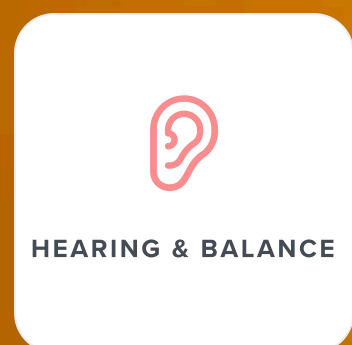


Noise-Induced Hearing Loss

DNA Health Report

REPORT CATEGORY —



Sample Client

Report date: 15 January 2026

Powered by


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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.

Personal information

NAME

Sample Client

SEX AT BIRTH

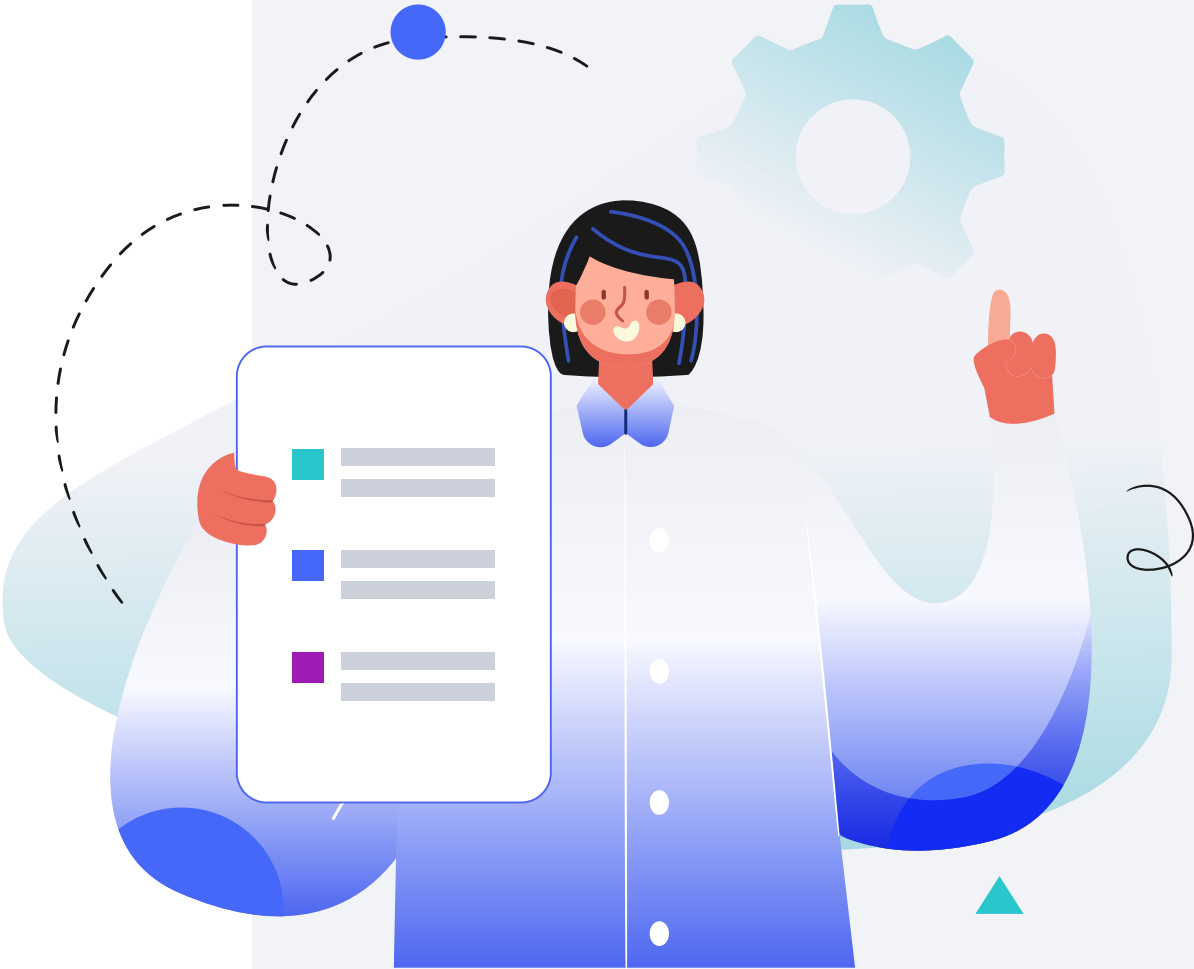
Male

HEIGHT

5ft 5" 165cm

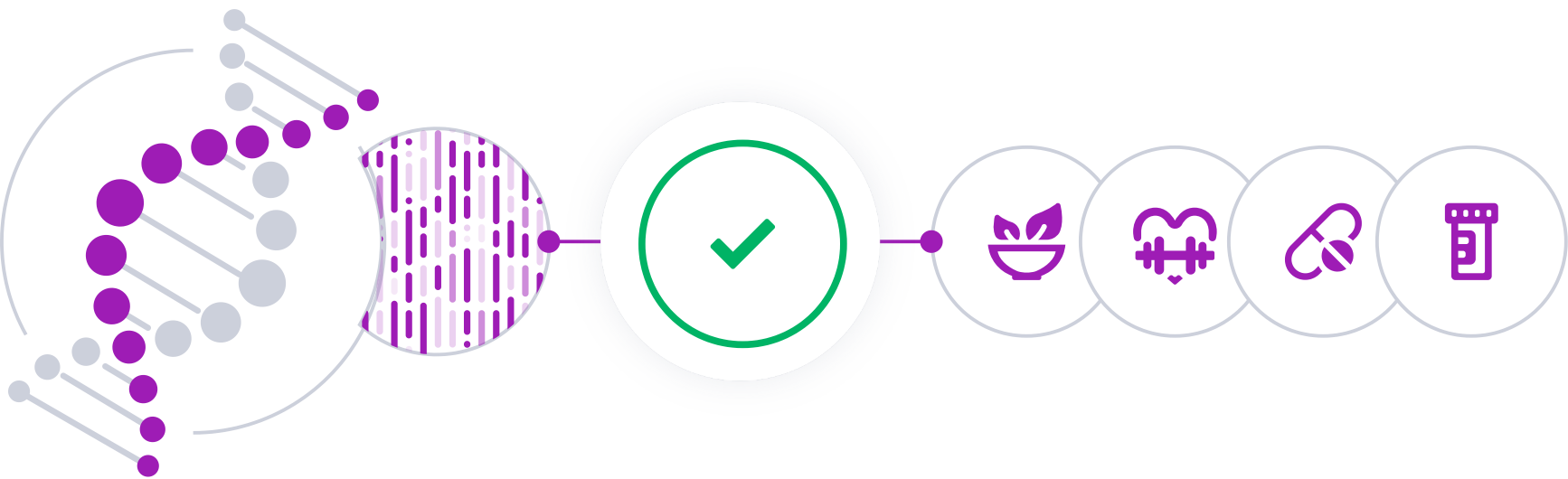
WEIGHT

137lb 62kg



How this works

Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.

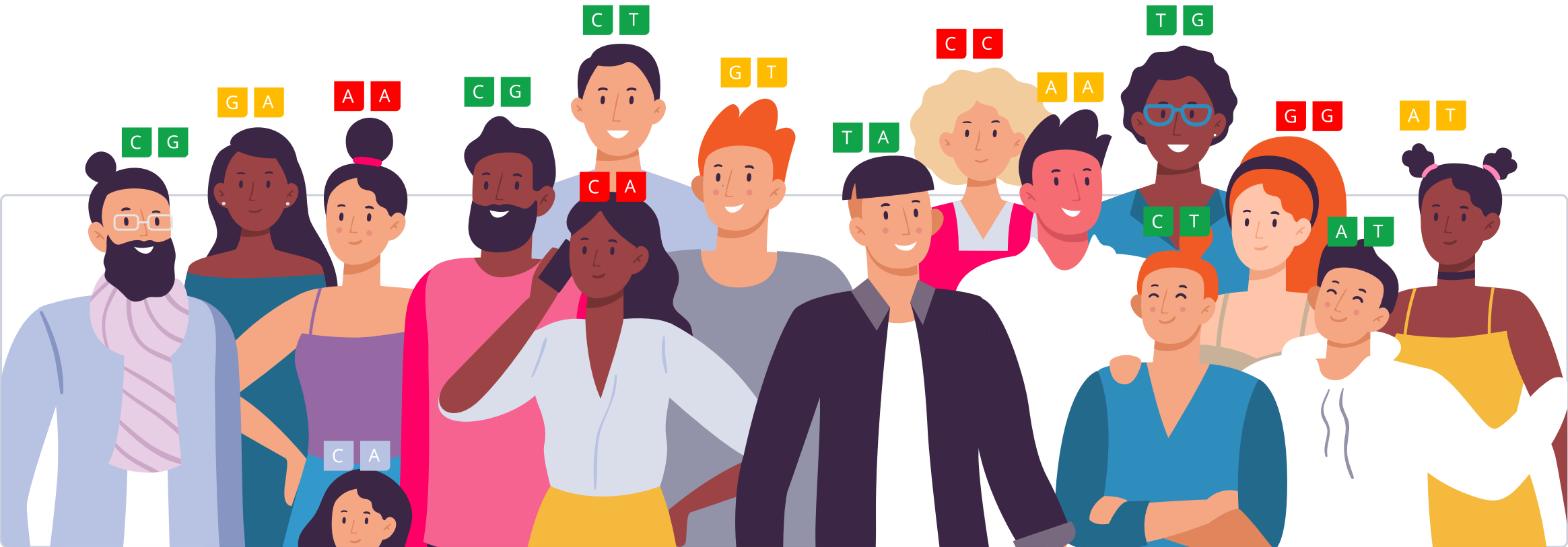


Similarly, our Trait Reports look at how your DNA influences your traits.



Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



We use artificial intelligence and machine learning to analyze all this information.
We then summarize your results as a risk score or display it on a gauge.

In total, we analyze up to 83 million genetic variants.

When we give a risk score, the risk icon tells you if you are at a higher or lower risk compared to other people:



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

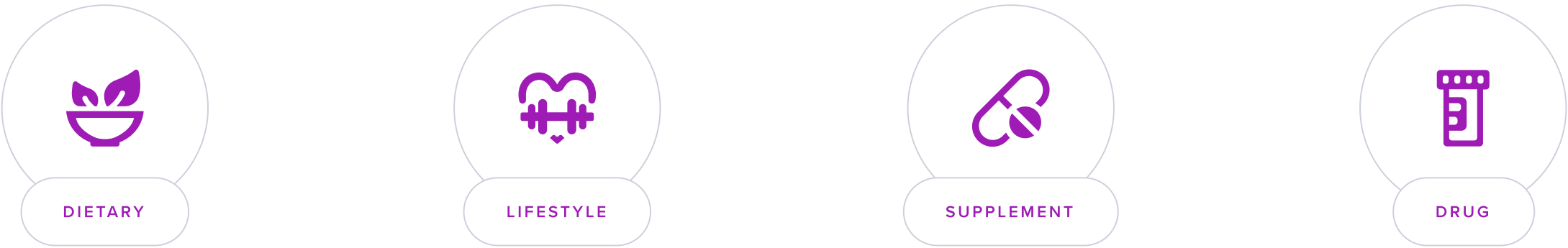
You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs.
The following icons tell you which category a recommendation falls into:



Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):



Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

5 / 5

Recommendations that are considered effective and generally recommended by experts and medical bodies.

4 / 5

Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.

3 / 5

Recommendations that are considered possibly effective and have many studies supporting them

2 / 5

Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.

1 / 5

Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.

0 / 5

No evidence in humans.

Genotype-specific Evidence

High-quality

Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, a few large clinical trials, or a meta-analysis).

Medium-quality

Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).

Low-quality

Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).

Indirect

A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).

In theory

A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

Noise-Induced Hearing Loss (NIHL) is a permanent hearing impairment resulting from prolonged exposure to high levels of noise. One of the most common occupational illnesses in the United States, NIHL is also one of the most preventable. While both intensity and duration of noise exposure are risk factors for NIHL, even a single exposure to an extremely loud sound (like an explosion) can cause permanent damage.

Symptoms of NIHL include [\[R\]](#):

- Difficulty hearing high-pitched sounds.
- Muffling of speech and other sounds.
- Difficulty understanding speech, especially against background noise.
- A ringing or buzzing sound in the ears (tinnitus).

Prevention is the cornerstone of managing NIHL. The following steps can help prevent hearing loss from loud noises and keep it from getting worse [\[R\]](#):

- Limiting exposure to loud noises, taking breaks from noise when possible.
- Using appropriate hearing protection in noisy environments.
- Turning down the volume when listening to the radio, TV, or music.
- Seeking out quiet leisure activities to give your ears a rest.
- Following hearing conservation guidelines set by regulatory agencies.
- Having your hearing regularly tested, especially if you are at risk.

Risk Factors and Treatment

Risk factors for NIHL include [\[R\]](#):

- Occupational noise: Jobs that involve loud machinery or explosions are at higher risk.
- Recreational noise: Exposure to loud music at concerts, clubs, and through personal audio devices can cause NIHL.
- Age: The cumulative effect of noise over time can contribute to hearing loss in older adults.
- **Genetics**

There is growing evidence that genetic factors may influence an individual's susceptibility to NIHL. Variations in genes related to the structure and function of the inner ear and its response to stress might explain why some people are more prone to hearing damage from noise than others. These genetic differences can affect the robustness of the auditory cells and their capacity to recover from noise exposure.

Once hearing is lost, it cannot be restored naturally. However, management strategies include [\[R\]](#):

- Using hearing aids or other amplification devices if necessary.
- Cochlear implants. When a regular hearing aid isn't likely to help much, a cochlear implant might be an option.



TYPICAL LIKELIHOOD

Typical likelihood of having NIHL based on 1,671 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
PTPRN2	rs10081191	CA
STK17A	rs74963759	GG
CTBP2	rs10901863	CT
BTBD3	rs2144638	CG
/	rs749405486	AA
/	rs137960856	TT
TMPRSS3	rs727503493	TT
/	rs201291779	TT
IQCB1	rs2877561	AA
CCDC68	rs1344011	CT
ARHGEF28	rs6453022	AC
TYR	rs1126809	AG
ARHGEF28	rs2703636	CT
AUTS2	rs35075890	AA
AHRR	rs190199516	TT
NCAPH2	rs200126237	GG
SLC26A5	rs141952919	AA
GTF2H5	rs138501510	CC
TRIOBP	rs200045032	GG
C10ORF90	rs139123090	GG
/	rs761934676	AA
MPZL2	rs74543584	TT
LOXHD1	rs118174674	CC
SH2D4B	rs12784122	GG

GENE	SNP	GENOTYPE
SYNJ2	rs146694394	CC
FSCN2	rs143796236	CC
KLHDC7B	rs36062310	GG
CDH23	rs143282422	GG
EYA4	rs9493627	GG
ABCC10	rs9394952	AA
CLRN2	rs13147559	CC
MPZL2	rs67307131	TT
TRIOBP	rs5756795	TT

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

Your Recommendations

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.

1

Magnesium

350 mg

3

N-acetylcysteine (NAC)

1200 mg

5

Sound Therapy

30 minutes

DOSAGE

2

Avoid Loud Noises

4

Hearing Aids

How to implement

TYPICAL STARTING DOSE

350 mg

Description

Magnesium is an essential mineral. Your body needs it for [R, R, R]:

- Muscle, nerve, and bone function
- Blood sugar and blood pressure control
- DNA and protein production
- Strong immunity

Women need **310-320 mg** of magnesium per day, while men need **400-420 mg** [R].

Foods rich in magnesium include **nuts, seeds, and leafy greens**. Magnesium is also available as a supplement [R].

How it helps

While not on your list, Magnesium supplements have been shown to reduce cochlear damage caused by noise exposure by helping to improve blood flow and reduce free radicals.

2



Avoid Loud Noises

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Limit exposure to loud noises by keeping the volume down on personal audio devices, wearing earplugs at concerts or noisy work environments, and taking breaks in quiet areas when possible. Attempt to maintain noise levels below 85 decibels, especially for prolonged periods, to protect your hearing.

Description

Most sounds you’re exposed to daily are quiet. However, there are times when sounds can be uncomfortably loud. **Exposure to loud noise for long periods of time can damage the cells of the inner ear.** This may lead to hearing impairment and conditions like tinnitus.

Exposure to loud noises may damage the inner ear or the auditory nerve. This may lead to hearing impairment or conditions like tinnitus [\[R, R\]](#).

Potentially damaging noises can be anything at a volume **above 70 decibels** (dB). The louder the noise, the less time it takes to cause damage to your ear. For reference, some volume levels of common sounds include [\[R, R\]](#):

- Whispering (30 dB)
- Normal conversation (60-70 dB)
- Motorcycle (95 dB)
- Ambulance siren (110-129 dB)
- Fireworks, gunshots (140-165 dB)

How it helps

Avoiding loud noises helps prevent further damage to the delicate structures in the inner ear, which can worsen noise-induced hearing loss.

3



N-acetylcysteine (NAC)

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 600 mg of N-Acetylcysteine (NAC) supplement daily with water. It can be taken at any time of the day, but try to take it at the same time each day for best results.

TYPICAL STARTING DOSE
1200 mg

Description

NAC is a supplement that contains a form of the amino acid cysteine, a protein building block that your body uses to make the antioxidant glutathione. It is used for its potential antioxidant properties and its ability to support lung, gut, and mental health.

[N-acetylcysteine](#) (NAC) is converted to cysteine in the body. Cysteine is a protein building block (amino acid) that helps make the antioxidant glutathione [\[R\]](#).

People take NAC to potentially support [\[R\]](#), [\[R\]](#):

- Mental health
- Ovarian health and pregnancy outcomes
- Lung health
- Gut health

How it helps

N-acetylcysteine (NAC) is known to reduce oxidative stress in the inner ear, thus offering potential protective effects against noise-induced hearing loss.

4



Hearing Aids

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Wear your hearing aids daily, starting from the morning and remove them before bedtime to rest your ears and allow the device to dry. It's recommended to gradually increase wearing time over the first few weeks to adjust comfortably. Ensure proper maintenance by cleaning them as per the manufacturer's instructions.

Description

Hearing aids are devices designed to assist individuals with hearing loss. They can significantly improve communication, quality of life, and mental well-being for those with hearing impairments.

How it helps

Hearing aids amplify sounds, making it easier for people with noise-induced hearing loss to understand speech and environmental sounds.

5



Sound Therapy

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Engage in sound therapy sessions by listening to calming and therapeutic sounds for at least 30 minutes a day. You can do this by using apps that offer sound therapy tracks, attending sound therapy workshops, or using sound therapy machines at home. Try to incorporate this practice into your daily routine for a continuous period to observe benefits.

TYPICAL STARTING DOSE

30 minutes

Description

Sound therapy involves the use of sound frequencies, music, or specific sounds to promote relaxation, reduce stress, and alter how a person experiences sound.

Sound therapy changes the way a person experiences tinnitus by exposing them to different sounds [\[R, R, R\]](#).

Sound therapy uses **hearing aids** and different **sound-masking devices** [\[R, R, R\]](#).

How it helps

Sound therapy can help by stimulating the auditory pathways and promoting plasticity in the brain, which might improve perception and sound clarity over time.