GX perform Personal Report

Prepared for: **John Smith**

genetic DIRECTION

REPORT SUMMARY

MENTAL & PHYSICAL FOUNDATION

Intrinsic Motivation to Exercise	Less Likely	BDNF
Addictive Behavior / Stimulus Control	More Likely	DRD2/ANNK1
Power / Endurance Potential	Higher Endurance	ACTN3, AGT, IL-6, NOS3, ACE, FTO, IGF1, GNB3, IL6-174
Grip Strength / Muscular Fitness	Normal	TGFA, POLD3, ERP27, HOXB3, GLIS1, PEX14, LRPPRC, MGMT, SYT1, HLA, GBF1, KANSL1, SLC8A1, ACTG1, DEC1, IGFS9B
Testosterone Levels	Average	SHBGE7

TRAINING RESPONSE

VO2 Max	Normal	AMPD1, APOE
Exercise Heart Rate Response	Slightly Above Average	CREB1
Exercise Stroke Volume	Normal	KIF5B
Body Composition Response to Strength Training	Enhanced	NRXN3, GNPDA2, LRRN6C, PRKD1, GPRC5B, SLC39A8, FTO, FLJ35779, MAP2K5, QPCTL-GIPR, NEGR1, LRP1B, MTCH2, MTIF3, RPL27A, SEC16B, FAIM2, FANCL, ETV5, TFAP2B

FUEL UTILIZATION

Protein Utilization	Enhanced	FTOF
Fat Utilization	Low	PPARG, TCF7L2, APOA5, CRY2, MTNR1B, PPM1K
Carb Utilization	Normal	IRS1
Caffeine Metabolism	Slow	AHR, RP11-10017.3-001, ARID3B, CYP1A1

RECOVERY & INJURY RISK

Systemic Inflammation	Above Average	CRP, APOC1 (APOE-CI-CII), HNF1A
Injury Risk	Normal	SPTBN1, MEPE, SLC25A13, MBL2/DKK1, LRP5, C18orf19

MENTAL AND PHYSICAL FOUNDATION

GRIP STRENGTH / MUSCULAR FITNESS

WHAT YOUR GENES SAY ABOUT YOU:

Our analysis indicates that your genetic profile exhibits characteristics that make you likely to have NORMAL hand grip/intrinsic muscular strength. You are genetically predisposed to perform in the average range on tests of grip strength as well as tests of general muscular strength and endurance. Though grip strength is not likely to be a limiter for you, you may still want to work on maximizing your grip strength, especially if you participate in racquet and ball sports and/or strength training, where grip strength is often people's weakest link. Because grip strength is indicative of intrinsic muscular strength and muscular endurance, total body strength training will also be helpful to maximize your overall strength.

Your genetic profile indicates that you are likely to have NORMAL hand grip/intrinsic muscular strength.

That means you are genetically likely to perform in the average range in tests of hand grip strength, as well as tests of general muscular strength and endurance, such as sit ups, push ups and lower body exercises like squats and leg presses.

RELATED GENES / SNPs

TGFA, POLD3, ERP27, HOXB3, GLIS1, PEX14, LRPPRC, MGMT, SYT1, HLA, GBF1, KANSL1, SLC8A1, ACTG1, DEC1, IGFS9B

The genes and associated SNPs included in this category have been shown to have significant associations with a person's grip strength, which in turn may help determine how successful you will be in activities requiring muscular strength and muscular endurance.

Hand-grip strength is not just about a firm handshake. It reveals a lot about your intrinsic muscular strength and fitness and may, when weak, also indicate an increased risk in fractures. So it's important not only for successful performance in many activities such as racquet and ball sports, resistance training, and off-road cycling, but also for general vitality and health.

Research has found that hand-grip strength is strongly correlated to muscular strength and endurance. In one study, significant correlations were found between grip

SUCCESS STRATEGIES

Being genetically inclined to have average grip and intrinsic muscular strength may put you at a slight disadvantage in sports where grip strength is a priority. It may also limit your ability to maximize your muscular gains in the gym, since hand grip is often the first thing to give out when lifting heavy.

It's also important to note that everyone, regardless of genetic make up, has weaker hand grip strength than they used to. Your grip strength is partly determined by activity and lifestyle. People performing lots of manual labor will have stronger hands. Grip strength—along with the rise in technology and decline in manual labor—has also been in decline among younger Americans, according to research. One 2016 study of 237 men and women ages 20 to 34 published in the Journal of Hand Therapy found that men 25 to 29 years of age had grip strengths of 101 and 99 pounds of force (right and left hands

GRIP STRENGTH / MUSCULAR FITNESS

strength and performance in tests of muscular strength and endurance respectively) today, a loss of 26 and 19 pounds from 30 years ago. Young women lost roughly 10 pounds of force over the same time period.

Grip strength naturally declines as we get older, especially after age 55, so exercising to maintain it can help make resistance training and tasks of daily living easier. You can improve your grip strength while you watch TV by simply squeezing a tennis ball. squeeze in as hard as you can for 15 to 20 seconds. Rest for 10 seconds. Repeat 8 to 10 times. In the gym, incorporate the farmer's carry move into your routine. Grab a pair of heavy kettlebells (or dumbbells if there are no kettlebells available) and grasp them firmly as you walk for 30 feet, taking short quick strides. Put them down and rest. Repeat 3 times. Use the heaviest weight you can carry.

Other grip strengthening moves include deadlifts, rows, pull ups, Olympic style lifts like cleans and snatches, and front squats—all of which not only improve your grip strength, but also are excellent for maximizing total body strength, which is also helpful for your particular genotype.

including sit ups, push ups, leg extension, and leg press.

Grip strength is also highly heritable. A large-scale genome-wide association study including a combined sample of 195,180 men and women identified 16 SNPs associated with grip strength. A number of these are also associated with genes that are implicated in the structure and function of muscle fibers, which helps explain why grip strength is a good indicator of intrinsic overall muscular strength. The study also confirmed that these genetic determinants of muscle strength were linked to fracture risk, likely because low muscle strength increases risk of falling.

Our analysis investigated which genotype for these genes was present in your DNA. Your rating of BELOW AVERAGE, NORMAL, or ABOVE AVERAGE reflects whether your genotypes included those that carried the likelihood of having below average grip/intrinsic muscular strength, average intrinsic grip/muscular strength, or below average intrinsic grip/muscular strength.

Mental & Physical Foundation Section Also Includes…

MENTAL AND PHYSICAL FOUNDATION

INTRINSIC MOTIVATION TO EXERCISE

MENTAL AND PHYSICAL FOUNDATION

ADDICTIVE BEHAVIOR / STIMULUS CONTROL

MENTAL AND PHYSICAL FOUNDATION

POWER / ENDURANCE POTENTIAL

MENTAL AND PHYSICAL FOUNDATION

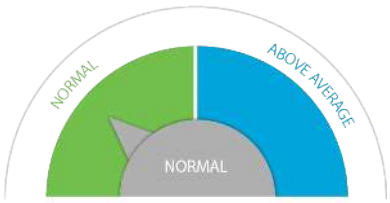
Testosterone Levels

TRAINING RESPONSE

EXERCISE STROKE VOLUME

WHAT YOUR GENES SAY ABOUT YOU:

Our analysis indicates that your genetic profile exhibits characteristics that make you likely to have a NORMAL stroke volume response to exercise. That means you are likely to experience a typical increase in stroke volume in response to exercise training.



Your genetic profile indicates that you are likely to experience an NORMAL stroke volume response to exercise training.

A greater stroke volume response is advantageous as you can pump out more blood at a lower heart rate. However, stroke volume response is only one factor in exercise performance and success.

Untrained people have a stroke volume of about 50 to 70 ml/beat at rest, which increases to 110 to 130 ml/beat during high intensity efforts. Exercise makes your heart muscle bigger and stronger, so you have a greater stroke volume. The resting stroke volume in elite athletes averages 90 to 110 ml/beat (which is why their resting heart rate is also so low), which increases to as much as 150 to 220 ml/beat during high intensity exercise, according to research.

Your stroke volume response is also sport dependent. Swimmers generally see a smaller increase in stroke volume response than runners or cyclists; exercising heart rate is typically lower during swimming as well, because the supine position prevents blood from pooling in the lower extremities and there's less need for increased heart rate and stroke volume to meet the body's needs.

RELATED GENES / SNPs

KIF5B

There are two ways for your heart to get more oxygen-rich blood to your exercising muscles: pump faster (heart rate response) and pump out a greater volume of blood with every beat. The latter is your stroke volume response, the amount of blood ejected per beat from your left ventricle, as measured in ml/beat.

Stroke volume increases as your exercise intensity rises. How much your stroke volume improves with exercise is also largely hereditary. The HERITAGE Family Study of 483 men and women from 99 nuclear families found that after 20 weeks of endurance training, the average increase in stroke volume during steady state aerobic exercise (60% of VO2 Max) was 3.9 ml/beat. But there was a large range of stroke volume response among individuals, ranging from a decrease of 41 ml/beat to an increase of 45 ml/beat. Variations in

TRAINING RESPONSE

EXERCISE STROKE VOLUME

Increasing stroke volume is believed to be more efficient than increasing heart rate during exercise, as you can do more work at a lower heart rate with a higher stroke volume. That said, once you reach a certain intensity, your stroke volume plateaus and your heart rate increases to meet your increasing exercise demands.

Your genetic tendency to have an average stroke volume response to exercise training does not mean you cannot perform at a high level or successfully compete against someone with a larger stroke volume response, though you may need to work harder at a given heart rate.

You can minimize any disadvantages by training your sport-specific skills; developing muscular power and efficiency and other fitness elements not solely dependent on cardiovascular efficiency. It's also important that you maintain optimum hydration status, as dehydration diminishes blood volume, which can exacerbate the impact of a genetically lower stroke volume.

the KIF5B SNP were strongly associated with stroke volume response to exercise, explaining nearly 30 percent of the variance.

Our analysis investigated which genotype for this gene was present in your DNA. Your rating of NORMAL or ABOVE AVERAGE reflects whether your genotype included those that make you likely to have an average or above average stroke volume response to regular exercise training.

Training Response Section Also Includes…

TRAINING RESPONSE

VO2 MAX

TRAINING RESPONSE

EXERCISE HEART RATE RESPONSE

TRAINING RESPONSE

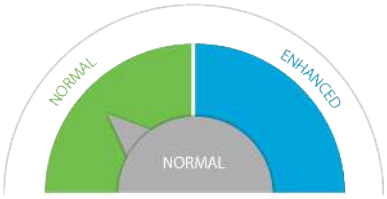
BODY COMPOSITION RESPONSE TO STRENGTH TRAINING

FUEL UTILIZATION

CARB UTILIZATION

WHAT YOUR GENES SAY ABOUT YOU:

Our analysis indicates that your genetic profile exhibits a NORMAL utilization of complex carbohydrates. Your score reflects the fact that your genotype does not appear to produce greater weight loss with a higher complex carbohydrate diet, and you can expect to lose around the same amount of weight with either a low, moderate or higher complex carb diet. Weight maintenance and loss aside, you still need adequate carbohydrate intake to fuel the sports and activities you perform. Complex carbs provide the most nutrients, fiber and, long-lasting energy during exercise.



Your genetic profile indicates that your utilization of carbohydrates is NORMAL

A high carbohydrate diet may not be beneficial if your goal is to lose and/or maintain weight. You still need adequate carbohydrate intake to fuel your activities, however. Prioritize complex carbohydrates, which provide the most nutrients, fiber, and lasting energy.

As an athlete, you use stored glucose—glycogen—to fuel your activity, particularly high intensity activity. Your body relies on glucose for daily living, as well, and this is why blood sugar levels are maintained within a consistent range. In fact, brain cells and red blood cells use glucose as their primary source of energy. Cells also use fat as a fuel source, but to metabolize fat, there must be some glucose present to complete the process.

Glucose is a very important nutrient. But sometimes cells do not respond to the insulin being released, a condition known as insulin resistance. The result is the bloodstream can be overloaded with glucose. Chronic high blood glucose levels can lead to pre-diabetes and, if unchecked, eventually diabetes, or uncontrolled high blood sugar. People who are overweight and/or physically inactive are at higher risk of insulin resistance. Athletes, however, are not immune to insulin resistance: one study on amateur athletes found that 3 out of 10 had fasting blood glucose in the pre-diabetes range.

RELATED GENES / SNPs

IRS1

The gene and associated SNP included in this category has been shown to be associated with a person's insulin sensitivity and the potential effects of the amount of carbohydrates and fat in the diet. Insulin is a hormone released by the body that helps cells take in glucose, or sugar, for energy. Glucose is present in the blood after the digestion of carbohydrates from foods like fruits, vegetables, legumes and grains. Insulin is also released in response to eating protein as it helps to shuttle amino acids into cells.

The gene in this category seems to influence insulin resistance and the body's response to carbs in the diet. One long-term study found that people with a variant of this gene who ate a high carbohydrate, lower fat diet that consisted of high fiber, whole plant foods, as opposed to processed, lower fiber carbs, had greater insulin sensitivity —and lower levels of insulin and insulin resistance—and experienced greater

FUEL UTILIZATION

CARB UTILIZATION

Since carbohydrate intake triggers insulin release, many people, including athletes and recreationally active men and women, assume that eating more carbs is not healthy and can lead to body fat and weight gain, as well as diabetes. Athletes in sports like CrossFit include a large low-carb diet (such as Paleo) contingency. But the relationship is not that simple: many people who eat a high carbohydrate diet perform well, are not overweight, and do not have diabetes, and, in fact, may have much lower levels of blood glucose. Several large epidemiological studies have shown that increased carb intake actually leads to a lower risk of diabetes and that, surprisingly, increased protein intake, increases the diabetes risk.

The types of carbs you eat play a role: Complex carbohydrates or starches are those that are made up of sugar molecules that are strung together in long, complex chains, as opposed to simple carbs, which are simple sugars like fructose and glucose. Complex carbs take longer for your body to digest, so have less of a "spike" effect on blood glucose levels. Sources include: whole grains like brown rice, quinoa, oatmeal, barley, bulgur, and buckwheat, vegetables, fruits, and legumes. If you eat mostly processed carbs (as opposed to fiber-rich complex carbs), you are likely to release greater amounts of insulin and this could affect your insulin resistance.

weight loss compared to eating a lower carb, higher fat diet. This is especially important as an active person, as maintaining healthy insulin sensitivity allows you to store the carbohydrates you eat for energy as well as to promote recovery after exercise and training.

Our analysis of your genes investigated which genotype for this gene was present in your DNA. Your rating of either NORMAL or ENHANCED reflects whether your genotype included those genes that improved insulin sensitivity and weight loss from a higher carb and slightly lower fat diet.

SUCCESS STRATEGIES

For weight loss, your genotype suggests that a high carbohydrate diet is not necessarily beneficial. Though there are no universally accepted definitions, high carb diets generally include greater than 60 percent of total calories from carbohydrates, and low carb diets generally include less than 30 percent of total calories from carbohydrates. Review your results from the other macronutrient genetic traits for more guidance on the weight/fat loss diet composition that might work best for you.

Performance-wise, your genotype does not suggest improved insulin sensitivity with high-carb intake. That does not mean you should eschew carbohydrates all together, however. But rather follow the carbohydrate intake recommendations found in current American College of Sports Medicine position statement on nutrition and athletic performance: reserve your higher carbohydrate intake for hard training days, races, and competitions. On easy or rest days, lean toward low carbohydrate intake.

Eat the majority of your carbohydrates from complex carbohydrate sources, which are highest in fiber, nutrients, and are best for your general health. Save simple carbohydrates like refined bread, pasta, sweets, and gels for when you need quick bursts of energy, such as right before a race or during prolonged activity, when you need fuel that is quickly absorbed. During such activity, you can aim for about 30 to 60 grams (120 to 240 calories) of carbohydrates per hour after the first hour to 90 minutes of activity.

Fuel Utilization Section Also Includes…

FUEL UTILIZATION

PROTEIN UTILIZATION

FUEL UTILIZATION

FAT UTILIZATION

FUEL UTILIZATION

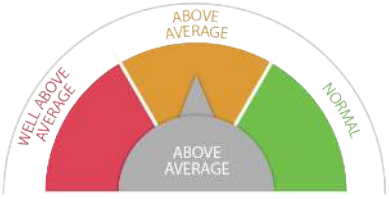
CAFFEINE METABOLISM

RECOVERY & INJURY RISK

SYSTEMIC INFLAMMATION

WHAT YOUR GENES SAY ABOUT YOU:

Our analysis indicates that your genetic profile exhibits characteristics that give you a likelihood of having ABOVE AVERAGE systemic inflammation levels. That means your CRP levels are likely to fall in a slightly elevated range. Persistently elevated systemic inflammation can lead to age-related chronic diseases like diabetes and heart disease so it's important to keep inflammation in check. The good news is that genes are only one factor that influences CRP levels. Healthy diet and lifestyle behaviors, including regular exercise, can help significantly reduce inflammation.



Your genetic profile indicates that you are inclined to have ABOVE AVERAGE systemic inflammation levels.

You can lower your CRP levels and avoid inflammation-related chronic diseases by practicing healthy diet, exercise, and lifestyle behaviors.

SUCCESS STRATEGIES

Normal CRP levels vary from laboratory to laboratory, but generally there are no or very low levels of CRP detectable in the blood. According to the American Heart Association, you are at a low risk for developing heart disease if your CRP levels are less than 1.0 mg/L; your risk is considered average if your levels are between 1.0 mg/L and 3.0 mg/L, and your risk is high if your levels are higher than 3.0mg/L.

According to data from the Physicians Health Study of nearly 15,000 healthy adult men, a high level of CRP was associated with a heart attack risk three times higher than average.

Since your screening results indicate that you're genetically inclined to have slightly elevated systemic inflammation, ask your doctor about having your CRP levels screened along with your cholesterol, triglycerides and other blood markers. A high-sensitivity C-reactive protein (hs-CRP) test is more sensitive than the standard test and also can be used to evaluate your risk for developing coronary artery disease.

RELATED GENES / SNPs

CRP, APOC1 (APOE-CI-CII), HNF1A

The genes and their associated SNPs that are included in this category have been shown to have significant associations with a person's systemic inflammation levels. That's low-level inflammation we don't see, which left unchecked, can damage our blood vessels and lead to many serious chronic diseases like heart disease, diabetes, stroke, neurodegenerative diseases like Alzheimer's, and some cancers. Chronic inflammation also hinders recovery from exercise and training and harms performance.

Doctors use C-reactive protein (CRP) levels as a general marker of systemic inflammation. CRP is a protein found in your blood plasma that binds to the surface of dead or dying cells and certain bacteria to clear them from your body. When there's a lot of cellular damage to clean up, CRP levels rise. Unsurprisingly, high CRP levels have been linked to a higher risk of mortality.

RECOVERY & INJURY RISK

SYSTEMIC INFLAMMATION

Along with getting screened, practice "anti-inflammatory" lifestyle behaviors including:

Achieve and/or maintain a healthy weight. As an active person, you are more likely to achieve and maintain a healthy body weight. As someone with a genetic inclination for higher than average systemic inflammation, you want to make it a priority to achieve a healthy weight if you have pounds to lose. Body mass index (BMI), which is a measure of body fat based on height and weight, is the main non-genetic determining factor for CRP levels. Carrying excess fat, particularly around the midsection where it is most metabolically active, is known to induce chronic low-grade inflammation. It also can switch on your at-risk genes that are associated with systemic inflammation. Maintaining a healthy weight is one of the best ways to keep systemic inflammation in check. If you're overweight, even modest weight loss can have a significant positive impact on CRP levels. In one study, overweight post-menopausal women who lost at least 5 percent of their body weight had measurable reductions in CRP levels. Those who lost weight by dieting and exercising were able to reduce their CRP levels by more than 41 percent in a year.

Get at least 2 ½ hours of exercise a week. Good news for you as an active person: exercise is a powerful anti-inflammatory for your body. Research finds that getting at least 2 ½ hours of moderate exercise a week helps lower CRP levels. In a 10-year study of nearly 4,300 men and women, those who met those exercise requirements had significantly lower CRP levels than those who didn't, and people who started exercising during the study to meet those levels had lower inflammation levels by the end. Other studies show that regular exercise can reduce inflammation by up to 60 percent.

Follow a training plan that includes adequate recovery. It's important to note that, though moderate exercise lowers inflammation, exercise of any higher intensity will cause some degree of inflammation. A long, hard and/or intense training session is a form of stress that initiates an inflammatory response, which is part of the adaptation process that generates muscle and makes you stronger and fitter as your body rebuilds. If you constantly

There are many culprits behind systemic inflammation, including autoimmune diseases, being overweight (especially if you carry your excess fat in your abdomen, where it is most metabolically active), poor fitness, a diet that is high in sugar and other inflammatory foods, sleep deprivation, as well as exposure to secondhand smoke and other pollutants.

CRP is also significantly influenced by genetics. Researchers estimate that the heritability of CRP levels is up to 40 percent. In a recent genome wide association analysis of more than 82,700 men and women, scientists identified a half a dozen genetic variations that were significantly associated with CRP levels. When they ranked the study participants according to their at-risk CRP genetic makeup, those in the highest gene score group had an average CRP level that was more than double the average level of those in the lowest gene score group.

Our analysis investigated which genotype for this gene was present in your DNA. Your rating of NORMAL, ABOVE AVERAGE or WELL ABOVE AVERAGE reflect whether or not your genotype include those that increase your risk for elevated systemic inflammation levels.

SYSTEMIC INFLAMMATION

train hard without adequate rest, such as doing high intensity CrossFit workouts every single day or training for long endurance events like marathons, ultras, and long distance triathlons, you may be setting the stage for chronic inflammation. Also, research suggests that sporadic intense exercising, such as being a "weekend warrior", can increase inflammation and weaken immunity, rather than bolster it. Aim to follow healthy, consistent training practices that include a mix of high intensity training days interspersed with adequate recovery days. Avoid slogging through workouts when you're feeling fatigued.

Follow a Mediterranean-style diet. Studies show that eating a Mediterranean-style diet, which is naturally high in monounsaturated fats as well as polyunsaturated omega-3 fatty acids, may help reduce systemic inflammation. Build your diet around fruits, vegetables, whole grains, seeds and nuts. Eat fatty fish at least twice a week. Choose lean protein foods, minimizing your intake of red meat.

Sugary foods, refined foods, and foods that are made with white flour create inflammation in the body. Limit your intake of processed foods, sweets and other low-fiber snack foods like chips and crackers, which tend to be high on the glycemic index, spike blood sugar levels quickly and lead to inflammation. One study found that overweight adults who stuck to a low-glycemic food diet were able to lower their CRP levels by 48 percent over a two-year period.

If you drink, do so in moderation. Too much is bad for you, but research shows that moderate amounts, such as a drink a day lowers your CRP levels more than totally abstaining. It's not a reason to start drinking, of course. But good news for those who enjoy alcohol in moderation.

Recovery & Injury Risk Section Also Includes…

RECOVERY & INJURY RISK

INJURY RISK

LINKS TO RELATED STUDIES:

INTRINSIC MOTIVATION TO EXERCISE

J Behav Med. 2014 Dec;37(6):1180-92. doi: 10.1007/s10865-014-9567-4. Epub 2014 May 8.

What keeps a body moving? The brain-derived neurotrophic factor val66met polymorphism and intrinsic motivation to exercise in humans.

https://www.ncbi.nlm.nih.gov/pubmed/?term=24805993

Caldwell Hooper AE, Bryan AD, Hagger MS.

ADDICTIVE BEHAVIOR / STIMULUS CONTROL

Transl Psychiatry. 2015 Dec 1;5:e686. doi: 10.1038/tp.2015.176.

The significant association of Taq1A genotypes in DRD2/ANKK1 with smoking cessation in a large-scale meta-analysis of Caucasian populations

https://www.ncbi.nlm.nih.gov/pubmed/?term=26624925

Ma Y, Wang M, Yuan W, Su K, Li MD

POWER / ENDURANCE POTENTIAL

J Sci Med Sport. 2018 Feb;21(2):213-220. doi: 10.1016/j.jsams.2017.06.012. Epub 2017 Jun 21.

Nine genetic polymorphisms associated with power athlete status - A Meta-Analysis.

https://www.ncbi.nlm.nih.gov/pubmed/?term=28666769

Weyerstraß J, Stewart K, Wesselius A, Zeegers M.

GRIP STRENGTH / MUSCULAR FITNESS

Article number: 16015 (2017) doi:10.1038/ncomms16015

Large-scale GWAS identifies multiple loci for hand grip strength providing biological insights into muscular fitness

https://www.nature.com/articles/ncomms16015

Sara M. Willems, Daniel J. Wright, Robert A. Scott

TESTOSTERONE LEVELS

PLoS Genet. 2011 Oct;7(10):e1002313. doi: 10.1371/journal.pgen.1002313. Epub 2011 Oct 6.

Genetic determinants of serum testosterone concentrations in men.

https://www.ncbi.nlm.nih.gov/pubmed/?term=21998597

Ohlsson C, Wallaschofski H, Lunetta KL, Stolk L, Perry JR, Koster A, Petersen AK, Eriksson J, Lehtimäki T, Huhtaniemi IT, Hammond GL, Maggio M, Coviello AD; EMAS Study Group, Ferrucci L, Heier M, Hofman A, Holliday KL, Jansson JO, Kähönen M, Karasik D, Karlsson MK, Kiel DP, Liu Y, Ljunggren O, Lorentzon M, Lyytikäinen LP, Meitinger T, Mellström D, Melzer D, Miljkovic I, Nauck M, Nilsson M, Penninx B, Pye SR, Vasan RS, Reincke M, Rivadeneira F, Tajar A, Teumer A, Uitterlinden AG, Ulloor J, Viikari J, Völker U, Völzke H, Wichmann HE, Wu TS, Zhuang WV, Ziv E, Wu FC, Raitakari O, Eriksson A, Bidlingmaier M, Harris TB, Murray A, de Jong FH, Murabito JM, Bhasin S, Vandenput L, Haring R.