Why your genes matter for your health

At a glance

- **Personalised health plans** – care that fits *your* biology, not the average.

- **Risk detection & prevention** – spot problems earlier, act sooner.

- **Smarter medicines** – understand how drugs affect you and fine-tune doses.

- **Everyday habits that work** – tailored nutrition, better choices, optimised fitness.

1. Genes & risk – seeing problems earlier

Some people inherit a higher chance of conditions such as heart disease, type 2 diabetes or certain cancers. This doesn't mean disease is guaranteed, but it changes the **starting risk level**.

Modern tools don't look for a single "bad gene". Instead, they combine the tiny effects of many DNA variants into **polygenic risk scores (PRS)**. When these scores are added to classic risk factors (age, blood pressure, cholesterol, smoking), they can sharpen risk prediction and help identify people who might benefit most from **earlier screening, closer follow-up or preventive treatment**.

Genes don't replace traditional risk factors, but they add another layer that supports **proactive prevention** rather than waiting for symptoms to appear.

2. Genes & medicines – why the same drug fits differently

The same prescription can be life-changing for one person and unhelpful – or even harmful – for another. One important reason is **pharmacogenomics**: how your genes influence the way you process and respond to medicines.

Variants in drug-metabolising enzymes and drug targets can affect how quickly a medicine is broken down, how strong its effect is, or whether you are at higher risk of side-effects. For a growing list of common medicines (for example some antidepressants, blood thinners, pain medicines and cancer drugs), there are now **clinical guidelines** that link genetic test results to recommended drug choice or dose.

Used well, pharmacogenomic information can support clinicians to **reduce adverse reactions, avoid ineffective treatments and choose safer starting doses**, especially in people taking several medicines at once.

3. Genes, lifestyle & everyday habits

Your DNA also shapes how your body responds to everyday choices like food, movement, sleep and stress.

- Some genetic profiles are linked to a higher tendency to gain weight or develop insulin resistance – but studies show that **regular physical activity and healthy diet patterns can offset a significant part of this inherited risk**.

- Genetic differences may influence how you handle fats and carbohydrates, how easily you build muscle, or how strongly you feel the impact of poor sleep or chronic stress.

The key message: **genes set the stage, lifestyle still writes a lot of the script**. Genetic information can help prioritise which habits are likely to matter most for *you* – guiding more effective, personalised plans for nutrition, movement, sleep and stress management.

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4. What genetics can – and can't – do

- Most common diseases are driven by **genes + environment + behaviour**.

- A "high-risk" result raises probability; it does **not** guarantee disease.

- A "low-risk" result lowers probability; it does **not** make you immune.

- Genetic information should **support**, not replace, good clinical care and healthy habits.

Used carefully, genetics is a tool for **better conversations**: clearer understanding of risk, more realistic expectations and more personalised choices.

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5. How HealthCode.Gene uses this science

At HealthCode.Gene we don't just generate data – we **translate it into action**:

- Turn complex genetic and pharmacogenomic reports into **plain-language summaries** for patients, clinicians and teams.

- Create **genetic & health literacy content** – reels, carousels and one-pagers that explain gene–lifestyle and gene–drug interactions in everyday terms.

- Design **visuals, decks and one-pagers** that help clinics, startups and pharma communicate risk, prevention and treatment options clearly.

- Support researchers and data-heavy teams with **genomics, transcriptomics and epigenetics analysis**, plus publication-ready figures and methods.

Where your genes meet your everyday habits, decisions can become smarter, earlier and more personalised.

HEALTHCODE.GENE
Where Genes Meet Healthy Habits

Key References for the Science-Curious

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