



CARBOHYDRATES

GENETIC DATA

GENE	GENO TYPE
KCDT10	GG
MMAB	CG
PLIN1	CC
UCP1	TC
TCF7L2(1)	CT
TCF7L2(2)	GT
TCF7L2(3)	CC
TCF7L2(4)	CC
CEBPA	GG
ABCG4	AA
VLDLR	GG
IGF1R	AG
LPIN(2)	TT
AGER	CA
FTO(4)	CC
GIPR	CC

TYPICAL

OPTIMAL INTAKE

MODERATE

OPTIMAL FIBER

Carbohydrates are frequently praised or villainized in dietary recommendations, but the one aspect that we have identified in the genomic data is that there is no right answer that fits every person.

Carbohydrates are a very individualized component of the diet and using the current scientific literature and our experience with genomics in clinical practice, the relevant and highest impact genes have been identified.

This is especially relevant when it comes to ideal body composition as some people will do better on lower carbohydrate intake while others tend to burn fat in the flame of a carbohydrate.

Be mindful of the fact that much of this response can be modified through epigenetics. Review your past experience and your food preferences with your coach.

INTERPRETATION:

Too many carbs can cause increased abdominal fat and impairs fat metabolism

RECOMMENDATIONS:

Keep carbs below 150g per day



MONOUNSATURATED FATS

GENETIC DATA

GENE	GENO TYPE
ADIPOQ(1)	GG
ADIPOQ(2)	GG
APOA5	AA
BDNF	CC
TNF	GA
FAAH	CA
LPL	TT
IL-1B	GG

MODERATE
MUFA INTAKE

There are currently no strict recommendations on MUFA intake but suggestions range from 12-25% of total calories.

Monounsaturated fatty acids (MUFA) have a long list of studies in the scientific literature supporting the health benefits. Reported health benefits include; decreased inflammation, decreased cancer rates, decreased heart disease, and weight loss.

MUFA is suspected to be the major health benefit of the Mediterranean diet where some traditionally consume as much as 40% of their total calories from olive oil, a major source of MUFA.

MUFA are mainly omega-9 fatty acids but also includes the omega-7 fatty acids. The main sources of MUFA in our diets include; oils, nuts, meats, salmon, and avocado.

MUFA SOURCES:

- Olive oil
- Macadamia nut oil
- Avocado Almonds
- Macadamia nuts
- Beef
- Salmon
- Pumpkin seeds
- Chicken

INTERPRETATION:

Increase MUFA consumption

RECOMMENDATIONS:

Increased MUFA consumption can improve insulin resistance



GRAIN SENSITIVITY

GENETIC DATA

GENE	GENO TYPE
GAD1(1)	GG
GAD1(2)	CT
GAD1(3)	TT
GAD1(4)	GC
GAD1(5)	CC

MODERATE

RISK

HIGH GLUTAMIC ACID SOURCES

- Wheat and Grains
- Soy
- Dairy
- Eggs
- Chicken & Turkey
- Seeds
- MSG

Glutamic acid decarboxylase is an enzyme responsible for the conversion of glutamate into GABA. GAD1 is only present in the brain and helps us to convert the excitatory neurotransmitter, glutamate, into the inhibitory neurotransmitter GABA.

The GAD1 genes relate to the handling of glutamic acid containing foods and the potential for creation of an imbalance between excitatory and inhibitory neurotransmitters in the brain. Certain variations can lead to decreased activity of this enzyme and a tendency toward higher glutamate and lower GABA levels in the brain. This can lead to anxiety, agitation, and difficulty sleeping.

Many grains are high in glutamic acid and frequently people will misinterpret a negative response to grains as a negative response to gluten.

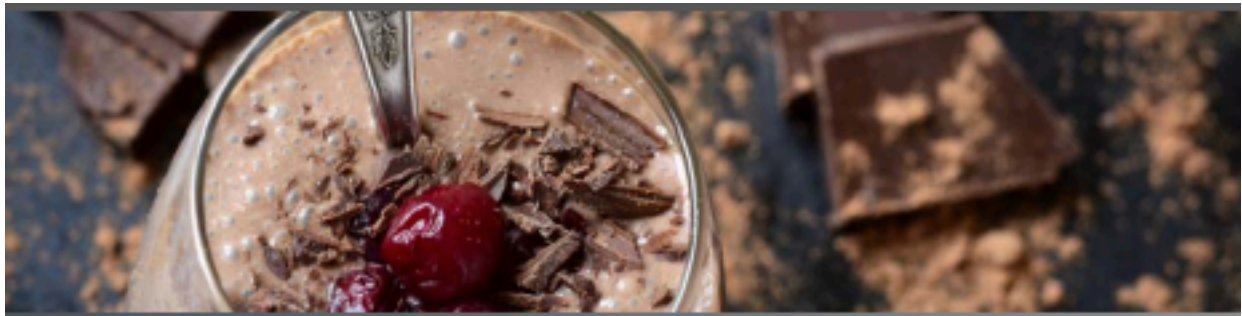
When these variations are significant and the symptoms are expressed, it is important to reduce exposure to glutamic acid and make sure that B6 levels remain healthy since it is required for the enzyme to work optimally

INTERPRETATION:

May have a problem converting GAD to GABA
This can lead to issues with anxiety

RECOMMENDATIONS

How well do you tolerate MSG and grains?
Supplement with magnesium glycinate 400mg
Vitamin B6 10 mg per day



INSULIN RESISTANCE

GENETIC DATA

GENE	GENO TYPE
FABP2	GA
GCKR	GA
LIPC	CC
PPARD	GA
IRS1	CC
VDR FOK1	.
CRY2	AC
FADS1	TC
PROX1	TC
ADCY5	AG
MTNR1B	CG
SLC30A8	CC
TCF7L2	CT
G6PC2	CC
MADD	AT
ADRA2A	GG
GLIS3	CA

MODERATE
RISK

Insulin resistance is a state where the body requires greater and greater amounts of insulin in order to drive down blood sugar levels. It is usually associated with diabetes or the pre-diabetic state.

Studies have demonstrated that some individuals actually possess a greater predisposition towards insulin resistance and this predisposition can be predicted based on genetic variations. Individuals that carry greater risk tend to have higher, though frequently normal, fasting blood sugar levels and insulin levels. These higher fasting blood glucose levels also promote accelerated rates of aging in the body.

Individuals with a greater propensity towards insulin resistance often report greater difficulty losing weight than others that follow similar diets despite aggressive adherence to the diet.

Insulin Resistance Score (IRS)

53%

INTERPRETATION:

41-55% = moderate risk of insulin resistance

RECOMMENDATIONS

Berberine - 500mg up to 3 times per day



PROTEIN

GENETIC DATA

GENE	GENO TYPE
FTO(1)	TT
FTO(2)	TT
LPIN1	GG
BDNF-AS	AA
TFAP2B	AA

LOW

OPTIMAL INTAKE

Consider the biologic value of proteins. The biologic value is a measure of the proportion of absorbed protein from a food which becomes incorporated into the proteins of the body.

Protein is an important macronutrient that provides the amino acid building blocks for structures, enzymes, antibodies, and hormones. There are 20 amino acids that the body uses to create millions of different proteins and of those, ten are considered essential, meaning that we are not able to make them and we must consume them in our diets.

There are many GWAS that look at how our mix of macronutrients can affect our gene expression to create a specific response. Most of these studies have focused on body composition. This means that we can look at certain genetic variations that correlate with an outcome of changing the way certain genes are expressed that relate to obesity, fat storage, and body composition.

Some people will respond better to a diet with a higher percentage of calories from protein, while other do better with a lower percentage. This is a complex network of gene interactions and there are ways to epigenetically shift the expressions of these genes to achieve desired outcomes.

INTERPRETATION:

Benefit from lower protein consumption

RECOMMENDATIONS

Lower protein to .3 x fat free mass