

GenePain

Pain Genetics Analysis · 150+ Genes · Pain Sensitivity, Analgesic Response, Inflammation & Nerve Health

PATIENT Alex Johnson	DATE OF BIRTH 1982-09-22 (Age 42)	SAMPLE TYPE Saliva Collection Tube	SAMPLE ID GM-GP-2024-06617
REPORT ID GP-2024-51873	COLLECTION DATE 2024-01-26	REPORT DATE 2024-02-01	LABORATORY Gene Matrix CLIA Lab, Chicago, IL
CLIA / NPI 14D2276402 / 1225729312	ORDERING PROVIDER Pain Specialist Referral	METHOD Next-Generation Sequencing (NGS)	

150+ GENES ANALYZED	72/100 PAIN SENSITIVITY SCORE	40+ PAIN MEDICATIONS PROFILED	28 PAIN SENSITIVITY GENES
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/ Executive Summary

Your pain sensitivity score is 72/100 — your body feels pain more quickly and strongly than most people. Your SCN9A gene variant lowers your natural pain threshold: you're not imagining it — your nervous system genuinely registers pain signals faster and at higher intensity than average. A homozygous COMT Val158Met genotype (the highest pain-sensitivity genotype) and an IL6 variant driving chronic inflammation complete the picture. Critically, your CYP2D6 poor-metabolizer status means codeine will never work for you. Your action step: multimodal pain management (not just medication) is key for you.

Your pain is real — and now provable. About 7–10% of people are poor CYP2D6 metabolizers, making codeine completely ineffective. This report gives your pain specialist objective genetic evidence and a completely different treatment approach.

/ Genetic Findings

GENE	VARIANT	GENOTYPE	IMPACT	RECOMMENDATION
SCN9A	rs6746030	A/G	LOWERED THRESHOLD Your SCN9A sodium-channel variant lowers your natural pain threshold — pain signals travel to your brain faster and at higher intensity than average.	Multimodal pain management is key: combine physical therapy, targeted exercise, and medication rather than medication alone.
COMT	Val158Met (rs4680)	Met/Met	HIGHEST SENSITIVITY Homozygous variant — your brain degrades pain-signal neurotransmitters more slowly, amplifying perceived pain intensity. This is the genotype associated with the highest pain sensitivity.	Prioritize sleep, stress regulation, and paced activity; discuss non-opioid central-acting options with your specialist.

CYP2D6	*4/*4 (rs3892097)	Poor Metabolizer	DRUG INEFFECTIVE CYP2D6 converts codeine into morphine — without it, codeine does nothing. Tramadol is similarly ineffective.	Avoid codeine and tramadol entirely. Your specialist should select analgesics that don't require CYP2D6 activation.
IL6	rs1800795	G/G	PRO-INFLAMMATORY Interleukin-6 overproduction drives chronic systemic inflammation even without injury or infection — an inherited inflammatory set point, not a lifestyle failure.	Anti-inflammatory nutrition protocol (14 personalized dietary recommendations in your full report); omega-3 emphasis; monitor CRP annually.
TRPV1	rs8065080	C/C	HEIGHTENED NERVE RESPONSE Your nerve endings are significantly more sensitive to heat and pain signals.	Avoid aggressive heat-based therapies; favor gentle, graded exposure and topical counter-irritants as directed.
GCH1	rs3783641	A/T	REDUCED PAIN GATING Reduced natural pain-gating — your body's built-in "volume control" for pain signals works less effectively.	Exercise protocol and sleep optimization measurably improve endogenous pain control; see your full report for the specific plan.

/ Pain Profile Summary

Your GenePain results across the key areas of your pain biology.

AREA	RESULT	CLINICAL IMPLICATION
Pain Sensitivity — SCN9A, COMT, OPRM1 (28 genes)	72/100 — HIGH	Objective genetic evidence of heightened pain signaling; multimodal management indicated.
Ibuprofen & NSAIDs — CYP2C9, COX2	STANDARD RESPONSE	Standard NSAID metabolism; use lowest effective dose with GI precautions.
Inflammation — IL6, TNF (25 genes)	ELEVATED	Genetic-driven chronic inflammation; anti-inflammatory protocol included.
Analgesic Response — CYP2D6, CYP3A4, ABCB1 (40+ medications)	CODEINE INEFFECTIVE	Poor CYP2D6 metabolizer — codeine/tramadol will not work; alternative classes required.

/ Personalized Recommendations

For Your Pain Specialist

- Codeine and tramadol are genetically ineffective for this patient (CYP2D6 poor metabolizer) — select non-CYP2D6 analgesics.
- Multimodal plan recommended given high pain-sensitivity genotype: physical therapy, graded exercise, sleep optimization, and medication.
- Full medication-compatibility table across 40+ pain medications included in the complete report.

Also Inside Your Full Report

- Your Nutrition Plan — 14 personalized dietary recommendations based on your inflammatory markers.
- Exercise Protocol — which exercises reduce your specific pain patterns and which to avoid.
- Supplement Guide — 6 supplements ranked by effectiveness for your genetic profile.

Daily Pain-Management Foundations

- Protect sleep aggressively — sleep deprivation measurably amplifies high-sensitivity pain phenotypes.
- Use pacing: break activity into manageable blocks to avoid boom-bust pain cycles.
- Track pain patterns for 4 weeks and review with your specialist alongside this report.

Important: This is a SAMPLE REPORT provided for demonstration purposes only. It does not constitute medical advice, diagnosis, or treatment. Genetic results identify predispositions and risk factors; they do not diagnose disease. Results should be discussed with a qualified healthcare provider before making any medical, dietary, supplement, training, or medication decisions. Do not start, stop, or change any medication without consulting your prescribing physician.

Laboratory: Gene Matrix LLC · 1375 W Fulton St STE 545, Chicago, IL 60607 · CLIA ID: 14D2276402 · NPI: 1225729312 · (847) 302-9668 · support@genematrix.io · Mon–Fri 8AM–5PM CT. Testing performed in a CLIA-certified, CAP-accredited laboratory using next-generation sequencing. Analytical accuracy 99.9%. All findings reviewed by board-certified geneticists.

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