

SALT SENSITIVITY TEST

XXXXXXXXXXXXX

Date of birth: XXXXXXX

Code: XXXXXX

WHAT THE REPORT INCLUDES

- Detailed EXPLANATION of the test performed and recommendations to be followed;
- SUMMARY TABLE presenting the metabolic areas analysed and the results from the DNA analysis, providing a quick overview of an individual's overall health status and highlighting any potential issues.
- BIBLIOGRAPHY providing scientific references for the test.

COLOURS USED

It indicates that the variants identified in the analysis do not unfavourably alter enzymatic activity of the proteins they encode and/or the risk associated with certain discases.

It indicates that the variants identified in the analysis slightly unfavourably alter enzyme activity accor the risk associated with certain disorders or diseases.



It indicates that the variable interval of the analysis alter enzyme activity in a particularly unfavourable way resulting in an increased risk of developing certain disorders or associated diverses.

The results shown, as well as the considerations and explanations contained in the following pages of this booklet, should not be regarded as a medical diagnosis. It is important to bear in mind that genetic information is only one part of the total information required to gain a complete picture of a person's state of health, and the data reported here is therefore a coal available to the treating physician to formulate a correct assessment of the patient's physiological state and suggest an appropriate personalised treatment.

INTRODUCTION

Salt consumption plays a crucial role in blood pressure regulation and cardiovascular health. However, not everyone responds to sodium in the same way—some individuals are more sensitive to it, which can increase the risk of hypertension and other related conditions. Genetic testing for salt sensitivity analyses specific genetic variants that influence blood pressure regulation and sodium metabolism, providing personalized insights to help you better manage your diet and overall well-being.

Sodium is an essential mineral that supports various physiological functions, including fluid balance, nerve transmission, and muscle contraction. However, excessive sodium intake can lead to water retention and elevated blood pressure, especially in individuals genetically predisposed to salt sensitivity. Understanding whether you are sensitive to salt can help you:

- Implement dietary strategies tailored to your genetic needs
- Lower the risk hypertension and cardiovascular diseases
- Improve water balance and renal function control
- Customize your dist to optimize long-term health

The test focuses on genetic variants in key genes involved in blood pressure regulation and sodium metabolism, such as the ACE gene. Some variants may affect your body's ability to eliminate excess sodium, raising the risk of hypertension when consuming a salt-rich diet.

Your test results will include a comprehensive analysis of your genetic predisposition to salt sensitivity, categorizing you as follows:

- **High salt sensitivity** → It is recommended to Guce sodium intake to prevent blood pressure increases.
- Moderate salt sensitivity \rightarrow You may be at risk if you grownsume high sodium levels over time.
- Low salt sensitivity → Your body can manage sodium take better, but it's still important to maintain a balanced diet.

Regardless of your genetic result, adopting a healthy, balanced lifestyle is essential for cardiovascular disease prevention. Your report will offer practical recommendations based on your genetic profile to help you make informed choices that support your long-term health.

Note: The results of this genetic test are for informational purposes and are not a substitute for medical advice. For concerns about your cardiovascular health or diet, please consult a healthcare professional.

Salt sensitivity test

Genetic analysis of the ACE (Angiotensin-Converting Enzyme) gene focuses on its role in regulating blood pressure and sodium metabolism. The ACE gene encodes the angiotensin-converting enzyme, which plays a vital role in the renin-angiotensin system - an essential mechanism for maintaining blood pressure and fluid balance in the body.

One of the most studied variants of the ACE gene is the I/D (Insertion/Deletion) polymorphism, which affects the levels of ACE in the blood. Specifically:

- **Variant D (Deletion)** \rightarrow Linked to higher ACE levels, which may increase the risk of ٠ hypertension and sodium retention.
- **Variant I (Insertion)** \rightarrow Associated with lower ACE levels, which may offer a protective effect • on blood pressure.

By analysing the ACE gene, this test provides insights into an individual's susceptibility to salt sensitivity and hyperte



EFFECTS OF THE UNFAVOURABLE VARIANT:

If your genetic test shows you carry the D (Deletion) variant of the ACE gene, you may have higher levels of the angiotensin-converting enzyme (ACE). This can lead to the following effects:

- Increased Blood Pressure: Higher ACE levels lead to more angiotensin II production, a • powerful vasoconstrictor that raises blood pressure and increases the risk of hypertension.
- **Reduced Sodium Elimination:** Angiotensin II can reduce sodium excretion in the kidneys, • leading to fluid retention and further increasing blood pressure.
- Vascular Inflammation and Oxidative Stress: This can promote long-term cardiovascular diseases.

• **Lower Cardiovascular Efficiency:** Individuals with the D variant may experience reduced physical endurance and exercise capacity due to lower cardiovascular efficiency.

These effects make those with the D variant more sensitive to high sodium intake and more susceptible to hypertension and cardiovascular diseases.

RECOMMENDED SOLUTIONS:

- 1. **Reduce Sodium Intake:** Since your body retains sodium more easily, it is essential to minimize your salt consumption:
 - Avoid processed and packaged foods (e.g., cold cuts, salty snacks, canned goods, fast food).
 - Use herbs, spices, lemon juice, and vinegar as alternatives to salt.
 - Always read food labels to detect hidden sodium in packaged products.
 - If recommended by your doctor, replace regular salt with low-sodium or potassiumbased sets.
- 2. **Increase Potassium Intake:** Potassium helps balance sodium's effects and supports healthy blood pressure. Potassium-rich foods include:
 - Bananas, orang apricots, avocados
 - Spinach, sweet protoes, beans, tomatoes
 - Nuts and seeds
- 3. **Maintain Adequate Magnesity and Calcium Levels:** These minerals promote heart health and counteract the effects of an event in II. Recommended foods:
 - Magnesium: Dried fruits, leguines, whole grains, green leafy vegetables
 - Calcium: Low-fat dairy, almond, sesame seeds, green leafy vegetables
- 4. Engage in Regular Physical Activity: Exercise can help lower blood pressure and improve cardiovascular health. Aim for:
 - Aerobic exercises (e.g., brisk walking, runping, swimming, cycling) for at least 150 minutes per week.
 - Resistance training (e.g., weightlifting, bodywight exercises) to strengthen vascular health.
 - Stress-reducing activities (e.g., yoga, meditation).
- 5. **Manage Stress:** Chronic stress activates the renin-angiotensin are perfects of the D variant. Helpful strategies include:
 - Deep breathing exercises
 - Meditation or mindfulness
 - Relaxing hobbies or activities
- 6. **Monitor Blood Pressure Regularly:** Regular monitoring helps detect any issues early. If you notice elevated readings, consult with your doctor about necessary lifestyle changes or treatments.
- 7. Limit Alcohol and Caffeine: Both alcohol and excessive caffeine can negatively affect blood pressure. Consider the following:
 - Limit alcohol intake to 1 drink per day for women and 2 for men.
 - Opt for low-caffeine beverages like green tea, which may offer beneficial effects on blood pressure.

CONCUSIONS:

If you carry the D variant of the ACE gene, your body is more sensitive to sodium and more likely to develop hypertension. However, by following a balanced diet, reducing salt intake, engaging in regular exercise, managing stress, and monitoring your health, you can significantly reduce your risk of cardiovascular issues and enhance your overall well-being. These personalized recommendations will help you make more informed decisions to optimize your health long-term.

Salt Censitivity Sample Report

BIBLIOGRAPHY

- 1. I/D polymorphism for angiotensin-converting enzyme (ACE): longevity gene or risk factor in hypertensive pathology? Lo Sasso B., Bellia C, Tomaiuolo R, Zarrilli F, Scorza M, Caruso A, Agnello L, Bazza F, Carru C, Zinnellu A, Deiana L, Ciaccio M. Bioch Clin 37(6): 2013.
- 2. Effects of ACE and ADD1 gene polymorphisms on blood pressure response to hydrochlorothiazide: a meta-analysis. Choi HD, Sun JH, Lee JY, Bae SK, Kang HE, Lee MG, Shin WG. Int J Clin Pharmacol Ther 2013 Sep. 51(9):718-24.
- 3. Goessler, Karla F., et al. ACE polymorphisms and the acute response of blood pressure to a walk in medicated hypertensive patients. Journal of Renin-Angiotensin-Aldosterone System 16.4: 720-729 (2015).
- Choi, H. D. et al. Effects of ACE and ADD1 gene polymorphisms on blood pressure response to hydrochlorothiazide: a meta-analysis. Int J Clin Pharmacol Ther 51, 718-24 LID - 10.5414/CP2 (2013).

