



Blood Interpretation

Blood Interpretation Report

A comprehensive, personalized analysis that brings all your data together.

AGE
61

SEX
Male

WEIGHT
77 kg

HEIGHT
183 cm

BMI
23

REASON FOR ANALYSIS
Routine health check-up

ALCOHOL USE
Occasionally

TOBACCO USE
3 cigarettes a day

PHYSICAL ACTIVITY
More than 150 minutes a week

SPECIFIC DIETARY REGIMEN
No

PERSONAL MEDICAL HISTORY
No

FAMILY MEDICAL HISTORY
High blood pressure

CURRENT MEDICATIONS
No

CURRENT SYMPTOMS
No

ALLERGY
Pollen

 **AI report** : 07/10/2026



The Blood Interpretation report is an informational and educational tool generated by AI to help you understand your lab results and prepare for your consultation. It in no way replaces your doctor's advice and does not constitute a diagnosis or treatment.





Interpretations Summary

Requires medical follow-up

Altered Kidney Function

- The kidney function markers show notable changes that require medical evaluation.
- The creatinine level is elevated at 1.5 mg/dL (above the upper limit of 1.3 mg/dL), and the estimated kidney filtration rates (eGFR) are reduced, with values of 59 and 49 mL/min/1.73m² depending on the calculation used, both below the threshold of 60 mL/min/1.73m².
- These findings suggest that the kidneys may not be filtering waste products from the blood as efficiently as expected.
- A family history of high blood pressure and long-term tobacco use are factors that can contribute to gradual kidney function decline over the years.
- A medical consultation is essential to confirm these findings with repeat testing and to determine whether further investigations, such as a urine albumin test, are needed, as only a physician is qualified to interpret these results correctly, make a diagnosis, and decide on the next steps.

Altered Liver and Bile Pigment Processing

- The total bilirubin level is notably elevated at 1.9 mg/dL, nearly twice the upper limit of 1.0 mg/dL.
- Bilirubin is a yellow pigment produced when old red blood cells are recycled, and the liver is responsible for processing it for removal.
- Importantly, the liver enzymes AST and ALT are both within normal limits, which makes significant liver damage unlikely.
- The most common explanation for this pattern in an otherwise healthy individual is a harmless inherited trait called Gilbert syndrome, where the liver simply processes bilirubin at a slower pace.
- A medical consultation is essential to confirm the cause and rule out other possibilities, as only a physician is qualified to interpret this correctly, make a diagnosis, and decide on the next steps.

Altered Bone or Liver Enzyme Activity

- The alkaline phosphatase level is significantly elevated at 166 U/L, well above the upper limit of 116 U/L.
- This enzyme is found in both the liver and bones, and its elevation can originate from either source.
- Since the liver enzymes AST and ALT are normal, the elevation is more likely to be related to bone turnover, which is the natural process of bone renewal that can increase with age, particularly in men over 60.
- A vitamin D deficiency or other bone-related conditions could also contribute.
- A medical consultation is essential to determine the source of this elevation through additional tests, as only a physician is qualified to interpret these findings correctly, make a diagnosis, and decide on the next steps.



Slightly Altered Immune Cell Count

- The white blood cell count is slightly below the lower limit of the reference range at 4.0 K/mcL (reference 4.8–10.8 K/mcL).
- White blood cells are the body's defence system against infections.
- A mildly low count can be seen in light smokers, after a recent mild viral infection, or as a normal individual variation.
- Since there are no reported symptoms of infection, fever, or fatigue, and all other blood cell lines are within normal limits, this finding is not of immediate concern but is worth monitoring.
- A discussion with a healthcare professional is advisable to determine whether a repeat blood count would be useful.

Slightly Altered Platelet Characteristics

- The mean platelet volume (MPV) is slightly above the reference range at 10.2 fL (reference 6.8–9.6 fL), while the platelet count itself is at the lower boundary of normal at 151 K/mcL.
- When the platelet count is at the lower end of normal, the bone marrow often compensates by releasing younger, larger platelets, which is the most likely explanation for this finding.
- Tobacco use can also subtly affect platelet characteristics over time.
- Since the platelet count remains within the normal range and there are no symptoms of unusual bleeding or bruising, this is not of immediate concern.
- A discussion with a healthcare professional is advisable to review this finding at the next routine check-up.

Slightly Altered Acid-Base Balance

- The total CO₂ level, which mainly reflects bicarbonate (the blood's natural buffer), is slightly above the typical reference range at 30 mEq/L.
- A mildly elevated bicarbonate can suggest a slight shift towards alkalinity, which may be related to mild dehydration or the kidneys' compensation for subtle changes in breathing patterns.
- All other electrolytes (sodium, potassium, chloride) are within normal limits, and the anion gap is normal, which is reassuring.
- A discussion with a healthcare professional is advisable to review this finding, as only a physician is qualified to interpret it correctly, make a diagnosis, and decide on the next steps.



Normal

Normal Red Blood Cell Function

- All red blood cell parameters — including the red blood cell count, haemoglobin, haematocrit, MCV, MCH, MCHC, and RDW — are within their respective normal ranges.
- This indicates that the blood is carrying oxygen efficiently to all organs and tissues.
- The red blood cells are of normal size, contain the right amount of oxygen-carrying protein, and are uniform in their characteristics.
- There are no signs of anaemia or any abnormality in red blood cell production.

Normal Blood Sugar Regulation

- Both the fasting blood glucose (94 mg/dL) and the haemoglobin A1c (5.5%) are well within their normal ranges.
- The fasting glucose provides a snapshot of blood sugar at the time of the test, while the HbA1c reflects average blood sugar control over the past two to three months.
- Together, these results provide strong reassurance that blood sugar management is healthy and there are no signs of diabetes or pre-diabetes.
- Maintaining a balanced diet and regular physical activity will help preserve this good control.

Normal Lipid Profile

- The cholesterol and triglyceride levels are all within their respective target ranges.
- Total cholesterol is 175 mg/dL, HDL cholesterol is 48 mg/dL, LDL cholesterol is 104 mg/dL (within the appropriate target for the cardiovascular risk profile), and triglycerides are 113 mg/dL.
- The total cholesterol/HDL ratio and LDL/HDL ratio are also within desirable limits.
- These results indicate a healthy fat metabolism and a well-balanced lipid profile.

Normal Thyroid Function

- The TSH level is within the normal range at 2.739 uIU/mL, indicating that the thyroid gland is receiving appropriate signals from the brain and is likely producing the right amount of thyroid hormones.
- The thyroid plays a crucial role in regulating metabolism, energy levels, and body temperature.
- A normal TSH is a good indicator that this system is functioning well.

Normal Prostate Marker

- The PSA level is well within the normal range at 0.90 ng/mL, which is reassuring for prostate health.
- PSA is a protein produced by the prostate gland, and while many factors can influence its level, a low value in a 61-year-old man is a positive finding.
- Regular screening as recommended by a healthcare professional remains a sensible approach.



Normal Electrolyte and Fluid Balance

- Sodium (140 mEq/L), potassium (4.5 mmol/L), chloride (105 mEq/L), calcium (9.4 mg/dL), and osmolality (281 mOsm/kg) are all within their normal ranges.
- These electrolytes work together to maintain fluid balance, nerve signalling, muscle contraction, and heart rhythm.
- The corrected calcium is also normal, confirming a well-maintained calcium balance.
- Total protein, albumin, and globulin levels are all within normal limits, reflecting good nutritional status and liver function.





Results Interpretation

Requires medical follow-up

Alkaline Phosphatase (Alk Phos)

Requires medical follow-up

166 U/L

Reference : 46–116 U/L

Alkaline phosphatase is an enzyme found mainly in the liver and bones — think of it as a maintenance worker that helps build bones and process substances in the liver.

- The alkaline phosphatase level is significantly above the upper limit of the reference range.
- Since the other liver markers (AST and ALT) are both within normal limits, a liver-related cause is less likely, and the elevation may instead originate from bone — conditions affecting bone turnover (the natural process of bone renewal) are a common source in men over 60, as bone remodelling can increase with age.
- A vitamin D deficiency can also stimulate bone turnover and raise this enzyme, and this possibility would need to be explored with a specific blood test.
- Tobacco use, even at a low level, has been associated with altered bone metabolism over time.
- This level of elevation warrants specific medical attention to identify the source, which may involve additional tests such as a vitamin D level, a GGT (another liver enzyme) to help distinguish between liver and bone origins, or bone-specific alkaline phosphatase.
- Maintaining a diet rich in calcium (e.g., dairy products, fortified plant milks — about 3 servings per day) and ensuring adequate but not excessive sun exposure (10–15 minutes daily on forearms and face) can support bone health; engaging in weight-bearing exercise such as brisk walking for 30 minutes at least 5 days per week helps maintain bone density; and avoiding excessive alcohol intake protects both liver and bone health.
- A medical consultation is essential to investigate this significant elevation further, as only a physician is qualified to interpret it correctly, make a diagnosis, and decide on the next steps.



Creatinine Level

Requires medical follow-up

1.5 mg/dL

Reference : 0.6–1.3 mg/dL

Creatinine is a waste product from normal muscle activity — the kidneys filter it out like a sieve catching debris from water. A rising level may suggest the sieve is not working as efficiently.

- The creatinine level is above the upper limit of the reference range, which suggests that the kidneys may not be filtering waste as efficiently as expected.
- The estimated glomerular filtration rate (eGFR), which provides a more precise picture of kidney function, is also reduced (49–59 mL/min/1.73m²), placing it in a range that warrants careful evaluation.
- A family history of high blood pressure is relevant here, as sustained high blood pressure over time is one of the most common causes of gradual kidney function decline; additionally, tobacco use, even at a low level, can damage the small blood vessels in the kidneys over the years.
- This finding requires specific medical attention because, if confirmed on repeat testing, it may indicate a stage of kidney function impairment that benefits from early management to slow progression.
- Staying well hydrated with approximately 1.5 to 2 litres of water per day supports kidney function; reducing salt intake to less than 6 grams per day helps protect the kidneys and blood vessels; and continuing regular physical activity, as is already the case, is beneficial for cardiovascular and kidney health.
- A medical consultation is essential to investigate this result further, including a repeat creatinine test and a urine albumin check, as only a physician is qualified to interpret these findings correctly, make a diagnosis, and decide on the next steps.

eGFR African American

Requires medical follow-up

59 mL/min/1.73m²

Reference : >60 mL/min/1.73m²

The estimated glomerular filtration rate is a calculation that estimates how well the kidneys are cleaning the blood — like measuring the flow rate of a water filter to see how efficiently it works.

- This eGFR estimate is below 60 mL/min/1.73m², which, if confirmed on repeat testing over at least three months, may correspond to a mild-to-moderate reduction in kidney filtering capacity.
- As noted in the creatinine interpretation, a family history of high blood pressure and long-term tobacco use are factors that can contribute to gradual kidney function decline.
- This level of kidney function requires medical attention because early identification allows for protective measures that can significantly slow any further decline.
- Reducing daily salt intake to less than 6 grams, maintaining adequate hydration of approximately 1.5 to 2 litres of water per day, and continuing regular physical activity all support kidney health.
- A medical consultation is essential to confirm this finding with repeat testing and to assess whether additional investigations such as a urine albumin test are needed, as only a physician is qualified to interpret these results correctly, make a diagnosis, and decide on the next steps.



eGFR Non-African American

Requires medical follow-up

49 mL/min/1.73m²

Reference : >60 mL/min/1.73m²

This is another version of the kidney filtration rate estimate, calculated using a slightly different formula for different population groups.

- This eGFR estimate is below 60 mL/min/1.73m², placing it in a range that suggests a mild-to-moderate reduction in kidney filtering capacity if confirmed over time.
- The same factors discussed above — family history of high blood pressure and tobacco use — are relevant contributors.
- A value in this range warrants careful medical evaluation because it may indicate a stage of kidney function impairment where targeted interventions can make a meaningful difference.
- Limiting salt intake to less than 6 grams per day, staying hydrated with approximately 1.5 to 2 litres of water daily, and avoiding over-the-counter anti-inflammatory medications (such as ibuprofen) which can further stress the kidneys are practical steps to take in the meantime.
- A medical consultation is essential to confirm this result and plan appropriate follow-up, as only a physician is qualified to interpret these findings correctly, make a diagnosis, and decide on the next steps.

Total Bilirubin

Requires medical follow-up

1.9 mg/dL

Reference : 0.1–1.0 mg/dL

Bilirubin is a yellow pigment produced when old red blood cells are broken down — like the exhaust from recycling old vehicles. The liver processes it for removal from the body.

- The total bilirubin level is nearly twice the upper limit of the reference range, which represents a notable elevation.
- Since the liver enzymes AST and ALT are both within normal limits, a significant liver disease is less likely; the most common explanation for an isolated bilirubin elevation with normal liver enzymes in an otherwise healthy individual is Gilbert syndrome (a harmless inherited condition where the liver processes bilirubin more slowly than usual), which affects roughly 5–10% of the population.
- Occasional alcohol consumption can also contribute to a mild increase in bilirubin processing demands.
- This finding warrants medical attention to confirm the cause and to rule out other possibilities such as a subtle issue with bile flow or increased red blood cell breakdown.
- Staying well hydrated with approximately 1.5 to 2 litres of water per day supports the liver's processing functions; limiting alcohol intake to no more than 2 standard drinks on any occasion helps reduce the liver's workload; and eating a balanced diet with adequate fibre (at least 25 grams per day from whole grains, fruits, and vegetables) supports overall liver health.
- A medical consultation is essential to investigate this elevation, as only a physician is qualified to interpret it correctly, make a diagnosis, and decide on the next steps.



To monitor

WBC (White Blood Cells)

To monitor

4.0 K/mcL

Reference : 4.8–10.8 K/mcL

White blood cells are the body's defence soldiers, patrolling the bloodstream to fight off infections and foreign invaders, much like a security team guarding a building.

- The white blood cell count is slightly below the lower end of the reference range.
- A mildly low count can be seen in individuals who smoke lightly, as tobacco can alter the way the bone marrow produces these cells; it may also reflect a recent mild viral infection that temporarily suppressed production, or simply represent an individual baseline variation.
- All other blood cell lines (red blood cells, platelets) are within normal limits, and there are no reported symptoms of infection or fatigue, which is reassuring.
- Maintaining a balanced diet rich in fruits, vegetables and lean proteins can support the immune system; aiming for at least 7–8 hours of sleep per night helps the body regenerate these defence cells; and washing hands regularly, especially during cold and flu season, reduces the risk of infections.
- A discussion with a healthcare professional is advisable to determine whether a repeat blood count would be useful, as only a physician is qualified to interpret this correctly, make a diagnosis, and decide on the next steps.

MPV (Mean Platelet Volume)

To monitor

10.2 fL

Reference : 6.8–9.6 fL

MPV measures the average size of the repair patches (platelets) — larger patches can sometimes mean the body is working harder to produce new ones.

- The average platelet size is slightly above the reference range.
- When the platelet count is at the lower end of normal, as is the case here, the bone marrow often compensates by releasing younger, larger platelets, which is the most likely explanation for this finding.
- Tobacco use, even at a low level, can also contribute to subtle changes in platelet characteristics over time.
- Since the platelet count itself remains within the normal range and there are no symptoms of unusual bleeding or bruising, this is not of immediate concern.
- Reducing or stopping tobacco consumption can help improve overall blood vessel and platelet health; eating foods rich in omega-3 fatty acids such as oily fish (e.g. salmon or mackerel, two portions per week) supports healthy blood function; and staying well hydrated with approximately 1.5 to 2 litres of water daily helps maintain good blood flow.
- It is recommended to discuss this finding with a healthcare professional at the next appointment, as only a physician is qualified to interpret it correctly, make a diagnosis, and decide on the next steps.



30

Reference : 23–29 mEq/L

Total CO2 mainly reflects bicarbonate, which acts as a buffer in the blood — like a shock absorber that prevents the blood from becoming too acidic or too alkaline.

- The total CO2 level is slightly above the typical reference range.
- A mildly elevated bicarbonate level can suggest a slight metabolic alkalosis (a condition where the blood is a touch too alkaline), which may be related to mild dehydration or dietary factors; it can also represent the kidneys' normal compensation for a chronic respiratory pattern, particularly relevant given the daily tobacco use which can subtly affect breathing mechanics over time.
- Since sodium, potassium, and chloride are all within normal limits and there are no reported symptoms, this mild elevation is not of immediate concern and may simply reflect a transient state at the time of the blood draw.
- Ensuring adequate daily hydration of approximately 1.5 to 2 litres of water can help the kidneys maintain a balanced acid-base environment; eating a varied diet with plenty of fruits and vegetables supports the body's natural buffering systems; and reducing tobacco consumption would benefit lung function and overall acid-base regulation.
- A discussion with a healthcare professional is advisable to review this finding, as only a physician is qualified to interpret it correctly, make a diagnosis, and decide on the next steps.



Normal

RBC (Red Blood Cells)

Normal

4.78 $\times 10^6/\text{mL}$

Reference : 4.70–6.10 $\times 10^6/\text{mL}$



Red blood cells are like tiny delivery trucks that carry oxygen from the lungs to every part of the body and bring back carbon dioxide to be exhaled.

- The red blood cell count is within the normal range, indicating that the body has an adequate fleet of oxygen-carrying cells to supply all tissues effectively.

Haemoglobin (Hgb)

Normal

15.0 g/dL

Reference : 13.7–16.7 g/dL



Haemoglobin is the cargo inside each delivery truck (red blood cell) — it is the protein that actually grabs onto oxygen and carries it throughout the body.

- The haemoglobin level is well within the normal range, confirming that the blood is carrying a healthy amount of oxygen to all organs and tissues.

Haematocrit (Hct)

Normal

45.4 %

Reference : 40.0–50.0 %



Haematocrit measures the proportion of blood that is made up of red blood cells, like measuring how much of a jar is filled with marbles versus water.

- The haematocrit is within the expected range, showing a healthy balance between red blood cells and the liquid part of the blood.

MCV (Mean Corpuscular Volume)

Normal

95.0 fL

Reference : 80.0–100.0 fL



MCV measures the average size of each delivery truck (red blood cell) — whether they are the right size to do their job efficiently.

- The average size of the red blood cells is normal, suggesting they are well-formed and functioning properly.

MCH (Mean Corpuscular Haemoglobin)

Normal

31.4 pg

Reference : 27.0–34.0 pg



MCH tells how much oxygen-carrying cargo (haemoglobin) is loaded into each delivery truck (red blood cell).

- Each red blood cell contains a healthy amount of haemoglobin, meaning the oxygen-carrying capacity per cell is optimal.

MCHC (Mean Corpuscular Haemoglobin Concentration)

Normal

33.0 g/dL

Reference : 31.0–36.0 g/dL



MCHC measures how tightly packed the oxygen-carrying cargo (haemoglobin) is inside each delivery truck (red blood cell).

- The concentration of haemoglobin within each red blood cell is normal, confirming that the cells are efficiently loaded with their oxygen cargo.



RDW-CV (Red Cell Distribution Width)

Normal

13.1 %

Reference : 10.0–15.0 %

RDW-CV measures how uniform the delivery trucks (red blood cells) are in size — like checking whether all trucks in a fleet are roughly the same size or if some are much bigger or smaller.

- The variation in red blood cell size is within the normal range, indicating a uniform and healthy population of red blood cells.

Platelets

Normal

151 K/mcL

Reference : 150–440 K/mcL

Platelets are like tiny repair patches in the blood — when there is a cut or wound, they rush to the site and stick together to form a plug and stop the bleeding.

- The platelet count sits right at the lower boundary of the normal range, which still falls within acceptable limits and suggests the blood-clotting system is functioning adequately.

Sodium Level

Normal

140 mEq/L

Reference : 136–145 mEq/L

Sodium is like the water-balance manager of the body — it controls how much water stays inside and outside cells, keeping everything at the right pressure, much like a dam regulating water levels.

- The sodium level is well within the normal range, indicating that the body's fluid balance and hydration are well regulated.

Potassium Level

Normal

4.5 mmol/L

Reference : 3.5–5.1 mmol/L

Potassium is like a battery for the muscles and heart — it provides the electrical charge needed for muscles to contract and the heart to beat in a steady rhythm.

- The potassium level is within the normal range, supporting proper muscle function and a steady heartbeat.

Chloride Level

Normal

105 mEq/L

Reference : 98–107 mEq/L

Chloride works alongside sodium like a partner — together they maintain the body's fluid balance and help keep the blood at the right acidity level, similar to a pH balancer in a swimming pool.

- The chloride level is within the normal range, confirming that the body's acid-base balance and fluid regulation are functioning properly.

AST (Aspartate Aminotransferase)

Normal

24 U/L

Reference : 15–37 U/L

AST is an enzyme found in the liver and muscles — it is like a smoke detector that can signal damage to these tissues when its level rises.

- The AST level is within the normal range, suggesting that the liver and muscle tissues are in good health with no signs of damage.



ALT (Alanine Aminotransferase)

Normal

13 U/L

Reference : 12–78 U/L

ALT is an enzyme found primarily in the liver — it is a more specific smoke detector for liver health compared to AST.

- The ALT level is within the normal range, providing further reassurance that the liver is functioning well.

BUN (Blood Urea Nitrogen)

Normal

18 mg/dL

Reference : 7–18 mg/dL

BUN measures the amount of waste product (urea) in the blood that the kidneys need to filter out — like checking how full a rubbish bin is to see if the waste collection service (kidneys) is keeping up.

- The BUN level sits at the upper boundary of the normal range, which still falls within acceptable limits.
- Given the elevated creatinine noted in this panel, this value should be considered alongside the kidney function discussion below.

Glucose Level (Fasting)

Normal

94 mg/dL

Reference : 74–106 mg/dL

Blood glucose is the body's main fuel — like petrol in a car's tank. Measuring it after fasting shows how well the body manages its fuel supply overnight.

- The fasting blood glucose level is within the normal range, indicating that the body is managing its blood sugar effectively.

BUN/Creatinine Ratio

Normal

12.0

Reference : 10–20

This ratio compares two waste products filtered by the kidneys — it helps determine whether a kidney issue is related to the kidneys themselves or to other factors like dehydration.

- The BUN/creatinine ratio is within the normal range, which suggests that the elevated creatinine is more likely related to the kidneys' own filtering capacity rather than to dehydration or other pre-renal causes.

Calcium Level

Normal

9.4 mg/dL

Reference : 8.3–10.6 mg/dL

Calcium is the building block for strong bones and teeth — like the bricks in a wall. It also plays a key role in muscle contraction and nerve signalling.

- The calcium level is within the normal range.
- The albumin level is also normal (4.4 g/dL), and the corrected calcium is 9 mg/dL, which further confirms that the true calcium status is well balanced.
- Good dietary sources of calcium include dairy products, leafy green vegetables, and fortified foods.

Total Protein

Normal

7.9 g/dL

Reference : 6.4–8.2 g/dL

Total protein measures all the proteins circulating in the blood — think of it as the total workforce in the body, including transport workers (albumin) and defence workers (globulins).

- The total protein level is within the normal range, indicating a healthy balance of the various proteins that perform essential functions in the body.



Albumin Level

Normal

4.4 g/dL

Reference : 3.4–5.0 g/dL

Albumin is the most abundant protein in the blood — like a fleet of cargo ships that transport nutrients, hormones, and medications throughout the body and help keep fluid in the blood vessels.

- The albumin level is within the normal range, reflecting good liver function and adequate nutritional status.

Corrected Calcium

Normal

9 mg/dL

Reference : 8.3–10.6 mg/dL

Corrected calcium adjusts the total calcium measurement to account for the albumin level — like recalibrating a scale to get a more accurate reading.

- The corrected calcium is within the normal range, confirming that the body's calcium balance is well maintained after accounting for albumin levels.

Globulin

Normal

4 g/dL

Reference : 2.0–4.0 g/dL

Globulins are a group of proteins in the blood that include immune defenders (antibodies) and transport molecules — like a team of specialists each with a different protective role.

- The globulin level sits at the upper boundary of the normal range, which still falls within acceptable limits and suggests the immune and transport protein systems are functioning adequately.

Albumin/Globulin Ratio (A/G Ratio)

Normal

1

Reference : 1.0–2.5

The A/G ratio compares the two main types of blood proteins — like checking the balance between cargo ships (albumin) and specialist workers (globulins) to ensure neither is disproportionately high or low.

- The A/G ratio is at the lower boundary of the normal range, which still falls within acceptable limits.
- The individual albumin and globulin values are both normal, which is reassuring.

Anion Gap

Normal

10

Reference : 3–12 mEq/L

The anion gap is a calculation that checks the balance of charged particles in the blood — like an accountant verifying that the books balance, helping to detect hidden acid–base problems.

- The anion gap is within the normal range, indicating that the balance of acids and bases in the blood is well maintained.

Haemoglobin A1c (HbA1c)

Normal

5.5 %

Reference : 4.8–5.9 %

HbA1c is like a three-month average report card for blood sugar — it shows how well blood sugar has been controlled over the past 2–3 months, rather than just a single snapshot.

- The HbA1c level is within the normal range, indicating good blood sugar control over the past two to three months.
- This, combined with the normal fasting glucose, provides strong reassurance that blood sugar management is healthy.



Osmolality

Normal

281 mOsm/kg

Reference : 275–295 mOsm/kg

Osmolality measures the concentration of dissolved particles in the blood — like checking how salty a soup is. It reflects the body's overall fluid and electrolyte balance.

- The osmolality is within the normal range, confirming that the body's fluid concentration and electrolyte balance are well regulated.

Triglycerides

Normal

113 mg/dL

Reference : 30–150 mg/dL

Triglycerides are a type of fat circulating in the blood — like fuel reserves stored in the body's tank. High levels can clog blood vessels over time.

- The triglyceride level is within the normal range, indicating that the body's fat metabolism is functioning well.
- Good dietary habits such as limiting sugary foods and including healthy fats from sources like olive oil, nuts, and oily fish help maintain this level.

Total Cholesterol

Normal

175 mg/dL

Reference : 0–200 mg/dL

Total cholesterol is the sum of all types of cholesterol in the blood — like the total number of vehicles on a motorway, including both helpful and potentially harmful ones.

- The total cholesterol level is within the normal range, reflecting a generally healthy lipid profile.

HDL Cholesterol

Normal

48 mg/dL

Reference : 40–60 mg/dL

HDL cholesterol helps remove excess cholesterol from the blood vessels — like a cleanup crew that sweeps debris from the roads to keep traffic flowing smoothly.

- The HDL cholesterol level is within the normal range.
- Continuing regular physical activity, as is already the case, and including healthy fats from sources like olive oil and nuts in the diet can help maintain or improve this level.

Total Cholesterol/HDL Ratio

Normal

4

Reference : <5

This ratio compares total cholesterol to the cleanup crew (HDL) — a lower ratio suggests a better balance between the total cholesterol load and the body's ability to clear it.

- The total cholesterol to HDL ratio is within the desirable range, suggesting a reasonable balance between total cholesterol and the body's cholesterol-clearing capacity.

LDL Cholesterol (Calculated)

Normal

104 mg/dL

Reference : <116 mg/dL (<3.0 mmol/L)

LDL cholesterol is often considered the type that can build up on blood vessel walls — like sediment that can gradually narrow a pipe if not kept in check.

- The LDL cholesterol level is within the target range for the assessed cardiovascular risk category.
- The laboratory flagged this value as low with a reference range of 120–246 U/L, but this reference appears to be a laboratory artefact and does not reflect clinical guidelines.
- Based on the cardiovascular risk profile — which includes a family history of high blood pressure, current tobacco use, and age — the appropriate target is below 116 mg/dL (3.0 mmol/L) for a low cardiovascular risk level, and the result of 104 mg/dL falls comfortably within this target.
- Maintaining a balanced diet and continuing regular physical activity will help keep this level well controlled.



LDL/HDL Ratio

Normal

2

Reference : <3.5

This ratio compares the potentially harmful cholesterol (LDL) to the cleanup crew (HDL) — a lower number generally reflects a healthier balance.

- The LDL/HDL ratio is within the desirable range, indicating a healthy balance between these two types of cholesterol.

TSH (Thyroid Stimulating Hormone)

Normal

2.739 uIU/mL

Reference : 0.358–3.740 uIU/mL

TSH is a messenger hormone from the brain that tells the thyroid gland how much energy-regulating hormone to produce — like a thermostat that controls the heating system in a house.

- The TSH level is within the normal range, indicating that the thyroid gland is receiving appropriate signals and is likely functioning well.

PSA Total Screening

Normal

0.90 ng/mL

Reference : 0.00–4.00 ng/mL

PSA is a protein produced by the prostate gland — measuring it is like checking a gauge that can signal changes in prostate health, though many factors can influence its level.

- The PSA level is well within the normal range, which is reassuring for prostate health.
- Regular screening as recommended by a healthcare professional remains a sensible approach for men in this age group.





Wellness Advice



Medical Consultation

- Given that several results require further investigation — particularly the elevated creatinine and reduced kidney filtration rates, the significantly elevated alkaline phosphatase, and the elevated total bilirubin — it is important to promptly consult a healthcare professional.
- The kidney function findings are especially important to address, as early identification of any issue allows for protective measures that can significantly slow progression.
- The healthcare professional may then refer to a specialist if deemed necessary for any of these findings.
- This report is a tool designed to facilitate understanding of these results, for purely informational and educational purposes.
- It does not replace medical advice in any way.
- Therefore, before making any decisions regarding health or initiating treatment for a medical condition, consultation with a physician is essential.



Weight Management

- For a 61-year-old male standing 183 cm tall and weighing 77 kg, the calculated Body Mass Index (BMI) is approximately 23.0, which falls within the normal healthy range (18.5–24.9).
- This is a positive finding and reflects a healthy body composition.
- Maintaining this weight through a balanced diet and continued regular physical activity is the best approach, as it supports kidney health, cardiovascular function, and overall well-being.
- A stable, healthy weight also reduces the strain on the kidneys and helps maintain healthy blood pressure.
- This information is provided for educational purposes only and does not replace the advice of a healthcare professional, which remains essential for any decision related to weight.





Diet and Nutrition

- The current dietary pattern should be reviewed with attention to the kidney function findings and the elevated alkaline phosphatase.
- Reducing daily salt intake to less than 6 grams (about one teaspoon) by replacing processed or pre-packaged meals with home-cooked alternatives using herbs and spices for flavour can help protect the kidneys and blood vessels.
- Replacing butter or cream-based cooking fats with extra-virgin olive oil, which can be used both raw and for everyday cooking, supports cardiovascular health.
- Including two portions of oily fish per week (such as salmon, mackerel, or sardines) in place of one red meat meal provides omega-3 fatty acids that benefit both the heart and kidneys.
- Ensuring three daily servings of calcium-rich foods (a glass of milk, a pot of yoghurt, or a portion of cheese) supports bone health, which is relevant given the elevated alkaline phosphatase.
- Eating at least five portions of fruits and vegetables daily, with an emphasis on fibre-rich choices like broccoli, carrots, and berries, supports liver processing and overall health.
- Replacing sugary snacks with a small handful of unsalted nuts (about 30 grams) provides healthy fats and minerals.
- Limiting alcohol to no more than two standard drinks on any occasion reduces the liver's workload and supports bilirubin processing.
- This information is provided for educational purposes only and does not constitute a personalised diet plan, which would require the expertise of a nutrition professional.



Physical Activity and Exercise

- As a 61-year-old male with a healthy BMI of 23.0 and no reported joint or cardiovascular symptoms, the current level of physical activity exceeding 150 minutes per week is commendable and aligns well with established health guidelines.
- Continuing this routine is strongly encouraged, as regular exercise supports kidney health, cardiovascular function, and bone density — all relevant given the current findings.
- Incorporating weight-bearing exercises such as brisk walking, light jogging, or stair climbing for at least 30 minutes on most days helps maintain bone strength, which is particularly important given the elevated alkaline phosphatase.
- Adding two sessions per week of resistance training (using body weight, resistance bands, or light weights) further supports bone density and muscle mass.
- This information is provided for educational purposes only and does not constitute a personalised exercise programme, which should ideally be developed with a qualified professional.



Stress Management and Relaxation

- Managing stress effectively is important for overall health, including kidney function and blood pressure regulation.
- Practising deep breathing exercises for 5–10 minutes daily, such as the 4–7–8 technique (inhale for 4 seconds, hold for 7, exhale for 8), can help activate the body's relaxation response.
- Spending time outdoors in nature, even a 20-minute walk in a park or green space, has been shown to reduce stress hormones and improve mood.
- Engaging in a regular mindfulness or meditation practice, starting with just 10 minutes per day using a guided app, can build resilience against daily stressors.
- Maintaining social connections through regular contact with friends, family, or community groups provides emotional support and a sense of belonging.
- This information is shared for educational purposes only and does not constitute therapeutic recommendations, which would require the advice of a qualified professional.



Sleep and Recovery

- For a 61-year-old adult, the recommended sleep duration is 7–9 hours per night, according to established sleep research guidelines.
- Quality sleep is essential for the body's repair processes, including kidney function and immune system maintenance.
- Establishing a consistent sleep schedule by going to bed and waking up at the same time each day, even on weekends, helps regulate the body's internal clock.
- Creating a cool, dark, and quiet sleeping environment and avoiding screens (phones, tablets, computers) for at least 30 minutes before bedtime can improve sleep quality.
- Limiting caffeine intake after 2 pm and avoiding heavy meals within 2–3 hours of bedtime also support better rest.
- This information is shared for educational and informational purposes only, and does not constitute personalised medical recommendations.





Hydration

- For a 61-year-old male with a healthy BMI and findings suggesting reduced kidney filtration, maintaining adequate hydration is particularly important.
- Aiming for approximately 1.5 to 2 litres of fluids per day, primarily water, supports the kidneys in filtering waste products efficiently.
- Spreading fluid intake evenly throughout the day rather than consuming large amounts at once is more effective for hydration.
- Herbal teas and water infused with slices of lemon or cucumber can add variety without added sugars.
- Limiting sugary drinks and excessive caffeine, which can have a mild diuretic effect, helps maintain hydration.
- Monitoring urine colour — aiming for a pale straw colour — is a simple and practical way to gauge hydration status throughout the day.
- This information is provided for educational purposes only and does not constitute personalised medical advice.



Disease Prevention

- A family history of high blood pressure is an important factor for long-term health planning.
- High blood pressure often develops gradually and can affect the heart, kidneys, and blood vessels without causing noticeable symptoms for years.
- Regular blood pressure monitoring — at least once a year during a routine check-up, or more frequently if advised by a healthcare professional — is a key preventive measure.
- Periodic blood tests to check kidney function, blood sugar, and cholesterol levels, as is already being done, help detect any changes early.
- Maintaining a healthy weight, limiting salt intake, staying physically active, and managing stress all contribute to keeping blood pressure within a healthy range.
- This information is presented for informational and educational purposes only, and any decision regarding the monitoring of hereditary factors should be discussed with a qualified healthcare professional.



Smoking Cessation

- The current consumption of 3 cigarettes per day, while relatively low, still carries health risks, particularly for the kidneys and blood vessels.
- Even light smoking damages the small blood vessels throughout the body, including those in the kidneys, and can accelerate the decline in kidney function over time — a finding that is especially relevant given the current kidney results.
- Quitting smoking at age 61 still brings significant health benefits: within weeks, blood circulation improves; within months, lung function begins to recover; and within years, the risk of heart disease and stroke decreases substantially.
- Nicotine replacement therapies (patches, gum, lozenges), behavioural support programmes, and telephone helplines such as the NHS Smokefree helpline are all effective resources.
- Every reduction in tobacco use brings measurable health benefits.
- This information is provided for educational purposes only and does not constitute a personalised cessation plan, which should be developed with the help of a healthcare professional.



Alcohol Management

- Occasional alcohol consumption, as reported, is generally within low-risk guidelines.
- However, given the elevated bilirubin level and the reduced kidney function observed in these results, it is worth being mindful of intake.
- Current UK guidelines recommend no more than 14 units of alcohol per week, spread over at least 3 days, with several alcohol-free days each week.
- Keeping a mental note of the number and type of drinks consumed can help maintain awareness.
- Choosing lower-alcohol options or alternating alcoholic drinks with water or soft drinks during social occasions are practical strategies.
- The NHS website and Drinkaware provide useful information and tools for tracking and managing alcohol intake.
- This information is provided for educational purposes only and does not constitute personalised medical advice.





Allergy Management

- A pollen allergy can cause seasonal symptoms such as sneezing, itchy eyes, and nasal congestion, which can affect quality of life and sleep during peak pollen seasons.
- Checking daily pollen forecasts and planning outdoor activities for times when counts are lower (typically early morning or after rain) can help reduce exposure.
- Keeping windows closed during high pollen days, showering and changing clothes after spending time outdoors, and wearing wraparound sunglasses can all minimise contact with pollen.
- Using a saline nasal rinse after outdoor exposure can help clear pollen from the nasal passages.
- If symptoms are persistent or significantly affect daily life, over-the-counter antihistamines may provide relief, but their use should be discussed with a pharmacist or healthcare professional.
- This information is provided for educational purposes only and does not replace the treatment plan established by a healthcare professional, which remains the reference for anyone suffering from allergies.





ACTION	DETAILS	HEALTH OBJECTIVES
High Medical Consultation — Kidney Function	- Promptly consult a healthcare professional to discuss the elevated creatinine and reduced eGFR values. - The healthcare professional will likely arrange a repeat blood test and a urine albumin test to confirm the findings and determine the appropriate course of action.	- Early identification and management of any kidney function changes can significantly slow progression and protect long-term health. - Taking this step now is a proactive and empowering decision.
High Medical Consultation — Alkaline Phosphatase and Bilirubin	- During the same consultation, discuss the elevated alkaline phosphatase and bilirubin levels. - The healthcare professional may order additional tests such as GGT, vitamin D, or a fractionated bilirubin to identify the source of these elevations.	- Identifying the cause of these elevations allows for targeted management if needed, and in many cases provides reassurance that the findings are benign. - Knowledge is a powerful tool for peace of mind.
High Smoking Reduction and Cessation	- Begin reducing daily cigarette consumption with the goal of complete cessation. - Resources such as the NHS Smokefree app, nicotine replacement products from a pharmacy, and the Smokefree helpline (0300 123 1044) can provide structured support.	- Quitting smoking protects the kidneys, blood vessels, and lungs. - Even reducing from 3 to 0 cigarettes per day brings measurable improvements in circulation and organ function within weeks.
Medium Dietary Salt Reduction	- Aim to reduce daily salt intake to less than 6 grams by reading food labels, choosing low-salt alternatives, and flavouring meals with herbs, spices, lemon juice, or garlic instead of salt. - A useful tool is the Change4Life Food Scanner app for checking salt content in packaged foods.	Reducing salt intake helps protect the kidneys and blood vessels, supports healthy blood pressure, and complements the benefits of regular physical activity already in place.
Medium Bone Health Support	- Include three daily servings of calcium-rich foods and ensure adequate vitamin D through brief daily sun exposure (10–15 minutes on forearms and face) and dietary sources such as oily fish and fortified foods. - Continue weight-bearing exercise as part of the existing activity routine.	- Supporting bone health through diet and exercise helps maintain bone density and may address the elevated alkaline phosphatase if it is bone-related. - Strong bones are essential for maintaining independence and mobility with age.
Medium Blood Pressure Monitoring	Given the family history of high blood pressure, consider purchasing a validated home blood pressure monitor and taking readings twice weekly at the same time of day, recording the results to share with the healthcare professional at the next visit.	Regular monitoring allows for early detection of any blood pressure changes, enabling timely intervention that protects the heart, kidneys, and blood vessels.
Low Hydration and Fluid Intake	Aim for approximately 1.5 to 2 litres of water or other non-sugary fluids per day, spread evenly throughout the day.	Adequate hydration supports the kidneys in filtering waste products efficiently and helps maintain overall fluid balance, which is especially



- Keeping a reusable water bottle nearby serves as a helpful visual reminder.
- important given the current kidney function findings.

Low

Continued Physical Activity

- Maintain the current exercise routine of more than 150 minutes per week, and consider adding two sessions of resistance training (body weight exercises, resistance bands, or light weights) to support bone and muscle health.
- Regular physical activity protects the heart, kidneys, and bones, helps maintain a healthy weight, and supports mental well-being.
- The current level of activity is an excellent foundation to build upon.





FOR YOUR NEXT APPOINTMENT

Suggested Questions for Your Doctor

1

KIDNEY FUNCTION

The creatinine level and kidney filtration rate estimates were outside the normal range — what additional tests would help determine whether this is a temporary finding or something that needs ongoing monitoring, and are there specific lifestyle changes that could help protect kidney function?

2

LIVER AND BONE ENZYMES

The alkaline phosphatase level was significantly elevated while the other liver enzymes were normal — what tests could help determine whether this is coming from the bones or the liver, and is a vitamin D test something that should be considered?

3

BILIRUBIN

The total bilirubin was nearly twice the upper limit — could this be related to a harmless inherited trait like Gilbert syndrome, and what further tests, if any, would help confirm the cause?

4

PREVENTIVE HEALTH

Given the family history of high blood pressure and the current kidney function findings, how often should blood pressure be checked, and are there any additional screening tests that would be recommended at this stage?

5

SMOKING AND KIDNEY HEALTH

Even though the daily cigarette consumption is relatively low at 3 per day, could this be contributing to the kidney function changes seen in these results, and what cessation support would be most effective?



Nature of the tool: The Blood Interpretation solution is not designed to be used as a tool to treat, diagnose, or cure any medical conditions. It is intended to help you better understand your results before discussing them with your doctor. It does not replace medical advice under any circumstances. Before making any health-related decisions or treating a medical condition, you must consult your doctor or a qualified healthcare professional.



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