UGENOME

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# Fertility

## Summary Report

REPORT CATEGORY

REPRODUCTIVE HEALTH

## Sample Client

Report date: 22 May 2026

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## Personal information

NAME

**Sample Client**

SEX AT BIRTH

**Male**

HEIGHT

**5ft 10"** 178cm

WEIGHT

**215lb** 97.5kg

DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.

Viewing this medical test requires a medical doctor or use one of our contracted genetic counselors. By accessing these results, you acknowledge and agree that you will consult with a licensed physician or one of our contracted genetic counselors to review and interpret the results, and you agree not to rely on this information as a substitute for professional medical advice, diagnosis, or treatment.


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# Summary

Male reproductive health is influenced by a combination of genetic, hormonal, and environmental factors. Genetics plays a significant role in determining fertility and the balance of reproductive hormones, both of which are crucial for reproductive function.

This report examines the genetic markers associated with fertility and reproductive hormones. By understanding your genetic predispositions, you can take proactive measures to address potential fertility concerns and manage hormone levels, ensuring optimal reproductive function and overall health.

## This summary report contains:

# Overview of Your Results

## Fertility

TYPICAL
### Sperm Motility
Predisposed to typical sperm motility

TYPICAL LIKELIHOOD
### Low Sperm Count
Typical likelihood of low sperm count

LESS LIKELY
### Male Infertility
Less likely to have male infertility

LESS LIKELY
### Testicular Cancer
Less likely to have testicular cancer

## Reproductive Hormones

LOWER LEVELS
### Luteinizing Hormone (LH)
Predisposed to lower LH levels

TYPICAL LEVELS
### Estradiol (M)
Predisposed to typical estradiol levels

TYPICAL LEVELS
### Bioavailable Testosterone
Predisposed to typical bioavailable testosterone levels

TYPICAL LEVELS
### DHT
Predisposed to typical DHT levels

TYPICAL LEVELS
### Progesterone
Predisposed to typical progesterone levels

TYPICAL LEVELS
### FSH
Predisposed to typical FSH levels

HIGHER LEVELS
### SHBG
Predisposed to higher SHBG levels

HIGHER LEVELS
### Testosterone
Predisposed to higher testosterone levels

LOWER LEVELS
### Prolactin
Predisposed to lower prolactin levels

# Fertility Genes

BALANCED ACTIVITY

## ESR1 (Estrogen)

Likely balanced ESR1 activity

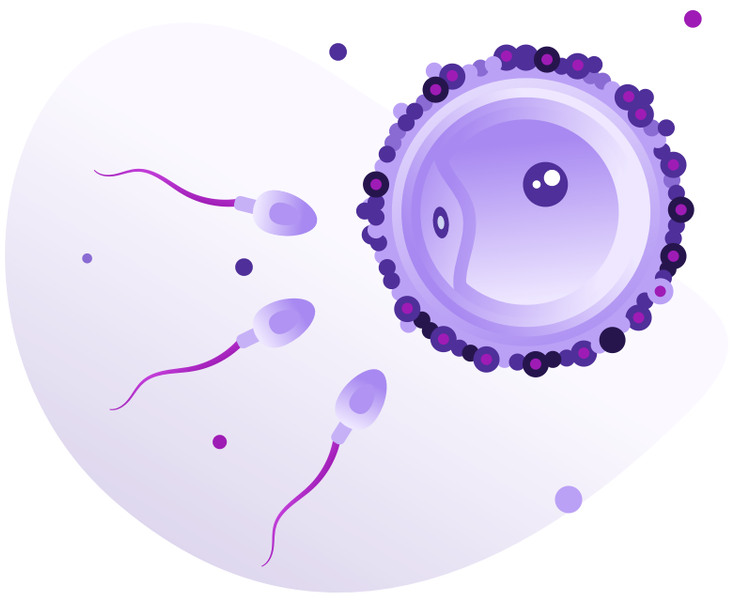
# Recommendations Overview

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You'll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

| | | DOSAGE |
|---|---|---|
| 1 | Maintain a Healthy Weight | 30 minutes |
| 2 | Zinc | 10 mg |
| 3 | Avoid PAHs Exposure | |
| 4 | Sleep for 7+ Hours | |
| 5 | Aerobic Exercise (Cardio) | 1 hour |
| 6 | Tongkat Ali | 200 mg |
| 7 | Avoid Opioid Drugs | |
| 8 | Ashwagandha | 120 mg |
| 9 | Mucuna Pruriens | 300 mg |
| 10 | L-Carnitine | 500 mg |
| 11 | Avoid Dioxin | |
| 12 | Flower Pollen Extract and Black Seed (Black Cumin) | 1000 mg |
| 13 | Black Seed (Black Cumin) | 1000 mg |
| 14 | Tribulus | 250 mg |
| 15 | Maintain Optimal Vitamin D Levels | 1000 iu |

# Your Results in Details



## Fertility

Fertility issues, including male infertility, low sperm count, and poor sperm motility, can have a significant impact on reproductive health. This section focuses on genetic predispositions that may affect sperm production and quality.

By understanding your genetic risks, you can seek early intervention, explore fertility treatments, and make lifestyle adjustments to improve reproductive outcomes and increase the chances of successful conception.

TYPICAL

### Sperm Motility

Predisposed to typical sperm motility

TYPICAL LIKELIHOOD

### Low Sperm Count

Typical likelihood of low sperm count

LESS LIKELY

### Male Infertility

Less likely to have male infertility

LESS LIKELY

### Testicular Cancer

Less likely to have testicular cancer

# Sperm Motility

**Key Takeaways:**

- Poor sperm motility (movement) may affect male fertility, but it's less detrimental than low sperm count.
- About **15%** of the differences in male fertility problems may be due to genetics.
- Given the above, you shouldn't be too worried about a high genetic risk.
- Click on the **Recommendations** tab to get useful tips for improving sperm motility.

About **15%** of the differences in male fertility problems may be due to genetics [R].

Other risk factors that can lead to low sperm motility include:

- Varicocele (swelling of veins in the scrotum)
- Infections or injuries
- Surgery
- Inborn issues
- Undescended testicles
- Long-term use of anabolic steroids and recreational drugs
- Testicular cancer

**Please note**: The research on the genetics of sperm motility is limited. Please take your results with a grain of salt. We will update this report as soon as new genetic variants become available.

TYPICAL

**Predisposed to typical sperm motility based on the genetic variants we looked at**

**40%**

OF USERS SHARE THE SAME SCORE

You have the same genetic predisposition as **40% of our users.**

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| ERBB4 | rs3791686 | CT |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Low Sperm Count

**Key Takeaways:**
About **15%** of the differences in male fertility problems may be due to genetics.
Even if you have a high genetic risk, your overall risk may not necessarily be high.
Other risk factors include older age, poor diet, toxin exposure, smoking, and obesity.
Click the **Recommendations** tab for potential dietary and lifestyle changes.

**Low sperm count, also known as oligospermia, is a condition in which semen contains fewer sperm than normal (<15 million/mL)**[R].

About **15%** of the differences in male fertility problems may be due to genetics [R].

Risk factors for low sperm count include [R]:

- Older age
- Health and lifestyle choices such as poor diet, drug and alcohol use, smoking, obesity, and sedentary lifestyle
- Exposure to certain chemicals, toxins, or radiation
- Heat exposure to the testicles from prolonged sitting, sauna, hot tubs, and tight clothing
- Certain medications like antibiotics and anabolic steroids
- Medical conditions like cancer, infections, or STDs

**Please note**: The research on the genetics of low sperm count is limited. Please take your results with a grain of salt. We will update this report as soon as new genetic variants become available.

TYPICAL LIKELIHOOD

**Typical likelihood of low sperm count based on 187,038 genetic variants we looked at**


**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| HLA-DRA | rs7192 | TG |
| AKR1C3 | rs117248788 | CA |
| TNNT3 | rs77500032 | AA |
| FAM107B | rs113304676 | CC |
| NPS | rs55976550 | GG |
| CNNM2 | rs145444967 | GG |
| AKR1E2 | rs77748270 | AA |
| / | rs61865654 | AA |
| MACROH2A 2 | rs76564905 | GG |
| FAM107B | rs78244802 | CC |
| C10ORF67 | rs117013820 | CC |
| FRMD4A | rs117436915 | AA |
| CSTF2T | rs146361107 | GG |
| MINDY3 | rs4748207 | TT |
| FAM171A1 | rs112246735 | CC |
| PFKP | rs76966676 | CC |
| ATE1 | rs12260433 | CC |
| PCDH15 | rs61853345 | GG |
| ZWINT | rs191187885 | TT |
| GTPBP4 | rs138429262 | GG |
| NRG3 | rs183007746 | TT |

| GENE | SNP | GENOTYPE |
|---|---|---|
| MPP7 | rs41305683 | TT |
| LIPN | rs143399974 | TT |
| CELF2 | rs117303890 | CC |
| SUFU | rs77091257 | TT |
| KIAA1217 | rs190687239 | CC |
| ADARB2 | rs11250679 | GG |
| RNLS | rs79436975 | GG |
| / | rs142421438 | AA |
| NRG3 | rs4293073 | CC |
| ARHGAP22 | rs151069544 | GG |
| CTNNA3 | rs146427273 | CC |
| GTPBP4 | rs140088528 | TT |
| MALRD1 | rs147633134 | GG |
| ADO | rs150963092 | CC |
| / | rs113275896 | TT |
| LARP4B | rs148276311 | CC |
| AS3MT | rs141933852 | GG |
| MMRN2 | rs72807990 | CC |
| NEBL | rs116888374 | AA |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Male Infertility

**Key Takeaways:**

- Genes affecting male fertility may be involved with sperm production and protecting DNA from damage.
- Risk factors include: certain health or anatomical issues, stress, medical treatments, chemical/heat exposure, drug and alcohol use, smoking, obesity.
- If you have a high genetic risk, you may reduce overall risk by taking action on risk factors that you can change. If you have symptoms, consult your doctor.
- Click the **next steps** tab for relevant labs.

It's fairly normal for it to take a while for a couple to achieve a successful pregnancy. However, one or both people may be **infertile** if there is no successful pregnancy after a year of trying [R, R].

In order to be fertile, the male reproductive system needs to [R, R]:

- Make healthy reproductive cells (sperm)
- Transport sperm into protective fluid (semen)
- Maintain high numbers of sperm in the semen

Thus, most problems with male fertility come from problems with sperm [R, R].

**Around 7% of men have fertility problems** [R].

Risk factors and causes of male infertility include [R, R]:

- Health problems (e.g., hormone problems, infections, tumors)
- Anatomical problems (e.g., testicle or duct issues)
- Medical treatments (e.g., some medications, prior surgeries, radiation)
- Chemical or prolonged heat exposure
- Drug or alcohol use
- Smoking
- Being overweight or obese

Stress is another factor linked to lower sperm quality and decreased fertility [R, R, R, R, R].

To help prevent fertility problems, many doctors recommend [R]:

- Avoiding cigarettes, alcohol, and drugs
- Maintaining a healthy weight
- Avoiding testicle overheating
- Reducing stress
- Avoiding exposure to toxins (e.g., pesticides, heavy metals)

Male fertility treatment options include [R]:

- A healthy lifestyle (e.g., diet changes, weight loss)
- Switching to sperm-safe lubricants
- Hormone treatment or medication
- Surgery
- Counseling
- Assisted reproductive technology (ART)

**Genetics plays a significant role in male fertility**. Genes involved in male fertility may be involved with [R]:

- Sperm production (*SPATA16*, *MTHFR*, *HSF2*)
- Protecting DNA from damage (*PRM1*, *PRM2*)

LESS LIKELY

**Less likely to have male infertility based on 14,843 genetic variants we looked at**

1st

PERCENTILE



Your risk is **greater than 1% of the population** and **lower than 99% of the population.**

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| HLA-DRA | rs7192 | TG |
| UBXN2B | rs147055282 | TC |
| CYP7A1 | rs142696294 | TC |
| VRK1 | rs115054029 | AA |
| / | rs145215845 | TT |
| ZNF644 | rs181438267 | GG |
| STXBP6 | rs145365432 | GG |
| THSD4 | rs117324614 | GG |
| DCLRE1A | rs146007001 | CC |
| MBL2 | rs79979441 | GG |
| CXADR | rs138843744 | TT |
| S1PR1 | rs146428323 | TT |
| SGCD | rs148776877 | TT |
| PLEKHG1 | rs149979208 | CC |
| CHD8 | rs139678772 | GG |
| THSD4 | rs149987389 | GG |
| CRPPA | rs117536059 | GG |
| / | rs139240144 | GG |
| CLNK | rs78400468 | CC |
| FPR2 | rs62110083 | GG |
| RBM18 | rs148719260 | CC |

| GENE | SNP | GENOTYPE |
|---|---|---|
| C22ORF39 | rs143695006 | CC |
| NARS2 | rs17137231 | GG |
| CSMD3 | rs62514562 | CC |
| / | rs77805212 | CC |
| S1PR1 | rs12140635 | AA |
| GATD3A | rs535511405 | GG |
| ASPH | rs142172474 | GG |
| HCN1 | rs75800206 | GG |
| FCGR2B | rs116020516 | GG |
| TPM1 | rs74724376 | GG |
| / | rs193215795 | CC |
| KBTBD8 | rs74326646 | CC |
| AXL | rs147469435 | TT |
| PADI2 | rs184595182 | GG |
| TRIM24 | rs191590233 | CC |
| KTN1 | rs77487636 | TT |
| NARS2 | rs191386217 | AA |
| / | rs118081873 | CC |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Testicular Cancer

Several factors can increase the risk of developing testicular cancer:

- Undescended testicle at birth
- Family history
- Personal history
- Age: Most common in men between 15 and 35.
- Ethnicity: More common in Caucasian men compared to African-American men.

There's no way to prevent testicular cancer but some healthcare providers recommend regular testicle self-exams.

Treatment options depend on the cancer’s stage and type and may include [R]:

- Surgery: The primary treatment is often a radical inguinal orchiectomy, where the affected testicle is removed through an incision in the groin.
- Radiation therapy: Used primarily for certain types of testicular cancer, such as seminomas, often after surgery.
- Chemotherapy: Drugs used to kill cancer cells, especially for cancers that have spread or are considered high risk.
- Surveillance: In some cases, particularly for early-stage cancers, doctors may recommend regular monitoring with follow-up exams and tests instead of immediate treatment.

Testicular cancer generally has a high cure rate, especially when detected early. The prognosis is usually very good, with a high survival rate even for advanced stages, due to effective treatments available. The exact prognosis depends on factors such as the type of testicular cancer, its stage at diagnosis, and the patient’s overall health.

**Please note: This report is not diagnostic and can't be used to make any medical decisions. Most cancers are uncommon and have a strong environmental component. Even if your genetic predisposition is high, you will most likely not develop the disease. This report doesn’t test for hereditary cancer syndromes or ‘cancer genes’. These are usually caused by rare mutations that can’t be analyzed by our test. If you're concerned about your risk of hereditary cancer, consider getting a specialized test at a reference laboratory.**

LESS LIKELY

**Less likely to have testicular cancer based on 981,211 genetic variants we looked at**

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| KITLG | rs1907702 | AA |
| KITLG | rs995030 | GG |
| C12ORF29 | rs11104702 | TT |
| DMRT3 | rs7863616 | CC |
| DMRT1 | rs755383 | TT |
| ZNF681 | rs61193264 | TT |
| MANBA | rs7659556 | TT |
| ATF7IP | rs2900333 | CC |
| CLPTM1L | rs36115365 | GC |
| HEATR3 | rs8046148 | GA |
| MCM3AP | rs2839186 | TC |
| RFTN1 | rs10510452 | AG |
| MANBA | rs2720460 | GA |
| MPO | rs9905704 | GT |
| UCK2 | rs3790672 | CT |
| NELL1 | rs186464019 | AA |
| SIM2 | rs56016578 | CC |
| DEPDC1 | rs185424124 | GG |
| / | rs80348946 | AA |
| ARL8A | rs61823671 | TT |
| ACTL8 | rs111581773 | GG |
| SPRY4 | rs4624820 | GG |
| ALCAM | rs9862599 | TT |
| BAK1 | rs210138 | AA |
| PRTG | rs10851590 | CC |
| CLPTM1L | rs4635969 | GA |
| PITX1 | rs3805663 | AG |
| PRDM14 | rs7010162 | TC |
| SLC25A44 | rs2072499 | AA |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Reproductive Hormones

Reproductive hormones play a vital role in regulating fertility, libido, and overall reproductive health. This section delves into the genetic factors that affect the levels and function of key hormones such as testosterone, estradiol, DHT, and LH.

Understanding your genetic predisposition to hormone imbalances can help you take steps to maintain healthy levels through lifestyle changes, supplements, or medical treatments.

LOWER LEVELS

## Luteinizing Hormone (LH)

Predisposed to lower LH levels

TYPICAL LEVELS

## Estradiol (M)

Predisposed to typical estradiol levels

TYPICAL LEVELS

## Bioavailable Testosterone

Predisposed to typical bioavailable testosterone levels

TYPICAL LEVELS

## DHT

Predisposed to typical DHT levels

TYPICAL LEVELS

## Progesterone

Predisposed to typical progesterone levels

TYPICAL LEVELS

## FSH

Predisposed to typical FSH levels

HIGHER LEVELS

## SHBG

Predisposed to higher SHBG levels

HIGHER LEVELS

## Testosterone

Predisposed to higher testosterone levels

LOWER LEVELS

## Prolactin

Predisposed to lower prolactin levels

# Luteinizing Hormone (LH)

In women, LH levels vary depending on the stage of the menstrual cycle. They peak just before ovulation. LH levels also tend to increase in women after menopause [R].

On the other hand, LH levels don't vary a lot in men [R].

Factors linked to **higher LH** levels include [R]:

- Fertility issues like PCOS
- Testicular damage
- Rare genetic disorders

Factors linked to **lower LH** levels include [R, R, R, R]:

- Pituitary disorders
- Smoking marijuana
- Anorexia
- Rare genetic disorders

Up to 70% of the differences in people's LH levels may be due to genetics. Variants with the strongest influence on LH levels belong to the ***LHB*** **gene**. This gene helps make one part of the hormone [R, R, R].

**Please note:** The number of genetic variants available for this report is limited. This report does not take into account the rare genetic disorders mentioned above.

LOWER LEVELS

**Predisposed to lower LH levels based on the genetic variants we looked at**

**20%**

OF USERS SHARE THE SAME SCORE

You have the same genetic predisposition as **20% of our users.**

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| ARL14EP | rs11031002 | TT |
| LHB | rs139643250 | CT |
| LHB | rs3795047 | AT |
| LHB | rs3795052 | AC |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Estradiol (M)

**Estradiol is a type of estrogen. Estrogens are sex hormones that maintain sexual and reproductive health.** In males, estradiol impacts sex drive, sperm production, and the ability to get an erection. The main sources of estradiol in men are the testes and the adrenal glands [R, R, R, R].

Your estradiol levels partially depend on your genetics, but factors other than genetics also influence your hormones [R].

**The following lifestyle changes can help balance your estradiol** [R]:

- Getting enough sleep
- Managing your stress
- Exercise
- Limiting alcohol
- Eating a healthy diet, low in sugar and processed foods, and high in healthy fats and fiber

Estradiol levels that are consistently low or consistently high can signal an underlying condition that may need medical attention. If you are concerned about your hormone levels, talk to your doctor.

TYPICAL LEVELS

## Predisposed to typical estradiol levels based on 86 genetic variants we looked at

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| CYP19A1 | rs727479 | AA |
| CYP19A1 | rs28892005 | AA |
| ABO | rs657152 | AA |
| ESR1 | rs728524 | AA |
| ESR1 | rs9340799 | AG |
| ESR1 | rs2234693 | TC |
| ESR1 | rs2077647 | TC |
| CYP19A1 | rs7173595 | TT |
| / | rs34019140 | GG |
| / | rs201687269 | TT |
| XDH | rs559555 | TT |
| GCKR | rs1260326 | CT |
| EDA2R | rs12850857 | G |
| SRD5A2 | rs112881196 | CC |
| FKBP4 | rs56196860 | CC |
| CYP3A7 | rs45446698 | TT |
| RBBP8 | rs113047993 | CC |
| AR | rs776715248 | T |
| IGHV3-11 | rs11160915 | GG |
| FAM9A | rs5933688 | A |
| BCL7B | rs188982745 | GG |
| KCNV1 | rs570754094 | AA |
| TNP1 | rs13387042 | GG |
| ESR2 | rs1256049 | CC |
| UGT2B7 | rs7662029 | AA |
| SULT2A1 | rs62129966 | CC |
| IL7R | rs1073548 | TT |
| AR | rs114255570 | G |
| TNFSF12 | rs62059839 | CC |

| GENE | SNP | GENOTYPE |
|---|---|---|
| CELSR1 | rs117826558 | CC |
| TMOD2 | rs3751591 | AA |
| SULT2A1 | rs10425629 | TT |
| TNFSF12 | rs727428 | TT |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Bioavailable Testosterone

Free blood testosterone and the one weakly bound to albumin constitute **bioavailable testosterone**. This fraction of testosterone (roughly 50%) can enter tissues and cause health effects [R].

About **45%** of the differences in bioavailable testosterone levels may be due to **genetics** [R].

**Free testosterone declines with age** in both men and women after peaking in the late 20s [R, R].

Other factors associated with low testosterone include [R]:

- **Obesity**
- Some medications
- Alcohol abuse
- Certain chronic medical conditions (e.g., type 2 diabetes, obstructive sleep apnea)

Bioavailable and free testosterone are less often ordered as lab markers than total testosterone because they are **more expensive and difficult to measure**.

However, it may be necessary to test free testosterone levels in people who have symptoms of low testosterone but have normal total testosterone levels [R].

TYPICAL LEVELS

**Predisposed to typical bioavailable testosterone levels based on 20,241 genetic variants we looked at**

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| AR | rs776715248 | T |
| FKBP4 | rs56196860 | CC |
| EIF4A1 | rs545206972 | CC |
| SRD5A2 | rs113017476 | GG |
| ESR1 | rs190930099 | AA |
| FAM9A | rs111386834 | T |
| / | rs7912521 | TT |
| PPP2R3C | rs10137488 | TT |
| KCNIP4 | rs7679843 | CC |
| MME | rs61762319 | AA |
| ORM1 | rs10982156 | TT |
| CYP19A1 | rs17703883 | TT |
| ABT1 | rs79310511 | AA |
| RORB | rs912202 | GG |
| / | rs11703376 | CC |
| GPR83 | rs12796488 | AC |
| DGKB | rs9986829 | AG |
| LIN28B | rs9322822 | TC |
| GOLT1A | rs35737316 | CT |
| JHY | rs10892924 | AT |
| MANBA | rs17254118 | CC |
| / | rs116923389 | TT |
| AMER1 | rs146225865 | G |
| / | rs2035837 | TT |
| YIPF6 | rs147676232 | C |
| UHRF1BP1 | rs11751920 | GG |
| EDA2R | rs73221538 | C |
| HSD17B10 | rs140498714 | C |

| GENE | SNP | GENOTYPE |
|---|---|---|
| UGT1A4 | rs2011425 | TT |
| RTL9 | rs41306249 | T |
| GPR139 | rs2764772 | AA |
| PEX2 | rs71529289 | CC |
| BBX | rs34040779 | TT |
| TNFSF12 | rs1799941 | GG |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# DHT

The following factors can cause decreased DHT levels:

- 5α-reductase deficiency [R]
- Low testosterone levels [R]
- Alcohol consumption [R]
- AIDs wasting syndrome [R]
- Aging [R]
- Taking 5α-reductase inhibitors, such as finasteride (Proscar, Propecia) and dutasteride (Avodart) [R, R]

Some strategies that may help increase DHT levels in people with deficiency include:

- Exercise [R, R]
- Eating enough healthy fats [R]
- Reducing alcohol intake [R]
- Correcting zinc or DHEA deficiency [R, R]
- Supplementing with creatine or *Tribulus terrestris* [R, R]

If your testosterone levels are normal but your DHT is elevated, that could mean that your male sex hormones are metabolized via the 5α pathway, which produces more DHT, rather than the 5-β pathway.

DHT can also increase due to:

- Exercise [R]
- High testosterone levels [R]
- Drugs such as Sildenafil (Viagra, Revatio) [R]

On the other hand, preliminary evidence suggests that the following supplements may help decrease DHT levels:

- Saw palmetto [R, R]
- St John's wort [R]

Work with your doctor to find out what's causing your low or elevated DHT and to treat any potential underlying condition. The additional lifestyle changes listed above are other things you may want to discuss with your doctor. None of these strategies should ever be done in place of what your doctor recommends or prescribes.

TYPICAL LEVELS

**Predisposed to typical DHT levels based on 4 genetic variants we looked at**

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| TNFSF12 | rs1799941 | GG |
| TNFSF12 | rs4151121 | GA |
| TNFSF12 | rs17856697 | GA |
| ZBTB4 | rs4239258 | GG |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Progesterone

The following factors may affect progesterone levels:

- **Menstrual cycle**: Progesterone levels naturally fluctuate during the menstrual cycle, peaking after ovulation and falling if no pregnancy occurs.
- **Pregnancy**: Progesterone levels rise significantly during pregnancy and play a crucial role in maintaining the pregnancy.
- **Stress**: Chronic stress can impact the balance of hormones, including progesterone.
- **Age:** Progesterone levels typically decline with age, especially as women approach menopause.
- **Lifestyle Factors**: Lack of sleep, poor diet, and lack of exercise can affect hormone balance, including progesterone.
- **Medical Conditions**: Disorders of the ovaries, thyroid disease, and other hormonal imbalances can affect progesterone levels.
- **Genetics**: Scientists have identified a number of gene variants linked to changes in progesterone levels.

TYPICAL LEVELS

**Predisposed to typical progesterone levels based on 16 genetic variants we looked at**

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| DYNC2I1 | rs2467806 | CC |
| RASSF10 | rs181121546 | CC |
| KCNH1 | rs79589801 | CC |
| HSD17B12 | rs142754737 | CC |
| SESN3 | rs139203625 | CC |
| CD34 | rs138621610 | GG |
| ARNTL | rs77032081 | CC |
| RBFOX1 | rs144711998 | CC |
| LYSMD3 | rs139441768 | TT |
| ARRDC3 | rs140935700 | GG |
| ZKSCAN5 | rs34670419 | GG |
| ZKSCAN5 | rs148982377 | TT |
| SKOR2 | rs72906582 | GG |
| SLC22A10 | rs112295236 | CC |
| PGR | rs608995 | AA |
| PGR | rs10895068 | CC |
| PGR | rs1042838 | CC |
| SFXN2 | rs10786714 | GG |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# FSH

**Follicle-stimulating hormone or FSH is a crucial hormone for reproduction, released by the pituitary gland**.

**Low FSH levels** may be caused by issues with the pituitary or the hypothalamus.

**High FSH levels** may be caused by issues with the ovaries or testes [R, R].

In women, FSH increases during the first half of the menstrual cycle and then decreases after ovulation. Levels also increase in menopause. In adult men, FSH levels don't tend to change [R].

Up to **80%** of the differences in people's FSH levels may be due to **genetics**. **However, genetic predisposition to lower or higher FSH doesn't imply a health issue** [R].

Interestingly, people with **genetically higher FSH levels** may be more prone to conditions affecting the **esophagus** [R].

TYPICAL LEVELS

## Predisposed to typical FSH levels based on 724,999 genetic variants we looked at

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| FSHR | rs2300441 | AG |
| OR2B6 | rs140386588 | CC |
| / | rs11803159 | GG |
| UBE3A | rs4109610 | TT |
| ARL14EP | rs11031005 | TT |
| ARL14EP | rs11031006 | GG |
| CYP19A1 | rs2414095 | GG |
| GAD2 | rs8190595 | CC |
| ZNF438 | rs187634935 | GG |
| PTER | rs116990127 | CC |
| PFKFB3 | rs12269260 | TT |
| KLF6 | rs183217426 | CC |
| CACNB2 | rs138339030 | GG |
| AKR1E2 | rs144252918 | CC |
| ASB13 | rs185593246 | AA |
| NEBL | rs114697026 | CC |
| GATA3 | rs185495652 | TT |
| ECHDC3 | rs142442083 | GG |
| ADARB2 | rs17156880 | TT |
| UCN3 | rs61857160 | AA |
| MAP3K8 | rs138348879 | TT |
| MYO3A | rs140374720 | GG |
| CELF2 | rs145712896 | GG |
| ANKRD26 | rs145806286 | CC |
| KLF6 | rs117498907 | GG |
| PLXDC2 | rs112852013 | AA |
| MASTL | rs138431023 | AA |
| CCNY | rs147373897 | CC |
| SLC39A12 | rs188192645 | GG |

| GENE | SNP | GENOTYPE |
|---|---|---|
| / | rs117942091 | GG |
| MLLT10 | rs183996836 | TT |
| PRKCQ | rs142326554 | CC |
| DIP2C | rs552137948 | CC |
| PITRM1 | rs117186526 | TT |
| KIAA1217 | rs12251731 | GG |
| BAMBI | rs79400426 | CC |
| ARMC3 | rs183475100 | TT |
| GATA3 | rs374631780 | GG |
| MASTL | rs544678990 | GG |
| ATP5F1C | rs146381068 | CC |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# SHBG

SHBG (sex hormone-binding globulin) is a protein made in the liver that binds to sex hormones and helps transport them in the blood. Hence, SHBG controls the levels of sex hormones. Your doctor may order a test in unusual circumstances, like if you have signs of high or low testosterone with normal testosterone levels [R, R, R].

SHBG production is controlled by [R, R, R]:

- Sex hormones
- Thyroid hormones
- Insulin
- Dietary factors

Disturbances in any of these can affect SHBG levels.

**Around 40% of differences in people's SHBG levels may be due to genetics** [R].

HIGHER LEVELS

**Predisposed to higher SHBG levels based on 509,397 genetic variants we looked at**

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| TNFSF12 | rs4227 | TT |
| TP53 | rs1042522 | CC |
| TP53 | rs1625895 | CC |
| TNFSF12 | rs4968200 | GG |
| TNFSF12 | rs3803800 | GA |
| DNAH2 | rs12185237 | CT |
| TMEM102 | rs117573122 | GG |
| / | rs143650826 | TT |
| DNAH2 | rs142627042 | CC |
| ZBTB4 | rs12051767 | CC |
| NR1H4 | rs61755050 | TT |
| MPDU1 | rs11078697 | CC |
| SHBG | rs116289877 | AA |
| SERPINA1 | rs28929474 | CC |
| SAT2 | rs55784804 | GG |
| SPEM1 | rs199795512 | TT |
| EIF4A1 | rs17883687 | GG |
| PLA2G12A | rs41278045 | AA |
| DNAH2 | rs34511268 | TT |
| FXR2 | rs118174079 | GG |
| EFNB3 | rs117584963 | CC |
| ATP1B2 | rs117322070 | CC |
| ATP1B2 | rs76733190 | CC |
| SERPINA1 | rs28929470 | GG |
| TMEM256 | rs139552861 | CC |
| EFNB3 | rs12939910 | CC |
| NR2F6 | rs116189680 | GG |
| CCND2 | rs76895963 | TT |
| TNFSF12 | rs8069501 | AA |

| GENE | SNP | GENOTYPE |
|---|---|---|
| GNGT2 | rs11650494 | GG |
| MAP1A | rs55707100 | CC |
| SOS2 | rs72681869 | GG |
| TNFSF12 | rs35386490 | TT |
| TNFSF12 | rs74351250 | GG |
| TNFSF12 | rs76749877 | GG |
| EIF3J | rs151291132 | AA |
| WDR72 | rs113401670 | CC |
| CHRNB1 | rs78608504 | CC |
| JMJD1C | rs117212080 | TT |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Testosterone

**Testosterone is the major male sex hormone.** It is mainly produced in the testes and helps men develop masculine features like increased muscle mass and body hair. Males begin producing testosterone when they are still in the womb and lose 1% of their testosterone per year after the age of 30. Testosterone helps develop a normal male reproductive system and produces some of the changes males experience during puberty [R, R].

Up to 60% of differences in people's testosterone levels may be due to genetics. Genes involved  may influence testosterone metabolism [R, R, R, R].

Testosterone levels are also influenced by your environment and lifestyle habits. Ways to balance your testosterone include [R, R, R, R]:

- Exercising
- Maintaining a healthy weight
- Improving your sleep quality
- Eating a healthy diet that includes healthy fats. Testosterone is made from cholesterol, and low-fat diets have been linked to low testosterone levels

HIGHER LEVELS

## Predisposed to higher testosterone levels based on 1,633 genetic variants we looked at

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| FKBP4 | rs56196860 | CC |
| SERPINA1 | rs28929474 | CC |
| XDH | rs77775907 | GG |
| EDA2R | rs141086308 | C |
| TNFSF12 | rs727428 | TT |
| PDE7B | rs7774640 | GG |
| FAM9A | rs5934505 | T |
| ATP1B2 | rs11078694 | CT |
| TDGF1P3 | rs5942977 | G |
| TNFSF12 | rs12946520 | TG |
| NR2F2 | rs8023580 | TT |
| MYPOP | rs35318830 | TT |
| / | rs7097842 | GG |
| NRBF2 | rs7084569 | AG |
| KANSL1 | rs62062271 | TT |
| UGT2B17 | rs9884390 | TT |
| HACE1 | rs11156429 | TT |
| SLCO1B1 | rs4149056 | TC |
| GNGT2 | rs11655704 | CT |
| GCKR | rs1260326 | CT |
| DGKB | rs10278686 | TC |
| STAT6 | rs7484541 | TA |
| SS18 | rs600619 | AG |
| SAT2 | rs10468481 | AG |
| CERS5 | rs28849840 | AG |
| JHY | rs11218882 | TC |
| ZBTB4 | rs12944954 | AA |
| DNAH2 | rs117387630 | CC |
| TACR3 | rs17289915 | CC |

| GENE | SNP | GENOTYPE |
|---|---|---|
| WRAP53 | rs183855978 | GG |
| WDR72 | rs79391862 | AA |
| SHBG | rs6258 | CC |
| TNFSF12 | rs12150660 | GG |
| ARL14EP | rs10835638 | GG |
| LCMT2 | rs143875230 | GG |
| YIPF6 | rs7052964 | T |
| FAM214A | rs77255942 | CC |
| UBQLN2 | rs6651991 | T |
| / | rs6484426 | TT |
| BAIAP2L1 | rs34785619 | INS(T)INS(T) |
| PNPLA3 | rs738409 | GG |
| GPR139 | rs2764772 | AA |
| MRAS | rs7626388 | AA |
| HSD17B13 | rs6811902 | TT |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Prolactin

**Key Takeaways**:

- Both high and low prolactin can cause issues with weight control, fertility, milk production, and more.
- High prolactin levels are normal only during pregnancy and breastfeeding.
- Up to **50%** of differences in people's prolactin levels may be due to genetics.
- Besides genetics, different lifestyle factors and health conditions can affect prolactin levels.

Prolactin is a hormone with key roles in fertility and reproduction. It stimulates the production of breast milk (lactation) and enhances motherly behavior [R, R, R].
Up to 50% of differences in people's prolactin levels may be due to genetics [R].
Men and non-pregnant women generally have low levels of prolactin. Women's prolactin levels peak during pregnancy and remain elevated after childbirth [R].
Prolactin levels also vary during the day. They increase during sleep and peak in the early morning.
Low prolactin may result from:

- Obesity [R, R]
- Underactive pituitary gland [R, R]
- Some drugs [R, R, R, R]

Factors that may lead to high prolactin include:

- Stress [R, R]
- Alcohol [R]
- Underactive thyroid [R, R]
- Polycystic ovary syndrome (PCOS) [R]
- Kidney and liver disease [R, R, R]
- Pituitary tumors (prolactinoma) [R, R, R]
- Some drugs [R, R, R, R, R, R, R]

LOWER LEVELS

## Predisposed to lower prolactin levels based on 77 genetic variants we looked at

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| CFHR3 | rs12144939 | GG |
| VTN | rs704 | GG |
| CPB2 | rs1926447 | GG |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Fertility Genes

The genetic foundation of reproductive health is influenced by key genes that regulate hormone production, reception, and metabolism. This section focuses on genes like ESR1, which plays a critical role in estrogen signaling and fertility. Understanding variations in these genes can provide insights into hormone sensitivity and potential fertility implications.

BALANCED ACTIVITY

## ESR1 (Estrogen)

Likely balanced ESR1 activity

# ESR1 (Estrogen)

The two main *ESR1* variants are **rs2234693** (-397T>C or PvuII) and **rs9340799** (-351A>G or XbaI). They are often inherited together, meaning you will likely carry either none or both.

Their **"C" and "G" alleles**, respectively, may be linked to the following **positive health outcomes**:

- Stronger bones (higher BMD) [R, R, R]
- Lower odds of endometrial cancer [R]
- Slower cognitive decline (only in European ancestry) [R]
- Lower odds of anxiety (phobia) [R]
- Better cardiovascular health [R]
- Increased fertility in men [R]

On the other hand, they may be linked to the following **negative health outcomes:**

- Endometriosis [R]
- Breast cancer [R, R]
- Prostate cancer [R, R]
- Depression [R]

Expectedly, the effects of these variants are more pronounced in women. According to most of the above associations and some lab experiments, **rs2234693-C increases *ESR1* expression**, leading to more pronounced effects of estrogen [R].

However, some studies have found no links – or even opposite links – of these variants with most of the above health outcomes. They may be partly explained by different results in people of Asian vs European ancestry [R, R, R, R, R, R, R].

BALANCED ACTIVITY

**Likely balanced ESR1 activity based on the genetic variants we looked at**

**50%**

OF USERS SHARE THE SAME SCORE

You have the same genetic predisposition as **50% of our users.**

**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| ESR1 | rs2234693 | TC |
| ESR1 | rs9340799 | AG |

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

# Recommendations Details

## 1 Maintain a Healthy Weight

Engage in at least 150 minutes of moderate aerobic exercise or 75 minutes of vigorous exercise weekly, along with strength training exercises for all major muscle groups on 2 or more days a week. Follow a balanced diet, rich in vegetables, fruits, whole grains, and lean proteins while controlling calorie intake to prevent excessive weight gain. Regularly monitor body fat percentage through methods like bioelectrical impedance analysis (BIA) scales, skinfold measurements, or DEXA scans to ensure it remains below 25%.

TYPICAL STARTING DOSE

**30 minutes**

### Helps with these Symptoms & Conditions:

Allergies | High Blood Pressure | Migraines

### Helps with these Goals:

Immunity

### Helps with these Lifestyle Risks:

Low Testosterone

## 2 Zinc

Take a 15 mg zinc supplement daily, ideally with a meal to enhance absorption.

TYPICAL STARTING DOSE

**10 mg**

### Helps with these Symptoms & Conditions:

Attention | High Blood Pressure | Migraines

### Helps with these Goals:

Immunity | Mood

### Helps with these Lifestyle Risks:

Low Testosterone

## 3 Avoid PAHs Exposure

Minimize your exposure to Polycyclic Aromatic Hydrocarbons (PAHs) by avoiding or reducing consumption of charred, grilled, or smoked foods, not smoking or avoiding secondhand smoke, and limiting time spent in areas with heavy traffic or industrial fumes. Use exhaust fans in kitchens and ensure proper ventilation when cooking at high temperatures to reduce indoor levels of PAHs.

### Helps with these Symptoms & Conditions:

Attention

High Blood Pressure

### Helps with these Goals:

Mood

### Helps with these Lifestyle Risks:

Low Testosterone

## 4 Sleep for 7+ Hours

Ensure you allocate enough time in your schedule to achieve a minimum of 7 hours of sleep each night. This might involve going to bed earlier or adjusting your evening routine to promote relaxation and make it easier to fall asleep.

### Helps with these Symptoms & Conditions:

Attention

High Blood Pressure

Migraines

### Helps with these Goals:

Energy

Immunity

Mood

### Helps with these Lifestyle Risks:

Low Testosterone

## 5 Aerobic Exercise (Cardio)

Engage in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity activity each week. Distribute this time over at least 3 days per week, avoiding consecutive days of vigorous exercise to allow for recovery.

TYPICAL STARTING DOSE

1 hour

**Helps with these Symptoms & Conditions:**

Allergies | Anxiety | Attention | High Blood Pressure | Migraines

**Helps with these Goals:**

Energy | Immunity | Mood

**Helps with these Lifestyle Risks:**

Low Testosterone

## 6 Tongkat Ali

Take 200-400 mg of Tongkat Ali extract daily, preferably in the morning, to maintain consistent levels in your body. This dosage is typically taken in a single dose or divided into two doses throughout the day. Use for a period of 5-9 weeks followed by a break or as advised by a healthcare professional.

TYPICAL STARTING DOSE

200 mg

**Helps with these Lifestyle Risks:**

Low Testosterone

## 7 Avoid Opioid Drugs

Do not use opioid medications unless prescribed by a healthcare provider for specific medical conditions where pain management is necessary, and even then, use them only as directed for the shortest possible duration.

### Helps with these Lifestyle Risks:

- Low Testosterone

## 8 Ashwagandha

Take 250-600 mg of ashwagandha supplement daily. It can be consumed with water or a meal, depending on your preference or as advised by a healthcare provider.

TYPICAL STARTING DOSE

**120 mg**

### Helps with these Symptoms & Conditions:

- Anxiety
- Attention

### Helps with these Goals:

- Energy
- Exercise Recovery
- Immunity
- Mood
- Muscle Growth

### Helps with these DNA Risks:

- Luteinizing Hormone (LH)

### Helps with these Lifestyle Risks:

- Low Testosterone

## 9 Mucuna Pruriens

Take 300 to 500 mg of standardized Mucuna pruriens extract once daily, preferably with water. For consistent benefits, consider taking it at the same time each day.

TYPICAL STARTING DOSE

**300 mg**

### Helps with these Lifestyle Risks:

- Low Testosterone

## 10 L-Carnitine

Take 500 mg of L-carnitine supplement daily with a glass of water, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

**500 mg**

### Helps with these Symptoms & Conditions:

- Attention
- High Blood Pressure
- Migraines

### Helps with these Goals:

- Energy
- Exercise Recovery
- Immunity

### Helps with these Lifestyle Risks:

- Low Testosterone

## 11 Avoid Dioxin

Reduce consumption of animal fats, since dioxins accumulate in fat tissue. Choose lean cuts of meat, and opt for organic or pasture-raised when possible to minimize exposure. Additionally, avoid burning trash that contains plastic, treated wood, or chlorinated chemicals to prevent dioxin release into the environment.

### Helps with these DNA Risks:

- Luteinizing Hormone (LH)

### Helps with these Lifestyle Risks:

- Low Testosterone

## 12 Flower Pollen Extract and Black Seed (Black Cumin)

Take a supplement that combines flower pollen extract and black seed oil. The dosage typically recommended is 500 mg of each, taken twice daily with meals. Continue this regimen for at least two months to evaluate its effects.

TYPICAL STARTING DOSE

1000 mg

### Helps with these DNA Risks:

- Luteinizing Hormone (LH)

### Helps with these Lifestyle Risks:

- Low Testosterone

## 13 Black Seed (Black Cumin)

Take 1000 mg of black seed (black cumin) supplement daily, preferably split into two doses of 500 mg each, one in the morning and one in the evening.

TYPICAL STARTING DOSE

1000 mg

### Helps with these Symptoms & Conditions:

- Allergies
- Anxiety
- Attention
- High Blood Pressure

### Helps with these Goals:

- Immunity

### Helps with these DNA Risks:

- Luteinizing Hormone (LH)

### Helps with these Lifestyle Risks:

- Low Testosterone

## 14 Tribulus

Take 250-1500 mg of Tribulus terrestris extract daily, divided into one to three doses, with meals. Start with the lower dose to assess tolerance and gradually increase as needed. This regimen can be followed for up to 90 days, after which a break or reassessment is recommended.

TYPICAL STARTING DOSE

**250 mg**

### Helps with these Symptoms & Conditions:

- High Blood Pressure

### Helps with these Goals:

- Exercise Recovery

### Helps with these Lifestyle Risks:

- Low Testosterone

## 15 Maintain Optimal Vitamin D Levels

Check your vitamin D levels, they should ideally be in the 30-66 ng/mL range. If your levels are lower than that, take a vitamin D supplement, 1000-4000 IU daily, to reach an optimal range.

TYPICAL STARTING DOSE

**1000 iu**

### Helps with these Symptoms & Conditions:

- Allergies
- Anxiety
- Attention
- High Blood Pressure
- Migraines

### Helps with these Goals:

- Energy
- Immunity
- Mood
- Muscle Growth

### Helps with these Lifestyle Risks:

- Low Testosterone

# Next Steps

Remember, your genes only tell one important part of your health story!

Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

# Your Lifestyle Assessments

Ever heard of the term Nature vs. Nurture?

The thing is, both DNA and environment play a role in determining your health risks. The following assessments shows how much of an impact your lifestyle, environment and medical history are having on your health risks.

LIFESTYLE

**You have an average risk of low testosterone based on the answers you provided.**


## Factors impacting your risk:

What is your age?

**41**

Increasing Risk

Have you recurrently been diagnosed with high cholesterol?

**Yes**

Increasing Risk

Your BMI:

**30.77**

Increasing Risk

Have you ever been diagnosed with diabetes?

**No**

Decreasing Risk

In a typical week, how many times do you participate in any physical activities or exercise for 30 minutes at a time? (such as walking, running, bike riding, weight training, yoga, etc.)

*Note: longer exercise equals more sessions (e.g., 1 hour = 2 sessions)

**8 or more**

Decreasing Risk

Do you smoke tobacco?

**No, never**

Decreasing Risk

Have you recurrently been diagnosed with high triglycerides?

**No**

Decreasing Risk

Have you ever been diagnosed with high blood pressure (hypertension)?

**No**

Decreasing Risk

Have you ever been diagnosed with a stroke?

**No**

Decreasing Risk

Have you ever been diagnosed with prostate disease (prostatitis, benign prostate hyperplasia, prostate cancer)?

**No**

Decreasing Risk

What is your height?

**178 cm**

No impact

What is your current weight?

**97.5 kg**

No impact