BioAge Diagnostics

FACT SHEET

Genetics & Pharmacogenetics

One DNA test. Lifelong genetic insight.

A saliva-based genetic test providing structured insight into genetic predispositions, biological pathways and medication response. It translates relevant genetic variation into structured, clinically contextualised insights.

SAMPLE Saliva sample, collected at home or in clinic.



Saliva
Non-invasive collection

25 genes
In the pharmacogenetic panel

7 pathways
Pathway-focused gene groups

CLINICAL VALUE

Clinical value for physicians

Because inherited genetic information remains largely stable throughout life, it provides a long-term layer of information that clinicians can consider alongside medical history, phenotype, lifestyle and dynamic biomarkers.

01
Genetic predispositions
Add inherited genetic context to the patient's broader health profile

02
Medication response
Review variants associated with drug metabolism alongside current medication and clinical factors

03
Pathway-level interpretation
Explore biological pathways and genetic associations that add context

04
Personalised prevention
Combine stable genetic information with phenotype, history, lifestyle and dynamic biomarkers

WHAT IS MEASURED

What your patient sees

A lifelong genetic profile presented across practical health domains, designed to be understood in a clinical conversation. The physician remains central to interpretation, prescribing and treatment decisions.

MEDICATION

For each medicine, whether genetic variation may influence treatment (normal or divergent), with an explanation and the related genes. Medication is never adjusted without a doctor or pharmacist.

PHARMACOGENETIC PROFILE

The activity of enzymes and transport proteins involved in drug metabolism, such as CYP2C19, CYP2C9, BChE and ABCG2, compared with what most people have. Can be shared with a doctor or pharmacist.

CONDITIONS

Genetic predisposition for selected health conditions: higher, lower or around average relative to the population, shown as a factor (for example 1.3×) with related lifestyle advice.

LIFESTYLE ADVICE

Advice on smoking, physical activity, alcohol, coffee and tea and more, sorted by personal relevance based on genetic predisposition and the related conditions.

PERSONAL TRAITS

A broad range of genetic traits with practical and medical relevance, such as alcohol sensitivity, caffeine metabolisation, bitter taste perception, coeliac predisposition and muscle fibre type.

CLINICIAN DASHBOARD

Consolidated findings, points of attention and pathway views for the clinician.

WHAT YOU GET

Patient value

For the patient

- Understand predispositions: clear categories for inherited tendencies to discuss with a professional
- Medication guidance: where genetic variation may be associated with differences in medication response
- Lifelong relevance: inherited information is stable and stays relevant over time

For the clinician

- Selected pharmacogenetic genes: CYP2C19, CYP2C9, CYP2D6, CYP3A4/5, DPYD, SLCO1B1, TPMT, UGT1A1, VKORC1, NUDT15, BCHE, ABCG2
- Pathway views: methylation, drug metabolism, oxidative stress, estrogen metabolism, neurotransmitters, vitamins, inflammation
- Points of attention consolidated in one clinician dashboard

INSIDE THE REPORT

Clinician dashboard

CLINICIAN DASHBOARD · EXAMPLE PATIENT

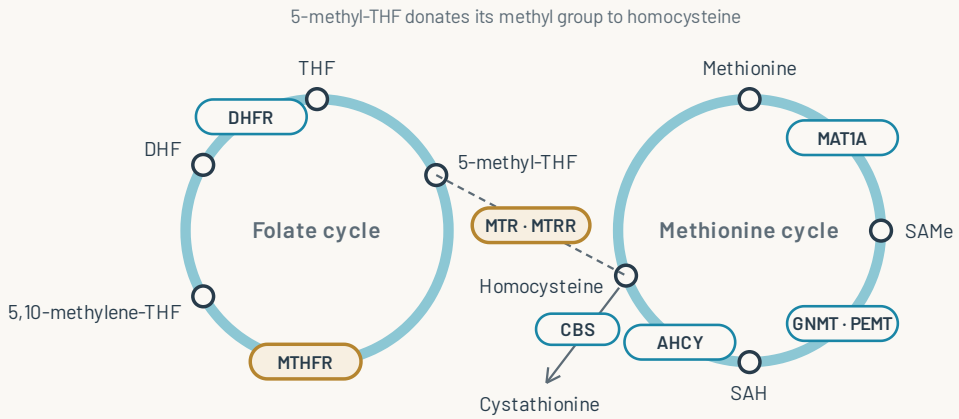
As expected · Point of attention

Methylation	Detoxification	Oxidative stress	Estrogen metabolism
MTHFR	CYP1A2	SOD2	CYP1B1
MTR	CYP2C19	CAT	CYP19A1
MTRR	CYP2D6	GPX1	COMT
BHMT	GSTM1	NQO1	SULT1A1
CBS	NAT2	NOS3	GSTP1
COMT	UGT1A1		

Consolidated genetic findings and points of attention, grouped by pathway. Illustrative example, not a patient result.

INSIDE THE REPORT

Biochemical pathway view



Variants are shown in the pathway they act in. Here, the methylation and one-carbon pathway: MTHFR and MTR link the folate and methionine cycles. Highlighted genes are illustrative.

INSIDE THE REPORT

Patient report: medicine sensitivity and personal health

Overview

Medicine sensitivity

Medication

Pharmaco profile

Personal health

Conditions

Lifestyle advice

Personal traits

Medication

For each medicine, whether genetic variation may influence treatment. **Never adjust medication on your own. Always consult a doctor or pharmacist.**

Abacavir	Divergent
Acenocoumarol (CYP2C9)	Normal
Acenocoumarol (VKORC1)	Normal
Allopurinol (ABCG2)	Normal
Amitriptyline	Divergent
Aripiprazole	Divergent

Pharmaco profile

Enzymes and transport proteins that influence how medicines work. Can be shared with a doctor or pharmacist to find the right dose, or a good alternative, faster.

ABCG2 transport protein	Normal activity
BChE enzyme	Normal activity
CYP1A2 enzyme	Normal activity
CYP2B6 enzyme	Normal activity
CYP2C9 enzyme	Normal activity
CYP2C19 enzyme	Normal activity

Conditions

Whether the genetic estimate is higher, lower or around average, relative to the population.

Alzheimer's	Slightly increased	1.3×
Bowel cancer	Average	0.9×
Breast cancer	Average	1.0×
Cardiovascular diseases	Average	1.2×
Glaucoma (POAG)	Average	0.9×
Liver cancer	Slightly reduced	0.8×
Lung cancer	Average	1.1×

Lifestyle advice

Sorted by personal relevance: genetic predisposition, the link between the advice and selected conditions, and the impact of the advice.

Smoking
Tobacco smoke contains various substances that are damaging to health. It is always sensible to stop smoking. Try to avoid passive smoking.

Daily exercise
Physical activity has a positive impact on health. Generally, at least 30 minutes of physical activity a day is recommended.

Alcohol consumption
The effect of alcohol on health depends on drinking pattern and average daily intake.

Coffee and tea

Personal traits

A broad range of genetic traits with practical and medical relevance.

Alcohol sensitivity	Not oversensitive
Alpha-1 antitrypsin deficiency (AATD)	No increased predisposition
Androgenetic alopecia	Increased predisposition
Bitter taste perception	Non-taster
Caffeine metabolisation rate	Normal
Coeliac disease (gluten)	No increased predisposition
Fast-twitch muscle fibres	Extra powerful

Illustrative patient view with example results, not a patient result. Medicine sensitivity covers medication and the pharmacogenetic profile; personal health covers conditions, lifestyle advice and personal traits. Genetic predisposition is not a diagnosis; prescribing decisions remain with the clinician.

INSIDE THE REPORT

Each result, one level deeper

MEDICATION

Abacavir

Genetic predisposition: HLA-B*57:01 positive

Based on the genetic result, a hypersensitivity reaction to abacavir is more likely than usual, so an alternative medicine may be the better choice.

How to proceed is always a decision for the treating doctor.

- Information about abacavir
- Related enzymes and genes: HLA-B*57:01

PHARMACO PROFILE

ABCG2 transport protein

ABCG2: 141QQ

Most people have a transporter with normal activity	This result: a normally active ABCG2 transporter

The transporter works as usual and removes certain medicines and the body's own waste products, such as uric acid, via the intestines and the kidneys, among other routes.

- Genetic predisposition
- What does the ABCG2 transporter do?
- Medicines and the ABCG2 transporter

CONDITIONS

Alzheimer's

Slightly increased

16%	22%
Average for sex, age and ancestry	Estimate including the DNA analysis

This does not mean that the condition will develop. The genetic estimate is slightly above average.

RELATED LIFESTYLE ADVICE

Coffee and tea · Smoking · Mediterranean food · Daily exercise · Oily fish · Bodyweight

LIFESTYLE ADVICE

Smoking

Tobacco smoke contains various substances that are damaging to health. It is always sensible to stop smoking, and to avoid passive smoking.

RELATED CONDITIONS IN THIS PROFILE

- Rheumatoid arthritis
- Alzheimer's

ALSO RELEVANT TO

- Cardiovascular diseases
- Lung cancer

PERSONAL TRAITS

Alcohol sensitivity

Not oversensitive

The result is shown against how alcohol sensitivity is distributed in populations in Europe and Asia.

- How is alcohol broken down in the liver?
- Genetic predisposition to alcohol sensitivity
- Genetic variants and effects
- Personal genetic predisposition
- Other factors

Every result opens to an explanation: the gene or variant behind it, how it compares with most people, and related lifestyle advice or conditions. Illustrative example, not a patient result.

INSIDE THE REPORT

Genes & markers included in the analysis

Pharmacogenetics

ABCG2, BCHE, CYP1A2, CYP2B6, CYP2C19, CYP2C9, CYP2D6, CYP3A4, CYP3A5, DPYD, F2, F5, HLA-A*31:01, HLA-B*15:02, HLA-B*57:01, IFNL3, MTHFR, NUDT15, PROC, PROS1, SERPINC1, SLCO1B1, TPMT, UGT1A1, VKORC1

Traits

ACTN3, ADH1B, AHSG, ALDH2, ALDOB, AR, ATP7B, AUTS2, CCL2, CYP1A2, EBF1, EDA2R, F2, F5, FGF5, FUT2, HDAC9, HFE, HLA-DQA1, HLA-DQB1, IRF4, LCT, MAPT-AS1 (SPPL2C), MBL2, MX1, OAS1, PAX1/FOXA2, PROC, PROS1, SERPINA1, SERPINC1, SLC14A2, TAS2R38, WNT10A

Health-associated genes

ABCA1, ABCA4, ABCA7, ABO, ACE, APOB, APOC3, APOE, APC, BIN1, BRCA-pathway-related markers, CDKN2A/B, CLU, FTO, GBA, GCK, GCKR, HNF1B, IL6, IL6R, KCNJ11, KCNQ1, LPA, LRRK2, MAPT, MC4R, MTHFR, MUTYH, PCSK9, PNPLA3, PPARG, TCF7L2, TERT, TP53, TREM2 and more

PATHWAY-FOCUSED GENE GROUPS

Methylation

MTHFR, MTR, MTHFD1, DHFR, MTRR, BHMT, MAT1A, AHCY, PEMT, GNMT, CBS, CTH, SUOX

Detoxification & drug metabolism

SLCO1B1, CYP1A2, CYP2B6, CYP2C9, CYP2C19, CYP2D6, CYP3A4, CYP3A5, DPYD, NUDT15, BCHE, CYP1A1, CYP1B1, CYP2A6, CYP2C8, CYP2E1, CYP2F1, CYP4F2, ITPA, NQO1, PON1, ADH1B, ALDH2, GSTM1, GSTT1, GSTP1, GSTA1, UGT1A1, SULT1A1, SULT1E1, NAT1, NAT2, TPMT, COMT, BHMT, HNMT, PEMT, ABCB1, ABCG2, VKORC1

Oxidative stress

SOD2, CAT, GPX1, SOD3, GSTM1, GSTT1, GSTP1, GSTA1, G6PD, NOS3

Estrogen metabolism

CYP17A1, CYP19A1, SRD5A2, CYP1A1, CYP1A2, CYP1B1, CYP3A4, UGT1A1, COMT, GSTM1, GSTT1, GSTP1, GSTA1, SULT1A1, SULT1E1, NQO1, SOD2, SOD3, CAT, GPX1

Neurotransmitters

TH, QDPR, DDC, COMT, MAOA, MAOB, DRD1, DRD2, DRD3, DRD4, DBH, ALDH2, ADRB2, HTR2A, HTR1A, HTR2B, DAO, HNMT, NAT2, OXTR, OPRM1, GABRA2, GRIK4, BDNF, VDR

Vitamins & micronutrients

BCO1, TTR, NBPF3, ALPL, MTHFR, FUT2, FUT6, TCN1, TCN2, CD320, MMUT, CLYBL, SLC23A1, SLC23A2, CYP2R1, GC, VDR, CYP27B1, DHCR7, SCARB1, CYP4F2, ZPR1, APOA5, APOB, VKORC1, TRPM6, TRPM7, CLDN16, CLDN19, SLC12A3

Inflammation

IL1A, IL1B, IL6, TNF / LTA, CRP, IL17A, IL10, IL1RN, IL6R, FKBP5, APOE, FADS1

A summary of the laboratory's gene and marker documentation. The full list includes additional health-associated genes beyond the examples shown here.

HOW IT WORKS

From saliva sample to clinical conversation



1. COLLECT

A saliva sample with a certified collection kit, at home or in clinic.

2. ANALYSE

Genetic analysis in an ISO 15189-accredited laboratory.

3. REVIEW

The clinician reviews findings and pathway views in the dashboard.

4. DISCUSS

Results are discussed with the patient in their clinical context.

CLINICAL VALUE

How to use the results clinically

Genetic results should always be interpreted in clinical context.

01	**CONTEXT FIRST**	Interpret inherited variants alongside medical history, phenotype, family history, current medication and relevant biomarkers.
02	**COMMUNICATE CAREFULLY**	Genetic predisposition is not a diagnosis. Discuss associations and uncertainty within the patient's broader clinical context.
03	**PRIORITISE**	Focus the consultation on findings that may provide useful context for prevention, medication response or follow-up.

MEASURE → INTERVENE → RE-MEASURE → VERIFY

LIMITATIONS

Clinical note

Pharmacogenetic information is intended to provide additional genetic context and should not replace professional judgement, current prescribing guidance or relevant patient-specific factors. Genetic predisposition is not a diagnosis.

Genetic associations should be considered alongside medical history, family history, phenotype, lifestyle and other relevant clinical information. The physician remains central to interpretation and all treatment-related decisions. Availability and regulatory status vary by market.

METHOD AND EVIDENCE

Secure. Accredited. Clinician-focused.

Information security

ISO 27001 certified.

Laboratory

Genetic analyses are conducted in an ISO 15189-accredited laboratory.

Sample collection

Saliva is collected with kits manufactured under an ISO 13485-certified quality management system.

WHITE-LABEL OPPORTUNITY

Your programme. Your brand. Our infrastructure.

Genetics & Pharmacogenetics can be integrated into healthcare, longevity and preventive-health programmes as a branded or co-branded testing pathway, without building the laboratory infrastructure behind it.

White-label options can include

- Branded test kits and packaging
- Integration into existing clinic or longevity programmes
- Remote sample collection
- Laboratory analysis
- A patient-facing experience in your name
- Results delivered into your preferred reporting environment
- Repeat testing and longitudinal programmes

Partner value

REMOTE ACCESS

Sample collection at home, outside the clinic.

A LIFELONG LAYER

Stable genetic context and medication-response insight from one saliva sample.

LONGITUDINAL USE

Repeat testing to follow change over time.

Genetics & Pharmacogenetics

One DNA test. Lifelong genetic insight.

Where Longevity Becomes Measurable.

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