Comprehensive Hearing Loss

The symptoms and severity of hearing loss vary from person to person. Hearing loss may manifest as a complete loss of hearing or partial deafness. It can affect one or both ears, it may apply to only certain sound frequencies, and it sometimes accompanies other symptoms. While many people experience hearing loss as they get older, genetic forms of hearing loss may occur at younger ages, even as early as infancy.

WHAT CAUSES HEARING LOSS?

Both environmental factors and genetics can contribute to hearing loss. According to the CDC, approximately 50% of hearing loss cases in infants can be attributed to genetics. Likewise, genetic factors can also contribute to age-related hearing loss or increase susceptibility to hearing loss caused by environmental factors. Environmental factors such as exposure to loud noise, medications, and certain types of infections can weaken structures in the ears and contribute to hearing loss.

TYPES OF GENETIC HEARING LOSS

Syndromic

Hearing loss that occurs with other conditions or additional symptoms.

Non-Syndromic

Hearing loss not associated with a condition or additional symptoms.

WHO IS THIS TEST FOR?

This panel may be appropriate for anyone with a personal or a family history of hearing loss. Individuals or family members who have exhibited features such as failing a hearing test, having delayed speech development, being hard of hearing, and/or requiring hearing aids at a younger age than expected can benefit from this test.

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BENEFITS OF GENETIC TESTING

Genetic testing for comprehensive hearing loss can:

- Establish or confirm the appropriate diagnosis
- Identify risks for additional health related symptoms
- Inform family members about their own risk factors
- Provide options for family planning
- Result in more personalized treatment and symptom management

RELATED TESTS

Visit Fulgent website for most up-to-date list

Syndromic Hearing Loss NGS Panel
Comprehensive Hearing Loss NGS Panel
Non-Syndromic Hearing Loss NGS Panel

TEST SPECIFICATIONS

Acceptable Sample Requirements

- Blood, two 4-mL EDTA tubes (lavender top)
- Extracted DNA, 3 µg in EB buffer
- Buccal swab or saliva

Turnaround Time 3-5 weeks

Coverage ≥96% at 20x

Reporting
VUS, likely pathogenic, and pathogenic variants

Customization
Customizable Gene list, VUS opt-out

GET CONNECTED

American Hearing Research Foundation - american-hearing.org
Hearing Loss Association of America - hearingloss.org
Global Genes - globalgenes.org

REFERENCES

- ncbi.nlm.nih.gov/books/NBK1434
- hear-it.org/Genetic-hearing-loss
- cdc.gov/ncbddd/hearingloss/genetics.html

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A Patient's Guide to Genetic Testing

What does a genetic test check for?

Genetic testing checks the order of one's DNA sequence (coded by the letters A, T, G, C) in specific genes linked to genetic conditions. Letters that were added, missing, or changed, are known as variants and can sometimes be harmful to one's health, increasing the risk for a genetic condition.

What are the potential results?

There are three possible results from genetic testing:

Positive

A pathogenic/likely pathogenic variant is detected in one's DNA. This type of variant is known to increase one's risk of a genetic condition. Identifying the specific gene involved can help confirm a diagnosis, inform screening and management, and reveal risk factors for an individual and/or their family.

Negative

No variation known to be associated with a genetic condition was detected in one's DNA . While a result may not show an increased risk for the condition(s) tested for, one can still be at risk for disease, especially if there is a family history.

Variant of Uncertain Significance (VUS)

A variant was detected in one's DNA, however, not enough information is known about this variant to determine whether or not it is known cause the condition(s) tested for. More research is needed to better understand this variant.

What about family members?

Children, siblings, and parents of individuals who have a variant(s) identified in genetic testing could carry the same variant(s) and benefit from testing. Regardless of whether or not a variant was identified, individuals can still be at an increased risk for a genetic condition, especially with a family history.

Do genetic test results affect health insurance or employment?

No, the Genetic Information Nondiscrimination Act (GINA) was signed into law in 2008.
It protects individuals from discrimination by an employer or a health insurance company based on genetic testing results and genetic information. GINA does not protect against life and disability insurance discrimination. For more information on GINA, go to www.ginahelp.org.

Where can I learn more?

Medline Plus/Genetics Home Reference - medlineplus.gov/genetics/understanding
National Society of Genetic Counselors - nsgc.org
Fulgent Genetics - fulgentgenetics.com/products/carrierscreening/learning.html

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