	p	p	c/up	sprints	p	p	s + 30 b/c
Weight							
Energy							
DAY	**11**	**12**	**13**	**14**	**15**	**16**	**17**
eggs	5	3	4	4	3	2	4
spinach	100		100	150			100
bacon	3	4	4		4		3
tomato	1	1	1		1	1	1
greek yoghurt	100	200	75	150	150	50	150
berries	50	100	100	100	100	100	100
whey protein conc					30		30
ostrich stew							
ostrich burger							
mixed veg			5				
roasted peppers							
aubergines							
carrots							
cauliflower						100	
onion	0.5	0.5					
mushrooms					4 large	2 large	
broccoli					150	100	
chicken liver parfait							
apple							
banana					1	1	1
green salad	40	40	40		40		
avocado	1	1	1		0.5	1	1
sweet potato							
small potato			2				
beetroot					75		
butter	1			1	1	1	1
cream			30				
cream - whipped							
full fat flat whi	1	1	1	2			1
coffee black							

feta cheese			30				
mozarella cheese							
blue cheese			50				
basil							
tuna							
chocolate 85%	50	50	75	50	40	40	20
tea black							
red wine	300	300	400	100		100	100
macadamia nu	100	150	150	150	200	150	100
honey	1	1			1		1
cheddar cheese							
chicken	150	150	150		250		250
chicken curry		250					
beef	150	150		350	150		
chili con carne						350	
pork belly							
smoked salmon				100			
lean burger		250					
calamari							
Fish						300	
olive oil	1	1	2		1	1	2
herbs, spices							
cinnamon	0.5	0.5	0.5	0.5	0.5		0.5
coconut oil							
garlic							
wheat free roll		1					
white rice			100				
hollandaise sa tablespoon				4			

Tel: 021 551 6372
Fax: 021 551 6379
VAT No.: 4540241041

METROPOLIS PATHOLOGY LABORATORIES Tolgaard Inc

Smartsurv House, 1st Floor,
32 Century Blvd, Century City
7441 Practice No: 5202507

Labno WHI0334319 (27/06/2012)

JAMIE SMITH
PREVENTATIVE MEDICINE
AND EXECUTIVE WELLNESS
SPORTS SCIENCE INSTITUTE OF SA
NEWLANDS

FAX->021 659 5633 STAT

Patient	0 NEILL,D,DONAL
Address	606 FORTUNE 109 BEACH ROAD MOUILLE POINT 8001
Tel No	(C)0794550773
Age(Sex)	41y (M) DoB 13/05/1971
Ref Dr	**JAMIE SMITH**
Practice	**SMITH, JAMIE**
Taken	27/06/12 00:01 Recd 27/06/12 10:12
Report	27/06/12 11:48

LABORATORY REPORT (E-MAIL)

Specimen: Blood
Tests ordered: FBC & Plt,Diff,ESR (West),S-U&E,Creat,Uric Acid,S-Chol,HDL,Trig, LDL2,CRP,LFT,VITD,eGFR,COM

FBC & PLATELETS			**Flags**	**RefInterval**
WBC Count	**4.6**	x10^9/L		4.0 - 11.0
Red Blood Cell Count	**4.99**	x10^12/L		4.50 - 6.50
Hb	**15.3**	g/dL		13.0 - 18.0
Hct	**45.3**	%		40.0 - 54.0
MCV	**91**	fl		80 - 100
MCH	**30.7**	pg		27.0 - 32.0
MCHC	**33.8**	g/dL		32.0 - 36.0
RDW	**13.3**	%		10.0 - 14.0
Platelets	**248**	x10^9/L		140 - 450

DIFFERENTIAL COUNT			**Flags**	**RefInterval**
Neutrophils	**55.30**	%		50.00 - 80.00
Neutrophils (Abs)	**2.57**	x 10^9/L		2.00 - 7.40
Monocytes	**9.10**	%		2.00 - 10.00
Monocytes (Abs)	**0.42**	x 10^9/L		0.10 - 0.84
Lymphocytes	**31.90**	%		25.00 - 50.00
Lymphocytes (Abs)	**1.48**	x 10^9/L		1.00 - 4.50
Eosinophils	**1.30**	%		0.00 - 5.00
Eosinophils (Abs)	**0.06**	x 10^9/L		0.04 - 0.60
Basophils	**2.40**	%	H	0.00 - 2.00
Basophils (Abs)	**0.11**	x 10^9/L		0.00 - 0.25

ESR (WESTERGREN)			**Flags**	**RefInterval**
ESR (Westergren)	**2**	mm/h		0 - 12

Tel: 021 551 6372
Fax: 021 551 6379
VAT No.: 4540241041

METROPOLIS PATHOLOGY LABORATORIES Tygerberg Inc

Smartsurv House, 1st Floor,
32 Century Blvd, Century City
7441 Practice No: 5202507

Labno WHI0334319 (27/06/2012) Patient 0 NEILL,D,DONAL

ELECTROLYTES & UREA			Flags	RefInterval
S-Sodium	134	mmol/L	L	135 - 145
S-Potassium	?High K - ?Checked - ?Haemolysis			
S-Chloride	100	mmol/L		98 - 107
S-Total CO2	28.2	mmol/L		22.0 - 30.0
S-Urea	4.0	mmol/L		3.2 - 7.2

Remarks:
Sample not haemolysed.No collection time or date stated on form.
Please treat results with reserve.

CREATININE			Flags	RefInterval
S-Creatinine	71	µmol/L		53 - 115

URIC ACID			Flags	RefInterval
S-Uric Acid	0.30	mmol/L		0.21 - 0.51

LIPIDS			Flags	RefInterval
S-Cholesterol 6.5!	7.18	mmol/L	H	3.10 - 5.20
S-HDL 2.5!	2.48	mmol/L	H	0.90 - 1.45
S-Triglyceride 0.5!	0.56	mmol/L		0.50 - 2.00
S-LDL 3.9!	4.70	mmol/L	H	1.00 - 3.00

C-REACTIVE PROTEIN			Flags	RefInterval
S-CRP	< 0.6	mg/L		0.0 - 5.0

LIVER FUNCTIONS			Flags	RefInterval
S-Total Protein	72	g/L		60 - 85
S-Albumin	48	g/L		38 - 54
S-Globulins	24	g/L		18 - 36
S-Total Bilirubin	8.8	µmol/L		3.0 - 22.0
S-Conjugated Bilirubin	2.70	µmol/L		0.00 - 5.00
S-Unconjugated Bilirubin	6.1	µmol/L		0.0 - 19.0
S-Aspartate Transaminase	24	IU/L		9 - 36
S-Alanine Transferase	28	IU/L		10 - 41
S-Alkaline Phosphatase	61	IU/L		40 - 129
S-Gamma-Glutamyltransferase	17	IU/L		0 - 50

VITAMIN D			Flags	RefInterval
Vitamin D	27.8	ng/ml	L	30.0 - 70.0

Reference Ranges for Vitamin D

<	*10 ng/mL*	*Deficiency*
10 -	*30 ng/mL*	*Relative Insufficiency*
30 -	*70 ng/mL*	*Sufficiency*
>	*70 ng/mL*	*Danger of toxicity developing*

Tel: 021 551 6372
Fax: 021 551 6379
VAT No.: 4540241041

METROPOLIS
PATHOLOGY LABORATORIES
Taljaard Inc

Smartsurv House, 1st Floor,
32 Century Blvd, Century City
7441 Practice No: 5202507

Labno WHI0334319 (27/06/2012) Patient 0 NEILL,D,DONAL

Please note: Change in reference range due to new method

EGFR		**Flags**	**RefInterval**
Glomerular Filtration Rate ...	**112.3**		-See below-

Reference Ranges for Glomerular Filtration Rate
Stages of Chronic Kidney Disease

Stage:	Description:	GFR:
1	Normal	>90
2	Mild decrease	60-80
3	Moderate decrease	30-59
4	Severe decrease	15-29
5	Kidney failure	<15

(GFR Units = mL/min/1.73m^2)

COMMENT	**Flags**	**RefInterval**

General Text
Please repeat specimen for accurate potassium result.

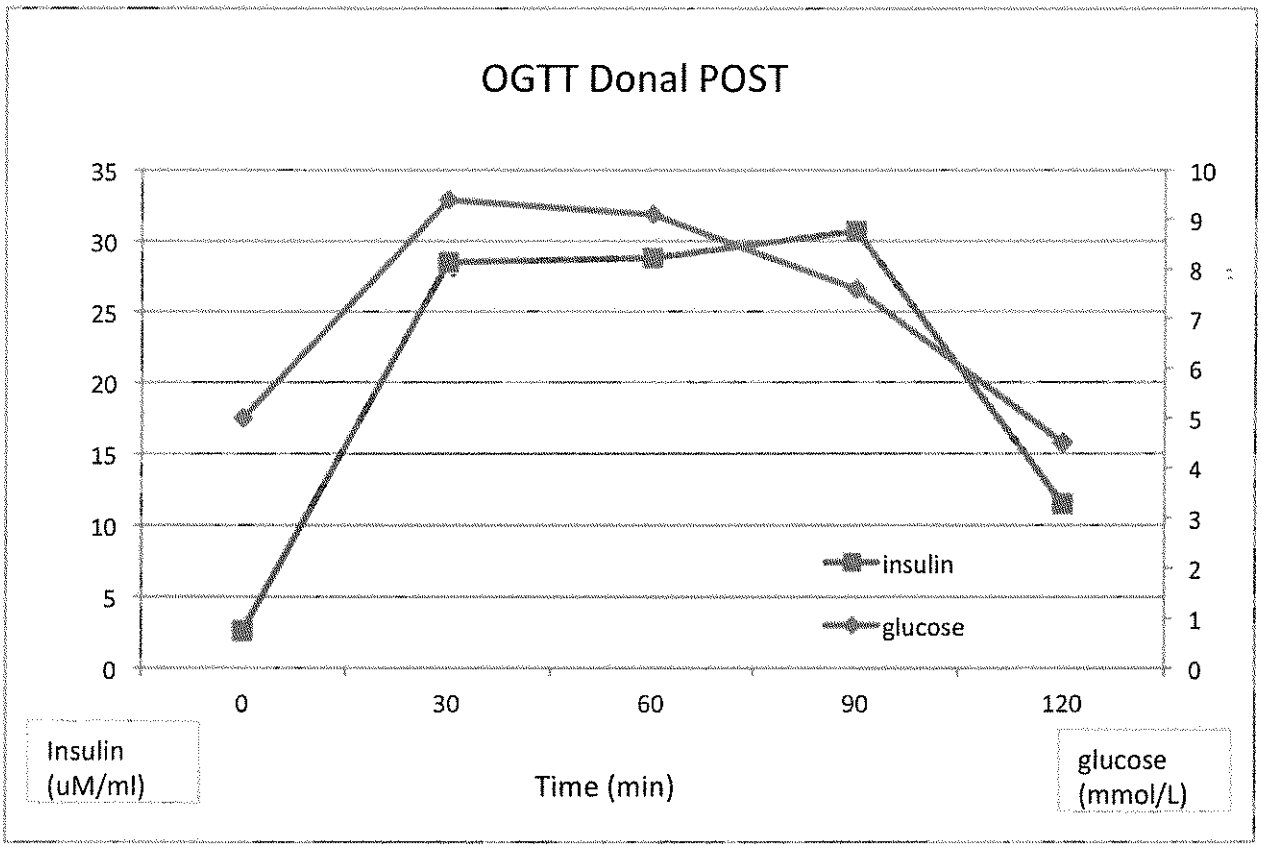
Authorised by : THERON, AMELIA MS
Test(s): FBC & Plt, Diff, ESR (West), S-U&E, Creat, Uric Acid, S-Chol, HDL, Trig, LDL2, CRP, LFT, VITD, eGFR, COM

Prof F Taljaard 083 627 1949

--- End of Laboratory Report ---

Donal Oniell
post
26/06/2012
Time

	glucose	insulin	
0	5	2.6	2·5
30	9.4	28.5	18·1
60	9.1	28.8	28·3
90	7.6	30.7	28·6
120	4.5	11.5	10·9



dna health

PATIENT GENOTYPE REPORT - ***STRICTLY CONFIDENTIAL***

PATIENT NAME: D. O'NEILL

SAMPLE ID: HH01000877ZA

DATE OF BIRTH: 13-05-1970

SAMPLE TYPE: BUCCAL SWAB

GENDER: MALE

DATE COLLECTED: 04-06-2012

REFERRING DOCTOR: DR G. PRINSLOO

DATE REPORTED: 20-06-2012

DNALYSIS

PREDICTIVE GENE PROFILING

BACKGROUND TO THE ANALYSIS

DNAlysis received your swab sample and used special molecular techniques to amplify your DNA for further analysis. This process, called the Polymerase Chain Reaction (PCR), copies the DNA of your genes many times over, so that we can generate sufficient quantities to analyse your genetic material. We then identify unique DNA sequences in some of your genes. Certain changes (polymorphisms) in these genes have been studied in detail, and evidence has emerged that correlates these polymorphisms with an individual's risk of developing certain chronic disease conditions or altering metabolic processes. Having identified the presence or absence of these polymorphisms, we are able, qualitatively, to assess particular health risks related to the specific genes. To make a holistic assessment of disease risks, environmental factors (diet and lifestyle) need to be considered in conjunction with the accompanying genetic profile.

REQUESTED ANALYSES

PANEL	*ANALYSED*
Lipid Profile	✓
B Vitamins / methylation	✓
Detoxification	✓
Inflammation	✓
Oxidative Stress	✓
Bone Health	✓
Insulin Resistance	✓

In the following pages you will find a table of your genetic results, and an explanation of these results and associated risk including diet and lifestyle recommendations. Only gene variants that have a beneficial, moderate or high impact on metabolic processes or disease susceptibility have been described in detail, as gene variants that have no impact or a mild impact do not require diet or lifestyle intervention.

N-3 = EPA, DHA, ALA

* Different - in context

Lipid Metabolism

Heart health depends on a complex balance of environmental, dietary and genetic factors. Certain genes influence LDL and HDL cholesterol levels; higher levels of LDL, or 'bad' cholesterol, and lower levels of HDL or 'good' cholesterol, are associated with a higher risk of heart disease.

Summary Results

GENE NAME	GENETIC VARIATION	YOUR RESULTS	GENE IMPACT
LPL	1595 C>G	CC	No impact
CETP	279 G>A	AA	Beneficial
APOA1	-75 G>A	GA	✦
APOC3	3175 C>G	GG	✦✦
APOE	158 Arg>Cys / 112 Cys>Arg	E3/E3	No impact

✦ Low Impact ✦✦ Medium Impact ✦✦✦ High Impact

From the analysis of your genetic profile the following **BENEFICIAL, MEDIUM** or **HIGH IMPACT** gene variants were observed:

CETP : ↑

Cetp plays a key role in the metabolism of high-density lipoproteins (HDL), and mediates the exchange of lipids between lipoproteins, resulting in the eventual uptake of cholesterol by hepatocytes.
The A allele is associated with reduced plasma cetp, increased HDL-C and reduced risk. AA genotypes generally respond poorly to statin therapy. In GA & AA individuals, a diet enriched with ALA and low in cholesterol is effective in decreasing VLDL-cholesterol and LDL-cholesterol.

Alpha-linolenic acid = Ω3

APOC3 ↓ catabolism of chol

APOC3 plays an important role in cholesterol metabolism, where it inhibits lipoprotein lipase and hepatic lipase, therefore delaying catabolism of triglyceride-rich particles.
The G allele is associated with elevated plasma triacylglycerol, cholesterol, and Apo C-III concentrations. Individuals with the G allele have a 4-fold increased risk for hypertriglyceridaemia. The G allele influences dietary responsiveness; where changing from a low-fat diet to a high-MUFA diet, LDL-cholesterol decreases. It is important to shift fat from saturated fat to unsaturated fat, especially MUFA, if the G allele present.

Response to diet: ↓ sat fat → ↑ MUFA

Free radicals damage DNA. Methylation is involved in DNA repair. If this is inadequate → leads to "holes" → ↑ risk of cancer + neuro. dev disease inc

B Vitamins / methylation — Uses B vitamins

B vitamins provide building blocks for growing cells, which are constantly being renewed, and play an important role in many physiological processes. B vitamins also supply some of the chemicals necessary for protecting our genes, so that our DNA doesn't accumulate damage from the wear and tear in the daily lives of our cells. These vitamins – including folate, vitamins B6 and B12 – help make new DNA for cells that are constantly growing and renewing themselves. Folate is also involved in turning many genes on and off, and also helps repair DNA. The process of DNA repair is called methylation. Although B vitamins are only required in small amounts, they are crucial for methylation and in producing new DNA.

Summary Results

* Major enzyme in DNA repair.

GENE NAME	GENETIC VARIATION	YOUR RESULTS	GENE IMPACT
MTHFR	677 C>T	TT	✦✦✦
	1298 A>C	CA	✦
MTR	2756 A>G	AA	No impact
MTRR	66 A>G	AG	✦
CBS	699 C>T	CT	Beneficial

✦ Low Impact ✦✦ Medium Impact ✦✦✦ High Impact

From the analysis of your genetic profile the following **BENEFICIAL, MEDIUM** or **HIGH IMPACT** gene variants were observed:

MTHFR
Mthfr is a key enzyme in DNA methylation and conversion of homocysteine to methionine.
Enzyme activity is decreased by the SNP. Enzyme functions at about 60% of optimal in individuals with the CT genotype, and about 30% of optimal in the TT genotype. A decrease in mthfr enzyme function leads to an increase in homocysteine and a decrease in DNA methylation and thus an increase in DNA adducts. Those with the T allele have greater folate, B6 and B12 requirements. In addition to folate rich foods, these individuals may require a supplement. When dietary intake of B vitamins, especially folate is adequate, the T allele has no effect on homocysteine. *

CBS ↑ methylation
Cystathionine beta synthase catalyses the conversion of homocysteine to cystathione.
The variant T allele is associated with a decreased risk of CAD and increased responsiveness to the homocysteine lowering effects of folic acid.

* Need Folate, B6 + B12, B2 → in everything but in small amounts.
1. Optimize diet
2. Supplement

] Goal for him = 800µg Folate (MTHF) At least prob getting @ 300µg. MultiB (always supplement all together)

Detoxification

The detoxification process in the body is governed primarily by the GST family of enzymes. Glutathione S-tranferases are responsible for catalysing reactions in which the products of Phase I metabolism are conjugated with glutathione, thus making them more water soluble and more easily excreted from the body through sweat and urine. Cruciferous and allium vegetables help increase the activity of your detoxification system, which aids the removal of harmful substances from your body.

Summary Results

Main NB Phase II

GENE NAME	GENETIC VARIATION	YOUR RESULTS	GENE IMPACT
GSTM1	Present/Absent	Absent	✦✦✦
GSTP1	313 A>G	AA	No impact
GSTT1	Present/Absent	Present	No impact

Main I

✦ Low Impact ✦✦ Medium Impact ✦✦✦ High Impact

From the analysis of your genetic profile the following **BENEFICIAL, MEDIUM** or **HIGH IMPACT** gene variants were observed:

GSTM1

Gstm1 is the most biologically active member of the gst super-family and is involved in Phase II detoxification in the liver.

Absence of the enzyme results in reduced hepatic detoxification, which is associated with increased risk for various cancers, chemical sensitivity, atopic asthma and altered lung function. Gst enzyme activities are induced in part by the breakdown products of cruciferous and allium vegetables. These should be increased significantly in the diet to increase activity of other gst enzymes to compensate for a deletion.

(1) What is the intake of carcinogens - nitrates (cold meat) - processed
- cooked / burnt red meat
- pollution
- plastic bottles

(2) What is the intake of cruciferous + allium veg. - induce GST enzyme activity - need both DAILY.

May need a supplement Indol-3-carbinol / I3C / DIM (diindolylmethane)

Component of Indol-3-carbinol

Inflammation

Inflammation is a normal immune response and an essential step in tissue healing. The release of these inflammatory substances is controlled by genes that govern inflammation. However, when these genes are not 'switched off' the inflammatory response continues. An increasing number of common disorders, such as obesity, heart disease, arthritis and inflammatory bowel disease have been associated with chronic low-grade inflammation.

Summary Results

GENE NAME	GENETIC VARIATION	YOUR RESULTS	GENE IMPACT
IL-6	-174 G>C	CC	✦✦✦
TNFA	-308 G>A	AG	✦✦

✦ Low Impact ✦✦ Medium Impact ✦✦✦ High Impact

From the analysis of your genetic profile the following **BENEFICIAL, MEDIUM** or **HIGH IMPACT** gene variants were observed:

IL-6 / small cell-signaling protein

Il-6 is a pro-inflammatory cytokine playing a crucial role in inflammation and tissue injury – low grade inflammation is associated with raised hsCRP levels, obesity and insulin resistance.
Carriers of the C allele have increased circulating levels of il-6 and raised hsCRP compared to GG individuals. The C allele associated with inflammation and increased risk of CVD. A synergistic effect with smoking has been reported, which emphasizes the importance of smoking cessation in those with the C allele. Weight management is also important. *

TNFA

Tumour necrosis factor is a multifunctional pro-inflammatory cytokine, with effects on lipid metabolism, coagulation, insulin resistance and endothelial function.
The A allele results in a two-fold increase in TNFA transcription and subsequent increase in tnfa levels. The A allele shows a greater responsiveness to dietary fat intake, and is associated with increased risk for obesity, adiposity and dyslipidaemia, especially when dietary fat intake is high. It is important to decrease saturated fat and increase n-3 fatty acids, as well as to manage weight.

↓ sat fats ↑ n-3

* IL-6 – weight management
No smoking
↑ N-3 ↓ N-6 ↓ sat fats

n-6 = LA (linoleic acid), GLA, AA (arachidonic acid)
Source: eggs, nuts, cereals, vegetable oils inc. sunflower + evening primrose oil

Oxidative Stress

Free radicals are a normal by-product of the body's energy-generating biochemical processes. They are highly reactive with other molecules, and can damage DNA, proteins and cellular membranes. Anti-oxidants are free radical scavengers that interact with the free radical to ensure it is no longer a reactive molecule. Anti-oxidants are found naturally in the body in the form of enzymes, but can also be consumed in a wide variety of foods, especially vegetables and fruits, as well as green tea and red wine.

Summary Results

GENE NAME	GENETIC VARIATION	YOUR RESULTS	GENE IMPACT
eNOS	894 G>T	TT	✦✦✦
SOD2	16 A>V	CC	✦✦✦
SOD3	760 C>G	CC	No impact

✦ Low Impact ✦✦ Medium Impact ✦✦✦ High Impact

From the analysis of your genetic profile the following **BENEFICIAL, MEDIUM** or **HIGH IMPACT** gene variants were observed:

eNOS – ↓ activity of enzyme ↓ NO availability

Endothelium-derived nitric oxide (NO) plays a key role in the regulation of vascular tone, peripheral resistance.

The T allele effects proteolytic cleavage of the enzyme, reducing nitric oxide bio-availability in the blood vessel wall, thus promoting atherosclerosis, and is associated with increased risk of atherosclerosis, essential hypertension, end-stage renal disease and pre-eclampsia. Carriers of the T allele are associated with a better response to Omega-3 fatty acids ↑ n-3

SOD2

The sod2 enzyme destroys the radicals which are normally produced within cells and which are toxic to biological systems.

There is evidence that people without the variant, and with lower consumption of fruits and vegetables, are at increased risk of developing disease, including the risk of developing certain cancers. It is important for individuals with the CC genotype to ensure a high intake of fruit and vegetables and adequate anti-oxidant intake.

- Ensure adequate intake in diet : berries, small red beans, fruit + veggies (red/purple / dark green), red wine, green tea, oats, dark chocolate
- May need to supplement

Bone Health

Our bones are not a fixed structure. Our cells work continuously to dissolve old bone and create new bone tissue. After the age of 30, both men and women start losing bone mass; the loss is particularly marked in women after menopause. According to latest research both nutrition and genetic factors play an important role in determining bone health.

Summary Results

GENE NAME	GENETIC VARIATION	YOUR RESULTS	GENE IMPACT
VDR	Fok1	CT	✦
	Bsm1	TT	No impact
	Taq1	CC	No impact
COL1A1	1546 G>T	TG	✦✦

✦ Low Impact ✦✦ Medium Impact ✦✦✦ High Impact

From the analysis of your genetic profile the following **BENEFICIAL, MEDIUM** or **HIGH IMPACT** gene variants were observed:

COL1A1

Type 1 Collagen is the major protein of bone, and is formed from 2 collagen alpha 1- and one collagen alpha 2 chains.

Individuals with the T allele show reduced bone strength and reduced inorganic content. Osteoblasts produce an abnormal ratio of collagen alpha I chains relative to collagen alpha I, impairing their ability to form mineralized bone. The T allele influences ratio but not total amount of collagen type I alpha chains produced by bone cells, hence leading to abnormal mineralization. GG individuals respond better to bisphosphonate therapy compared to GT and TT individuals. GT and TT genotypes have an increased risk of fracture and greater bone loss when calcium is low. Women with the TT genotype are at significantly increased risk of excess rates of bone loss at the spine, but this effect may be nullified by the use of HRT.

Ensure adequate daily Calcium : 1g daily - if not getting enough in diet - supplement

Insulin Sensitivity

Insulin is a hormone that stimulates the uptake of glucose from the diet into the blood. Those with lowered sensitivity to insulin have a limited ability to respond to the hormone's action. The scientific literature suggests that insulin insensitivity or resistance may play an important role in some of the most common disorders – including, obesity, type 2 diabetes, high blood pressure, heart disease and disrupted fat metabolism.

Summary Results

GENE NAME	GENETIC VARIATION	YOUR RESULTS	GENE IMPACT
PPAR-γ	Pro12Ala	CC	✦✦✦

✦ Low Impact ✦✦ Medium Impact ✦✦✦ High Impact

From the analysis of your genetic profile the following **BENEFICIAL, MEDIUM** or **HIGH IMPACT** gene variants were observed:

PPARG

PPARG is a transcription factor activated by fatty acids which has a major role in adipogenesis and expression of adipocyte-specific genes.

Pro12Pro (CC) genotype individuals are highly sensitive to the type and amount of fat in their diet, with regards susceptibility to obesity and diabetes. An increase in total dietary fat and saturated fat is associated with greater waist circumference in CC individuals. It is important to manage total dietary fat intake, as well as quality of fat. The CC genotype does not offer the protection seen in those with the G allele, thus all diet and lifestyle variables that impact insulin sensitivity should be addressed.

2/3 of people have CC (modified by other genes)

Important to hold this in context - influences responsiveness to intervention. (whole intervention)

CC = very responsive to diet. / sensitive to lifestyle

⇒ Don't need to ↓ fat, but ↑ quality - ensure adequate MUFA + n-3
↓ n-6

* Would be interesting to analyze your diets looking at FA levels + ratio's.

G allele = beneficial / protective

[all carriers have good fats + bad fats]