



INDUSTRY EDUCATION

Fagron TrichoTest™



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Introduction

Hair is not merely a physical attribute; it is an integral part of our identity, shaping our self-perception and influencing our psychological well-being. The intricate cycle of hair growth, consisting of growth (anagen), involution (catagen), and rest (telogen), is a delicate balance. Most people lose between 50 to 100 hairs each day due to this natural process. Alopecia, an abnormal condition characterized by hair loss, disrupts this finely tuned balance. This condition, which can affect any part of the body but most commonly targets the scalp, results from various factors, including age, autoimmune conditions, or stress. The primary types of scalp alopecia include androgenetic alopecia, alopecia areata, and a thinning of hair known as telogen effluvium.

Alopecia treatment encompasses a wide range of treatment options and no inclusive genetic test for predicting patient response prior to therapy has been developed. Type and grade of alopecia, current medication, pathologies, intolerance, allergy, physiological and emotional stress are taken into consideration through a questionnaire in Fagron TrichoTest™.

What is Fagron TrichoTest™, and How Does It Work?

The Fagron TrichoTest™ is a revolutionary approach to personalized hair loss treatment that represents the cutting-edge convergence of genetics and pharmaceutical care. But what exactly is this groundbreaking test, and how does it function?

At its core, the TrichoTest™ is an innovative genetic test designed to decode the intricate dynamics of hair loss. Its primary objective is to tailor alopecia treatment strategies to the individual, bridging the gap between one-size-fits-all treatment plans and personalized therapy.

The test operates by studying the genetic information embedded in your DNA, specifically scrutinizing 26 genetic variations across 23 genes known to influence hair growth and hair loss. These genes act as biomarkers, providing invaluable insight into predicting a patient's potential response to various alopecia treatments.

However, TrichoTest™ understands that genetics isn't the sole determinant of hair health. Numerous external factors – including lifestyle, diet, stress levels, medication, and other health conditions – significantly influence hair growth and hair loss. To ensure a holistic analysis, the TrichoTest™ incorporates an in-depth questionnaire that seeks to capture these crucial elements of a patient's history and present circumstances.

The operational mechanism of the test is straightforward, beginning with a healthcare professional connecting to a digital provider portal. Here, they input patient data and complete a detailed clinical questionnaire. Subsequently, using a non-invasive buccal swab, the practitioner collects a sample of cells from the inside of a patient's cheek. This sample contains the patient's DNA and is sent to an authorized laboratory for genetic analysis.

Once the genetic data is available and the questionnaire completed, a proprietary algorithm combines these two pieces of information, generating an integrated report. This report forms the basis of the personalized treatment plan, recommending the most appropriate active pharmaceutical ingredients and treatment vehicles that are most likely to be effective given the patient's unique genetic profile and personal history. From the providers perspective, they get an email notification when the report is ready, prompting them to login to the secure portal to view/download the report before sharing with their patient. The provider will contact patient to schedule consultation. This can change based on the provider or business.

This comprehensive, secure, and personalized approach makes the Fagron TrichoTest™ an innovative tool in managing alopecia, adding a much-needed level of customization to treatment strategies and paving the way for improved patient outcomes.

What Are the Pathologies Addressed?

The TrichoTest™ is specifically designed to address androgenetic alopecia (AGA), alopecia areata (AA), and telogen effluvium (TE).

AGA, also known as common baldness, is a prevalent form of progressive hair loss in both men and women. AA, an immune-mediated form of alopecia, leads to patchy hair loss on the scalp or even across the entire body. Finally, TE is a temporary form of hair loss, usually triggered by stress, a traumatic event, or even a change in hormones, often occurring post-childbirth.

The TrichoTest™ is equipped to assess each of these pathologies, identifying the unique genetic and lifestyle factors that may contribute to hair loss, and guiding healthcare providers in determining the best treatment path.

How Can Genetics Benefit the Patient?

The human genome is a wealth of information that goes beyond just determining our physical traits. It influences how our bodies react to various substances, including medication. In the context of hair loss, understanding the genetic factors involved can significantly improve treatment outcomes, and that's where the value of the Fagron TrichoTest™ becomes apparent.

Genetics plays a pivotal role in determining our unique biological responses. By understanding an individual's genetic makeup, healthcare providers can tailor treatment strategies to cater specifically to that individual's needs and potential responses. This process, known as personalized or precision medicine, has the potential to optimize treatment efficacy and minimize potential side effects, and is now being applied to the field of alopecia treatment via the Fagron TrichoTest™.

The TrichoTest™ analyzes key genes that have been scientifically linked with hair loss and hair health. The insights derived from this analysis can inform predictions about how a patient might respond to various treatment options. For example, if a person's genetic profile indicates an increased sensitivity to a certain medication, healthcare providers can adjust the dosage or choose an alternative treatment that might be more effective or have fewer side effects. Similarly, the test can identify genetic variations that may predict a more positive response to specific treatments. This way, healthcare providers can make data-driven decisions that are specifically tailored to the patient's genetic profile, increasing the likelihood of successful treatment.

The efficacy of the most recognized alopecia treatments is not absolute, and it requires at least a 4- to 6-month trial before noticing improvement and must be used indefinitely to maintain a response. Although topical minoxidil exhibits a good safety profile, its efficacy in the overall population remains relatively low at 30 - 40%. While finasteride arrests hair loss in over 87% of men, only 11% achieve marked hair regrowth¹.

Due to the significant time commitment and low re-sponse rate, biomarkers for predicting patient response prior to therapy would be advantageous. Numerous polymorphisms defining potential response to alopecia treatments have been defined, but none of them are used on an individual basis in the clinical practice. Since SULT1A1 enzyme activity correlates with minoxidil response², Goren et al.³ developed a colorimetric assay of SULT1A1 activity in plucked hair follicles to predict patient response to minoxidil.

A meta-analysis of the results from three studies (70 patients total) yielded an accuracy of 95.9% in ruling out non-responders to minoxidil⁴. This colorimetric minoxidil response test is registered by Follea International and commercialized in some clinics in Europe. SULT1A1*2 (rs9282861) genetic variant analysis could also be used for ruling out with a high accuracy non-responder to topical minoxidil treatment⁵. However, there is currently no evidence that this genetic test is commercialized or being used in clinical settings.

Moreover, the analysis of genetic information can help to reveal predispositions to certain types of hair loss, which might not yet be apparent. Early detection of these predispositions can enable preventive strategies to be implemented, potentially delaying, or even preventing the onset of hair loss. This proactive approach to healthcare is an enormous benefit of genetic testing and analysis.

The Fagron TrichoTest™ also considers the potential impact of a patient's lifestyle and personal history on their genetic predispositions. This holistic approach can lead to lifestyle recommendations that complement the suggested treatment strategies, creating a comprehensive and efficient plan of action against hair loss.

Training

GX Sciences – a Fagron company, extends its commitment beyond providing cutting-edge genetic testing services, underlining the importance of education and training for healthcare providers. With its GX Academy, an educational platform rich in resources, it offers contemporary updates, training, and expert-led webinars to enhance practitioners' understanding. Simultaneously, the company provides tailored support to help in interpreting test results and discussing specific patient cases. The goal is to foster a community of well-informed healthcare professionals adept at implementing personalized medicine for optimal patient care.

In essence, by incorporating genetics into the management of alopecia, healthcare providers can navigate the complex landscape of hair loss treatment with precision, leading to improved patient satisfaction, better treatment outcomes, and enhanced overall patient well-being.

The future of hair loss treatment is personalized, and with the TrichoTest™, that future is here.

References:

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