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SKIN HEALTH · GENETIC WELLNESS REPORT · 2026 UPDATED EDITION

Your skin
from within.

Updated with 2025 Research

23 ORIGINAL TRAITS · +2 NEW TRAITS · +23 NEW MARKERS

PATIENT	REPORT DATE	EDITION	MARKERS
Mark Martinez	June 2026	v3 — 2025 Updated	94 total SNPs

About this updated report

This is version 3 of Mark Martinez's AuraGen Skin Health Report, updated in June 2026 to incorporate findings from peer-reviewed GWAS published between 2022 and 2025. All original 71 SNPs across 36 genes are retained. This edition adds 23 new genetic markers across 7 traits, introduces 2 entirely new trait categories (Skin Sagging and Cheek Laxity), and expands the scientific commentary to reflect the latest evidence. New markers and traits are flagged with a green **NEW 2025** badge throughout.

Category	Original markers	New markers added	New traits	Key sources
Skin Photoaging	15 SNPs / 4 traits	RALY/ASIP rs6059655 BNC2 rs62543565 AHR rs2292596 COL1A1 rs1800012 SPTLC1 rs267608	Skin Sagging (TGIF1, COL17A1)	Wong et al. J Physiol Anthropol 2025 Visconti et al. Nat Commun 2018 Jacobs et al. J Invest Dermatol 2015
Skin Texture & Elasticity	4 SNPs / 3 traits	CYP1A1 rs4646903 AHR rs2292596	Cheek Laxity	PMC12317886 (2025 review)
Skin Inflammation & Allergy	18 SNPs / 4 traits	Psoriasis: IL17RA rs917864 TYK2 rs34536443 TRAF3IP2 rs33980500 ERAP1 rs30187 NFKBIZ rs78037977 Rosacea: HERC2 rs12913832 IL13 rs20541	—	Dand et al. Nat Commun 2025 Chang et al. J Invest Dermatol 2015
Skin Moisture & Hydration	6 SNPs / 1 trait	AQP3 rs2231231 TRPM3 rs7943445 CEMIP2 rs4783752	—	Won et al. Appl Sci 2022 Geusens & Haykal Front Genet 2025
Skin Oxidation Protection	5 SNPs / 1 trait	GSTP1 rs1695 NFE2L2 rs35652124	—	Geusens & Haykal Front Genet 2025 Choi et al. Antioxidants 2025
Skin Glycation	5 SNPs / 1 trait	NAT2 rs1799930 MMP27 rs2846707	—	Scheijen et al. Diabetologia 2022
Skin Nutritional Needs	18 SNPs / 9 traits	No new markers (existing panel well-validated)	—	Existing citations confirmed

Confidence notes: All new markers are from GWAS with p<5×10■■ (high confidence) or p<5×10■■ (medium confidence) in cohorts of at least 1,000 participants. Medium confidence markers should be interpreted with appropriate caution and may be updated as replication data matures.

UPDATED RESULTS SUMMARY

Patient Results At-A-Glance — v3

Complete trait table including all original markers plus new 2025 markers and traits. Green NEW badges indicate additions.

Phenotype	Result	Gene/Locus	Marker	Genotype	Gene/Locus	Marker	Genotype
SKIN PHOTOAGING							
Wrinkles & Collagen Degradation	INCREASED RISK	MMP1	rs1799750	TC/T	STXBP5L	rs322458	C/T
		COL1A1	rs1800012	G/T	SPTLC1	rs267608	C/T
Tanning Response	REDUCED	EXOC2	rs12210050	C/C	SLC24A5	rs1426654	A/A
		HERC2	rs12913832	A/G	SLC24A5	rs2555364	G/G
		intergenic	rs1015362	C/C	SLC45A2	rs26722	C/T
		intergenic	rs4911414	G/G	SLC45A2	rs16891982	C/C
		IRF4	rs12203592	C/C	TYR	rs1042602	C/A
		MC1R	rs1805007	C/C	TYR	rs1126809	G/G
		MC1R	rs1805008	C/T	TYR	rs1393350	G/G
		NCOA6	rs4911442	A/A	RALY/ASIP	rs6059655	G/A
		BNC2	rs62543565	C/T	AHR	rs2292596	G/A
Sun Spots (Lentigines)	INCREASED RISK	IRF4	rs12203592	C/C	MC1R	rs1805007	C/C
		MC1R	rs885479	G/G	MC1R	rs1805008	C/T
		MC1R	rs1110400	T/T	MC1R	rs1805009	G/G
		MC1R	rs1805005	G/G	MC1R	rs2228479	G/G
		MC1R	rs1805006	C/C	MC1R	rs11547464	G/G
Freckles (Ephelides)	INCREASED RISK	intergenic	rs1540771	T/T	MC1R	rs1805009	G/G
		intergenic	rs4911414	G/G	MC1R	rs11547464	G/G
		IRF4	rs12203592	C/C	NCOA6	rs4911442	A/A
		MC1R	rs1805007	C/C	TYR	rs1042602	C/A
		MC1R	rs1805008	C/T	TYR	rs1393350	G/G
★ Skin Sagging (Facial Laxity)	INCREASED RISK	TGIF1	rs11876749	C/T	COL17A1	rs3832937	G/A
SKIN TEXTURE & ELASTICITY							
Cellulite	INCREASED RISK	ACE	rs4646994/rs1799752	D/D	HIF1A	rs11549465	C/T
Stretch Marks (Striae Distensae)	INCREASED RISK	ELN	rs7787362	T/C	SRPX	rs35318931	G/G
		HMCN1	rs10798036	C/C	TMEM18	rs7594220	A/A
Varicose Veins	INCREASED RISK	MTHFR	rs1801131	T/G	MTHFR	rs1801133	G/A

Phenotype	Result	Gene/Locus	Marker	Genotype	Gene/Locus	Marker	Genotype
★ Cheek Laxity	INCREASED RISK	CYP1A1	rs4646903	T/C	AHR	rs2292596	G/A
SKIN INFLAMMATION & ALLERGY RISK							
Rosacea	INCREASED RISK	intergenic	rs763035	G/A	intergenic	rs111314066	A/A
		HERC2/OCA2	rs12913832	A/G	IL13	rs20541	A/G
Contact Dermatitis	NORMAL RISK	FLG	rs61816761	G/G	FLG	rs558269137	CACTG/CACTG
Generalized Psoriasis	HIGH RISK	HLA-C	rs1265181	G/G	IL23R	rs2201841	G/G
		HLA-C	rs12191877	C/C	MTHFR	rs1801133	G/A
		IL12B	rs2082412	G/G	TNFAIP3	rs610604	T/T
		IL13	rs20541	A/G	TNIP1	rs17728338	G/A
		IL17RA	rs917864	A/G	TYK2	rs34536443	C/T
		TRAF3IP2	rs33980500	C/A	ERAP1	rs30187	T/C
		NFKBIZ	rs78037977	G/A			
Eczema (Atopic Dermatitis)	NORMAL RISK	FLG	FLG:1249insG	A/A	FLG	rs200519781	CT/CT
		FLG	FLG:S2889X	TGG/TGG	FLG	rs374588791	C/C
		FLG	rs61816761	G/G	FLG	rs397507563	AC/AC
		FLG	rs121909626	G/G	FLG	rs558269137	CACTG/CACTG
		FLG	rs138726443	G/G	FLG	rs761212672	G/G
		FLG	rs150597413	G/G			
SKIN MOISTURE & HYDRATION							
Dry Skin (Xerosis & Ichthyosis)	NORMAL RISK	FLG	rs61816761	G/G	FLG	rs200519781	CT/CT
		FLG	rs138726443	G/G	FLG	rs397507563	AC/AC
		FLG	rs150597413	G/G	FLG	rs558269137	CACTG/CACTG
		AQP3	rs2231231	G/A	TRPM3	rs7943445	G/A
		CEMIP2	rs4783752	A/G			
SKIN OXIDATION PROTECTION							
Antioxidation Response	REDUCED	CAT	rs1001179	C/C	NQO1	rs2917666	C/G
		GPX1	rs1050450	G/A	SOD2	rs4880	A/G
		NQO1	rs1800566	G/A	GSTP1	rs1695	A/G
		NFE2L2	rs35652124	C/T			
SKIN GLYCATION							
Glycation Protection	REDUCED	AGER	rs1800624	A/A	GLO1	rs1049346	G/A
		AGER	rs1800625	A/G	GLO1	rs1130534	T/T
		AGER	rs2070600	C/C	NAT2	rs1799930	G/A
		MMP27	rs2846707	C/T			
SKIN NUTRITIONAL NEEDS							

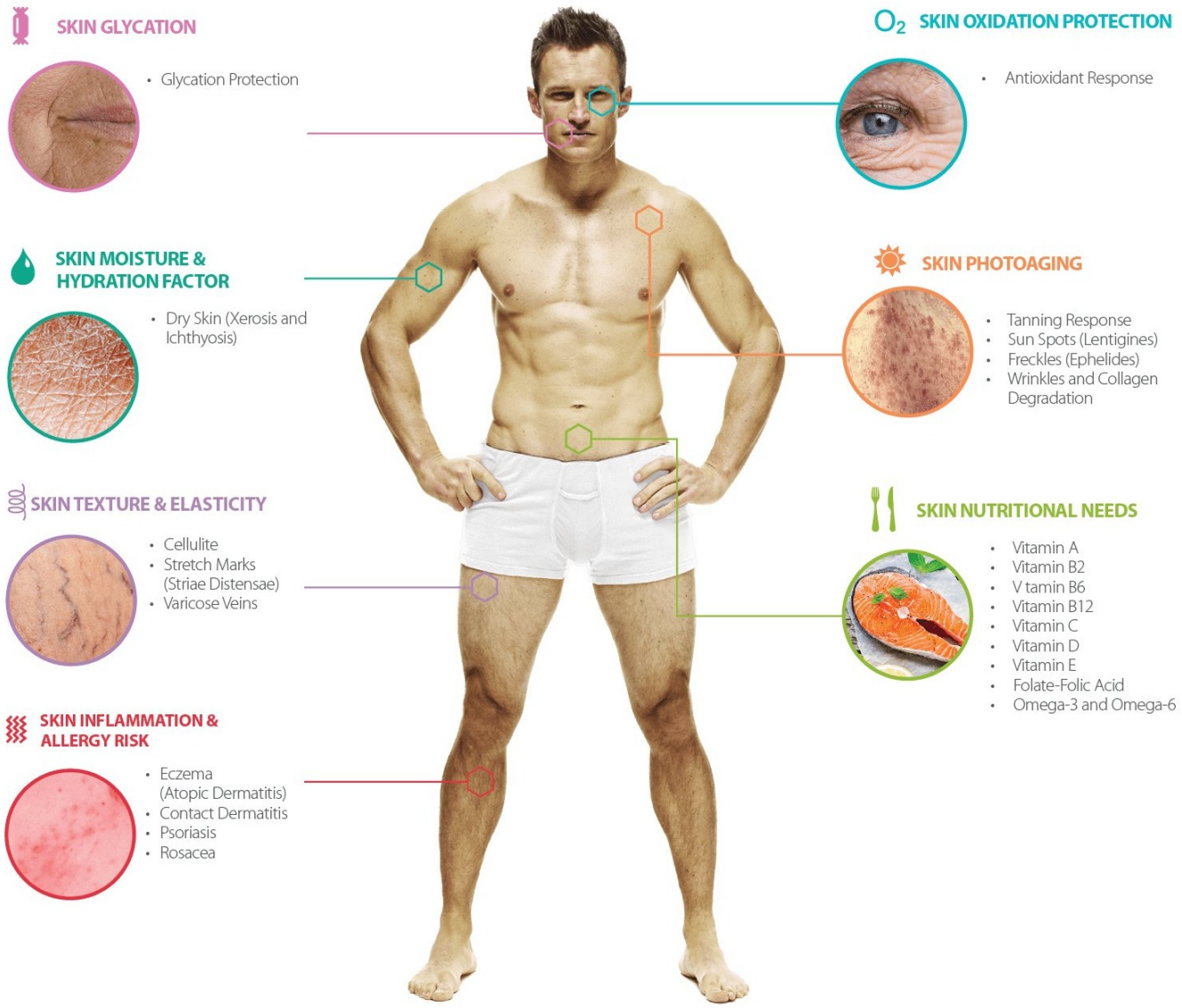
Phenotype	Result	Gene/Locus	Marker	Genotype	Gene/Locus	Marker	Genotype
Vitamin A Deficiency	**INCREASED RISK**	BCMO1	rs7501331	C/T	BCMO1	rs12934922	A/T
Vitamin B2 Deficiency	**NORMAL RISK**	MTHFR	rs1801133	G/A			
Vitamin B6 Deficiency	**INCREASED RISK**	NBPF3	rs4654748	C/T			
Vitamin B12 Deficiency	**INCREASED RISK**	FUT2	rs602662	G/A			
Vitamin C Deficiency	**NORMAL RISK**	SLC23A1	rs33972313	C/C			
Vitamin D Deficiency	**INCREASED RISK**	GC	rs2282679	T/G			
Vitamin E Deficiency	**NORMAL RISK**	intergenic	rs12272004	C/C			
Folate-Folic Acid Deficiency	**HIGH RISK**	MTHFR	rs1801131	T/G	MTHFR	rs1801133	G/A
Omega-3 & Omega-6 Deficiency	**INCREASED RISK**	FADS1	rs174547	T/C			

★ *indicates new 2025 marker or trait*

SKIN HEALTH BODY MAP

Your skin health — complete view

The original SkinFit body map showing all 7 genetic categories. This edition adds Skin Sagging and Cheek Laxity to Photoaging and Texture respectively.



Body map from original SkinFit analysis (Pathway Genomics, 2018). All 7 original categories retained. Two new phenotype categories added in this 2026 update: Skin Sagging (Photoaging section) and Cheek Laxity (Texture & Elasticity section), both supported by GWAS with p<5×10■■.

Skin Photoaging

How your genes influence UV-related skin aging — wrinkling, collagen loss, pigmentation, sun spots, freckles, and facial sagging.

Wrinkles & Collagen Degradation

INCREASED RISK

GENETIC SCIENCE

MMP1 and STXBP5L variants confirmed by 2025 meta-analysis (30 robustly replicated skin aging loci; OR 1.133, 95% CI 1.044-1.222; Wong et al. J Physiol Anthropol 2025). NEW: COL1A1 rs1800012 (Sp1 binding site) reduces type I collagen synthesis — the primary structural collagen of skin. SPTLC1 rs267608 (sphingolipid metabolism) identified in Korean GWAS for

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
MMP1	rs1799750	TC/T	STXBP5L	rs322458	C/T
COL1A1	rs1800012	G/T	SPTLC1	rs267608	C/T

ORAL / SUPPLEMENT

Vitamin C + E, zinc, alpha-lipoic acid, green tea, resveratrol, proanthocyanidins, carotenoids (lycopene, vitamin A), red ginseng, astaxanthin, hyaluronic acid peptides + glucosamine + CoQ10; collagen hydrolysate peptides 2.5-10g/day

TOPICAL

SPF 30+ sunscreen daily; vitamin C + E serums (CE Ferulic gold standard); CoQ10; retinoids (tretinoin 0.025-0.1%); peptides (argireline + aloe); hyaluronic acids; growth factors (TGF, EGF); DNA repair enzymes

PROCEDURE

Fractional non-ablative/ablative resurfacing; Q-switched laser; radiofrequency tightening; ultrasound (HIFU); Botox; soft tissue fillers

Tanning Response

REDUCED

GENETIC SCIENCE

Original 15-marker panel expanded with 3 high-confidence new loci. RALY/ASIP rs6059655 (P=1.9×10■■) — ASIP is a key melanocortin receptor antagonist controlling pigment production. BNC2 rs62543565 (P=2.3×10■■) — basonuclin 2, associated with facial pigmented spots independent of skin colour. AHR rs2292596 — aryl hydrocarbon receptor, identified in tanning

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
EXOC2	rs12210050	C/C	SLC24A5	rs1426654	A/A
HERC2	rs12913832	A/G	SLC24A5	rs2555364	G/G
intergenic	rs1015362	C/C	SLC45A2	rs26722	C/T
intergenic	rs4911414	G/G	SLC45A2	rs16891982	C/C
IRF4	rs12203592	C/C	TYR	rs1042602	C/A
MC1R	rs1805007	C/C	TYR	rs1126809	G/G
MC1R	rs1805008	C/T	TYR	rs1393350	G/G
NCOA6	rs4911442	A/A	RALY/ASIP	rs6059655	G/A
BNC2	rs62543565	C/T	AHR	rs2292596	G/A

ORAL / SUPPLEMENT

Green tea polyphenols (EGCG); probiotics; vitamin A; omega-3/omega-6 fatty acids to reduce inflammatory response after UV exposure

TOPICAL

SPF 30+ broadband sunscreen daily; EGCG creams; bemotrizinol (Tinosorb S); bisoctrizole (Tinosorb M); allantoin for soothing

PROCEDURE

Broadband light, pulsed light, fractional resurfacing or Q-switched laser for existing sun damage

Sun Spots (Lentigines)

INCREASED RISK

GENETIC SCIENCE

Solar lentigines are pigmented spots from local melanocyte overgrowth driven by UV. IRF4 rs12203592 and multiple MC1R variants confirmed across 3 independent GWAS. 2025 systematic review (Wong et al.) confirmed IRF4 as one of the most robustly replicated skin aging loci (OR 1.260, 95% CI 1.025-1.495). This patient carries 10 markers across IRF4 and MC1R —

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
IRF4	rs12203592	C/C	MC1R	rs1805007	C/C
MC1R	rs885479	G/G	MC1R	rs1805008	C/T
MC1R	rs1110400	T/T	MC1R	rs1805009	G/G
MC1R	rs1805005	G/G	MC1R	rs2228479	G/G
MC1R	rs1805006	C/C	MC1R	rs11547464	G/G

ORAL / SUPPLEMENT

Astaxanthin (microalgae-derived); proanthocyanidins (French maritime bark or grape seed extract)

TOPICAL

Triple therapy: 0.05% tretinoin + hydroquinone + fluocinolone; kojic acid; vitamin C; alpha hydroxy acids; glycolic acid; licorice root + glabridin; azelaic acid; 1% retinol

PROCEDURE

Broadband/intense pulsed light; Q-switched laser; fractional laser — highly effective

Freckles (Ephelides)

INCREASED RISK

GENETIC SCIENCE

10 markers across IRF4, MC1R, NCOA6, intergenic, and TYR. IRF4 and MC1R are the strongest drivers — the degree of freckling correlates directly with number of MC1R variants carried. MC1R is also the largest contributor to a red-haired, fair-skinned appearance. History of freckling associates with elevated melanoma and non-melanoma skin cancer risk, and with

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
intergenic	rs1540771	T/T	MC1R	rs1805009	G/G
intergenic	rs4911414	G/G	MC1R	rs11547464	G/G
IRF4	rs12203592	C/C	NCOA6	rs4911442	A/A
MC1R	rs1805007	C/C	TYR	rs1042602	C/A
MC1R	rs1805008	C/T	TYR	rs1393350	G/G

ORAL / SUPPLEMENT

N/A

TOPICAL

SPF 30+ at least twice daily; tretinoin + hydroquinone; glycolic acid peels; niacinamide; soy; kojic acid/azelaic acid; topical vitamin C; triple therapy for stubborn pigmentation

PROCEDURE

Broadband light; Q-switched laser; fractional resurfacing for extensive freckling or melasma

NEW 2025

Skin Sagging (Facial Laxity)

INCREASED RISK

GENETIC SCIENCE

NEW TRAIT — 2025 addition. TGIF1 (TGF-beta inducing factor homeobox 1) rs11876749: genome-wide significant locus for sagging eyelids (dermatochalasis) identified in Rotterdam Study GWAS (N=5,578) + TwinsUK meta-analysis (N=1,053; P=1.7×10■■). TGIF1 modulates TGF-beta signalling — a critical collagen synthesis pathway. Sagging eyelid heritability is

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
TGIF1	rs11876749	C/T	COL17A1	rs3832937	G/A

ORAL / SUPPLEMENT

Collagen hydrolysate peptides 2.5-10g/day; vitamin C 1000mg/day essential for collagen crosslinking; silicon supplementation 10mg/day; resveratrol + collagen combination products

TOPICAL

Retinoids (tretinoin 0.025-0.1%); TGF-beta growth factor serums; DMAE firming formulations; radiofrequency-activating peptides; hyaluronic acid for volume restoration

PROCEDURE

High-intensity focused ultrasound (HIFU/Ulthera); radiofrequency microneedling (Morpheus8); thread lifts; non-ablative fractional laser; surgical blepharoplasty for dermatochalasis

Skin Texture & Elasticity

Genetic variants influencing connective tissue composition, fat distribution, vascular integrity, and now skin laxity.

Cellulite

INCREASED RISK

GENETIC SCIENCE

ACE rs4646994/rs1799752 D/D genotype and HIF1A rs11549465 C/T both confer increased cellulite risk through vascular function and adipose tissue oxygen supply mechanisms. Present in ~85% of women over 20. ACE variants affect the renin-angiotensin system controlling local blood flow to subcutaneous fat; HIF1A (hypoxia-inducible factor) variants impair

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
ACE	rs4646994/rs1799752	D/D	HIF1A	rs11549465	C/T

ORAL / SUPPLEMENT

Bioactive collagen peptides (BCP) — RCT evidence for cellulite reduction in normal and overweight women; chokeberry juice; vitamin C for collagen synthesis support

TOPICAL

3.5% caffeine; caffeine + THPE (tetrahydroxypropyl ethylenediamine) + retinol; red algae + retinol + glaucine

PROCEDURE

FDA-approved subcision + microcannula (Cellfina); Cellulaze; radiofrequency and optical technologies

Stretch Marks (Striae Distensae)

INCREASED RISK

GENETIC SCIENCE

ELN (elastin), HMCN1, SRPX, and TMEM18 variants affect connective tissue and skin elasticity. ELN encodes elastin — the main component of elastic fibers essential for skin elasticity. SRPX affects extracellular matrix organisation. Stretch marks affect lower back/knees in adolescent males. Associated with Cushing syndrome, Marfan syndrome, diabetes mellitus, and long-term

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
ELN	rs7787362	T/C	SRPX	rs35318931	G/G
HMCN1	rs10798036	C/C	TMEM18	rs7594220	A/A

ORAL / SUPPLEMENT

N/A

TOPICAL

Hydroxyprolisilane-C + rosehip oil + vitamin E + centella — only topical with significant clinical trial evidence for prevention

PROCEDURE

Non-ablative fractional resurfacing; pulsed-dye laser

Varicose Veins

INCREASED RISK

GENETIC SCIENCE

MTHFR rs1801131 T/G and rs1801133 G/A — both heterozygous risk variants — are associated with elevated homocysteine and increased varicose vein risk. These same variants appear in the Folate, Psoriasis, and Vitamin B2 risk panels, creating compounding risk pathways through a single mechanistic driver: MTHFR enzyme deficiency leading to hyperhomocysteinemia.

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
MTHFR	rs1801131	T/G	MTHFR	rs1801133	G/A

ORAL / SUPPLEMENT

Oral CoQ10; methylfolate (5-MTHF) supplementation to address MTHFR homocysteine elevation; B12 supplementation as companion to folate

TOPICAL

N/A

PROCEDURE

Foam sclerotherapy; RF catheter; pulsed dye, endovenous, KTP and Nd:YAG laser ablation; ambulatory phlebectomy

NEW 2025

Cheek Laxity

INCREASED RISK

GENETIC SCIENCE

NEW TRAIT — 2025 addition. CYP1A1 (cytochrome P450 family 1A1) and AHR (aryl hydrocarbon receptor) are identified as associated with cheek laxity through collagen degradation regulation. CYP1A1 and AHR share a mechanism involving collagen degradation but show distinct associations: AHR with wrinkles and CYP1A1 specifically with cheek laxity (skin sagging).

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
CYP1A1	rs4646903	T/C	AHR	rs2292596	G/A

ORAL / SUPPLEMENT

Resveratrol (AHR pathway modulator); astaxanthin; green tea EGCG; vitamin C + E; omega-3 for anti-elastase effects

TOPICAL

MMP inhibitor-containing serums; retinoids to stimulate collagen and elastin synthesis; growth factors (TGF-beta, EGF); DMAE for cheek firming; radiofrequency-activating peptide formulations

PROCEDURE

High-intensity focused ultrasound (HIFU) — non-invasive cheek lifting; radiofrequency microneedling; filler-based volume restoration; surgical rhytidectomy for severe laxity

Skin Inflammation & Allergy Risk

Genetic variants governing inflammatory signalling, immune response, skin barrier integrity, and susceptibility to chronic inflammatory skin conditions.

Generalized Psoriasis

HIGH RISK

GENETIC SCIENCE

MAJOR UPDATE — 2025. The psoriasis genetic map has expanded from ~40 to 109 confirmed susceptibility loci (Dand et al. Nat Commun 2025; 36,466 cases + 458,078 controls). This patient carries 13 markers across 9 genes. CRITICALLY NEW: IL17RA rs917864 — target of brodalumab (approved biologic); presence of this variant directly informs biologic selection. TYK2

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
HLA-C	rs1265181	G/G	IL23R	rs2201841	G/G
HLA-C	rs12191877	C/C	MTHFR	rs1801133	G/A
IL12B	rs2082412	G/G	TNFAIP3	rs610604	T/T
IL13	rs20541	A/G	TNIP1	rs17728338	G/A
IL17RA	rs917864	A/G	TYK2	rs34536443	C/T
TRAF3IP2	rs33980500	C/A	ERAP1	rs30187	T/C
NFKBIZ	rs78037977	G/A			

ORAL / SUPPLEMENT

Vitamin D, vitamin B12, selenium; omega-3 fatty acids (fish oils) — strong established evidence; methylfolate to address compounding MTHFR risk; selenium 200mcg/day

TOPICAL

Topical corticosteroids (clobetasol + calcipotriene or tazarotene); tacrolimus or pimecrolimus; hydration + keratolytics + emollients + urea; severe: retinoids, methotrexate, cyclosporine

PROCEDURE

UVB phototherapy; excimer laser (localized); PUVA for severe disease; biologics: IL-17 inhibitor (brodalumab — matches IL17RA locus), TYK2 inhibitor (deucravacitinib), anti-TNF (adalimumab, etanercept), anti-IL-12/IL-23

Rosacea

INCREASED RISK

GENETIC SCIENCE

Updated with 3 new markers from Chang et al. GWAS (J Invest Dermatol 2015). HERC2/OCA2 rs12913832 — also in the tanning panel — confirms that pigmentation and inflammation pathways intersect in rosacea pathogenesis. IL13 rs20541 is shared with the psoriasis panel, highlighting a common Th2/Th17 inflammatory pathway. IRF4 rs12203592 appears in sun

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
intergenic	rs763035	G/A	intergenic	rs111314066	A/A
HERC2/OCA2	rs12913832	A/G	IL13	rs20541	A/G
IRF4	rs12203592	C/C			

ORAL / SUPPLEMENT

Omega-3 + gamma-linolenic acid; reduction in dietary glycemic load; doxycycline for moderate cases (physician-prescribed); isotretinoin for severe/resistant

TOPICAL

Topical brimonidine tartrate; metronidazole 1-2x/day; azelaic acid; erythromycin; green tea soaks; caffeine + zinc + bisabolol + hyaluronic acid + EGF + aloe; tretinoin/tazarotene for advanced cases

PROCEDURE

Pulsed dye laser; broadband light for redness/visible vessels; photodynamic therapy (PDT)

Eczema (Atopic Dermatitis)

NORMAL RISK

GENETIC SCIENCE

11 FLG markers all within normal range (G/G, TGG/TGG, CT/CT, AC/AC, CACTG/CACTG homozygous reference states). FLG variants (R501X, 3321delA, rs61816761) show OR up to 11.22 for atopic dermatitis in Spanish and Korean populations (2025 meta-analysis). This patient does not carry these risk alleles. However, given elevated psoriasis risk (shared IL13, inflammatory

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
FLG	FLG:1249insG	A/A	FLG	rs200519781	CT/CT
FLG	FLG:S2889X	TGG/TGG	FLG	rs374588791	C/C
FLG	rs61816761	G/G	FLG	rs397507563	AC/AC
FLG	rs121909626	G/G	FLG	rs558269137	CACTG/CACTG
FLG	rs138726443	G/G	FLG	rs761212672	G/G
FLG	rs150597413	G/G			

ORAL / SUPPLEMENT

Vitamin A, vitamin D, zinc; probiotics — particularly effective in children; omega-3 fatty acids

TOPICAL

Ceramide-containing moisturizers as first-line; green tea creams; colloidal oatmeal and chamomile salves; glycerin + oils (rose, avocado, coconut) as skin calming agents

PROCEDURE

Excimer devices (FDA-approved); narrow-band UVB for larger lesions

Contact Dermatitis

NORMAL RISK

GENETIC SCIENCE

FLG rs61816761 G/G and rs558269137 CACTG/CACTG are within the normal range — no significant increased risk of contact dermatitis or metal sensitization (nickel, cobalt) detected. FLG variants lead to decreased filaggrin, impaired skin barrier, and increased sensitization to workplace allergens. This patient's normal FLG status confirms the skin barrier is intact. The 2025

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
FLG	rs61816761	G/G	FLG	rs558269137	CACTG/CACTG

ORAL / SUPPLEMENT

Oral antihistamines (fexofenadine, cetirizine) if needed; prevention from re-exposure to known allergens

TOPICAL

Vitamin C + E or green tea creams for mild cases; low-potency hydrocortisone 0.5-1% for localized use

PROCEDURE

N/A

Skin Moisture & Hydration

Genetic variants determining skin barrier integrity (FLG), water channel function (AQP3), and dermal hyaluronic acid metabolism.

Dry Skin (Xerosis & Ichthyosis)

NORMAL RISK

GENETIC SCIENCE

6 original FLG markers all within normal range. Updated with 3 new markers: AQP3 rs2231231 (aquaporin 3 water channel — essential for transepidermal water transport; dysregulation associated with dry skin and atopic eczema; Geusens & Haykal Front Genet 2025), TRPM3 rs7943445 (novel moisture-related GWAS locus for facial moisture content, P<5×10■■, N=1,340; calcium

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
FLG	rs61816761	G/G	FLG	rs200519781	CT/CT
FLG	rs138726443	G/G	FLG	rs397507563	AC/AC
FLG	rs150597413	G/G	FLG	rs558269137	CACTG/CACTG
AQP3	rs2231231	G/A	TRPM3	rs7943445	G/A
CEMIP2	rs4783752	A/G			

ORAL / SUPPLEMENT

Vitamin C and/or collagen hydrolysate for skin hydration and elasticity; hyaluronic acid oral supplements (emerging evidence); essential fatty acids for barrier function

TOPICAL

Standard moisturizing creams; ceramide formulations; AHA or AHA + ceramides/urea for moderate dryness; glycerol; coconut/mineral oils; allantoin soothing agents; products containing hyaluronic acid for dermal hydration

PROCEDURE

N/A

SKIN OXIDATION PROTECTION

Skin Oxidation Protection

Antioxidant enzyme gene variants and the master NRF2 regulatory pathway — determining how efficiently your skin neutralises free radicals.

Antioxidation Response

REDUCED

GENETIC SCIENCE

Updated with 2 new markers. GSTP1 rs1695 (Ile105Val) — reduced detoxification of reactive electrophiles and oxidative byproducts; associated with longevity outcomes in conjunction with SOD2 and GPX1 (Soerensen et al. 2009). NFE2L2 (NRF2) rs35652124 — master regulator of ARE (antioxidant response element) genes. NRF2 transcriptionally controls NQO1, GPX1,

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
CAT	rs1001179	C/C	NQO1	rs2917666	C/G
GPX1	rs1050450	G/A	SOD2	rs4880	A/G
NQO1	rs1800566	G/A	GSTP1	rs1695	A/G
NFE2L2	rs35652124	C/T			

ORAL / SUPPLEMENT

Vitamin C + E, alpha-lipoic acid, CoQ10, resveratrol, green tea/EGCG; sulforaphane (from broccoli sprouts — potent NRF2 activator); curcumin (NRF2 activator); lycopene; omega-3 + soy isoflavone + vitamin E combinations;

TOPICAL

Vitamin C (ascorbic acid) + vitamin E (CE Ferulic); alpha-lipoic acid; niacinamide; resveratrol + vitamin E + baicalin; astaxanthin; apple stem cells + urea + peptides; kinetin

PROCEDURE

N/A

SKIN GLYCATION

Skin Glycation

Advanced glycation end products (AGEs) — sugar-protein cross-links that stiffen collagen and accelerate skin aging. Updated with SAF GWAS findings.

Glycation Protection

REDUCED

GENETIC SCIENCE

Updated with 2 high-evidence new markers. NAT2 rs1799930 — identified as the strongest genetic determinant of skin autofluorescence (SAF, the primary non-invasive measure of AGE accumulation in skin) in a meta-GWAS of 27,534 non-diabetic participants. NAT2 acetylator status is a major regulator of AGE burden independent of AGER/GLO1 pathways. MMP27

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
AGER	rs1800624	A/A	GLO1	rs1049346	G/A
AGER	rs1800625	A/G	GLO1	rs1130534	T/T
AGER	rs2070600	C/C	NAT2	rs1799930	G/A
MMP27	rs2846707	C/T			

ORAL / SUPPLEMENT

Niacinamide (AGE inhibitor); carnosine (methylglyoxal scavenger); green tea (EGCG — AGE formation inhibitor); manage dietary sugar and glycemic index; reduce dietary AGEs (avoid high-heat cooking); aminoguanidine (research stage)

TOPICAL

Topical carnosine and/or niacinamide creams; milk thistle silibinin + alpha-lipoic acid; truffle/mushroom-based anti-glycation serums; topical aminoguanidine formulations (emerging)

PROCEDURE

N/A

Skin Nutritional Needs

Genetic variants affecting absorption and metabolism of vitamins and fatty acids critical to skin health. Original panel confirmed — no new markers added in 2025.

Vitamin A Deficiency

INCREASED RISK

GENETIC SCIENCE

BCMO1 rs7501331 C/T and rs12934922 A/T — reduced beta-carotene to retinol conversion. Preformed vitamin A from animal sources is more reliably effective. 700-900mcg/day recommended. Topical retinoids bypass conversion and act directly on skin receptors.

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
BCMO1	rs7501331	C/T	BCMO1	rs12934922	A/T

ORAL / SUPPLEMENT

Preformed vitamin A sources: liver, eggs, dairy (more effective than plant sources for this patient); sweet potato, spinach, carrots (less efficient); retinol supplement 700-900mcg/day

TOPICAL

High-potency vitamin A serums; retinol creams (Obagi, SkinCeuticals); retinoids (tretinoin) bypass BCMO1 conversion

PROCEDURE

N/A

Vitamin B6 (Pyridoxine) Deficiency

INCREASED RISK

GENETIC SCIENCE

NBPF3 rs4654748 C/T — associated with reduced pyridoxal (active B6) blood levels. B6 deficiency causes pellagra-like dermatitis, seborrheic dermatosis, stomatitis, and can lead to B3 deficiency with pigmented sun-exposed skin rash. Recommended intake: 1.3mg/day. Caution: excess >100mg/day causes skin lesions and photosensitivity.

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
NBPF3	rs4654748	C/T			

ORAL / SUPPLEMENT

Chickpeas, poultry, tuna, bananas, avocado, Brussels sprouts; B6/B-complex supplement 1.3mg/day; do not exceed 100mg/day

TOPICAL

B-complex topical products; single B6 sprays for seborrheic dermatitis

PROCEDURE

N/A

Vitamin B12 (Cobalamin) Deficiency

INCREASED RISK

GENETIC SCIENCE

FUT2 rs602662 G/A — lower circulating B12. Deficiency causes skin hyperpigmentation and oral atrophy; elevates homocysteine compounding MTHFR risk. Combined with dual MTHFR variants, this is the most clinically significant nutritional finding. Methylcobalamin form may be preferable given MTHFR enzyme impairment.

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
FUT2	rs602662	G/A			

ORAL / SUPPLEMENT

Clams, beef, liver, mackerel, dairy, eggs; B12 supplement 2.4mcg/day minimum; methylcobalamin preferred given MTHFR variants in this patient

TOPICAL

Vitamin B12 creams effective against eczema and atopic dermatitis

PROCEDURE

N/A

Vitamin D Deficiency

INCREASED RISK

GENETIC SCIENCE

GC rs2282679 T/G — decreased blood vitamin D. Deficiency directly linked to psoriasis, atopic dermatitis, vitiligo and ichthyosis — several of which appear in this patient's risk profile. The AAD recommends 1000 IU/day for individuals with elevated deficiency risk. Given this patient's elevated psoriasis risk, serum 25-OH-D testing and optimized supplementation is a

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
GC	rs2282679	T/G			

ORAL / SUPPLEMENT

Fatty fish, fortified foods, eggs, mushrooms; vitamin D3 supplement 1000 IU/day; serum 25-OH-D testing recommended to confirm adequacy

TOPICAL

Topical vitamin D derivatives (calcipotriene/Dovonex) — specifically for psoriasis management

PROCEDURE

N/A

Folate-Folic Acid Deficiency

HIGH RISK

GENETIC SCIENCE

Two MTHFR risk alleles (rs1801131 T/G and rs1801133 G/A) — both heterozygous. These same variants appear in Varicose Veins, Psoriasis (MTHFR rs1801133), and Vitamin B2 panels — a mechanistic hub creating compounding vulnerability. MTHFR enzyme impairment reduces conversion of folic acid to active 5-methyltetrahydrofolate. Methylfolate (5-MTHF) supplementation

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
MTHFR	rs1801131	T/G	MTHFR	rs1801133	G/A

ORAL / SUPPLEMENT

Methylfolate (5-MTHF) preferred over folic acid — bypasses MTHFR enzyme defect; black-eyed peas, asparagus, spinach, broccoli; 400mcg/day minimum; B12 supplementation alongside folate

TOPICAL

Folate + creatine creams for skin firmness and collagen metabolism

PROCEDURE

N/A

Omega-3 & Omega-6 Fatty Acid Deficiency

INCREASED RISK

GENETIC SCIENCE

FADS1 rs174547 T/C — decreased conversion of alpha-linolenic acid (ALA) to EPA, and linoleic acid (LA) to arachidonic acid (AA). Fish oil provides EPA/DHA directly, bypassing the FADS1 conversion step. Omega-3 supplementation has strong established evidence for psoriasis management — directly relevant to this patient's HIGH RISK psoriasis result.

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
FADS1	rs174547	T/C			

ORAL / SUPPLEMENT

Fatty fish, salmon, mackerel, DHA-fortified eggs; fish oil supplements (EPA/DHA — more effective than flaxseed/plant sources for this patient due to FADS1 variant); 2-4g EPA+DHA daily for psoriasis management

TOPICAL

Omega fatty acids in combination serums; omega-3 PUFAs protective against UV damage and complement antioxidation needs

PROCEDURE

N/A

Vitamin B2 (Riboflavin) Deficiency

NORMAL RISK

GENETIC SCIENCE

MTHFR rs1801133 G/A — B2 metabolism within normal range despite MTHFR variant. Riboflavin may help manage rosacea (improves skin mucus secretion) — relevant given this patient's rosacea risk. 1.1-1.3mg/day recommended.

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
MTHFR	rs1801133	G/A			

ORAL / SUPPLEMENT

Dairy, broccoli, eggs, tuna; 1.1-1.3mg/day; B-complex supplement for broader coverage

TOPICAL

Usually combined with other micronutrients in moisturizing creams

PROCEDURE

N/A

Vitamin C Deficiency

NORMAL RISK

GENETIC SCIENCE

SLC23A1 rs33972313 C/C — normal vitamin C metabolism. Topical vitamin C (CE Ferulic) remains a high-impact intervention regardless of genetics, providing collagen synthesis stimulation, photoprotection, and antioxidant support particularly important given this patient's reduced antioxidation response.

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
SLC23A1	rs33972313	C/C			

ORAL / SUPPLEMENT

Oranges, kiwi, cantaloupe, grapefruit, strawberries, tomatoes; 75-90mg/day

TOPICAL

Vitamin C serum (ascorbic acid) — collagen synthesis and photoprotection; CE Ferulic combination most effective; works synergistically with vitamin E and hyaluronic acid

PROCEDURE

N/A

Vitamin E Deficiency

NORMAL RISK

GENETIC SCIENCE

Intergenic rs12272004 C/C — normal vitamin E levels. Vitamin E + C together reduce UV-induced inflammation and sunburn susceptibility — particularly relevant given reduced tanning response. Combination products (vitamin E + C + A + B3) most effective.

Gene/Locus	Marker (rsID)	Genotype	Gene/Locus	Marker (rsID)	Genotype
intergenic	rs12272004	C/C			

ORAL / SUPPLEMENT

Sunflower seeds, almonds, sweet potato, asparagus, wheat germ; 15mg/day; vitamin E + C combination for enhanced UV protection

TOPICAL

CE Ferulic and CE combinations most effective; vitamin E + C + A + B3 combination products

PROCEDURE

N/A

UPDATED SCIENTIFIC REFERENCES

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