SelfDecode™

# MCHC

## Biohacker Report

REPORT CATEGORY

ENERGY & FATIGUE

## Sample Client

Report date: 15 January 2026

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## Personal information

NAME

**Sample Client**

SEX AT BIRTH

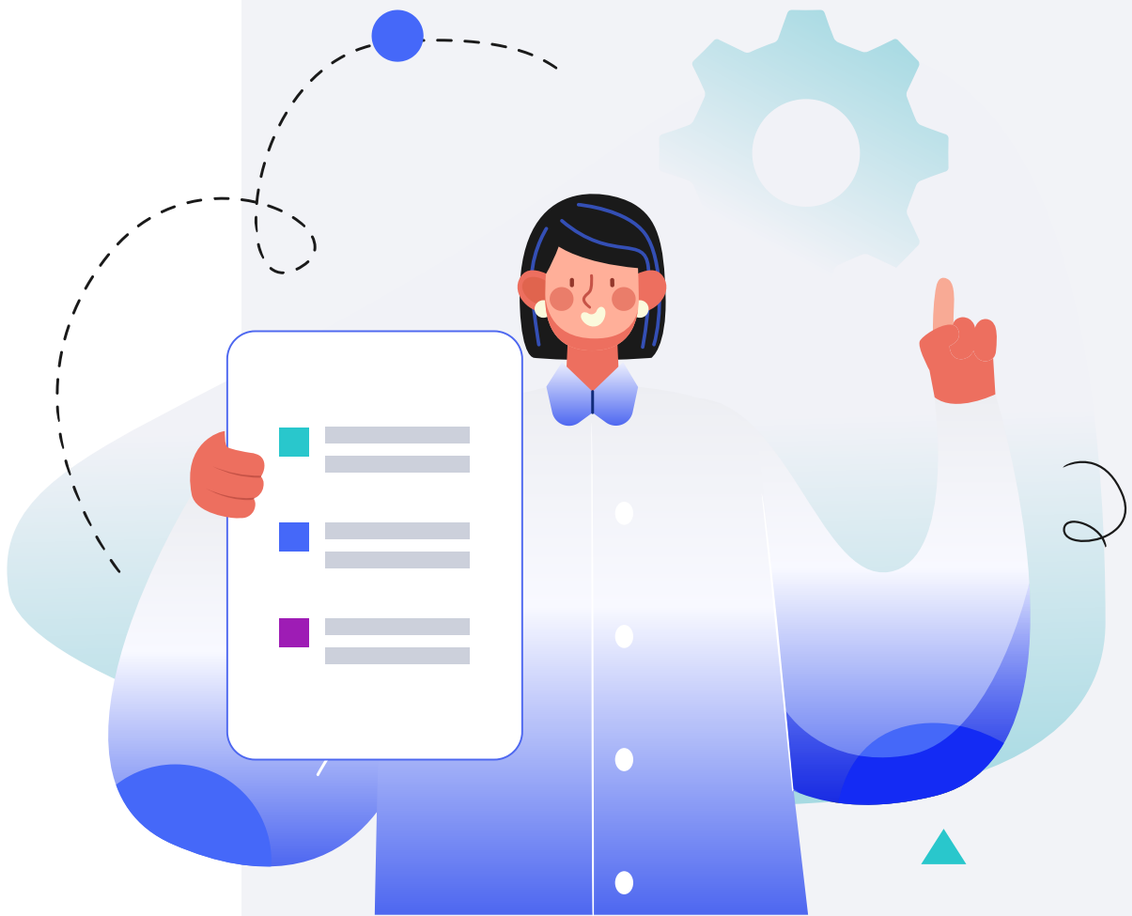
**Male**

HEIGHT

**5ft 5"** 165cm

WEIGHT

**137lb** 62kg

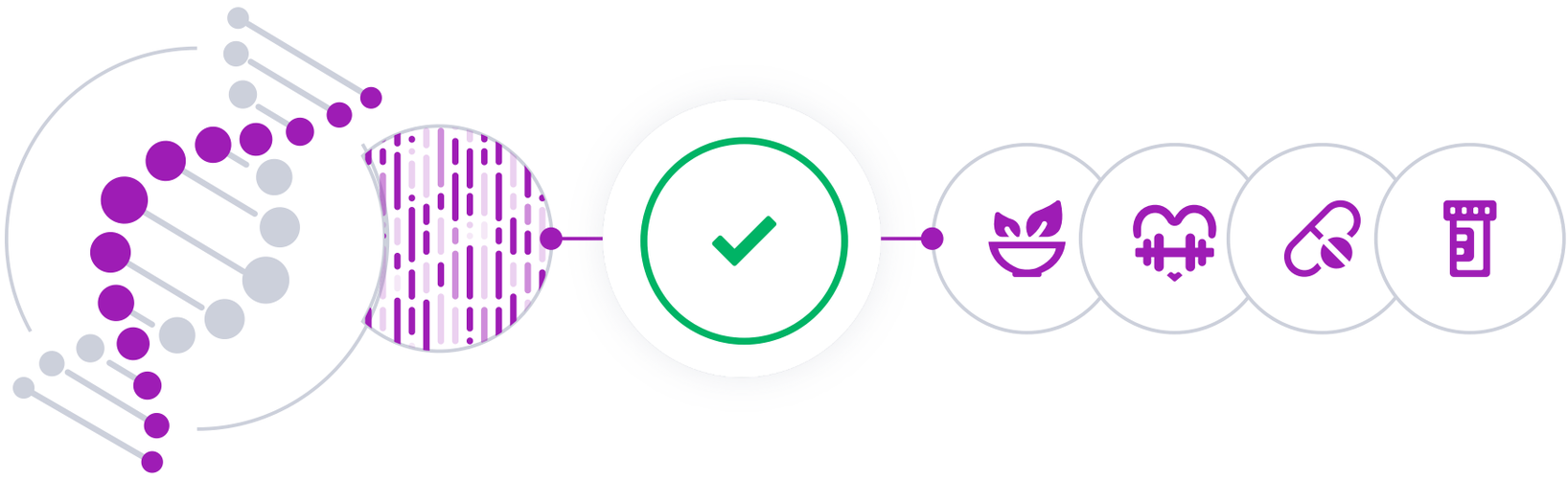


DISCLAIMER

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.

# How this works

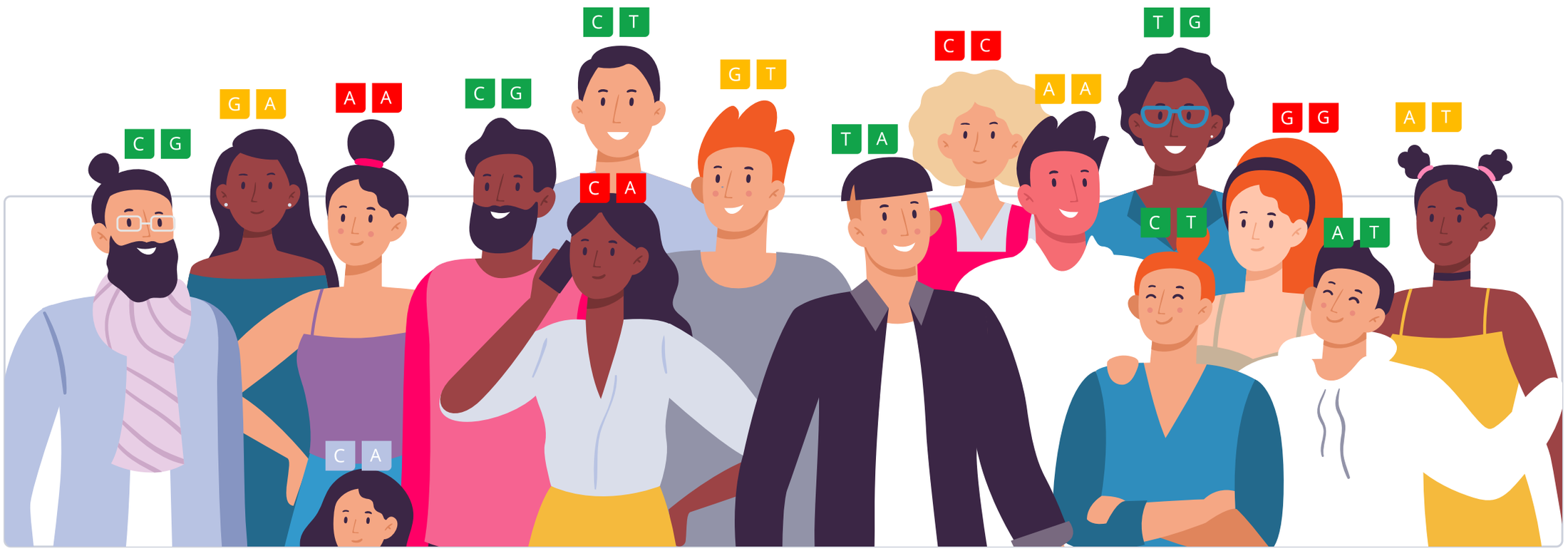
**Our Wellness Reports analyze how your DNA influences your health.**
**We then use this analysis to give you personalized risk estimates and recommendations.**



**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.

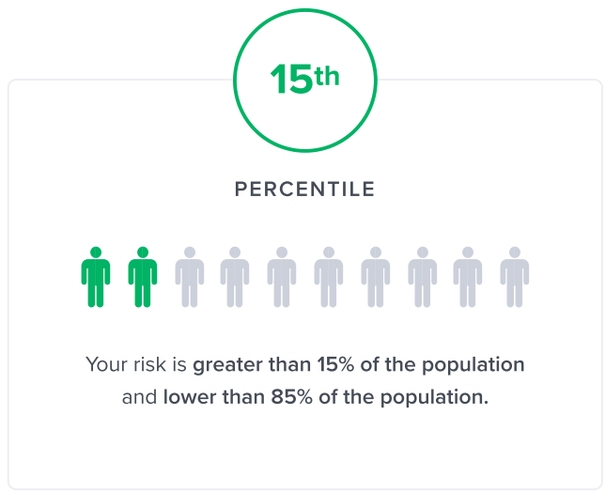
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.

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


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



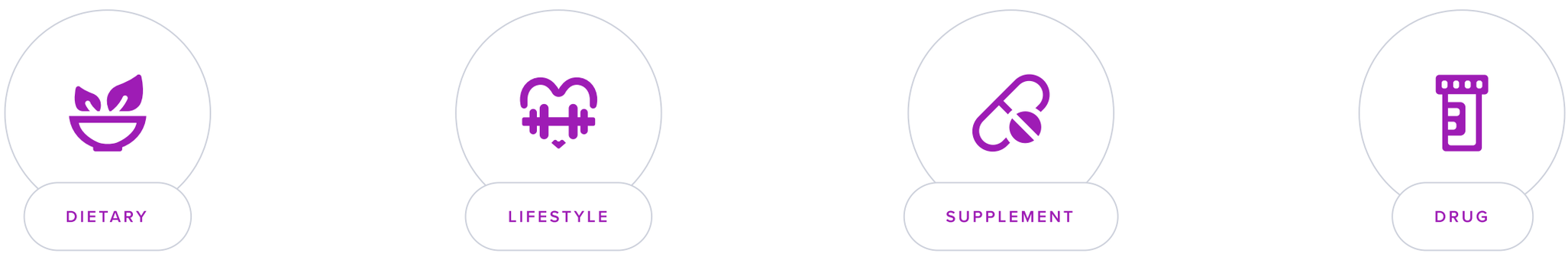

**Genotype color info:** AA You don't have any risk alleles | AA You have 1 risk allele | AA You have 2 risk alleles

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, afew 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

MCHC (mean corpuscular hemoglobin concentration) is the **average amount of hemoglobin per red blood cell**. Hemoglobin is the protein that helps transport oxygen in the blood.

An MCHC test is part of a complete blood count (CBC), which also looks at other properties of your red blood cells. MCHC is calculated from hemoglobin and your red blood cell count. It helps diagnose anemia [R].

Low MCHC causes **hypochromia** ("hypo-" = low, "chromia" = color), which makes the red blood cells paler. Meanwhile, high MCHC causes red blood cells to become darker, also known as **hyperchromia** [R, R].

# Factors Influencing MCHC

Up to **25%** of people's differences in MCHC may be due to genetics [R, R].

**Low MCHC** may result from health conditions that decrease hemoglobin production, such as

- Anemia [R, R]
- HIV [R]
- Rare genetic disorders (e.g., thalassemia) [R]

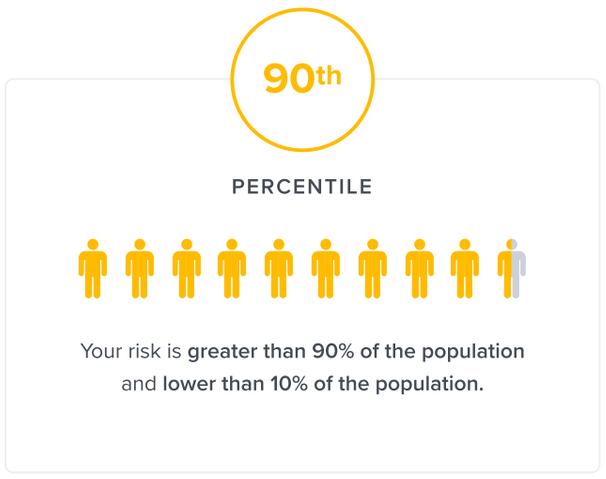
**High MCHC** may be due to [R, R, R]:

- Vitamin B12 deficiency
- Vitamin B9 (folate) deficiency
- Excessive alcohol drinking
- Rare genetic disorders

**Keep in mind that this report is not about the rare genetic disorders mentioned above.** They are very rare and usually diagnosed in infancy.

HIGHER LEVELS

**Predisposed to higher MCHC levels based on 2,420 genetic variants we looked at**




**Your top variants that most likely impact your genetic predisposition:**

| GENE | SNP | GENOTYPE |
|---|---|---|
| SLC35B1 | rs575705078 | AA |
| / | rs747844459 | CC |
| TF | rs150854910 | CC |
| / | rs573635749 | AA |
| RAB7A | rs112097551 | GG |
| RBL1 | rs149999468 | GG |
| / | rs537740323 | AA |
| BORA | rs184739375 | TT |
| AAR2 | rs181837942 | AA |
| HBB | rs34029390 | AA |
| GREM2 | rs142343894 | GG |
| ARL6IP5 | rs534455553 | CC |
| TNFRSF13B | rs34557412 | AA |
| HBZ | rs8055187 | TT |
| H2BC5 | rs9379820 | TC |
| CEBPA | rs78744187 | CT |
| RCL1 | rs10758656 | AG |
| CITED2 | rs643381 | AC |
| CD164 | rs6924815 | GA |
| / | rs189129074 | TT |
| ATP8B3 | rs74401481 | CC |
| ATP6V1G3 | rs61491840 | CC |
| ALDH8A1 | rs1320959 | TT |
| KIT | rs218251 | TT |

| GENE | SNP | GENOTYPE |
|---|---|---|
| HSPA4L | rs141430271 | CC |
| TST | rs5756489 | TT |
| MIDEAS | rs144991697 | GG |
| BCL2 | rs17758695 | CC |
| OVOL2 | rs45473509 | AA |
| MARCHF8 | rs71494791 | CC |
| TP53 | rs78378222 | TT |
| NCOA4 | rs17720193 | AA |
| PLEKHB1 | rs574506011 | GG |
| FAXDC2 | rs35998524 | CC |
| AGO3 | rs145204399 | TT |
| ABCA6 | rs77542162 | AA |
| MARCHF2 | rs145430844 | CC |
| HK1 | rs17476364 | TT |
| UBXN6 | rs8887 | 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 Turnips

1

# Turnips

IMPACT 1 / 5

EVIDENCE 1 / 5

## How to implement

Incorporate turnips into your diet 2-3 times a week by adding them to soups, stews, or roasting them as a side dish. You can also shred raw turnips into salads for a crunchy texture.

## Description

Turnips are root vegetables from the Brassicaceae family and are rich in vitamins, minerals, and fiber. They are used in cooking for their potential to support weight management, improve digestion, and provide essential nutrients like vitamin C and potassium.

## How it helps

According to one single-blind human feeding study, Tibetan turnip powder (7.5 g, 2x/day for 7 days) may contribute to hypoxia tolerance, which could be due to its ability to improve oxygen uptake and delivery, enhance body antioxidant capacity, and increase MCHC. However, further studies with larger samples and double-blind design are warranted [R].

# Next Steps

Remember, your genes only tell one important part of your health story!

Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

# Your lab results

Your lab results are impacted by the combined effect of your genes, environment and lifestyle.

Lab tests will give you the best picture of your current health status, while your genes provide insight into your health predispositions and which recommendations are best for you.

| | | | |
|---|---|---|---|
| MCHC | 33 g/dL | 32 – 36 | 9 Nov 2025 |
| RDW | 13.8 % | 11.5 – 13 – 15 | 9 Nov 2025 |
| RBC | 6.05 x10^6/mm3 | 4.2 – 5.8 | 9 Nov 2025 |
| Hematocrit | 51.8 % | 20 – 40 – 47 – 52 – 65 | 9 Nov 2025 |
| Hemoglobin | 17.1 g/dL | 7 – 13.2 – 14 – 16.5 – 17.1 – 20 | 9 Nov 2025 |