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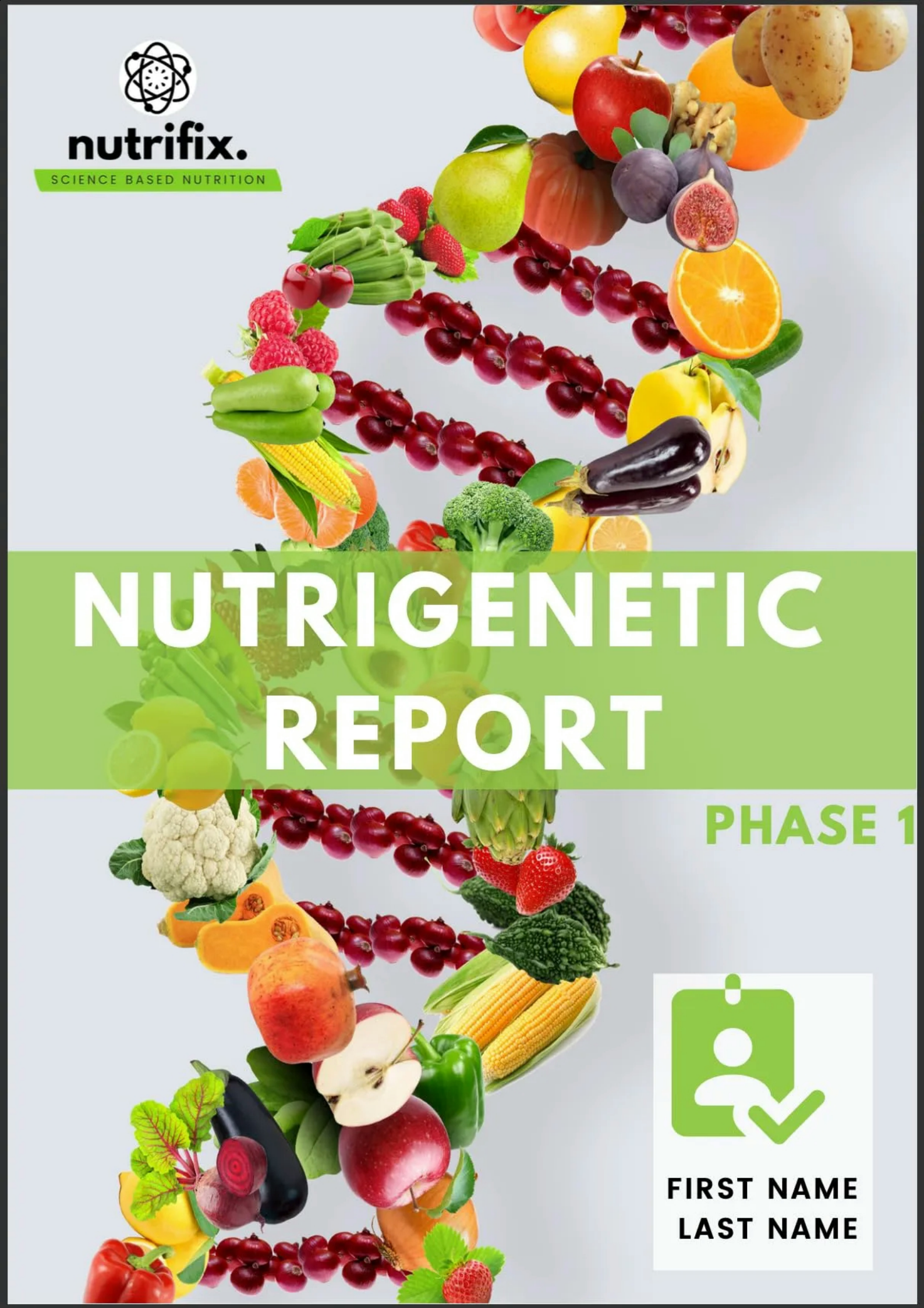
SCIENCE BASED NUTRITION



NUTRIGENETIC REPORT

PHASE 1

FIRST NAME
LAST NAME

GENOMIC COACHING

NAME: FIRST & LAST NAME

SELF OPTIMIZATION PROCESS - SNP INTERACTIONS

FOOD

Nutrients:

- 💚💚🤍🤍🤍: lactose intolerance, gluten tolerance (1/3), satiety
- 💚💚💚🤍🤍: difficulty to lose weight
- 💚💚💚💚🤍: maintenance of weight lost difficulty, salt/fat perception (3/3)
- 💚💚💚💚💚: N/A

Metabolic pathologies:

- 🧡🧡🤍🤍🤍: metab. syndrome
- 🧡🧡🧡🤍🤍: obesity, diabetic nephropathy, TGs, altered cholesterol
- 🧡🧡🧡🧡🤍: fatty liver, diabetes, retinopathy, hypertension, inflammation
- 🧡🧡🧡🧡🧡: N/A

MOVEMENT/BREATH/TEMPERATURE

Typology:

- 💚💚🤍🤍🤍: N/A
- 💚💚💚🤍🤍: sprint/force/power
- 💚💚💚💚🤍: exercise aptitude
- 💚💚💚💚💚: aerobic resistance

Metabolic pathologies:

- 🧡🧡🤍🤍🤍: N/A
- 🧡🧡🧡🤍🤍: tendinopathy, joint pathology, muscular lesion
- 🧡🧡🧡🧡🤍: oxidative stress
- 🧡🧡🧡🧡🧡: luxation/dislocation, ligament rupture

OPTIMAL MACRONUTRIENT BREAKDOWN

	TARGET	GENETIC RISK
Fats		
• MUFAs	~11-15% (35-47gr)	<11% (APOA5-BMI), <22% (APOA1-LDL, TGs)
• PUFAs	~9% (28gr)	<9% (BDNF-weight)
◦ Omega 3s	~3%(EPA:DHA:ALA 2.5:1.5:5gr)	high EPA/DHA --> low FFAs (PPARG)
◦ Omega 6s	~6% (19gr)	>5.3% (FADS1-HDL incr.)
• SFAs	~10-15% (31-47gr)	<15.5% (FTO-BMI, TCF7L2-IR)
• Total	~30-39% (94-123gr)	<44% (FTO-BMI); <60% (APOA2-LDL, TGs)
• Ratios	ALA/LA: ~26%; PUFAs/SFAs: ~60-90%	N/A; PUFAs/SFAs>38% (FTO)
Carbs	~45-50% (359-381gr)	>36% (FTO-BMI)
• complex	~213-248gr (+71-83gr simple)	<144gr? (PLIN1-adiposity - hispanics)
• fibre	~50-75gr	>13gr/1000kcal (TCF7L2-DT2, FTO-BMI)
Proteins	~16-20% (110-140gr)	<0.6-0.75/lbs bodyweight dep. on effort
Kcal	~2830	N/A

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GENOMIC COACHING

NAME: FIRST & LAST NAME

SELF OPTIMIZATION PROCESS - MEAL PLANNING

MONDAY/WEDNESDAY/FRIDAY - MTOR DAY

	AVERAGE
Fats	
• MUFAs	41gr
• PUFAs	27.9gr
◦ Omega 3s	EPA:DHA:ALA 0:0:5.8gr
◦ Omega 6s	21.8gr
• SFAs	33gr
• Total	103gr
• Ratios	ALA/LA:28%; PUFAs/SFAs:84%
Carbs	296gr
• complex	150gr (+74gr simple)
• fibre	72gr
Proteins	141gr
Kcal	approx. 2695

FOODS

MEAL 1: Smoothie & stuff

-200gr each of kefir & quail/chicken/duck eggs, 100gr each of banana & grapefruit 60gr each of celery, beetroot & parsley root, 25gr each of ginger, kale and arugula, 17.5gr each of parsley, chia and beet greens, 10gr each of peppermint, sorrel, hemp protein, psyllium and collagen & 5gr each of walnuts & hemp seeds + 100gr of wheat crackers

MEAL 2: Greens, cereals/legumes, fish

-400gr yam/broccoli/brussels sprouts/asparagus/artichoke/leek/carrots/cauliflower/pumpkin/mushrooms, 250 gr chicken/turkey/duck/beef/lamb/chicken liver, 100gr tempeh/lentils/chickpeas/brown rice/quinoa/red or mung beans/peas/millet/amaranth, 50gr sauerkraut, 15gr each of capers & olives, 5gr each of black cumin & garlic, spices + 200gr banana/apple/pear

TUESDAY/THURSDAY/SATURDAY - PHAGY DAY

	AVERAGE
Fats	
• MUFAs	51.3gr
• PUFAs	31gr
◦ Omega 3s	EPA:DHA:ALA 1.0:1.4:5.0gr
◦ Omega 6s	23gr
• SFAs	48gr
• Total	130gr
• Ratios	ALA/LA:22%; PUFAs/SFAs:65%
Carbs	270gr
• complex	84gr (+103gr simple)
• fibre	83gr
Proteins	109gr
Kcal	approx. 2704

FOODS

MEAL 1: Nuts & fruits & stuff

-300gr berries/kiwi/plum/apple, 100gr each of kefir and coconut meat, 50gr (cooked) oats, 10gr each of hazelnuts, brazil nuts, dried mulberry, black sesame, flaxseed, psyllium, sunflower seeds, pine nuts & cocoa beans, 5gr each of walnuts, chia, macadamia, poppy seeds, apricot seeds, yeast & chicory

MEAL 2: Salad & protein

-500gr of celery root/onion/fennel/bok choi/(white)radish/turnip/arugula/endive/lettuce, 300gr sea bass or bream/mackerel/salmon/tuna/trout/carp/gray mullet/herring, 100gr each of pomegranate, avocado & chestnut, 30gr each of sprouts, dates & lemon juice/apple cider, 15gr of olive oil, 7gr each of basil & dill, spices + 100gr banana

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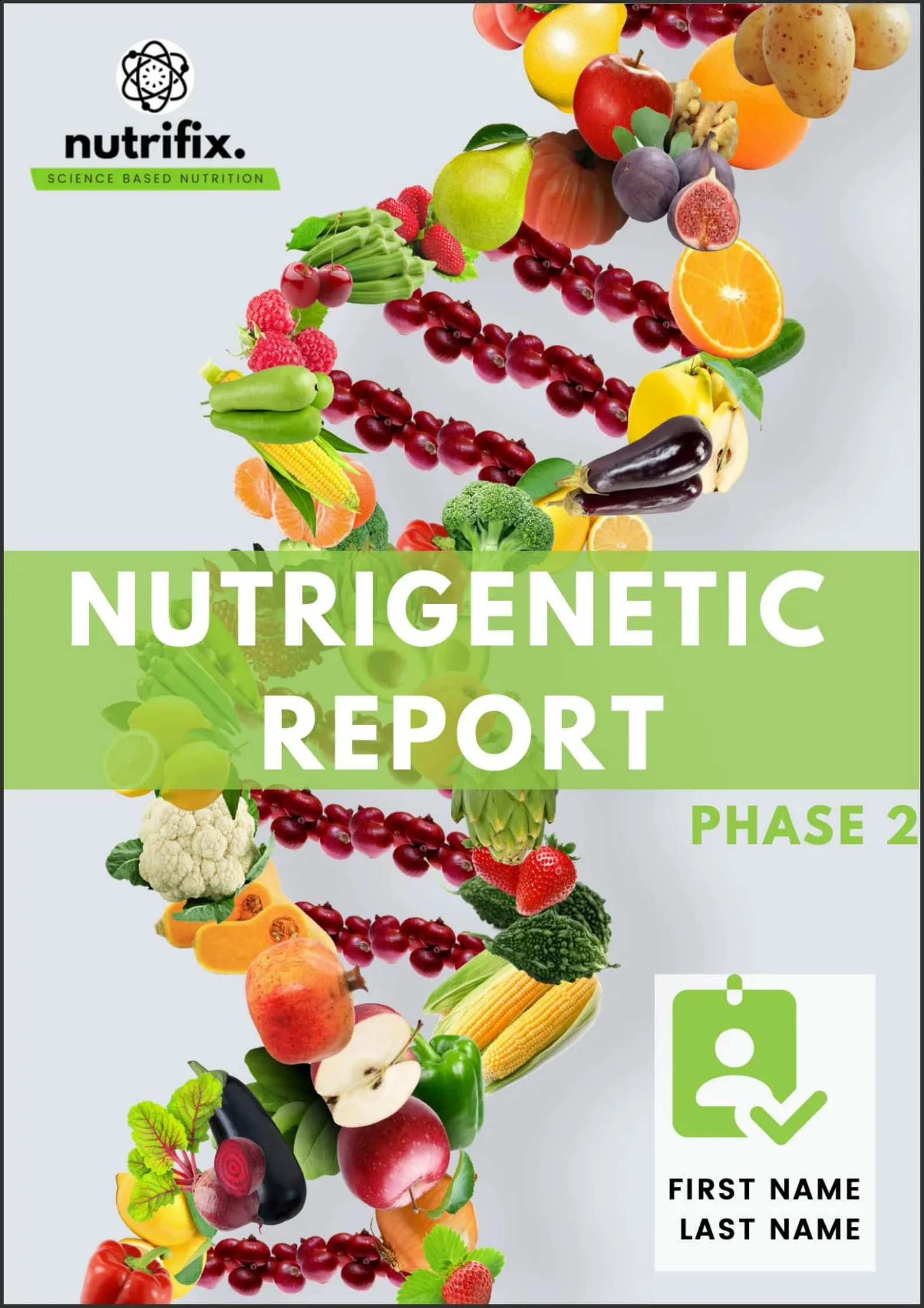

NUTRIGENETIC REPORT

PHASE 2

FIRST NAME
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NUTRIGENETIC REPORT

NAME: FIRST & LAST NAME

INFLAMMATORY PATHWAYS

Fenton Reaction: pathway related to dysregulated iron's and copper's oxidative potential
- Overall variated genes:
  - ATOX1: delivers copper from the cytosol to transporters ATP7A and ATP7B for SOD
  - PRDX2: reduces hydrogen peroxide; recharges via Trx
- Key SNPs variated:
  - none significant

NOS Uncoupling: pathway related to dysregulated nitric oxide (NO) production
- Overall variated genes:
  - none significant
- Key SNPs variated:
  - NOS1: ubiquitously expressed, with high level of expression in skeletal muscle
  - SLC19A1: transporter involved in the regulation of intracellular folate concentrations
  - DHFR: converts dihydrofolate into tetrahydrofolate & helps recycle BH2 to BH4

Glutamate: pathway related to glutamate metabolism
- Overall variated genes:
  - TSC1: growth inhibitory protein thought to play a role in the stabilization of tuberin
  - PSAT1: the major source of glutamine-dependent α-ketoglutarate
- Key SNPs variated:
  - none significant

Gut Health: factors influencing gut health like histamine, oxalates and allergens
- Overall variated genes:
  - HNMT: degrades histamine via methylation; 1 hetero upregulation
- Key SNPs variated:
  - MCM6: influences LCT gene to continue producing lactase; 2 homo SNPs
  - MAOB: degrades benzylamine, phenylethylamine (PEA), methylhistamine after HNMT
  - HRH4: predominantly in haematopoietic cells; role in inflammation & allergy resp.
  - SPP1: cytokine which attaches osteoclasts to bone matrix; key in oxalate breakdown
  - FUT2: related to intestinal bacteria's functions in immunity and glucose regulation

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RECOMMENDATIONS

TOP 10 COMPOUNDS	FOOD SOURCES	QUANTITIES FREQUENCY	HUMAN EFFECT MATRIX & TARGET
RESVERATROL	Red wine, choco	300 mg /alt. day	Low; 9 studies on cancer, cognition, CVD and metabolism
GRAPE SEED EXTRACT	grape seeds	400 mg /alt. day	Med; 14 studies on CVD, diabetes, metabolism; 95% proanthocyanidins
COQ10	organ meats, fatty fish, nuts & seeds	200 mg /alt. day	Low; 74 studies on metabolic health, physical performance and other
LUTEOLIN	celery, parsley, broccoli	50 mg /alt. day	N/A; may prevent oxidative stress
QUERCETIN	onions, apples, capers	500 mg /alt. day	Med; 9 studies on oxidation, stress response, immunity, metabolism etc
ELLAGIC ACID (90%)	pomegranate	200 mg /alt. day	N/A; studies on IBS, PCOS, diabetes, CVD, cancer
RIBOFLAVIN (B2)	organs, almonds, cheese, roe, yolk	15 mg /alt. day	Med; 30 studies on cardiovascular health, metabolism, inflammation
ROSEMARY EXTRACT	rosemary	200 mg /alt. day	Low; 3 studies on immunity
GARLIC (1% ALLICIN)	garlic	600 mg /alt. day	Med; 240 studies on CVD, immunity, metabolism, cancer
R-ALA	Organ meats, spinach, broccoli	300 mg /alt. day	Med; 23 studies on diabetes, CVD, pain and immunity

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NUTRIGENETIC REPORT

PHASE 3

FIRST NAME
LAST NAME

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NAME: FIRST & LAST NAME

RARE SNPS - DETOX

Area	Gene	SNPs	Prevalence	Category	Priority	Up/Down	Note
Phase I - CYP	CYP4A11	1	2.1%	Phase I Detox	High		hydroxylates medium-chain fatty acids
Phase I - CYP	CYP27B1	1	7.1%	Phase I Detox	High		synthesizes the active form of vitamin D3
Phase I - CYP	CYP2G2P	1	11.8%	Phase I Detox	Medium		pseudogene
Phase I - CYP	CYP4V2	4	13.7%	Phase I Detox	Medium		metabolism of fatty acid precursors into Omega 3s
Phase I - CYP	CYP7A1	2	14.0%	Phase I Detox	Medium		catalyzes bile acid synthesis from cholesterol
Phase I - CYP	CYP27A1	2	17.2%	Phase I Detox	Low		part of the bile synthesis pathway
Phase I - CYP	CYP1A1	2	19.1%	Phase I Detox	Low		polycyclic aromatic hydrocarbons (PAHs) in cigarette smoke
Phase I - CYP	CYP4F2	1		Phase I Detox		down	degrades inflammatory leukotriene B4
Phase I - CYP	CYP2C9	1		Phase I Detox		down	metabolizes phenytoin, tolbutamide, ibuprofen and S-warfarin xenobiotics
PON1	PON1	2		PON 1		up, down	removes herbicides/pesticides and supports HDL function
Phase II Sulfation	SLC26A1	2	6.8%	Sulfate Transporters	High		family of sulfate/anion transporter genes
Phase II Sulfation	NDST3	1	7.9%	Heparan Sulfotransferases	High		deacetylation and sulfation of heparan sulfate and heparin
Phase II Sulfation	SLCO1B1	5	12.0%	Sulfate Transporters	Medium		uptakes bilirubin, estradiol, leukotriene C4, statins in liver
Phase II Sulfation	SLC35B3	4	14.1%	Sulfate Transporters	Medium		
Phase II Sulfation	SLC26A11	6	17.9%	Sulfate Transporters	Low		involved in intracellular electrolyte balance
Phase II Sulfation	SULT1A2	2	18.9%	Sulfotransferases	Low		sulfation of steroids (DHEA) and bile acids
Phase II Sulfation	SULT1C2	4	19.5%	Sulfotransferases	Low		transfers sulfo moiety from PAPS to phenol-containing compounds
Phase II Glucuronidation	UGT8	1	7.3%	UDP-glucuronosyltransferases	High		
Phase II Glucuronidation	UGT1A7	1		UDP-glucuronosyltransferases		down	glucoronidase activity on phenols
Phase II Methylation	COMT	1		Phase II Methylation		down	metabolizes catecholamines and xenobiotics
Phase III Detox	ABCC2	1		Phase III Detox		down	drug & biliary transport

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ADDITIONAL ADVICE

Further recommended testing:

- Key:
  - Metabolomix+ w. Fatty Acids & Comprehensive Urine Elements add-ons: fatty acids (CYP4A11, CYP4V2), catecholamines (COMT, DBH), fats VS carbs (GNB3, SLC22A5, SLC16A1), selenium (SEPP1, DMGDH)
  - blood: iron panel (SLC40A1, SLC48A1), GSH & GPX (CBS, CTH, SHMT1, GSTs), vit D (CYP27B1), lipid panel + bile acids (CYP7A1, CYP27A1, PON1), inflammation panel incl. TNFalpha (TNF upregulation & 3 low priority SNPs), IL6 (IL6) + due to IDO2
  - urine: TMA/TMAO/choline/betaine @ Bioclinica (PEMT, SLC44A1, DMGDH)
  - Dutch Hormone (SLCO1B1, SULT1A2)
- Ideal to do in order to fine-tune recommendations:
  - wear a CGM (GNB3)
- Lifestyle hacks:
  - watch out for gluten (low priority KIAA1109 SNP)
  - watch out for cigarette smoke PAHs (CYP1A1)
  - watch out for herbicides/pesticides (PON1)
  - Intermittent fasting (mTOR SNPs), but not too long due to protein synthesis SNPs
- In case needed in the future:
  - consider drug efficacy of phenytoin, tolbutamide, ibuprofen, tamoxifen, glimepiride, glyburide, gliclazide (CYP2C9)
  - consider drug dosage of acenocoumarol, phenprocoumon, warfarin (CYP4F2)
  - statins clearance (SLCO1B1)

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