wild health.

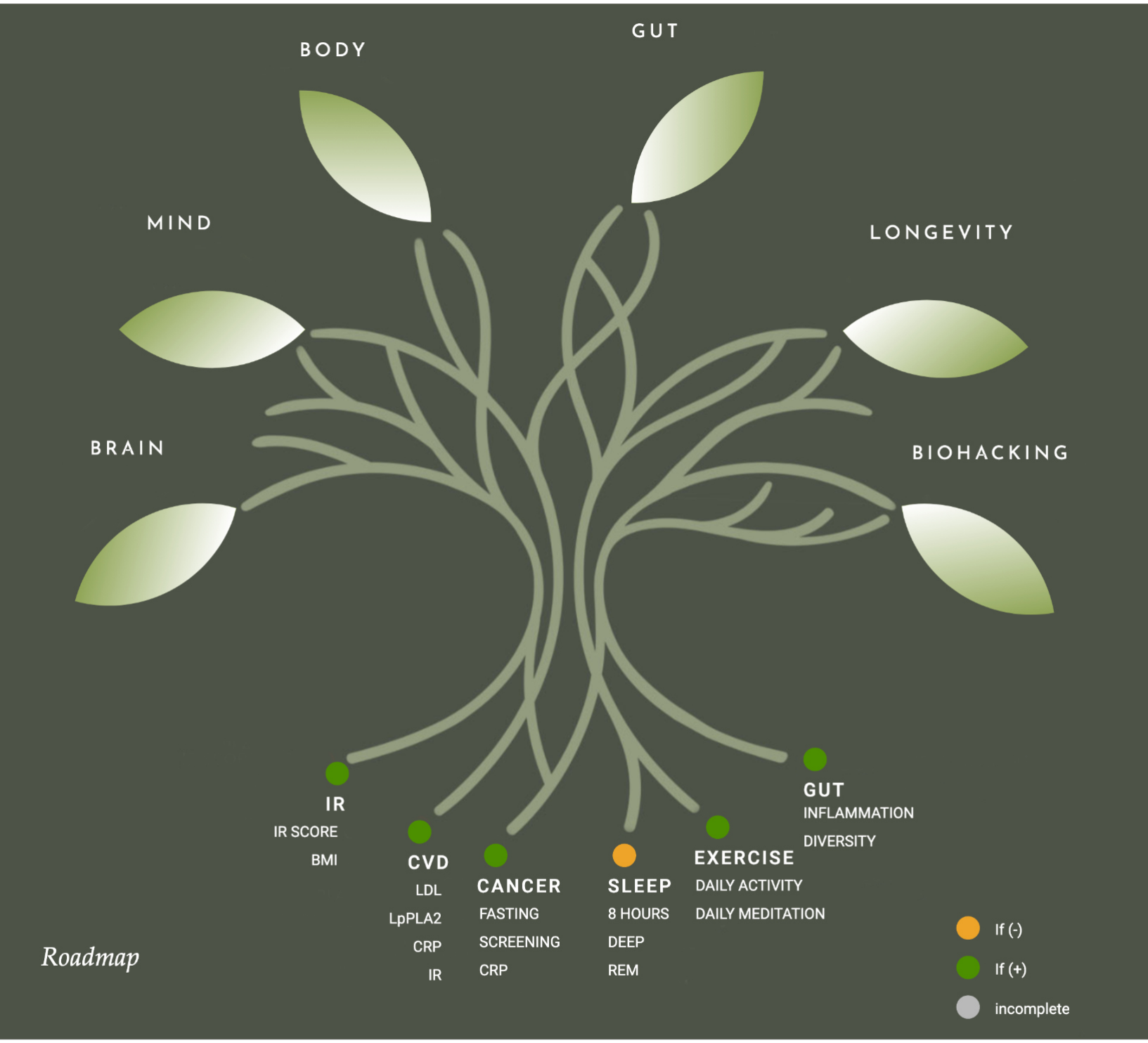
PERSONALIZED HEALTH REPORT

Created Exclusively For

Ben Greenfield

November 10, 2020

wild health.



HEALTH OPTIMIZATION SCORE 91

Graduate

6 months or more — Optimized

ESTIMATED TIME TO COMPLETION

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OVERALL HEALTH ASSESSMENT

WILD HEALTH SCORE:

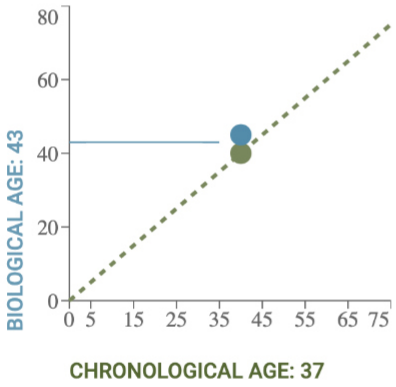
We use a combination of your lifestyle, genetics, and biomarkers to calculate an overall assessment of your health. Primary inputs include insulin sensitivity, cardiovascular health, cancer risk, sleep, exercise (physical and mental), and gut health. Obviously, we can't include everything in a single number, but this should give you a good start to help understand where you stand today, and how you can begin to improve your health. The maximum score is 100.

WILD HEALTH SCORE: 91/100

AT GOAL | AREA OF IMPROVEMENT | INCOMPLETE DATA

Insulin Resistance	■	Sleep	■
Cardiovascular Health	■	Mind/Body	■
Cancer Risk	■	Gut Health	■

Your biological rate of aging is faster than your chronological age.



1.2
YOUR RATE

EPIGENETIC AGE: 43

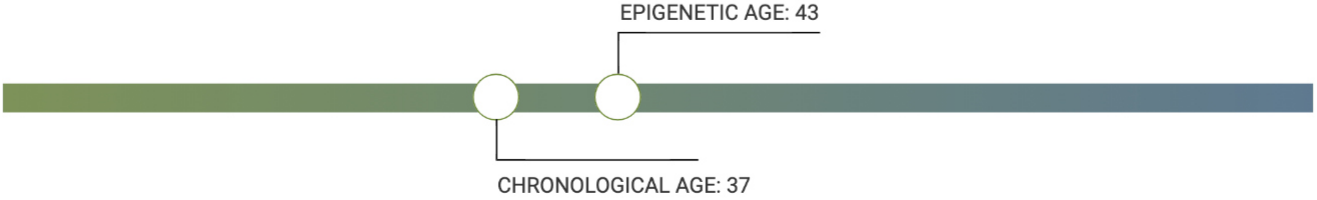
Elysium calculates your biological age by analyzing over 100,000 sites of DNA methylation, which are epigenetic modifications to your genome that do not change your DNA but can influence how your genes are expressed. (Your chronological age is determined based on the date you registered your Index Kit). For every chronological year that passes, your biological age may accelerate or decelerate based on your DNA methylation.

Why does my biological age matter?

Understanding your biological age will help your Wild Health coach develop appropriate optimization plans to help you maintain or improve your rate of aging. An ideal rate rate of aging is less than 1.0. Changes in your lifestyle can optimize the rate which you are aging.

BIOLOGICAL AGE:

Discover your biological age and organ system's aging rate to transform your longevity and vitality.



Macronutrients

There is no one ideal diet for all of us. We are all genetically different and have spent years modifying our epigenetics, training our bodies to turn specific genes on and off. This makes us all unique. At Wild Health, our goal is to help you find the right diet for you, based on your own preferences, your human operating system (your genes), and your current state of health. This section summarizes our assessment of a diet that will optimize your potential, fend off chronic disease, and promote longevity.

DIET & NUTRITION

MACRONUTRIENTS

Some recommendations are true for all, independent of your specific genomics:

- Eat mostly plants. Meat and grains should always be considered side items on your plate.
- Do not eat processed food. It's not real food if your great grandmother wouldn't recognize it.
- Avoid vegetable oils (soybean, canola). These cause inflammation and are unhealthy forms of fat. Use extra virgin olive oil or avocado oil instead.
- Do not eat all of the time. A daily 12-hour fasting window is considered the minimum. Fasting improves metabolic flexibility and allows for cellular regeneration.

YOUR DIET AND NUTRITION

Your genetic predispostition to fat, carbs, and saturated fats:

Fat Intolerance: 47%

Carb Intolerance: 58%

Sat Fat Intolerance: 53%

SNPS *Your genetic blueprint (single nucleotide polymorphysms)*

APO-E: Apo-ε3/ε3

- 0 Risk Alleles
- 1 Risk Alleles
- 2 Risk Alleles
- Missing SNP

Fat Intolerance:	
PPAR gamma #1	
PPAR gamma #2	
TCF7L2	
GIPR	
IRS1	
ADRB3	

Carb Intolerance:	
PPAR gamma #1	
PPAR gamma #2	
ADRB3	
FTO #1	
FTO #2	
FTO #3	
FTO #4	

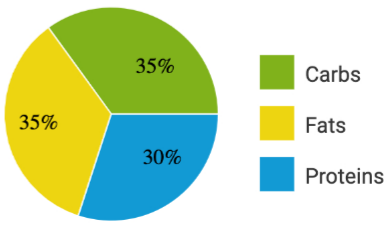
Sat Fat Intolerance:	
PPAR Alpha #1	
PPAR Alpha #2	
PPAR gamma #1	
PPAR gamma #2	
TCF7L2	
FTO #1	
FTO #2	
FTO #3	
FTO #4	

CARB RELATED LABS

Hgb-A1c	4.8
Fasting Glucose	88
HOMA-IR	0.24
TRIG:HDL	0.52

LIPID PANEL

Total Cholesterol	237
HDL	101
LDL	125
TRIG	53



DIET & NUTRITION

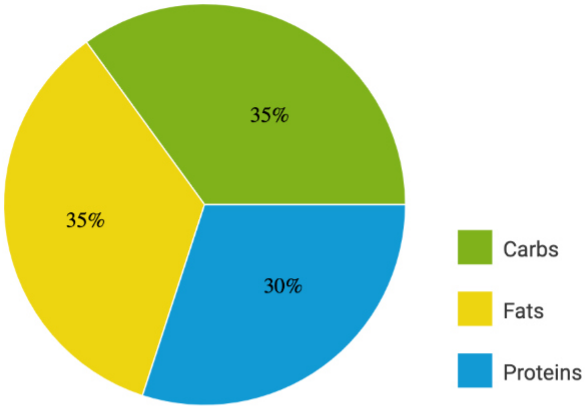
MACRONUTRIENTS

Macronutrient tracking can be extremely time intensive and overwhelming, but is essential to understand where your calories come from. Genetically, we are all different and may benefit from significant variations in our macronutrient profile. Furthermore, many people experience significant weight loss (or desired weight gains) through macronutrient tracking. There are extensive phone apps that assist in calorie and macronutrient counting.

To estimate your daily calories per gram of carbohydrate, fat, and protein use the following formula:

1 gram Carbohydrate = 4 calories
1 gram Protein = 4 calories
1 gram of Fat = 9 calories

Your recommended macros:



YOUR MACRONUTRIENTS

Your recommended daily macronutrient % of calories are 35% fat, 35% carbs, 30% protein.

Saturated fat:
Your saturated fat should be < 7% of your total calories. You are intolerant to saturated fat: you should reduce saturated fat & increase monounsaturated and polyunsaturated fats in your diet. Think: less red meat cheese, butter, ghee and MCT and more avocado, nuts, seeds and fish, extra virgin olive oil, and avocado oil.
We can work together to identify foods with high saturated fat content and develop strategies to lower the total amount you consume on a daily basis.

Cholesterol:
You have high LDL cholesterol. Based on your genetics, the total amount of grams of saturated fat per day that you should be consuming is less than < 7% of your total calories.

Carbohydrates:

DIET & NUTRITION

YOUR MACRONUTRIENT RECOMMENDATIONS

You are intolerant to carbohydrates: reduce simple carbs and consider a high fat, low carb diet. You should avoid grains and breads. Fruits are ok, but you should choose low glycemic fruits such as berries, kiwi, oranges, grapefruit, cherries, watermelon, pears, grapes, plums, apricots, apples. Replace simple carbs like grains, cereals, crackers and breads with complex carbs such as sweet potatoes, vegetables and beans. We also want you to increase the amount of dietary fiber you are taking in. Ground flaxseed and psyllium husk are great and contain a lot of fiber. Consuming this diet consistently can result in weight loss.

Fat:
You are intolerant to high fat diets and are unlikely to respond well to a ketogenic or high fat diet. We should keep your percentage of calories from fat less than 40%. Focus on whole foods, and a balanced diet including carbs from vegetables, healthy fats, and protein.

METABOLISM AND VITAMINS - METHYLATION

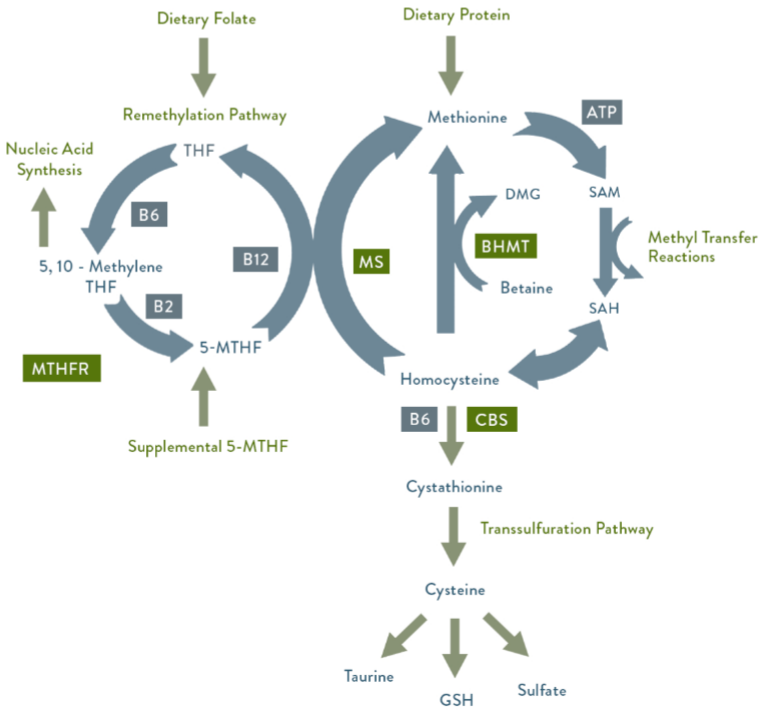
Methylation: Methylation is the process of "1 carbon metabolism," representing the body's ability to carry out the process of adding carbon atoms or methyl groups to compounds. The body has to do this to package DNA, regenerate muscle, make enzymes, degrade neurotransmitters and harmful chemicals, and much, much more. Methylation is performed via two pathways: the FOLATE pathway and the CHOLINE pathway. Both pathways must be optimized to promote adequate methylation and perform all of these processes at an appropriate level.

Folate (Vitamin B9) and other B vitamins are involved in the methylation pathway, most specifically Folate, B12, and P-5-P. There are multiple mutations in enzymes involved in the pathway, such as MTHFR, which can effect your ability to methylate using the B vitamins. B vitamins are found in numerous quantities in green leafy vegetables.

Choline is an essential nutrient important for multiple bodily functions including methylation, neurotransmitter development, fat packaging and excretion from the liver, and creatine production. Choline is found in greatest quantity in eggs, fish, dairy, meat, and to a lesser but notable amount in vegetables. Multiple SNPs are involved in the choline side of the methylation pathway and are noted below.

We can assess your methylation status by measuring your homocysteine levels. Homocysteine builds up when methylation is stressed. High homocysteine levels have been associated with cardiovascular disease and other chronic diseases. Elevated homocysteine levels appear to irritate the arterial walls. We will also test your B vitamin levels and your liver function levels as elevated liver function markers can indicate choline deficiencies.

TMAO: Unfortunately, when you are low in choline the answer isn't always as simple as take more choline. Some people are at risk of higher cardiovascular disease when they ingest choline and carnitine due to a compound made by some gut bacteria called TMAO. We can tell your risk for this response based on the function of a specific enzyme and your gut microbiome composition. The TMAO risk score calculates your risk, and if it is high we can supplement the choline system in different ways.



DIET & NUTRITION

MICRONUTRIENTS: METHYLATION

Your Methylation Genomics and Labs

METHYLATION STATUS:
OPTIMAL

Optimal

Homocysteine:
6.8

Choline Risk Score 63%

PEMT	
FADS 1	
MTHFD1	

Folate Risk Score 17%

MTHFR #1	
MTHFR #2	
MTRR #1	
MTRR #2	
MTR	

TMAO Score: 29

FMO3 #1	
FMO3 #2	

CHOLINE RELATED LABS

AST	66
ALT	48

FOLATE RELATED LABS

B12	2000
Folate	13.5

TMAO RELATED LABS

Total Cholesterol	237

YOUR METHYLATION RECOMMENDATIONS

Homocysteine = 6.80.
Homocysteine is a marker of inflammation. When it is high, methylation is reduced. A homocysteine value less than 7 suggests adequate methylation.

B12 = 2000.
Your vitamin B12 level is not in the range considered low.

Folate = 13.50.

DIET & NUTRITION

YOUR METHYLATION RECOMMENDATIONS

Your folate level is low:
Increase dietary intake of leafy greens. These include: cilantro, arugula, chards, watercress, rutabaga, bok choy, artichoke, dandelion and spinach. Other sources of folate include beans, eggs, avocado, and nuts and seeds.

Liver enzymes:
You have had consistently elevated liver enzymes (AST & ALT). There are multiple possible causes for this. Please see the micronutrient section for more information.

METABOLISM AND VITAMINS - VITAMINS AND MICRONUTRIENTS

Genetic variation can significantly affect important vitamins and micronutrients. Some of these we can easily monitor with lab testing such as vitamin D and omega-3 levels. Some are less readily measured, but easy to increase intake based on your genetics. We'll cover the following vitamins and micronutrients here:

Omega 3s: These essential fatty acids cannot be produced in the human body. Omega 3s are active and beneficial as DHA and EPA. These are most readily found in fish oils, krill oil and algae. ALA, which can be converted to the active forms, DHA and EPA, by the body, is found in nuts and seeds and vegetable forms of omega 3s. The enzyme that is responsible for this conversion is a common SNP we will monitor. We'll also directly monitor your Omega 3 levels.

Vitamin D: Is an essential hormone (not really a vitamin) that the body makes using sunlight. Nearly all humans are now low or sub-optimal in vitamin D due to the nature of society. There are multiple SNPs associated with Vitamin D and we will directly monitor your levels.

Vitamin A: Important for eyesight and immune function. The vegetable form, beta-carotene, must be converted to the active form, retinol, by an enzyme BCMO1, which has common mutations. We'll review your genetic disposition and make recommendations.

Vitamin B12: Commonly reduced absorption in the stomach. Medications such as antacids and metformin can reduce absorption as well as genetics. We'll review your current level as well as your genetic predispositions.

Vitamin E: Can have either beneficial or anti-inflammatory effects depending on your genetics. We'll review your predispositions.

Caffeine: We all respond to caffeine differently. It could be performance enhancing, or it could ruin your sleep and lead to cardiovascular disease.

YOUR VITAMINS AND MICRONUTRIENTS RECOMMENDATIONS

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Gene CYP1A2:
You have faster caffeine metabolism, you may find improved athletic performance with caffeine intake
prior to exercise. Try to limit caffeine later in the day to prevent disruption in sleep.

Gene SLC30A8:
You are at increased risk for delayed onset muscle soreness (DOMS) related to impaired zinc
transport. Your zinc level is low!
Supplemental or dietary intake of zinc can help through foods such as nuts, seeds, eggs, meat and
shellfish. We also recommend 30mg of zinc daily with food [Link](https://thor.ne/xEPDK).
250-500 milligrams of Vitamin C before a big workout can help as well [Link](https://thor.ne/p8mS).

Gene COL5A1:
You have a genetic SNP associated with tendinopathies and may benefit from increased collagen
consumption. Foods such as sardines and bone broth are great sources of collagen protein.
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YOUR VITAMINS AND MICRONUTRIENTS RECOMMENDATIONS

Gene SOD2:
You have reduced superoxide dismutase activity, which is responsible for scavenging free radicals. Increased consumption of antioxidant rich foods such as grapes, berries, nuts and dark green veggies may help.

Gene GSTP1:
Supplemental Vitamin E may be harmful due to increased inflammation. Avoid vitamin E supplementation, including multivitamins.

Liver Function:
Your liver function enzymes are elevated. There are multiple possible causes for this, but include fatty liver and alcohol as the most likely. You have a PEMT mutation which may reduce your liver's ability to transport fats out of the liver. You should increase choline intake, start TMG supplementation, and start creatine 5gm daily [Link](https://thor.ne/p8FV). Reduce or stop alcohol consumption.

DIET & NUTRITION

KRYPTONITE FOODS

Kryptonite for you

Based on your genetics you should avoid these as much as possible:

Sugar is inflammatory and contributes to increased insulin resistance, accelerated aging, and poor body composition.

Wheat/gluten leads to inflammation and all the negative effects that come along with it.

Vegetable oils and processed foods are particularly deleterious to you and your DNA.

SUPER FOODS

Optimal for you

Based on your genetics you should focus on adding or increasing the following in your diet:

Fish. SMASH fish. You have several snps that make sardines particularly ideal for you with their clean content of Omega 3's, collagen protein, and other key vitamins and nutrients.

Cruciferous vegetables. Broccoli, cauliflower, brussell sprouts, and other crucifers will greatly benefit your specific genetic makeup.

Saturated Fat:
Reduce saturated fat such as red meat cheese, butter, ghee and MCT. Replace it with avocado, nuts, seeds and fish, extra virgin olive oil, and avocado oil.

Caffeine:
You may have an athletic benefit from caffeine.

Vitamin A:

YOUR COMPLETE DIET RECOMMENDATIONS

- Genetic saturated fat tolerance: Reduce saturated fat to <7% of total calories.
- Elevated LFTs: Increase dietary choline intake, supplement creatine and TMG. Consider liver ultrasound to rule out NAFLD.
- Supplement with Zinc
- Increase dietary folate
- Limit simple carbohydrates and monitor for insulin resistance

DIET & NUTRITION

YOUR SUPER FOODS RECOMMENDATIONS

Increase your consumption of foods that contain higher levels of Vitamin A. Consider adding organ meats as they have higher levels of active form of Vitamin A. Other foods include eggs, hard Goat/Cheddar cheese, orange and yellow vegetables and fruits like sweet potatoes and carrots into your diet.

Antioxidants:
Antioxidant rich foods such as grapes, berries, nuts and dark green veggies may help. These include: cruciferous vegetables such as broccoli, cauliflower, brussels sprouts, and cabbage have the bioactive sulforaphane in them which helps decrease inflammation in your body.

Collagen:
You have a genetic SNP associated with tendinopathies and may benefit from increased collagen consumption. Foods such as sardines and bone broth are great sources of collagen protein.

Choline:
Increase foods high in choline such as eggs, fish, dairy, and green vegetables.

Dietary Folate:
Foods high in folate such as leafy greens, cilantro, arugula, chards, watercress, rutabaga, bok choy, artichoke, dandelion and spinach. Other sources of folate include beans, eggs, avocado, and nuts and seeds.

EXERCISE & RECOVERY

Personalized Exercise Plan

We use a combination of 3 major polygenic scores to help develop your personalized workout plan. These include Strength v Endurance, Recovery, and HIIT. Multiple genes are in play for each of these scores, so rather than go over each SNP individually, we will summarize them here. Specifics can be seen in the details section of the report.

Strength versus endurance is a simple measure of your potential. This does not mean that those with a genetic preference for endurance cannot perform strength activities, or that those with strength genetics cannot run marathons. It is simply a way of personalizing the optimal rep/weight schemes and regularity of exercise. Your genetics are always modifiable.

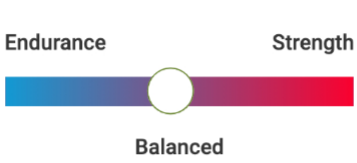
Recovery is simple, but there are a lot of genes at play. Some people can workout 7 days a week and perform at the top of their game, while others need days to recover between workouts. Although some of this is training related and thus epigenetic in nature, a great deal of your potential resides in your genes. We'll review your genes and create a recovery score, and thus help dictate how often you should workout. This can be paired with objective recovery metrics such as heart rate variability and resting heart rate to optimize your exercise plan.

HIIT training is beneficial for just about everyone. But the intensity and volume of HIIT training can be optimized for your genetics. We'll assess HIIT related genes and use those to build a report.

EXERCISE & RECOVERY

YOUR EXERCISE AND RECOVERY GENOMICS AND LABS

Your genetic predisposition to strength vs. endurance training, rate of recovery and intensity tolerance:



ACTN3	
INSIG2	
VEGFA	
ACE 2	
PPARG1A	
PPARA	
ADRB2 #1	
ADRB2 #2	
NRF #1	
NRF #2	
NRF #3	
AGT	
TRHR	
BDKRB2	

SOD2	
IL-6	
IL-6 R	
CRP	
TNF	
SLC30A8	

GABRG3	
CRN1	
LEPR	

EXERCISE & RECOVERY

YOUR EXERCISE AND RECOVERY RECOMMENDATIONS

Gene SOD2:
Associated with some reduced levels of Reactive Oxygen Species scavenger and antioxidant production. Increased muscle break down may require more rest between bouts of high intensity exercise. Be mindful of your recovery speed in the exercise section of this report and CRP levels.

Gene GSTP1:
Supplemental Vitamin E may be harmful due to increased inflammation. Avoid vitamin E supplementation, including multivitamins.

Your SHBG is elevated:
Strength and endurance exercise can increase both testosterone levels and SHBG. High SHBG will reduce the amount of free testosterone that is active in circulation. Discontinue fasted training, add quality complex carbs before and after training session. Evaluate for adequate caloric intake to support activity.
Consider Boron supplementation 5 mg/d.
Consider DIM supplementation. [Link](https://thor.ne/gKr3k)

EXERCISE & RECOVERY

PERSONALIZED EXERCISE PLAN

In order to determine your genetic preference of exercise, we compiled all exercise related SNPs to produce a percentage of strength vs endurance preference. We also have taken into consideration multiple SNPs that can affect your recovery time between intense exercise classified as slow, moderate or fast. A longevity, genetic based exercise program has been developed with this in mind and is included in this document.

Your genetic training preference is pretty balanced at 47%.
This means you are likely to benefit from both power and endurance athletics almost equally.
Generally, when individuals have a balanced genetic preference we find it most important to find an exercise program you like and can adhere to.

Your recovery time is intermediate at 50%.
This means that you will likely need at least 1 or 2 days of recovery per week.
Be mindful of excessive soreness after intense efforts and use that time for active recovery.
These "recovery days" can consist of yoga, stretching, zone 2 cardio or a mindfulness practice.

Gene COL5A1:
You are at increased risk for tendinopathy, more specifically achilles tendinopathy.
Repetitive movements may increase this risk. Make sure to do some stretching or calf raises before exercise.
You should also avoid fluoroquinolone antibiotics due to increased risk of tendon rupture(Cipro, Levaquin).
Consider adding regular eccentric loading movements into your training program to help strengthen and protect your tendons.

Gene SLC3OA8:
You are at increased risk for delayed onset muscle soreness (DOMS) related to impaired zinc transport. Your zinc level is low! We recommend 30mg of zinc daily with food [Link](https://thor.ne/xEPDK).
250-500 milligrams of Vitamin C before a big workout can help as well [Link](https://thor.ne/p8mS).

Gene IL6:
Associated with lower levels of inflammation after hard training sessions, leading to quicker recovery times. This genotype has been independently associated with success in power sports, perhaps due to improved muscle repair after exercise.

Gene CRP:
The C-reactive protein SNP can cause increased inflammation especially after intense exercise. Be mindful of your recovery speed in the exercise section of this report and CRP levels.

EXERCISE & RECOVERY

Week	Workout	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	Weight room	Full-body Circuit #1 +10 min HIIT 1 or 2	OFF	Full-body Circuit #2 +10 min + HIIT 1 or 2	Core/mobility #2	OFF	Full-body Circuit #1 +10 min HIIT 1 or 2	Core/mobility #1
	Cardio	Post-lift: 20min Level 2 cardio	OFF	Post-lift: 20min Level 2 cardio	Cardio SIT #1	OFF	PM: 20-30 min walk, swim, or easy spin for active recovery	60min Z2 cardio
2	Weight room	Full-body Circuit #2 +10 min + HIIT 1 or 2	OFF	Full-body Circuit #1 +10 min HIIT 1 or 2	Core/mobility #2	OFF	Full-body Circuit #2 +10 min + HIIT 1 or 2	Core/mobility #2
	Cardio	Post-lift: 20min Level 2 cardio	OFF	Core/mobility #1	Cardio SIT #2	OFF	PM: 20-30 min walk, swim, or easy spin for active recovery	60min Z2 cardio
3	Weight room	Full-body Circuit #1 +10 min HIIT 1 or 2	OFF	Full-body Circuit #2 +10 min + HIIT 1 or 2	Core/mobility #2	OFF	Full-body Circuit #1 +10 min HIIT 1 or 2	Core/mobility #1
	Cardio	Post-lift: 20min Level 2 cardio	OFF	Core/mobility #1	Cardio SIT #3	OFF	PM: 20-30 min walk, swim, or easy spin for active recovery	60min Z2 cardio
4	Weight room	Full-body Circuit #1 +10 min HIIT	OFF	Full-body Circuit #1 +10 min HIIT 1 or 2	Core/mobility #2	OFF	Full-body Circuit #2 +10 min + HIIT 1 or 2	Core/mobility #1
	Cardio	Post-lift: 20min Level 2 cardio	OFF	Core/mobility #1	Cardio SIT #1	OFF	PM: 20-30 min walk, swim, or easy spin for active recovery	60min Z2 cardio
5	Weight room	Full-body Circuit #1 +10 min HIIT 1 or 2	OFF	Full-body Circuit #2 +10 min + HIIT 1 or 2	Core/mobility #2	OFF	Full-body Circuit #1 +10 min HIIT 1 or 2	Core/mobility #1
	Cardio	Post-lift: 20min Level 2 cardio	OFF	Core/mobility #1	Cardio SIT #3	OFF	PM: 20-30 min walk, swim, or easy spin for active recovery	60min Z2 cardio

EXERCISE & RECOVERY

Training zones for cardio: Training levels can be based on Heart as a % of Estimated Max HR, % of Threshold HR, or RPE (rate of perceived exertion)						
Level	Training Zone	% of HRMax		"RPE (on 1-10 Scale)"	Effort Loads	Physiological Adaptations
1	Easy/ Recovery	50.00%	60.00%	1 - 2	Recovery. Should feel easy	Recovery. Improves fatigue and soreness
		104	124			
2	Endurance	60.00%	70.00%	2 - 3	Long slow distance workouts, strength workouts	Increases energy utilization, developing lactate clearance, promotes muscle cell adaptations and bulidng capilary beds
		124	145			
3	Endurance	70.00%	80.00%	4 - 5	Tempo efforts. Hard but comfortable	Increases oxygen utilization and transportation. Improves energy utilization
		145	166			
4	Threshold Intervals	80.00%	90.00%	6 - 7	Anaerobic threshold	Improvements in maximum fitness, lung capacity and high speed endurance. Short efforts paired with active recovery
		166	186			
5	Intensity Intervals	90.00%	100.00%	8 - 9	3-8 minute intervals, aerobic system, building VO2	Above your onset of blood lactate accumulation or "OBLA"., Improves speed and intensity tolerance.
		186	207			
6	Max Efforts	98.00%	110.00%	10	All out, short intervals (up to 3min), running/skiing economy, Speed sprints and strides.	Improves speed and economy of movement
		203	228			

Cardio Sprint Interval Training (SIT)	
SIT #1	6x 20 sec on 3 min active recovery between intervals
SIT #2	3 x 3 min on/3 min recovery
SIT #3	Cardio Intervals pyramid: (On/ Recovery) 1:00/:30 1:30/:30, 2:00/ 1:00, 3:00/1:30, 2:00/1:00, 1:30/30, 1:00/30
Program Notes: running, rowing, biking or swimming. Max effort for each interval with active recovery inbetween	

Calculate HR max			
Current Age	37	HRMax	181

EXERCISE & RECOVERY

Mobility/Core #1

Focus:body weight resistance training

Exercise		Set #1		Set #2		Notes
		Program	Variation	Program	Log	
Prone Plank Progression	reps	2		2		Progression: Elbows 15secs, 5 Rt arm Ext., 5 Lf arm Ext., 5 Rt leg Ext., 5 Lf leg Ext., 5 Rt/LF opposites, 5 Lf/Rt opposites, Elbows 15secs
Side Plank Progression	reps	2		2		Progression: Elbow 15secs, Lift upper leg 15secs, Adduction w/ 6 lower leg knee drives; Repeat on Rt and then Lf side
Supermans	15 reps	10		10		5 secs holds of Y, T, and W progression
Deadbug	30 reps alternating	20		20		total reps listed, divide evenly between sides
Hip Bridges	15reps	15	1 leg lift	15		Push-up and hold for 5 count
Hip Circles (hydrants)	reps	20		20		total reps listed, divide evenly between sides
Bird-Dogs	reps	10		10		total reps listed, divide evenly between sides
Hands overhead Body Weight Squat	reps	12		12		Hands extended overhead (can hold stick in hands if helps) Slow down, hold, slow up, hold (3,2,3,2)

Mobility/Core #2

Focus:body weight resistance training

Exercise		Set #1		Set #2		Notes
		Program	Variation	Program	Log	
Lunge - Reverse adn twsit to outside leg	12 reps	2	Add DB or OH hold to make harder	2		Progression: Elbows 15secs, 5 Rt arm Ext., 5 Lf arm Ext., 5 Rt leg Ext., 5 Lf leg Ext., 5 Rt/LF opposites, 5 Lf/Rt opposites, Elbows 15secs
Side Plank	30 sec/ side	2	Leg in hip abduction/ 15 sec	2		Progression: Elbow 15secs, Lift upper leg 15secs, Adduction w/ 6 lower leg knee drives; Repeat on Rt and then Lf side
Supermans	reps	10		10		5 secs holds of Y, T, and W progression
Band pull apart	reps	15		20		total reps listed, divide evenly between sides
Band good morning	reps	15		15		Light band, focus on form
Push up/ plank hold	10 reps	2		20		Hold 5 sec at low plank position
Scap retraction pullup hold	6-10 reps	10		10		Hold count of 3 at scap retraction

EXERCISE & RECOVERY

Strength Circuit #1

Exercise	Genotype	Set x Rep
Bench/ Bent over row superset	Mixed Genotype	5 x 5
Deadlift	Mixed Genotype	5 x 5
Wt DB step up	Mixed Genotype	3 x20 alt

HIIT #1

	Name	Set x Rep
Tabata, 1 min rest between rounds	Air squat	20s on 10s off x 8
	KBS	20s on 10s off x 8
	Burpee	20s on 10s off x 8

HIIT #2

	Name	Set x Rep
1 min on 1 min off x 2 rds	DB thruster	1 min on 1 min off
	Burpee	1 min on 1 min off
	Renegade row	1 min on 1 min off
	DB lunge	1 min on 1 min off
	Sit up	1 min on 1 min off

Strength Circuit #2

Exercise	Genotype	Set x Rep
Back Squat	Mixed Genotype	5 x 5
Pull Up/ Dip Super set	Mixed Genotype	5 x 5
Jump Squat	Mixed Genotype	30 sec on / 30sec rest x 2

HIIT #1

	Name	Set x Rep
Tabata, 1 min rest between rounds	Push press	20s on 10s off x 8
	KBS	20s on 10s off x 8
	Jump lunge	20s on 10s off x 8

HIIT #2

	Name	Set x Rep
1 min on 1 min off x 2 rds	KBS	1 min on 1 min off
	Burpee	1 min on 1 min off
	Push press	1 min on 1 min off
	Air squat	1 min on 1 min off
	Sit up	1 min on 1 min off

DETAILED EXERCISE & RECOVERY GENETICS AND LABS

GENETICS

PPARGC1A(rs8192678): Peroxisome Proliferator - PPARGC1A regulates energy through production of mitochondria, fat and carbohydrate metabolism and conversion from fast to slow twitch muscle fibers.

PPAR-α(rs4253778): Peroxisome proliferator - activated receptor alpha. PPARa is a key regulator of carbohydrate and fat metabolism, helping muscle burn fuel during endurance work.

PPAR-α(rs135549): Peroxisome proliferator-activated receptor alpha is a master regulator of lipid, carbohydrate and amino acid metabolism. PPAR-α is found primarily in brown adipose tissue and the liver, and, to a lesser extent, the kidneys, skeletal muscle, heart and both the small and large intestines. PPAR-α plays an essential role in the process of ketogenesis (the production of ketone bodies from the oxidation of fat, which typically occurs during carbohydrate restriction or fasting). Activation of PPAR-α promotes the uptake, utilization and catabolism of fatty acids by activating genes involved in fatty acid transport, binding, activation and oxidation. PPAR-α is activated primarily through the binding of polyunsaturated fatty acids. The G allele reduces activation and function of PPAR-a and leads to lipid abnormalities with high SFA and low PUFA intake.

ADRB3(rs4994): Adrenergic beta - 3 receptor. The protein encoded by this gene belongs to the family of beta adrenergic receptors, which mediate catecholamine-induced activation of adenylate cyclase through the action of G proteins. This receptor is located mainly in the adipose tissue and is involved in the regulation of lipolysis and thermogenesis.

NRF(rs7181866): Nuclear Respiratory Factor 2. NRF improves respiratory capacity and cellular energy mobilization.

AGT(rs699): Angiotensinogen. AGT (Angiotensinogen) is associated with blood vessel constriction and blood pressure control.

TRHR(rs16892496): Thyrotropin - releasing hormone receptor. TRHR (thyrotropin-releasing hormone receptor) helps to regulate metabolic rate, leading towards growth of lean body mass and release of stored fuel during exercise.

BDKRB2(rs1799722): Bradykinin Receptor B2.BDKRB2 helps to regular blood pressure through vasodilation, and has effects on cell hydration and muscular contraction.

CRP(rs1205): C - Reactive Protein. C-Reactive Protein: CRP is an acute phase reactant increased in states of inflammation.

SLC30A8(rs13266634): Zinc transporter protein member 8. Zinc transporter involved in the accumulation of zinc in the cell and related to insulin secretion and storage.

COL5A1(rs12722): Collagen 5 Alpha 1. COL5A1 is a structural component (the alpha-1 chain) of type V collagen.

TNF(rs1800629): Tumor Necrosis Factor. Tumor Necrosis Factor: A controller of immune cells and inflammation.

ACTN3(rs1815739): Alpha - actinin - 3. ACTN3 (Alpha-actinin-3) is an essential structural component exclusively present in fast twitch muscle fibers.

LABS

DHEA	277
iGF	108
CRP	0.63
Testosterone, Free	50
SHBG	60

SLEEP

Personalized Sleep Plan

If your sleep suffers, your performance suffers. We place such an emphasis on sleep because great sleep means a great mood, energy levels and mental clarity.

A couple of easy tweaks can be made and you'll see a tremendous positive impact:

1) One of the ways our coaches and doctors track sleep is through the Oura ring. If you get one, we can invite you to our Oura cloud account so we can monitor your sleeping trends and see any potential needs for intervention. https://ouraring.com/partners/wildhealth

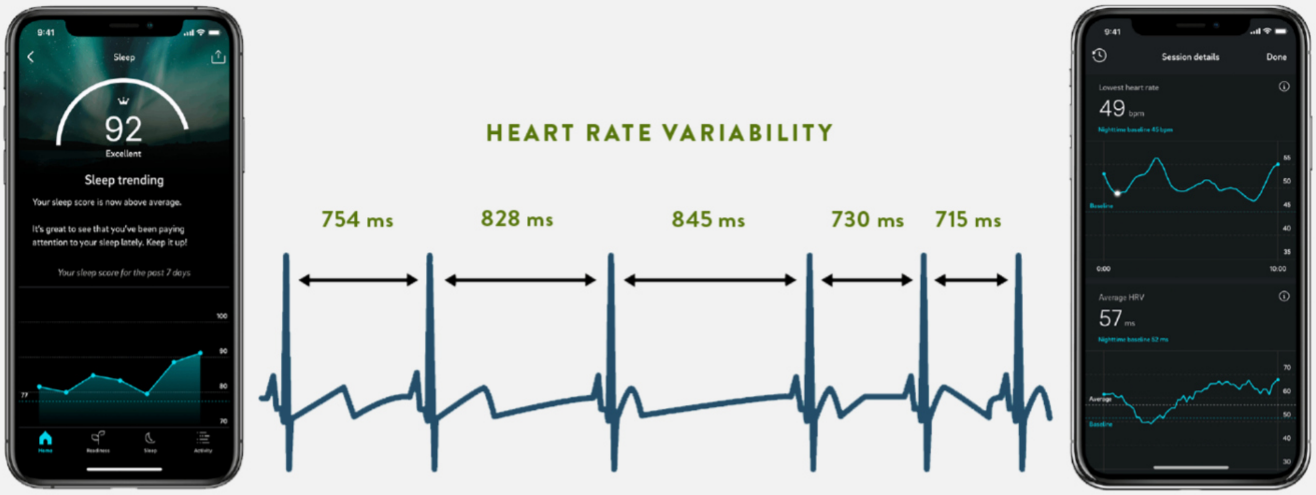
2) The foundation of good sleep is proper sleep hygiene. This includes reducing exposure to blue light after dark, think LED lights, screens and devices. When exposure to blue light is unavoidable we recommend using blue light blocking glasses. Reduced exposure to blue light after dark supports natural melatonin production and parasympathetic nervous system activation.

3) In our opinion these are the two best books that provide evidence based insight into why sleep is so important and how to improve yours! By the way, reading before bed is a great way to reduce screen time and blue light exposure.

-The Power of When

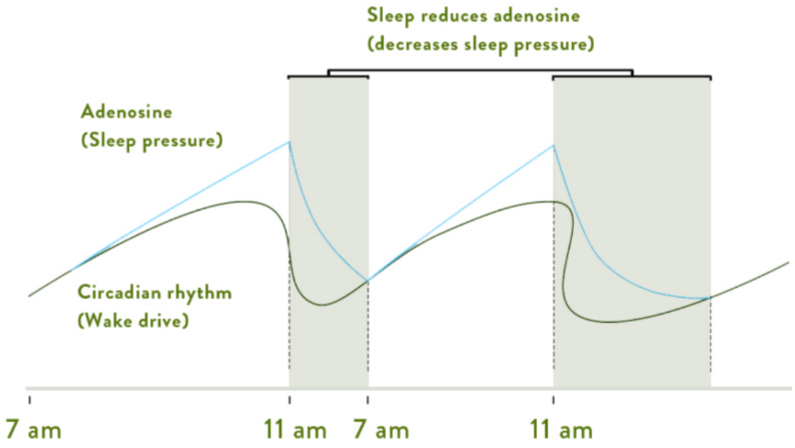
-Why We Sleep by Matthew Walker

SLEEP



YOUR CIRCADIAN GENETICS

MTNR1B	
ADORA2A	
MTNR1A	
NPAS2	
ADA	



Gene ADORA2A:
You have increased risk for altered sleep with caffeine intake. You should stop caffeine consumption after noon.

Gene MTNR1A:

SLEEP

YOUR SLEEP RECOMMENDATIONS

You have an increased risk for late-onset Alzheimer's disease with sleep disturbance. Avoid shift work and focus on consistent bedtimes and adequate sleep.

Gene NPAS2:
You have increased cancer risk associated with alterations in circadian rhythm. Don't eat when it's dark. Fast for at least 12 hours every night.

Gene ADA:
Studies have shown that individuals with this SNP have decreased overall wellbeing with disrupted sleep. Proper sleep hygiene will be even more important for you. Studies have also shown that naps can help negate this when sleep has been disrupted.

Personalized Mindfulness Plan

Stress and anxiety are real and have a physical effect on the body and mind. Mindfulness can help stabilize cortisol and helps the overall balance of hormones in our body. Mindfulness has even been shown to lower blood pressure by 10-15mm Hg.

Mindfulness practices are one tool in your toolbox to calm your body intentionally.

Aim for 10-15 minutes per day to calm the mind.

Here are some tools to consider:

Simple “Gratefulness Journals” have been shown to improve mood, joy and decrease stress. Keeping this in your car between appointments might be beneficial. Click here to see a simple option.

Meditation apps like “Head Space” or “Calm” can guide you as well.

Music can have an incredible effect on your mood. Use it intentionally.

YOUR NEUROBEHAVIORAL GENETICS

COMT	
BDNF	
AKT1	
FAAH	

Gene BDNF:
You have a BDNF SNP. BDNF stands for Brain-derived neurotrophic factor and is involved in the growth of new neurons, proliferation of existing neurons and in the maintenance of synapses. This gene is associated with reduced activation of BDNF and reduced brain plasticity. BDNF is best activated by exercise.

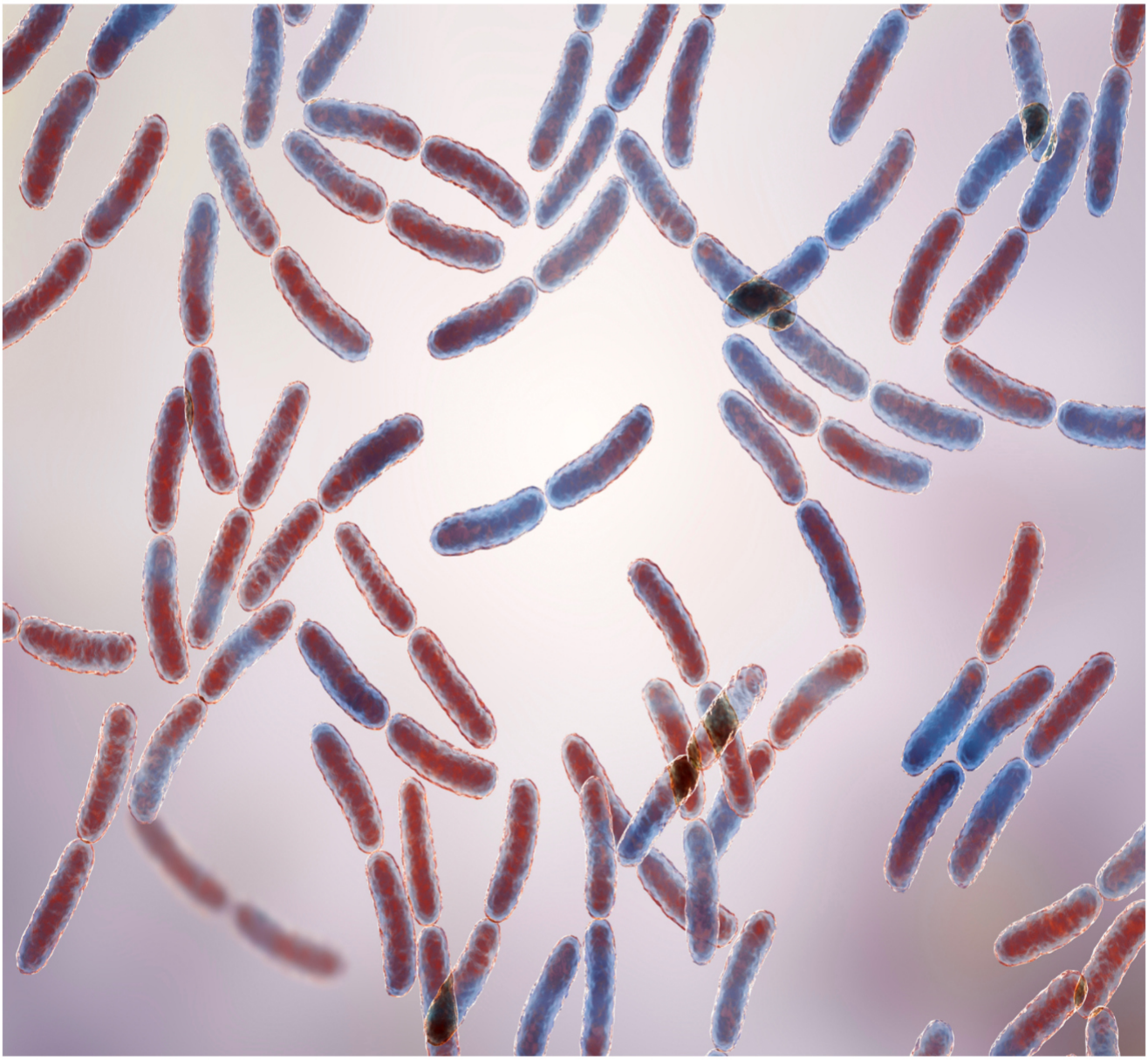
Gene FAAH:
You have lower Fatty Acid Amide Hydrolase function and slower breakdown of cannabinoids, CBD and THC. Less improvement in anxiety with CBD or THC. Faster THC and CBD metabolism. Less addictive potential towards CBD and THC. Usually, you'll have better sleep with CBD.

Inflammation and Diversity

Your microbiome is part of you. The bacteria in your gut affect your risk of chronic disease like heart disease and dementia. They make B vitamins and other nutrients our bodies use to function. They make neurotransmitters like serotonin and have been linked to depression and mental health. They even buffer and use lactic acid and can make us better athletes.

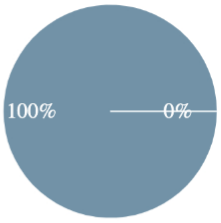
We use your microbiome data to compile an inflammation score which may alter your risk of chronic disease as well as a diversity score, which has been linked to longevity.

Finally, we'll review some specific bacteria and how they may be important to optimize and identify some actions to improve them.

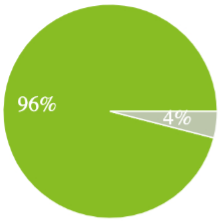


MICROBIOME

INFLAMMATION AND DIVERSITY



Inflammation Score: 0%



Diversity Score: 96%

Inflammation Score

0

No intervention necessary.

Diversity score

96

No intervention necessary.

IMPORTANT FLORA

Akkermansia muciniphila

21

Increase prebiotics. Goal 1-5% of abundance. Decrease metabolic syndrome.

Prevotella

82

No intervention necessary.

Veillonella

95

No intervention necessary.

Methanobacteria

55

No intervention necessary.

Proteobacteria

57

Increase prebiotics, probiotics, add berberine. Decrease IBS, mood disorders, metabolic syndrome, autoimmune disease.

Faecalibacterium prausnitzii

14

Increase prebiotics. To help reduce IBS, crohns, asthma, metabolic syndrome.

Bifidobacteriaceae

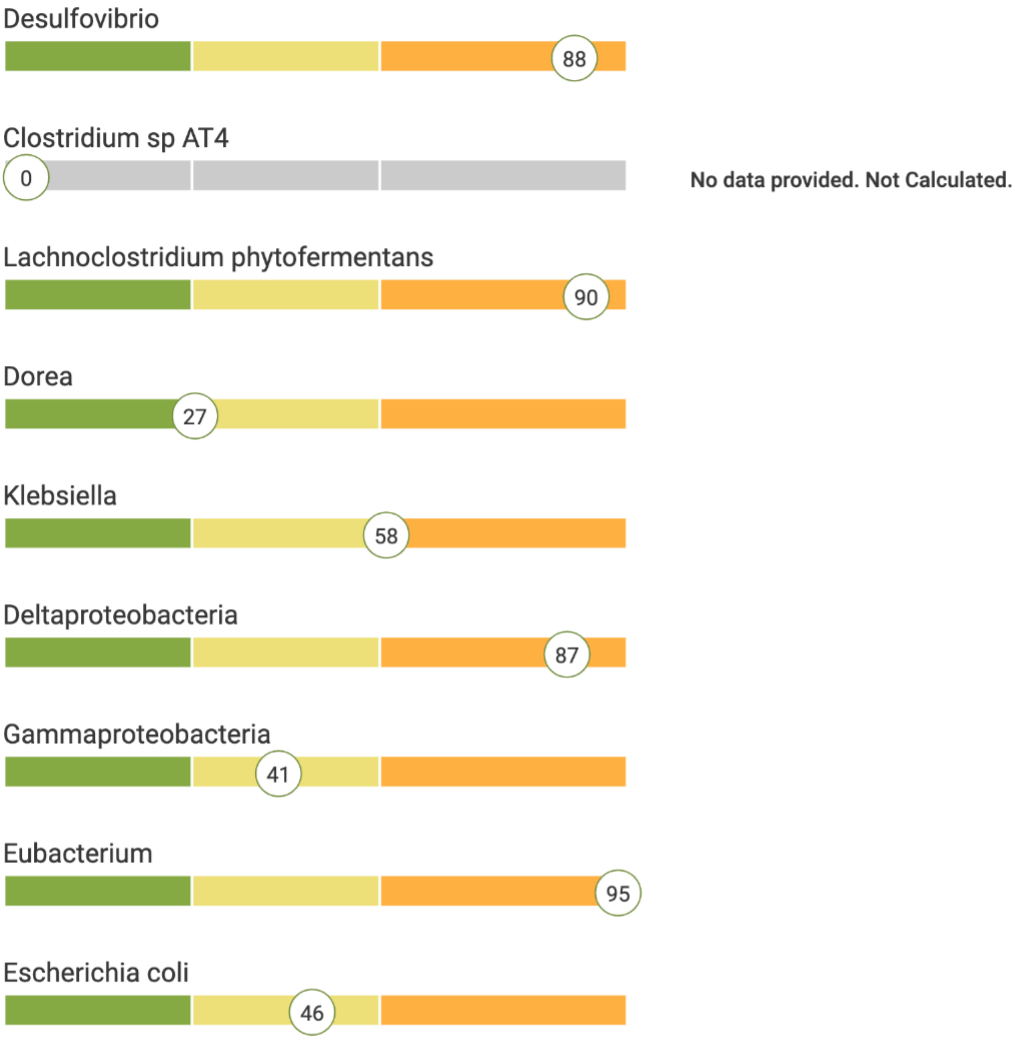
45

No intervention necessary.

Firmicutes to Bacteroidetes ratio

2

TMAO-PRODUCING BACTERIA



Inflammation Score:

You have low gut inflammation so no intervention is necessary.

Diversity score:

No intervention needed due to good gut diversity.

Methanobacteria:

No intervention.

Prevotella:

YOUR MICROBIOME RECOMMENDATIONS

No intervention.

Faecalibacterium prausnitzii:
To help reduce IBS, crohns, asthma, metabolic syndrome:
Increase prebiotics. Helpful sources: artichokes, asparagus, garlic, onion, leeks, greenish bananas.
Soluble fiber: sweet potatoes, brussels sprouts, lima beans.

Akkermansia muciniphila:
Goal 1-5% of abundance. Decrease metabolic syndrome.
Increase prebiotics. Helpful sources: artichokes, asparagus, garlic, onion, leeks, greenish bananas.
Soluble fiber: sweet potatoes, brussels sprouts, lima beans.

Bifidobacteriaceae:
No intervention.

Proteobacteria:
Decrease IBS, mood disorders, metabolic syndrome, autoimmune disease.
Increase prebiotics, helpful sources: artichokes, asparagus, garlic, onion, leeks, greenish bananas.
Soluble fiber: sweet potatoes, brussels sprouts, lima beans.
Increase probiotics: Thorne FloraMend 1 capsule per day with food [Link](https://thor.ne/pAV5N)
Start Thorne berberine: 2 capsules per day with food. Supports beneficial bacterial balance in the gut. [Link](https://thor.ne/50YTa)

Veillonella:
Adequate lactate clearance advantage. No intervention necessary.

CHRONIC DISEASE

Cardiovascular Disease
Dementia
Insulin Resistance
Inflammation

CHRONIC DISEASE

CARDIOVASCULAR DISEASE

Your Cardiovascular Disease Risk

10 YEAR CVD RISK 1.4%

1.4%

How your medical history affects your cardiovascular risk according to MESA.

GENETIC CVD RISK

How your genes affect your cardiovascular risk compared to the Wild Health population.

LPA	
PCSk9	
LDLR	
ZC3HC1	
TCF21	
CYP17A1	
RASD1	
PPAP2B	
CXCL12	
MIA3	
ANKS1A	
SMG6	
HNF1A	
HHIPL1	
SH2B3	
LPA	
ADAMTS7	
UBE2Z	
COL4A1	
CDKN2A	
SORT1	
WDR12	
PHACTR1	
ABO	
APOA5	
MRAS	
KCNE2	

YOUR CARDIOVASCULAR GENETICS AND LABS

Sat Fat Intolerance: 53%

LIPIDS

Total Cholesterol	237
LDL	125
HDL	101
Triglycerides	53
LDL(p)	859
Lp(a)	14

INFLAMMATION

LP PLA2	128
CRP	0.63
Omega 3	6
Coq10	–

CARDIOVASCULAR DISEASE RECOMMENDATIONS

Your LDL cholesterol is above goal, but the remainder of your CV risk factors are at goal. Research suggests that you could reduce your lifetime cardiovascular risk by managing your cholesterol. According to QRisk, at age 95, your current VD risk is 26%. If you brought your LDL cholesterol to 100 mg/dL your CVD risk would be 23%.

CHRONIC DISEASE

DEMENTIA

Your genetics and Labs

There are many, many causes of Alzheimers. However, some of the most common causes are easily managed. First, we need to assess your risk. That is best assessed by looking both at genetics, such as Apo-ε status, as well as TNF and SIRT1. But we also have to evaluate your current health, as metabolism and inflammation are common contributors as well. This summary will help assess your risk, and identify specific interventions you can follow to help mitigate that.

Insulin Resistance Score: 0%

TROPHIC SUPPORT

Homocysteine	6.8
Testosterone	2248
Estrogen	—
Progesterone	—
TSH	4.1
T4	1.07
Vitamin D	50.4

INFLAMMATION

CRP	0.63
A/G ratio	2.3
Omega 3	6
Co q10	—

TNF C857T	
TNF	
BDNF	

YOUR APOE STATUS: Apo-ε3 / ε3

You have a normal risk for dementia associated with Apo-ε compared to the rest of the population.

Your estimated lifetime risk of dementia is 9%.

DEMENTIA RISK

Apo-ε3/ε3

Gene APOE:

You are APOE3/3: This is the normal variant and confers and baseline risk of dementia.

Gene MTNR1A:

CHRONIC DISEASE

DEMENTIA DISEASE RECOMMENDATIONS

You have an increased risk for late-onset Alzheimer's disease with sleep disturbance. Avoid shift work and focus on consistent bedtimes and adequate sleep.

Gene SIRT1:
More mental decline with aging. Consider resveratrol and NAD.

Gene CRP:
You may be at heightened risk of inflammation. Monitor CRP and A:G ratio closely and treat causes of inflammation to help prevent dementia.

Methylation: No intervention necessary, your methylation is adequate.

Hormones: You have evidence of reduced thyroid function. We should consider replacement.

CHRONIC DISEASE

INSULIN RESISTANCE

Your Genetics and Labs

Insulin is a hormone made by the pancreas and is responsible for transporting glucose from your blood stream into your cells. Insulin resistance is the reduced effectiveness of insulin at transporting glucose- the cells become "resistant to it." There are many theories. At Wild Health we believe in the suitcase theory: if your cells are full of glucose, it becomes harder to fit glucose in them and the insulin doesn't work as well. Thus the treatment is reducing glucose, ie consumption. If insulin resistance goes unchecked it will lead to pre-diabetes, and often full blown type 2 diabetes.

Although there are many facets to fixing insulin resistance, the basics are:

1. Diet: low carb and fasting to reduce glucose in the cells
2. Exercise. Increase glucose utilization
3. Sleep and hormonal optimization- to optimize insulin effectiveness.

Carb Intolerance: 58%

INSULIN RESISTANCE LABS

Fasting Glucose	88
Fasting Insulin	1.1
HOMA-IR	0.24
Ferritin	66
TRIG:HDL	0.52
Hgb-A1c	4.8

PPAR gamma #1	
PPAR gamma #2	
ADRB3	
FTO #1	
FTO #2	
FTO #3	
FTO #4	

INSULIN RESISTANCE SCORE: 0%

YOUR INSULIN RESISTANCE RECOMMENDATIONS

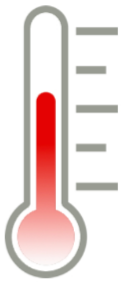
Gene IRS1:
You have an increased risk for insulin resistance and diabetes in response to a diet high in fat. This is mitigated by a high carb and low fat diet.

Your insulin resistance score is excellent. Nice work!.

CHRONIC DISEASE

INFLAMMATION

Your Genetics and Labs



Inflammation kills.

Chronic low grade inflammation is at the root of cardiovascular disease, Alzheimer's, cancer, and autoimmune disease. Chronic inflammation can be treated with supplements, an anti-inflammatory diet, sleep, and healthy exercise, but the most important action is to identify the source.

Some common sources include:

1. Microbiome - "leaky gut"
2. Overtraining - too much exercise, not enough recovery
3. Inflammatory diet
4. Poor sleep
5. Insulin resistance
6. High cholesterol
7. Chronic infections

CRP = 0.63

LOW INFLAMMATION — HIGH INFLAMMATION

0 — 5.0

INFLAMMATION LABS

CRP	**0.63**
A/G ratio	**2.3**

YOUR INFLAMMATION RECOMMENDATIONS

Gene CRP:
The C-reactive protein SNP can cause increased inflammation especially after intense exercise. Be mindful of your recovery speed in the exercise section of this report and CRP levels.

Gene SOD2:

CHRONIC DISEASE

INFLAMMATION RECOMMENDATIONS

Associated with some reduced decrease levels of Reactive Oxygen Species scavenger and antioxidant production. Increased muscle break down may require more rest between bouts of high intensity exercise. Be mindful of your recovery speed in the exercise section of this report and CRP levels.

Gene GSTP1:
Supplemental Vitamin E may be harmful due to increased inflammation. Avoid vitamin E supplementation, including multivitamins.

Gene TNF:
May require a longer rest period between training sessions. Associated with moderately increased levels of inflammation after strenuous exercise. Be mindful of your recovery speed in the exercise section of this report and CRP levels.

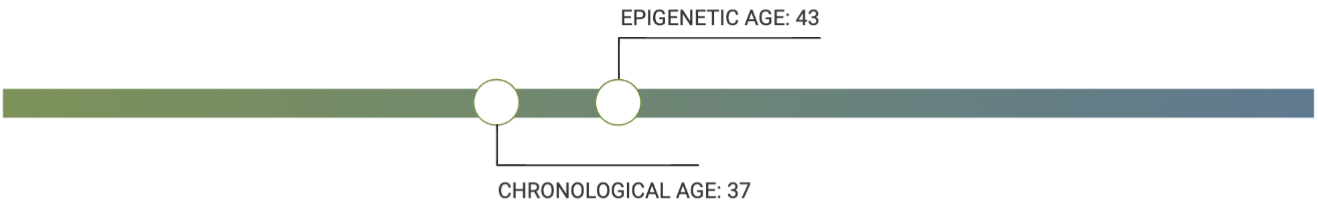
You have a normal CRP, suggesting low inflammation. Nice work!

Your Personalized Longevity Report

There is no single secret to longevity. Longevity comes both from genetics and how you live your life. Every aspect of this entire health report is aimed at longevity. Sleep, exercise, diet, fasting, medications, supplements, reversing chronic disease, all of these matter. But there are some specifics we can focus on here. First, it helps to know your baseline. In this case, your baseline is your biological age and how it compares to your chronological, or birth age. You biological age is a measure of how your DNA is packaged. As we age, our cells make mistakes methylating DNA and repackaging it. These errors confuse cells and make them start behaving like different types of cells. This is part of what begins to increase our biologic age. Your DNA methylation test will estimate your biological age to the year. If your biological age is older, we have a lot of work to do. If your biological age is lower, we've got a good start. Your aggressiveness with this protocol can be directed and to some degree dictated by your biological age. The following protocol is broken into lifestyle and supplement interventions, as well as possible peptide interventions. What you choose to apply to your routine is up to you, but we recommend discussing these decisions with your precision medicine physician.

LONGEVITY

YOUR BIOLOGICAL AGE:



Oxidative Stress

GSTM1	
GSTM1	
GSTM1	
GSTM1	
SOD3	

Telomeres

TERT	
TERC	
RTEL1	
ACYP2	
OBFC1	
SIRT1	

LONGEVITY LABS

DHEA	277
iGf	108
TSH	4.1
T4	1.07
Testosterone, Free	50
Hgb-A1c	4.8

Cancer Risk

ADIPOQ	
ADIPOQ	
BRCA1	
BRCA1	
BRCA1	
BRCA1	
BRCA2	
JAK2	
NPAS2	

Dementia Risk

Apo-ε: Apo-ε3/ε3

TNF C857T	
TNF	
BDNF	

Metabolism

PGC1a	
PPARa #1	
PPARa #2	

LONGEVITY

YOUR PERSONALIZED LONGEVITY REPORT

Fasting

Using one or all of the following fasting methods will be beneficial for just about anyone. Time Restricted Feeding. A lot of people call this intermittent fasting. But since there is no caloric restriction, it is not truly fasting, you are just restricting the time window within which you eat, ideally the same number of calories as if you didn't restrict the time. So, consume the same amount of food/calories you typically do in a day but just consume it in a smaller feeding window.

For example:

A. 12 hour fast/12hour feeding window: eat between 7am and 7pm. You can of course adjust the times.

B.16 hour fast/8 hour feeding window: eat between 11am and 7pm. Now you are only eating in an 8 hour window.

As your body becomes used to this you can even narrow the feeding window more if you wish so you'll be eating within a 7 or 6 hour window. Time restricted feeding has been shown to reduce insulin levels and increase insulin sensitivity, as well as reduce blood pressure.

Intermittent Fasting. This is truly fasting, meaning you will restrict calories for 1-5 days. First option is a 0 calorie fast. You are allowed to only consume coffee or water for 1-3 days. Don't put food in your mouth. Second option is a Fasting-mimicking diet. Day 1- consume about 1100 calories, day 2-5 consume about 800 calories. Low protein. You can consume vegetables, extra virgin olive oil, nuts, seeds, soups, salads, but no meat and no junk. Benefit: prolonged fasting or calorie restriction greater than 24 hours results in autophagy (where the body eats itself) and apoptosis (programmed cell death) allowing your body to clean up damaged proteins, old cells that have lost their programing, and even pre-cancerous cells.

YOUR LONGEVITY LIFESTYLE RECOMMENDATIONS

Gene HSP70:
You have a genetic SNP in a Heat Shock Protein. Your genetics correlate to a lower cellular production of Heat Shock Proteins and therefore a slight increase of cardiovascular risk. Monitor cardiovascular risk and consider ways to increase Heat Shock Proteins. Frequent exercise and consuming foods such as: broccoli sprouts/sulforaphane, extra virgin olive oil, curcumin, blueberry and Lion's Mane mushrooms will possibly increase your body's concentration of Heat Shock Proteins.

Telomeres: At risk for shorter telomere length. Reduce sources of inflammation such as processed foods, simple sugar, smoking, and alcohol. Focus on optimizing sleep and eating a healthy diet.

Gene SIRT1:
At increased risk for more mental decline with aging. Start NAD precursor with resveratrol : [Link](https://thor.ne/p8SC). Can consider adding additional Resveratrol up to 1000mg total per day.

Gene SOD3:

YOUR LONGEVITY RECOMMENDATIONS

This SNP increases oxidative stress in the body. We recommend taking Thorne Glutathione SR 175mg 1-2 times per day [Link](https://thor.ne/p8DX). Glutathione is important as it occurs naturally in cells and is a cofactor in dozens of enzymatic reactions involved in detoxification. Consider Thorne NAC 1 capsule twice per day. NAC is a powerful antioxidant that promotes healthy immune function and helps protect the body from toxic insults and oxidative stress [Link](https://thor.ne/BwDqC).

Gene ADIPOQ:
Higher risk for colon cancer and 2x increased risk for breast cancer. Fasting regularly helps to improve cellular autophagy. Quarterly 3-day water fasts and regular time restricted feeding with 12-16 hours of fasting per day will mitigate the risk.

Gene NPAS2:
Increased risk of breast and (if applicable) prostate cancer with alterations in circadian rhythm and diet. This risk can be improved by fasting for at least 12 hours each night and not eating after dark.

Gene PPAR alpha:
See general diet recommendation regarding dietary fat tolerance.

Gene BDNF:
Reduced activation of BDNF and neuroplasticity, introversion, advanced decline with Alzheimer's. Start Lion's Mane.

Gene HSPA1L:
Reduced Heat Shock Proteins. Recommend regular sauna, nitrates and polyphenols, for improved nitric oxide production.
Sauna: 20-40 minutes per session for 3 - 7 days per week.
Nitrates: Beet juice powder: Humann Superbeets: [Link](https://tinyurl.com/tb5kwkp).
Polyphenols: Superfood Reds: [Link](https://tinyurl.com/tpetvgu).

Consider hypothyroidism. Consider treatment with thyroid replacement. Consider thyroid antibody tests.

HEALTH REPORT SUMMARY

RECOMMENDED SUPPLEMENTS

Gene SIRT1:
At increased risk for more mental decline with aging. Start NAD: [Link](https://thor.ne/p8SC) Start Resveratrol 100-1000mg per day.

Gene SOD3:
This SNP increases oxidative stress in the body. We recommend taking Thorne Glutathione SR 175mg 1-2 times per day [Link](https://thor.ne/p8DX). Glutathione is important as it occurs naturally in cells and is a cofactor in dozens of enzymatic reactions involved in detoxification. Consider Thorne NAC 1 capsule twice per day. NAC is a powerful antioxidant that promotes healthy immune function and helps protect the body from toxic insults and oxidative stress [Link](https://thor.ne/BwDqC).

Folate:
Your folate level is low at 13.50
Start methylfolate Supplementation: [Link](https://thor.ne/p8xQ).
Increase dietary intake of leafy greens. These include: cilantro, arugula, chards, watercress, rutabaga, bok choy, artichoke, dandelion and spinach. Other sources of folate include beans, eggs, avocado, and nuts and seeds.

Gene SLC3OA8:
You are at increased risk for delayed onset muscle soreness (DOMS) related to impaired zinc transport. If you regularly experience DOMs symptoms we recommend 30mg of zinc daily with food [Link](https://thor.ne/xEPDK).
250-500 milligrams of Vitamin C before a big workout can help as well [Link](https://thor.ne/p8mS).

CoQ10:
Your CoQ10 levels are low. CoQ10 is part of the electron transport chain and important for mitochondrial health as well as energy production. CoQ10 is drastically reduced in those taking statins.
Start CoQ10 100mg daily: [Link](https://thor.ne/p8eI) Take 1 capsule daily with food.

Strength and endurance exercise can increase both testosterone levels and SHBG. High SHBG will reduce the amount of free testosterone that is active in circulation. Discontinue fasted training, add quality complex carbs before and after training session. Evaluate for adequate caloric intake to support activity.
Consider Boron supplementation 5 mg/d.
Consider DIM supplementation.

Decrease IBS, mood disorders, metabolic syndrome, autoimmune disease.

HEALTH REPORT SUMMARY

RECOMMENDED SUPPLEMENTS SUMMARY

Increase prebiotics. Helpful sources: artichokes, asparagus, garlic, onion, leeks, greenish bananas.
Soluble fiber: sweet potatoes, brussels sprouts, lima beans.
Increase probiotics: Thorne FloraMend 1 capsule per day with food [Link](https://thor.ne/pAV5N)
Start Thorne berberine: 2 capsules per day with food. Supports beneficial bacterial balance in the gut.

Liver Function:
Your liver function enzymes are elevated. There are multiple possible causes for this, but include fatty liver and alcohol as the most likely. If you have a PEMT mutation this may reduce your liver's ability to transport fats out of the liver. In this case, increased choline/TMG (trimethylglycine) may help.
Check TMAO level:
If TMAO <4 treat with phosphatidylcholine 1-2 capsules per day [Link](https://thor.ne/p8GB).
If TMAO >/= 4 treat with TMG 2 capsules daily [Link](https://www.lifeextension.com/vitamins-supplements/item01859/tmg).
Start Creatine 5gm daily [Link](https://thor.ne/p8FV). Reduce or stop alcohol consumption.

GENOMIC GLOSSARY

ACE(rs4646994): Angiotensin converting enzyme. ACE (angiotensin-converting enzyme) is the gene with the greatest evidence supporting its role in athletic performance. It affects both blood pressure and the fluid/salt balance in our blood.

AGT(rs699): Angiotensinogen. AGT (Angiotensinogen) is associated with blood vessel constriction and blood pressure control.

ACTN3(rs1815739): Alpha - actinin - 3. ACTN3 (Alpha-actinin-3) is an essential structural component exclusively present in fast twitch muscle fibers.

TRHR(rs16892496): Thyrotropin - releasing hormone receptor. TRHR (thyrotropin-releasing hormone receptor) helps to regulate metabolic rate, leading towards growth of lean body mass and release of stored fuel during exercise.

PPAR-α(rs4253778): Peroxisome proliferator - activated receptor alpha. PPARa is a key regulator of carbohydrate and fat metabolism, helping muscle burn fuel during endurance work.

VEGF(rs2010963): Vascular endothelial growth factor. Associated with: New blood vessel growth to support exercise activities. Regular exercise and progressive training programs can create a 4-fold increase in levels of VEGF.

VDR(rs731236): Vitamin D receptor. VDR reflects serum Vitamin D3 levels, which regulate calcium and phosphorus concentration, helping to support the immune system.

IL6(rs1800795): Interleukin 6. IL6 is a cytokine immune modulator that regulates the inflammatory process involved in repair from a training stimulus.

ADRB2(rs1042714): Adrenoceptor Beta 2. ADRB2 is a regulator of epinephrine function and helps mobilize macronutrients for fuel during training.

ADRB2(rs1042713): Adrenoceptor Beta 2. ADRB2 is a regulator of epinephrine function and helps mobilize macronutrients for fuel during training.

BDKRB2(rs1799722): Bradykinin Receptor B2.BDKRB2 helps to regular blood pressure through vasodilation, and has effects on cell hydration and muscular contraction.

COL5A1(rs12722): Collagen 5 Alpha 1. COL5A1 is a structural component (the alpha-1 chain) of type V collagen.

NRF(rs7181866): Nuclear Respiratory Factor 2. NRF improves respiratory capacity and cellular energy mobilization.

PPARGC1A(rs8192678): Peroxisome Proliferator - PPARGC1A regulates energy through production of mitochondria, fat and carbohydrate metabolism and conversion from fast to slow twitch muscle fibers.

CRP(rs1205): C - Reactive Protein. C-Reactive Protein: CRP is an acute phase reactant increased in states of inflammation.

SOD2(rs4880): Super Oxide Dismutase 2. Associated with: Scavenging of free radicals in the cells, especially within the mitochondria. It is therefore an antioxidant protector of cellular health.

IL6R(rs4129267): Interleukin - 6 Receptor. The receptor for immune messenger Interleukin-6 (IL-6). IL-6 stimulates the immune response to training and is involved in the inflammatory repair process.

TNF(rs1800629): Tumor Necrosis Factor. Tumor Necrosis Factor: A controller of immune cells and inflammation.

GDF5(rs224329): Growth Differentiation Factor 5. Growth Differentiation Factor 5: Expressed in the CNS and coupled to the healing and development of bones, cartilage and neurons.

COL1A1(rs1800012): Collagen 1 Alpha 1. Collagen 1 Alpha 1: Produces Type 1 Collagen, the fibrillar collagen found in most connective tissues and primary collagen that comprises tendons, ligaments and cartilage.

SLC30A8(rs13266634): Zinc transporter protein member 8. Zinc transporter involved in the accumulation of zinc in the cell and related to insulin secretion and storage.

GENOMIC GLOSSARY

PPARG(rs1801282): Peroxisome proliferator - activated receptor gamma. PPARG activates genes that stimulate lipid uptake and adipogenesis by fat cells. It also stimulates insulin sensitivity in muscle cells and increases gluconeogenesis in the liver. People with the G allele have increased obesity and diabetes risk with high SFA diet and low PUFA and MUFA. PUFAs directly activate the PPARG expression.
PPARG(rs3856806): Peroxisome proliferator - activated receptor gamma. PPARG activates genes that stimulate lipid uptake and adipogenesis by fat cells. It also stimulates insulin sensitivity in muscle cells and increases gluconeogenesis in the liver. People with the G allele have increased obesity and diabetes risk with high SFA diet and low PUFA and MUFA. PUFAs directly activate the PPARG expression.
TCF7L2(rs7903146): Transcription Factor 7 - like 2. A cellular transcription factor influencing several genes related to glucose metabolism and thus associated with risk of diabetes.
FTO(rs9939609): Fat Mass and Obesity associated Protein. The A allele is associated with higher ghrelin levels and less satiety. This increases appetite and leads to obesity risk. The first meal of the day affects ghrelin levels. Eat a complete meal full of fiber and protein to help reduce ghrelin level later in the day.
FTO(rs1121980): Fat Mass and Obesity associated Protein. The FTO gene plays a major role in genetic risk for obesity. Multiple SNPs of the FTO gene lead to risk of obesity and insulin resistance especially in the setting of a high saturated fat diet and low PUFAs.
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FTO(rs1558902): Fat Mass and Obesity associated Protein. The FTO gene plays a major role in genetic risk for obesity. Multiple SNPs of the FTO gene lead to risk of obesity and insulin resistance especially in the setting of a high saturated fat diet and low PUFAs.
FTO(rs1421085): Fat Mass and Obesity associated Protein. This FTO SNP is associated with reduced thermogenesis and less brown adipose tissue. The C allele is the risk allele.
ADRB3(rs4994): Adrenergic beta - 3 receptor. The protein encoded by this gene belongs to the family of beta adrenergic receptors, which mediate catecholamine-induced activation of adenylate cyclase through the action of G proteins. This receptor is located mainly in the adipose tissue and is involved in the regulation of lipolysis and thermogenesis.
GIPR(rs2287019): Gastric inhibitory polypeptide. The C allele is associated with greater insulin secretion for the same amount of food. GIPR is also involved in glucose and fat uptake by fat cells. This seems to be mitigated by a high carb, low fat diet.
IRS1(rs2943641): Insulin receptor substrate 1 (IRS1).
GSTP1(rs1695): Glutathione transferase enzyme most active. Glutathione is one of the most potent antioxidant systems that the body has and is orders of magnitude more powerful than supplemental Vitamin E (alpha tocopherol). Supplemental Vitamin E has been shown to have a negative impact on individuals with A alleles by raising the levels of pro-inflammatory cytokines in the blood. However, people that have the less active version of GSTP1, may possibly have an anti-inflammatory benefit from a low dose (75 IU) supplemental Vitamin E.
VitDBindingProtein(rs7041): Vitamin D Binding Protein.
CYP2R1(rs2060793): Vitamin D hydroxylase.

GENOMIC GLOSSARY

FUT2(rs602662): fucosyltransferase 2.

FUT2(rs601338): fucosyltransferase 2.

BCMO1(rs12934922): Beta - carotene monooxygenase.

BCMO1(rs7501331): Beta - carotene monooxygenase.

SLC23A1(rs33972313): Vitamin C transporterintestional cells. Reduced function of primary Vitamin C transporter in intestines. Requires increased Vitamin C levels as well as focus on Glut 1 transporters which requires glucose for Vitamin C transport. Each A allele is associated with a 5 micromol/L reduction in Vitamin C serum levels.

HFE(rs1800562): Hemochromotosis SNP.

CYP1A2(rs762551): Caffeine metabolism.

PEMT(rs7946): Phosphatidylethanolamine - N - methyltransferase (PEMT). PEMT is responsible for choline production in the liver and thus important for methylation, acetylcholine production, lipid transport out of the liver and may be associated with fatty liver disease.

FADS1(rs174548): Fatty acid delta - 5 - desaturase. Phosphatidylcholine is important for production of cellular membranes, neurotransmitters, and plays a role in methylation, including the reduction of dopamine and generation of creatine.

MTHFD1(rs2236225): methylenetetrahydrofolate dehydrogenase.

MTRR(rs1801394): Methionine synthase reductase. MTRR activates the enzyme methionine synthase (requiring Vitamin B2) . MTR remethylates homocysteine to methionine using B12 as a cofactor. This reaction is critical to folate metabolism and methionine cycling for the methylation pathway.

MTHFR(rs1801131): 5 - mthylenetetrahydrofolate reductase. MTHFR converts homocysteine to methionene in a critical step in the methylation pathway. The MTHFR gene is well studied. 5 different SNPs alter it's function from 15%-100% effectivity. Presence of one or more variants of this enzyme may warrant Methylfolate, methy-B12, P-5-P, tri-methylglycine, or choline supplementation if there is evidence or reduced methylation which is often identified by homocysteinemia.

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UCP1(rs1800592): Uncoupling protein 1. UCP1 is a protein found in mitochondria in brown fat and involved in thermogenesis and heat production. The risk allele is associated with reduced protein and thus reduced thermogenesis, heat production and resting metabolic rate. Thermogenesis may be improved by exercise and cold exposure.

CRY2(rs11605924): Cryptochrome circadian regulator.

PGC-1a(rs8192678): Peroxisome Proliferator - PPARGC1A regulates energy through production of mitochondria, fat and carbohydrate metabolism and conversion from fast to slow twitch muscle fibers.

FADS2(rs1535): fatty acid delta - 6 desaturase. The fatty acid delta-6 desaturase (FADS2) enzyme is responsible for elongating the polyunsaturated fatty acid alpha- linolenic acid (ALA) and converting it into the omega-3 fatty acid eicosapentaenoic acid (EPA).

ACE(rs4343): Angiotensin - Converting Enzyme.

FADS1(rs174550): Fatty acid desaturase 1.

SH2B3(rs3184504): SH2B adaptor protein 3.

GENOMIC GLOSSARY

MTNR1B(rs10830963): Melatonin Receptor. Melatonin receptors are found on the pancreas and may influence insulin secretion.
ADORA2A(rs5751876): Adenosine A2a receptor (Caffeine antagonizes).
MTNR1A(rs12506228): Melatonin Receptor. Melatonin receptor mediated Alzheimer's risk.
NPAS2(rs2305160): Circadian associated transcriptional activator. Transcriptional activator which forms a core component of the circadian clock. Risk allele is associated with alterations in metabolism especially related to the circadian rhythm. Risk seems to increased by loss of sleep and eating late meal. Patients with this risk allele may see increases in CRP and insulin resistance with late meals. The risk may be reduced by longer fasting periods at night. For example, breast cancer risk has been reduced in studies by 36% simply by fasting for 12+ hours overnight.
SLC01B1(rs4149056): Solute carrier organic anion transporter
SLC01B1(rs4363657): Solute carrier organic anion transporter
COQ2(rs4693596): Coenzyme Q10.
HMGCR(rs17238540): hydroxy - methylglutaryl coenzyme A reductase.
PCSk9(rs11591147): Proprotein convertase subtilisin/kexin type 9. PCSK9 loss of function variant allele T, 1-3% of population, results in less LDL receptor reduction and thus increased LDL clearance from the blood.
Jak2(rs12340895): Jak2 gene and blood cancer.
SLC23A1(rs10063949): Vitamin C Transporter. Risk of Crohn's, IBD.
COMT(rs4680): catechol - Omethyltransferase breaks down dopamine (requires methylation). AKA Worrier Vs. Warrior gene.
BDNF(rs6265): Brain - derived neurotrophic factor. BDNF is a neurotrophin that is involved in neuronal health, growth of new neurons and proliferation of existing neurons.
AKT1(rs2494732): Alpha Serine/Threonine Kinase 1. Response to Cannabis associated psychosis risk
FAAH(rs324420): Fatty Acid Amidee Hydrolase.
TERT(rs2736100): telomerase reverse transcript as a part of Telomerase, an enzyme capable of lengthening telomeres.
OBFC1(rs9420907): OBFC1enzyme involved in telomere maintenance.
RTEL1(rs755017): regulator of telomerase elongation helicase 1).
ACYP2(rs11125529): Acylphosphatase 2.
HSP70(rs1008438): Heat Shock Protein HSP1A1.
HSP70(rs1043618): Heat Shock Protein HSP1A1.
HSP70(rs2075800): Heat Shock Protein HSP1AL.

HEALTH REPORT SUMMARY

LABORATORY RESULTS

LIPIDS

LDL- P (<1000 nmol/l)	859
Small LDL-p (<527 nmol/l)	130
Lp(a) (<75 nmol/l)	14
Triglycerides (<150 mg/dl)	53
LDL Cholesterol (<100 mg/dl)	125
Total Cholesterol (<200 mg/dL)	237
HDL Cholesterol (>50 mg/dl)	101

METHYLATION

Homocysteine (<7 umol/l)	6.8
AST (<20 U/l)	66
ALT (<20 U/l)	48
B12 (500-1500 pg/ml)	2000
Folate (12-25 ng/ml)	13.5
Folate RBC (>280 ng/ml)	–
TMAO (<5.0 uM)	–
Uric Acid (<5mg/dL)	5

VITAMINS AND MICRONUTRIENTS

Omega 3 (>5.4)	6
Vitamin D (50-100 ng/ml)	50.4
CoQ10 (>0.75 ug/ml)	–
Ferritin (Iron) (30-100)	66

HORMONES

Cortisol (10-18 mcg/dl)	–
DHEA: (200-500 mcg/dl)	277
iGF (100-250 ng/ml)	108
Testosterone Total [men(250-1100 ng/dl), women(10-55)]	2248
Testosterone, Free	50
SHBG (10-50 nmol/L)	60
Progesterone [women(1-20 ng/dl) (men <0.5)]	–
LH 1.6-8 (mIU/ml)	–
FSH	–
TSH (0.4-4 uIU/ml)	4.1
Free T4 (2.3-4.2 pg/ml)	1.07
Free T3 (2.3-4.2 pg/ml)	1.8
Estradiol [women(50-250 pg/ml) (men <40)]	–

INFLAMMATION

OxLDL (<60 U/l)	–
A:G ratio (>1)	2.3
CRP (<1.0 mg/l)	0.63
LpPLA2 (<200 nmol/min/ml)	128

INSULIN RESISTANCE / METABOLISM

Fasting Glucose (<100 mg/dl)	88
Fasting Insulin (<5 uIU/ml)	1.1
Hgb-A1c (<5.5%)	4.8
HOMA-IR	0.24