

ADIPOQ
Weight Regain

Adapt

Adapt

Normal

AG

AA

GG

Your Result: Adapt

This is rare at 8% of the population and people have lower levels of adiponectin similar to those that are AA and may more likely be obese. It may be appropriate to follow a diet lower in fat, as recommended by the American Heart Association, have a varied diet and limit high fat foods including fried foods, high fat dairy and animal products. Dieting may be more effective than those with GG because there is lower chance of regaining lost weight.

Comments:

This gene is involved in controlling the break down (metabolism) of fat in your body. With the analysis of this gene, certain individuals may find they have an increased ability to process fat from their diet and others will find they have a decreased ability to metabolize fat, contributing to weight gain.

References: Dhillion, K., Common Polymorphisms in the adiponectin and its receptor genes, adiponectin levels, and risk of prostate cancer, Cancer Epidemiology, Biomarkers, and Prevention, 2011, 20, 2618-1627.

Ogundele et al., Association of adiponectin gene (ADIPOQ) polymorphisms with measures of obesity in Nigerian young adults, The Egyptian J. of Med Hum Genetics, 2018, Vol 19 123–127.

Jie-fu Lu et al, Association of ADIPOQ polymorphisms with obesity risk: A meta-analysis, Human Immunology, October 2014, Vol 75, Issue 10, 1062-1068.

Apalasamy et al, Association of ADIPOQ gene with obesity and adiponectin levels in Malaysian Malays, Mol Biol Rep, 2014 May;41(5):2917-21.

Riestra et al. Gender-specific associations between ADIPOQ gene polymorphisms and adiponectin levels and obesity in the Jackson Heart Study cohort, BMC Medical Genetics, 2015, 16:65.

Wu et al., Association of Adiponectin Gene (ADIPOQ) rs2241766 Polymorphism with Obesity in Adults: A Meta-Analysis. PLoS ONE, 2014, 9(4): e95270.

Wu et al., Association of Adiponectin Gene (ADIPOQ) rs2241766 Polymorphism with Obesity in Adults: A Meta-Analysis. PLoS ONE, 2014, 9(4): e95270.

Riestra et al. Gender-specific associations between ADIPOQ gene polymorphisms and adiponectin levels and obesity in the Jackson Heart Study cohort, BMC Medical Genetics, 2015, 16:65.

Apalasamy et al, Association of ADIPOQ gene with obesity and adiponectin levels in Malaysian Malays, Mol Biol Rep, 2014 May;41(5):2917-21.

Jie-fu Lu et al, Association of ADIPOQ polymorphisms with obesity risk: A meta-analysis, Human Immunology, October 2014, Vol 75, Issue 10, 1062-1068.

Ogundele et al., Association of adiponectin gene (ADIPOQ) polymorphisms with measures of obesity in Nigerian young adults, The Egyptian J. of Med Hum Genetics, 2018, Vol 19 123–127.

Click to hide references

DRD2
Food Reward

Adapt

Normal

Normal

AA

AG

GG

Your Result: Normal

You have a common type found in 40% of the population and your risk of addictive behavior is quite low. Strive to eat a healthy, nutrient dense and balanced diet to meet your needs and goals.

Comments:

Analysis of this gene reveals if you are at a greater risk of reward-seeking, addictive behaviors which can lead to overeating. The gene in question is involved with dopamine, an important chemical found in your brain that plays a role in signaling you to "feel good".

References: Morton, LM, DRD2 genetic variation in relation to smoking and obesity in the prostate, lung, colorectal, and ovarian, cancer screening trial, Pharma Cogenetics Genomics, 2006, 16(12), 901-910.

1) Klein TA, et al., Genetically determined differences in learning from errors, Science. 2007 Dec 7;318(5856):1642-5.

2) David SP, et al., Genetic variation in the dopamine pathway and smoking cessation, Pharmacogenomics. 2008 Sep;9(9):1307-21

3) Tsou CC, DRD2 and ANKK1 genes associate with late-onset heroin dependence in men, World J Biol Psychiatry. 2017 Sep 25:1-11.

4) Katsarou MS et al., Effect of single-nucleotide polymorphisms in ADH1B, ADH4, ADH1C, OPRM1, DRD2, BDNF, and ALDH2 genes on alcohol dependence in a Caucasian population, Pharmacol Res Perspect. 2017 Aug;5(4)

Click to hide references

FTO

Feeling Full

Adapt

Adapt

Normal

AT

AA

TT

Your Result: Adapt

This is a rare genetic variant that is found in approximately 20% of the population. This gene's function is not completely understood but one role it has is it regulates genes that control appetite. Studies with people of differing weights and body mass index (BMI) have shown that people with this variant usually have a greater appetite than those with AT or TT and therefore may have a tendency to gain weight. It is important build strategies around meals and snacks to be mindful and intuitive to your hunger and satiety cues. It will be important to try to eat meals at a slower pace, chewing completely and putting down your fork between bites to allow time for satiation to be cued. If you struggle with weight and satiation, you may need a Registered Dietitian Nutritionist to make a meal plan as a guidance for meal size and frequency based on your personal needs.

Comments:

This gene is associated with fat mass and obesity due to its role in controlling appetite. Scientists have done studies that showed a strong correlation with variants of this gene and the incidence of obesity. The gene has a role in the feeling of "fullness" or satiety, or lack thereof when eating.

References: Hakanen M, Raitakari OT, Lehtimäki T, Pellonen N, Pakkala K, Sillanmäki L, Lagström H, Viikari J, Simell O, Rönkämaa T, "FTO genotype is associated with body mass index after the age of seven years but not with energy intake or leisure time physical activity." The Journal of Clinical Endocrinology and Metabolism 2009 Apr;94(4):1281-7.

1)Hagg S, et al., Gene-based meta-analysis of genome-wide association studies implicates new loci involved in obesity, Hum Mol Genet. 2015 Dec 1;24(23):6849-60.

2) Fall T, et al., Recent Advances in Human Genetics and Epigenetics of Adiposity: Pathway to Precision Medicine? Gastroenterology. 2017 May;152(7):1695-1706. doi: 10.1053/j.gastro.2017.01.054. Epub 2017 Feb 15.

Wardle J, Carnell S, Haworth CM, Farooqi IS, O'Rahilly S, Plomin R, "Obesity associated genetic variation in FTO is associated with diminished satiety." The Journal of Clinical Endocrinology and Metabolism 2008 Sep;93(9):3640-3.

LEPR

Appetite

Adapt

Normal

Normal

GG

AG

AA

Your Result: Normal

You have a common variant found in 43% of the population. With this type, you are less likely to become obese. It is important to include regular exercise to stay healthy and decrease risk of disease with a nutrient dense and varied diet.

Comments:

Analysis of the LEPR gene can reveal an individual's risk of obesity. The metabolic rate of an individual is a major determinant of weight gain and loss. With a high metabolic rate, you will likely burn more calories for the same activity as others and therefore more likely to have a lower average weight. With a low metabolic rate, you are more likely to gain weight with the same levels of activity and calories as someone with a higher metabolic rate. This genetic analysis will give you insight into your metabolic rate.

MC4R

Obesity

Adapt

Adapt

Normal

CT

CC

TT

Your Result: Normal

The TT type is found in 55% of the population and is not associated with a tendency to gain weight and have a higher BMI. It is still recommended to eat a balanced diet and regularly exercise to lead a healthy lifestyle and decrease risk of chronic diseases.

Comments:

Analysis of this gene can reveal if an individual is likely to have increased waist size, increased BMI (body mass index), and a higher incidence of insulin resistance. Mutations in this gene have been found to have the strongest association with childhood and adult obesity.

NMB

Hunger

Adapt

Normal

Normal



TT

GT

GG

Your Result: Normal

You are with the majority of the population (58%) who have this variant. The signals for fullness are normal and you don't have a tendency for overeating with GG. It is recommended that you continue to eat a healthy, nutrient dense and balanced diet to meet your needs and goals to maintain a healthy weight and decrease risk of chronic disease.

Comments:

Analysis of the NMB gene will reveal if an individual has the ability to receive the appropriate signals of "fullness" to indicate to stop eating (and therefore has a role in regaining weight over time). Studies have found that variants determine how soon you get full during eating.

SLC2A2

Sweet Tooth

Adapt

Adapt

Normal



AG

AA

GG

Your Result: Normal

The majority of the population (70%) have GG and are likely to have a normal sugar consumption and less craving to eat sweet foods.

Comments:

This gene is believed to explain sugar cravings and why some people crave sugar more than others. Some individuals may find that their high sugar consumption (which may lead to obesity) can be explained by analysis of this gene. Knowledge of this gene variation can place emphasis on the need to create a nutrient dense meal plan and healthy lifestyle, while limiting sugar choices and availability in the diet. The main sources of added sugar include soft drinks, sports drinks, energy drinks, juice drinks, candy, cakes, cookies, crackers, cereals, desserts, condiments, syrups, dressings, and sauces.