymorphism and folate: A meta-analysis. <i>Indian J Clin Biochem</i> . 2014; 31(4): p. 402-403.