



Holistic Analysis 03/29/2026

Patient Data

Name	Heart Patient
Date of Birth	1966-06-15
Age at time of analysis	59
Sex	Male
Symptoms (patient)	Complains of occasional chest pains when exerting himself. Sweating, hard exercise difficult.
Initial exam	Patient is under stress due to long music career. Does not actively lift weight, but exercises by walking 3 times a week.
Course/changes	None.
Onset date	2026-03-26
Medications	Lipitor, standard daily dose.
Supplements	Magnesium, Fish Oil 1000mg daily, and Zinc.
Allergies	Ragweed
Family history	Father heart attack age 57.
Past medical history	Appendix removal in 2015
Past surgical history	None
Lifestyle	Exercise 30 minutes run each week, diet Read meat, fish, and poultry mixed., alcohol Weekly, 2-3 mixed drinks., drugs None, smoking None
Anthropometrics	Ht 5'11, Wt 185 (BMI ~25.8; overweight range)
Nationality	Other (specific population risk context not provided)
Last seen	2025-07-24

Labs Analysis

Panel ID

labs-2026-03-26T18:24:17.135Z

Interpreted At

2026-03-26T18:24:17.135Z

Analyte	Value	Unit	Normal Range	Range Graphic
Sodium	139	mmol/L	135–145	
Potassium	4.8	mmol/L	3.5–5.1	
BUN	22	mg/dL	6–24	
Creatinine	1.18	mg/dL	0.74–1.35	
Calcium	9.1	mg/dL	8.6–10.2	
Protein, Total	7.1	g/dL	6.0–8.3	
Albumin	4.2	g/dL	3.5–5.0	
Bilirubin, Total	0.6	mg/dL	0.1–1.2	
Alkaline Phosphatase	70	U/L	40–129	
AST (SGOT)	22	U/L	10–40	
ALT (SGPT)	37	U/L	7–56	
Glucose, Serum	106	mg/dL	70–99	
Cholesterol, Total	122	mg/dL	125–200	
Triglycerides, Total	88	mg/dL	0–150	
HDL	31	mg/dL	40–60	
HDL/Chol %	25	%	not provided	Reference range unavailable
LDL	73	mg/dL	0–100	
TSH	2.95	uIU/mL	0.4–4.0	

Analyte	Value	Unit	Normal Range	Range Graphic
PSA	1.53	ng/mL	0–4.0	

Imaging Correlation

- **Image 1 (CT chest/upper abdomen, single axial slices, contrast-enhanced):** Cystic-appearing, well-circumscribed posterior mediastinal/pericardial-adjacent lesion abutting the left atrium (likely pericardial vs paraesophageal/bronchogenic cyst; origin indeterminate on one slice) plus an indeterminate wedge-shaped hypoenhancing region in the left kidney (consider infarct vs infection; needs correlation with full multiphase study and clinical/labs). For the diagnoses below: supports Dx2 (renal infarct) if confirmed; incidental/indeterminate for Dx1 (ischemic heart disease) though mediastinal lesion could rarely contribute to atypical symptoms; incidental for Dx3 (non-cardiac chest pain) unless esophageal compression symptoms are present (not provided).

Clinical synthesis (labs)

- Cardiometabolic risk pattern: HDL 31 mg/dL (low) with BMI ~25.8 (overweight range) and family history of premature MI (father at 57) increases pre-test probability of coronary disease despite LDL 73 mg/dL and total cholesterol 122 mg/dL.
- Glucose, Serum 106 mg/dL (mildly high) suggests impaired fasting glucose risk; this supports aggressive lifestyle intervention for ASCVD risk reduction and exercise tolerance.
- Renal function markers are within provided reference ranges (Creatinine 1.18 mg/dL, BUN 22 mg/dL), but CT shows a wedge-shaped left renal hypoenhancement that is not explained by these labs alone; this objective imaging abnormality materially competes with symptom-localized diagnoses and warrants targeted renal/vascular workup.
- Liver enzymes and proteins are unremarkable (AST 22 U/L, ALT 37 U/L, Albumin 4.2 g/dL), supporting feasibility of nutrition/exercise interventions; no lab evidence here of systemic inflammatory or infectious process (inflammatory markers not provided).
- No cardiac injury markers are available (high-sensitivity troponin not provided); given exertional chest pain with diaphoresis, absence of these discriminators limits risk stratification and should prompt urgent evaluation pathway.

Summary Table

Diagnosis	Estimated Probability (%)	Key Discriminating Features
1) Stable ischemic heart disease (exertional angina) / high-risk coronary artery disease until proven otherwise	55	Exertional chest pain + diaphoresis; reduced exercise tolerance; strong family history of premature MI; low HDL; needs ECG/troponin strategy and ischemia testing; CT mediastinal cyst likely incidental.
2) Left renal infarction (embolic or in-situ thrombosis) vs focal renal infection (pyelonephritis) causing wedge-shaped hypoenhancement	25	CT wedge-shaped hypoenhancement in left kidney; may be clinically silent; requires UA, CBC, inflammatory markers, renal vascular imaging; consider cardioembolic source (arrhythmia) which also intersects with chest symptoms.
3) Non-cardiac chest pain (GERD/esophageal spasm or musculoskeletal chest wall pain) with stress-related symptom amplification	20	Stress context; non-specific chest pain description; needs careful exclusion of ACS/angina first; mediastinal cyst could be paraesophageal and contribute if dysphagia/reflux present (not provided).

Possible Diagnoses – Workup & Plan

Diagnosis 1: Stable ischemic heart disease (exertional angina) / high-risk coronary artery disease until proven otherwise

Overview: 59M with exertional chest pain and diaphoresis with reduced exercise tolerance; family history of premature MI (father at 57) and low HDL increase likelihood of coronary ischemia despite LDL 73 mg/dL. This is the highest-risk diagnosis and should be prioritized over symptom-localized benign etiologies.

Suggested Workup

- Immediate risk stratification: 12-lead ECG (resting) — not provided; compare with prior if available (not provided).
- Cardiac injury evaluation if any ongoing/recent pain: serial high-sensitivity troponin — not provided; use protocol-based timing.
- Functional/anatomic ischemia assessment (choose based on baseline ECG/exercise capacity): exercise treadmill test, stress echocardiography, or coronary CT angiography (CCTA).
- Transthoracic echocardiogram — assess LV function/valves; evaluate alternative causes of exertional symptoms (e.g., cardiomyopathy/valvular disease; exam findings not provided).
- Ambulatory rhythm monitoring if palpitations/syncope or suspicion for paroxysmal arrhythmia (not provided), especially given concurrent concern for possible renal infarct (Dx2) where embolic source matters.
- **Must-not-miss:** acute coronary syndrome, aortic dissection, pulmonary embolism. Current vitals, oxygen saturation, and pain characteristics (radiation, duration, rest pain) are not provided; if concerning features present, ED evaluation is indicated.

Lab Correlation

Supports

- **HDL 31 mg/dL (low):** low HDL is associated with impaired reverse cholesterol transport and higher atherothrombotic risk, increasing pre-test probability of CAD in a symptomatic patient.
- **Glucose, Serum 106 mg/dL (high):** mild hyperglycemia suggests insulin resistance, promoting endothelial dysfunction and accelerating atherosclerosis risk.
- **LDL 73 mg/dL (normal):** lower LDL reduces but does not eliminate CAD risk; symptomatic exertional angina can occur despite controlled LDL, particularly with strong family history.
- **Creatinine 1.18 mg/dL (normal):** preserved renal function supports ability to pursue diagnostic imaging that may require contrast (risk/benefit still individualized; eGFR not provided).

Argues against / missing

- High-sensitivity troponin — **not provided**
- BNP or NT-proBNP — **not provided**
- Hemoglobin / CBC — **not provided**
- HbA1c — **not provided**
- Lipoprotein(a) — **not provided**

Next Discriminators

- 12-lead ECG
- High-sensitivity troponin
- Stress echocardiography
- Coronary CT angiography

Missing Key Labs (not provided).

- High-sensitivity troponin — **not provided**
- BNP or NT-proBNP — **not provided**
- CBC (hemoglobin/hematocrit) — **not provided**
- HbA1c — **not provided**
- Lipoprotein(a) — **not provided**
- hs-CRP — **not provided**

Medications

Medication typically used here, but **omitted per holistic mode.**

Non-pharmacologic

- **Activity safety:** until ischemia is excluded, avoid high-intensity exertion that provokes chest pain; use symptom-limited activity only; seek urgent care if pain occurs at rest (details not provided).
- **Cardiac rehabilitation-style conditioning (after clearance):** progressive aerobic training 4–5 days/week; start with low intensity (talk test), increase duration before intensity; add 2 days/week resistance training (light-to-moderate) to improve HDL and insulin sensitivity.
- **Stress physiology:** structured stress reduction (e.g., 10–20 min/day paced breathing ~6 breaths/min; mindfulness-based stress reduction; CBT for health anxiety/performance stress). Occupational stress is a known trigger for angina via catecholamine surge.
- **Sleep:** target 7–9 hours; screen for obstructive sleep apnea (snoring, witnessed apneas, daytime sleepiness — not provided) given cardiometabolic risk and exertional symptoms.
- **Botanicals/supplements (adjunct; do not substitute for cardiac evaluation):**
 - Soluble fiber (e.g., psyllium) — evidence for LDL reduction and glycemic improvement; monitor GI tolerance and spacing from other supplements.
 - Plant sterols/stanols — modest LDL lowering; consider if dietary pattern supports; avoid overreliance.
 - Omega-3 intake via fatty fish 2x/week; patient already uses fish oil (dose/quality not fully provided). Bleeding risk is generally low at typical doses but increases with concurrent antithrombotics (not provided).
- **Risk/benefit note:** supplements are not proven to prevent acute coronary events in symptomatic patients; priority is diagnostic clarification and evidence-based risk reduction.

Red Flags / Escalation

- Chest pain at rest, pain lasting >10–15 minutes, increasing frequency/severity, syncope/presyncope, new dyspnea, new neurologic deficits, or hemodynamic instability (vitals not provided) → ED/EMS.
- Associated jaw/arm/back radiation, nausea/vomiting, or diaphoresis with minimal exertion → urgent ACS evaluation.
- New unilateral leg swelling/pleuritic pain/hemoptysis (not provided) → evaluate for PE.

Dietary Considerations

- **Positive:** Mediterranean-style pattern emphasizing vegetables, legumes, whole grains, nuts, olive oil; fatty fish; aim for 25–35 g/day fiber (supports HDL/insulin sensitivity and ASCVD risk reduction).
- **Negative:** limit saturated fat (fatty red meats, butter, high-fat dairy) and refined carbohydrates/sugary beverages (supports HDL and glucose control); limit alcohol to within guideline ranges; current intake weekly 2–3 mixed drinks (timing/quantity per occasion not provided).
- **Hydration:** cardiac status not provided; give conservative guidance—maintain pale-yellow urine, avoid dehydration during exercise; avoid energy drinks and excessive caffeine if palpitations occur (not provided).
- **Condition-specific:** low HDL and glucose 106 mg/dL favor weight-neutral or modest weight-loss approach (5–7% if feasible) and carbohydrate quality focus (minimize ultra-processed foods).
- **Do not overclaim:** diet supports risk reduction but does not rule out obstructive CAD in symptomatic exertional chest pain.

Follow-Up

- **Timeframe:** same day/within 24 hours for ECG-based evaluation given exertional chest pain with diaphoresis; sooner/ED if any red flags.
- **Reassess:** symptom pattern (exertional threshold, duration, radiation), vitals (BP/HR/O₂ sat — not provided), functional capacity, and triggers (stress/sleep).
- **Repeat/obtain tests:** ECG and high-sensitivity troponin if recent symptoms; schedule ischemia testing and echocardiogram based on initial risk assessment.

Diagnosis 2: Left renal infarction (embolic or in-situ thrombosis) vs focal renal infection (pyelonephritis) causing wedge-shaped hypoenhancement

Overview: CT shows an indeterminate wedge-shaped hypoenhancing region in the left kidney; this objective finding is not explained by the chest pain alone and warrants targeted evaluation for renal infarct (including cardioembolic sources) versus focal infection. Symptoms of flank pain, fever, dysuria are not provided.

Suggested Workup

- Urinalysis with microscopy and urine culture — evaluate for pyuria/bacteriuria/hematuria (not provided).
- CBC with differential — leukocytosis supports infection; anemia/hemoconcentration may influence perfusion risk (not provided).
- Inflammatory markers (CRP, ESR) — support infection/inflammation vs bland infarct (not provided).
- LDH — often elevated in renal infarction due to tissue necrosis (not provided).
- Renal vascular imaging: CT angiography abdomen/pelvis or MR angiography; consider renal Doppler ultrasound as adjunct depending on availability and renal function.
- Cardioembolic evaluation if infarct suspected: ECG and ambulatory monitoring for atrial arrhythmia (not provided), transthoracic echo for thrombus/valvular disease (not provided).
- **Must-not-miss:** renal artery occlusion with threatened kidney, systemic embolic source, and occult infection/sepsis (vitals and fever status not provided).

Lab Correlation

Supports

- **Creatinine 1.18 mg/dL (normal):** normal creatinine does not exclude focal renal infarct or focal pyelonephritis; unilateral segmental involvement can preserve global filtration early.
- **BUN 22 mg/dL (normal):** near-normal nitrogen balance similarly does not exclude focal renal pathology; BUN may remain normal without dehydration or bilateral involvement.
- **Potassium 4.8 mmol/L (normal):** normal potassium argues against advanced renal failure; does not discriminate infarct vs infection.
- **Glucose, Serum 106 mg/dL (high):** mild hyperglycemia can increase infection susceptibility and vascular risk, modestly increasing plausibility of either process.

Argues against / missing

- Urinalysis (leukocyte esterase/nitrite/hematuria) — **not provided**
- Urine culture — **not provided**
- CBC with differential — **not provided**
- LDH — **not provided**
- CRP — **not provided**

Next Discriminators

- Urinalysis with microscopy
- Urine culture
- LDH
- CT angiography abdomen/pelvis (renal arteries)

Missing Key Labs (not provided)

- Urinalysis with microscopy — **not provided**
- Urine culture — **not provided**
- CBC with differential — **not provided**
- LDH — **not provided**
- CRP — **not provided**
- Blood cultures — **not provided**

Medications

Medication typically used here, but **omitted per holistic mode.**

Non-pharmacologic

- **Hydration:** maintain adequate oral fluids unless contraindicated by cardiac/renal status (not provided); avoid dehydration which can worsen renal perfusion.
- **Temperature/pain monitoring:** track daily temperature and symptom diary (flank pain, dysuria, hematuria — not provided) to help discriminate infection vs infarct.
- **Cardioembolic risk reduction (if infarct suspected):** prioritize rhythm evaluation, sleep optimization, and graded activity pending cardiac clearance (Dx1).
- **Botanicals/supplements:** avoid initiating high-dose botanicals with anticoagulant/antiplatelet effects (e.g., concentrated extracts) until infarct/bleeding risk is clarified; patient already on fish oil (dose provided) and magnesium/zinc (doses not provided).
- **Risk/benefit note:** if renal infarct is confirmed, time-sensitive management is often required; supportive measures alone are insufficient.

Red Flags / Escalation

- Fever, rigors, hypotension, confusion (not provided) → urgent evaluation for sepsis/pyelonephritis.
- New severe flank/abdominal pain, gross hematuria, oliguria/anuria (not provided) → urgent renal/vascular evaluation.
- New neurologic deficits or limb ischemia symptoms (not provided) → concern for systemic embolization; emergent care.

Dietary Considerations

- **Positive:** emphasize whole foods with adequate protein for healing (lean poultry/fish/legumes), and potassium-containing foods in moderation given potassium is normal (4.8 mmol/L) but renal status could change.
- **Negative:** limit excess sodium and ultra-processed foods that can worsen BP and renal vascular stress; avoid binge alcohol which can dehydrate.
- **Hydration:** renal/cardiac fluid restrictions are **not provided**; conservative guidance—steady fluid intake through the day, increase modestly with activity/heat, avoid overhydration.
- **Condition-specific:** if infection is confirmed, avoid delaying definitive evaluation; cranberry products have limited evidence for prevention in select populations and are not a treatment for upper-tract infection.
- **Do not overclaim:** diet/hydration are supportive and do not resolve renal infarction or pyelonephritis.

Follow-Up

- **Timeframe:** within 24–72 hours to complete UA/CBC/LDH and review full imaging series; same day if systemic symptoms (not provided).
- **Reassess:** fever, urinary symptoms, flank pain, BP (not provided), and any embolic symptoms.
- **Repeat/obtain tests:** repeat renal function (BMP) after additional contrast imaging or if symptoms evolve; proceed with renal vascular imaging if infarct remains a concern.

Diagnosis 3: Non-cardiac chest pain (GERD/esophageal spasm or musculoskeletal chest wall pain) with stress-related symptom amplification

Overview: Stress and exertional symptoms can coexist with reflux/esophageal spasm or chest wall pain; however, exertional chest pain with diaphoresis is concerning for ischemia and must be excluded first. CT shows a posterior mediastinal/pericardial-adjacent cystic lesion that could be paraesophageal; associated dysphagia/reflux symptoms are not provided.

Suggested Workup

- First exclude cardiac ischemia per Dx1 (ECG/troponin strategy; stress testing) before labeling as non-cardiac.
- Focused history: relation to meals, positional component, nocturnal symptoms, dysphagia/odynophagia, regurgitation (not provided); reproducibility with palpation or movement (not provided).
- Physical exam: chest wall tenderness, costochondral pain, range of motion; cardiopulmonary exam (not provided).
- If esophageal symptoms present: consider barium esophagram and/or upper endoscopy; consider esophageal manometry if spasm suspected (symptoms not provided).
- For mediastinal cyst: obtain full CT series review and consider MRI chest for characterization and origin (pericardial vs bronchogenic vs esophageal duplication cyst).
- **Must-not-miss:** ACS/angina (Dx1) and PE/aortic pathology if red flags present (not provided).

Lab Correlation

Supports

- **TSH 2.95 uIU/mL (normal):** euthyroid status reduces likelihood that thyroid dysfunction is driving palpitations/anxiety-related chest symptoms; does not confirm non-cardiac pain.
- **AST (SGOT) 22 U/L (normal) and ALT (SGPT) 37 U/L (normal):** no hepatic signal here to suggest hepatobiliary referred pain; labs are non-specific and do not rule in/out GERD/MSK etiologies.
- **Glucose, Serum 106 mg/dL (high):** mild hyperglycemia can correlate with lifestyle stress patterns; not diagnostic for chest pain etiology.

Argues against / missing

- High-sensitivity troponin — **not provided**
- 12-lead ECG — **not provided**
- CBC — **not provided**
- H. pylori testing — **not provided**
- D-dimer — **not provided**

Next Discriminators

- 12-lead ECG
- High-sensitivity troponin
- Stress echocardiography
- Barium esophagram

Missing Key Labs (not provided).

- High-sensitivity troponin — **not provided**
- CBC — **not provided**
- H. pylori stool antigen or urea breath test — **not provided**
- D-dimer — **not provided**
- CRP — **not provided**

Medications

Medication typically used here, but **omitted per holistic mode.**

Non-pharmacologic

- **Reflux-oriented measures (if symptoms correlate; not provided):** avoid late meals (finish ≥ 3 hours before bed), elevate head of bed, reduce trigger foods (see diet), weight optimization.
- **Musculoskeletal chest wall care (if reproducible tenderness; not provided):** posture/ergonomics (instrument performance), thoracic mobility work, scapular stabilization, gentle pec/upper back stretching; consider PT referral.
- **Breathing mechanics:** diaphragmatic breathing and paced breathing to reduce hyperventilation-related chest tightness; integrate during performance stress.
- **Botanicals with some evidence for dyspepsia (adjunct; ensure no alarm features):**
 - Enteric-coated peppermint oil has evidence for esophageal spasm/functional GI symptoms; may worsen reflux in some—trial only if reflux is not dominant (symptoms not provided).
 - Deglycyrrhizinated licorice (DGL) may improve dyspepsia symptoms; avoid in uncontrolled hypertension if glycyrrhizin-containing products are used (BP not provided).
- **Risk/benefit note:** do not attribute exertional diaphoresis/chest pain to stress/GERD until ischemia is excluded.

Red Flags / Escalation

- Any exertional chest pain with diaphoresis that is new/worsening or occurs at lower workloads → urgent cardiac evaluation.
- Dysphagia, odynophagia, GI bleeding, unintentional weight loss (not provided) → urgent GI evaluation.
- Pleuritic pain with dyspnea, hemoptysis, unilateral leg swelling (not provided) → urgent evaluation for PE.

Dietary Considerations

- **Positive:** smaller, earlier meals; emphasize vegetables, non-citrus fruits, whole grains, lean proteins; adequate magnesium-containing foods (leafy greens, legumes) consistent with current supplementation.
- **Negative:** if reflux suspected (not provided), limit alcohol, peppermint, chocolate, high-fat meals, tomato/citrus, and late-night eating; limit carbonated beverages if bloating triggers symptoms.
- **Hydration:** cardiac status **not provided**; conservative guidance—regular water intake; avoid large boluses immediately before exertion if it provokes symptoms (not provided).
- **Condition-specific:** given Glucose, Serum 106 mg/dL, reduce refined carbs and sweetened drinks which can worsen reflux and cardiometabolic risk.
- **Do not overclaim:** dietary modification may reduce symptom triggers but does not exclude cardiac causes.

Follow-Up

- **Timeframe:** 1–2 weeks after cardiac evaluation (or sooner if symptoms persist/worsen).
- **Reassess:** symptom triggers (meals/position/palpation), response to lifestyle measures, and any alarm features (not provided).
- **Repeat/obtain tests:** if reflux/esophageal symptoms are present and persistent, consider barium esophagram or upper endoscopy; if mediastinal cyst remains indeterminate, pursue MRI chest or full CT review.