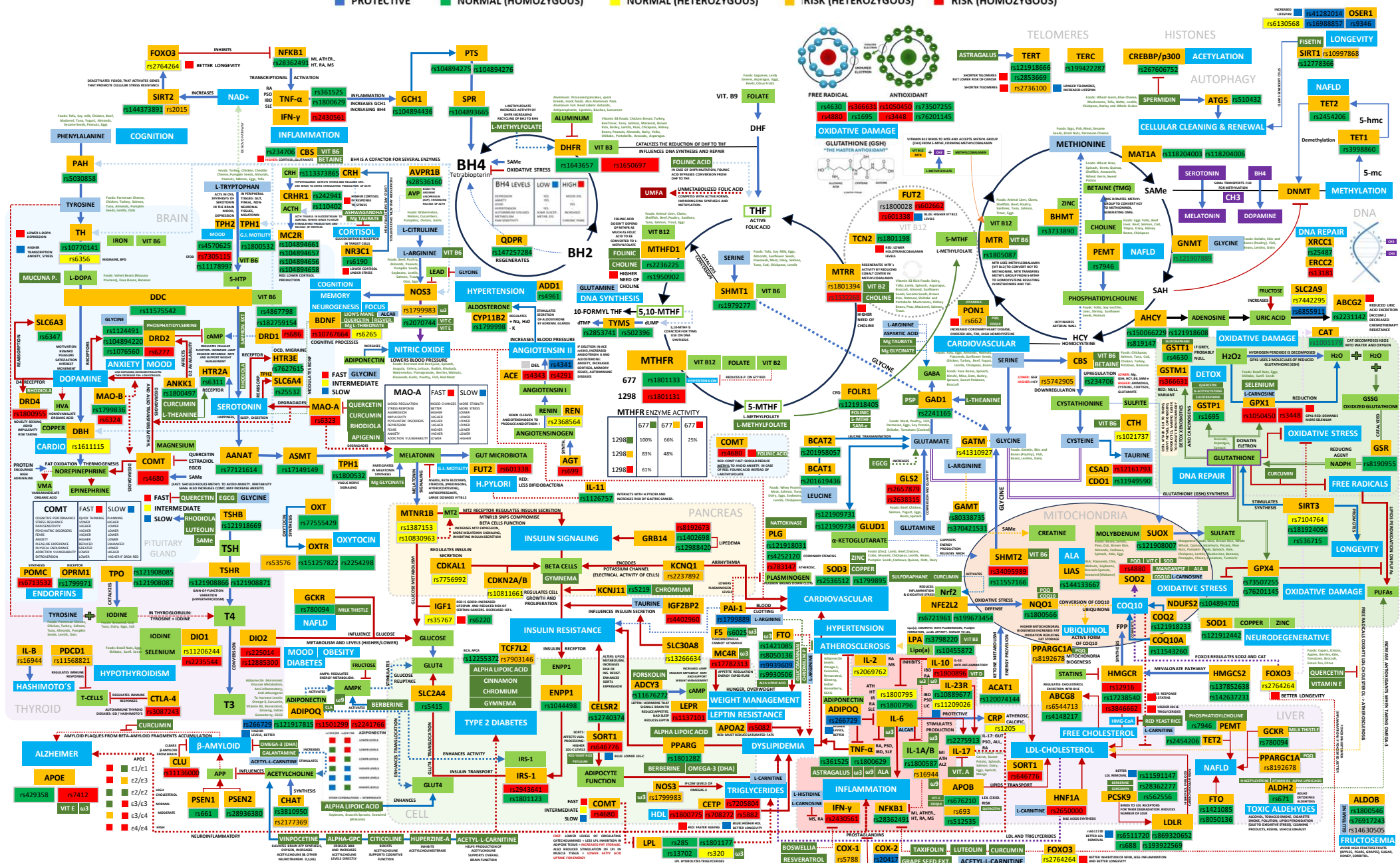


METABOLIC PATHWAYS

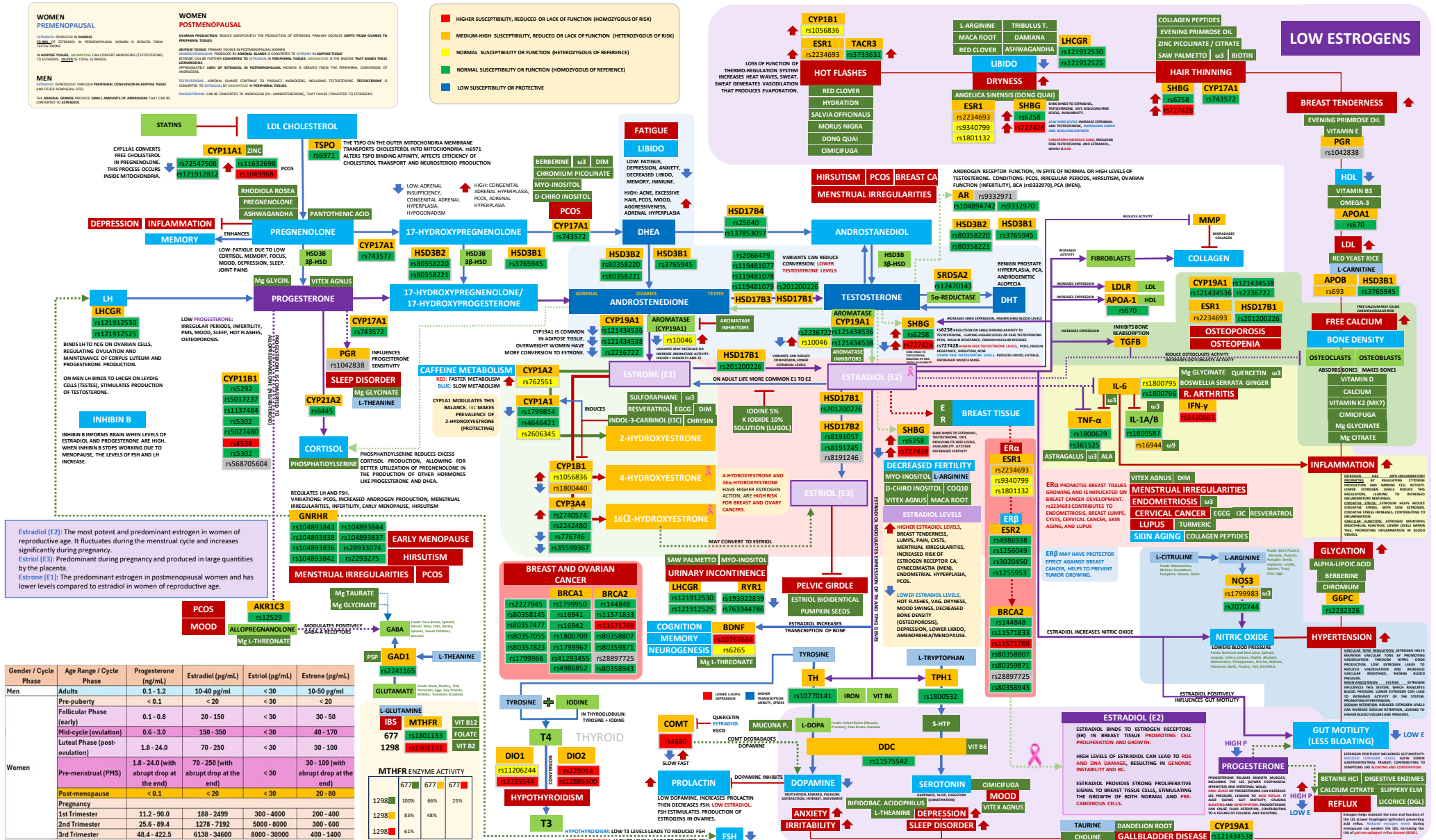
PERSONALIZED

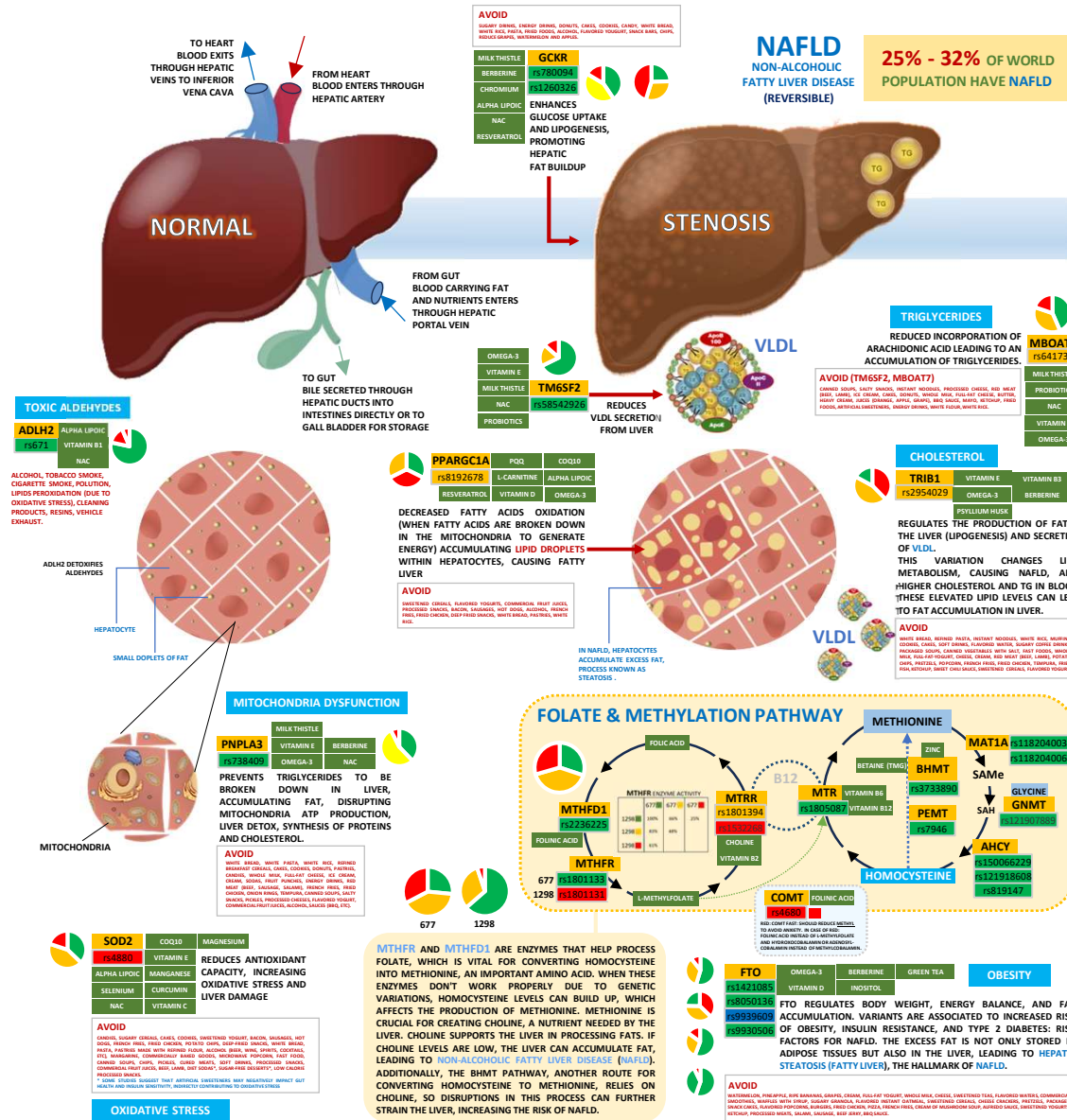
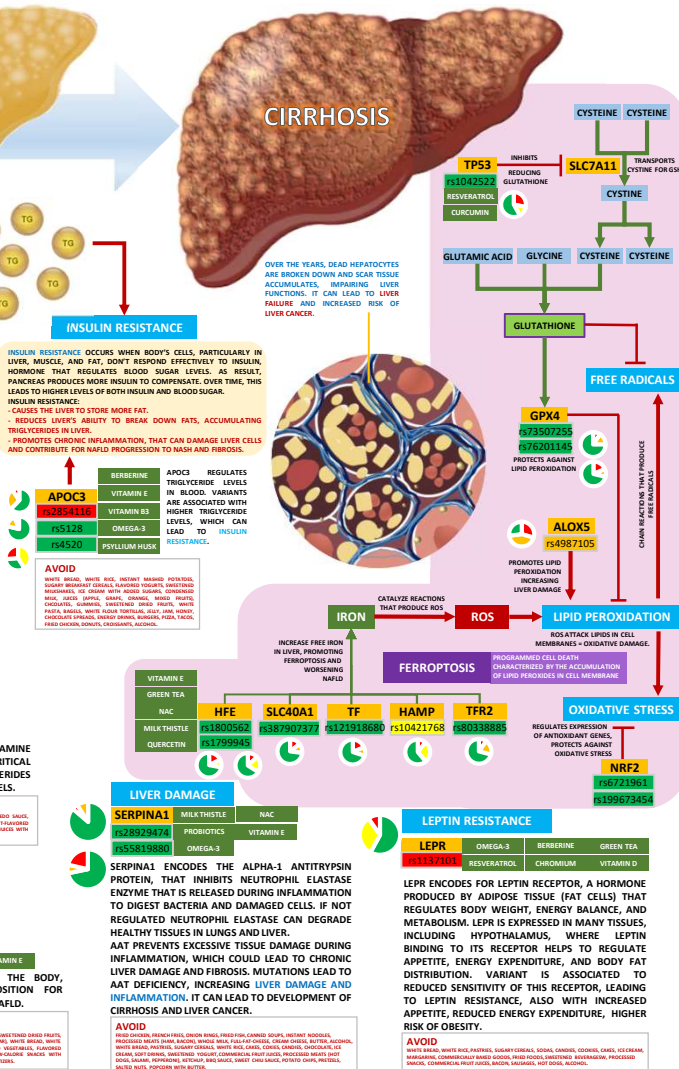
■ PROTECTIVE ■ NORMAL (HOMOZYGOUS) ■ NORMAL (HETEROZYGOUS) ■ RISK (HETEROZYGOUS) ■ RISK (HOMOZYGOUS)



PERSONALIZED WOMAN PATHWAY

OPTIMIZING HEALTH DURING PERI AND POST-MENOPAUSE TRANSITION







MCS MEDIUM-CHAIN SATURATED
FATTY ACIDS

LCS LONG-CHAIN SATURATED
FATTY ACIDS

MUFAs MONOUNSATURATED
FATTY ACIDS

OMEGA-9

LDL CHOLESTEROL

OLEIC ACID
OLIVE OIL, OLIVEWOOD OIL, PEANUT OIL

C18:1

SKIN

INFLAMMATION

ELOVL2
#3774398

ERUCIC ACID
RAPESEED OIL, CANOLA OIL, MUSTARD OIL

C20:1

INFLAMMATION

PALMITOLEIC ACID
MACADAMIA OIL, SEA BUCKTHORN OIL

FADS1
#1745486

C16:1

ERUCIC ACID
RAPESEED OIL, CANOLA OIL, MUSTARD OIL

C22:1

CARDIOVASCULAR

CARDIOVASCULAR RISK IN HIGH ANCESTRY

PERSONALIZED DIET PATHWAYS

■ PROTECTIVE ■ NORMAL (HOMOZYGOUS) ■ NORMAL (HETEROZYGOUS) ■ RISK (HETEROZYGOUS) ■ RISK (HOMOZYGOUS)

OMEGA-3	CETP	DYSLIPIDEMIA CARDIOVASCULAR
VITAMIN B3	rs1800775	

ASSOCIATED WITH HIGHER HDL LEVELS. LOWER CARDIOVASCULAR DISEASE RISK BUT COMPLEX EFFECTS ON TRIGLYCERIDES.

HIGH-FIBER FOODS: OATS, BARLEY; HEALTHY FATS: OMEGA-3S, OLIVE OIL, AVOCADOS; VEGETABLES: SPINACH, BROCCOLI, KALE.

TRANS FATS: BAKED GOODS, FRIED FOODS; EXCESSIVE REFINED CARBS: WHITE BREAD, SUGARY CEREALS, SAUCES RICH IN FATS.

EGCG	FTO	OBESITY TYPE 2 DIABETES CARDIOVASCULAR
OMEGA-3	rs9939609	
PSYLLIUM		
CLA		

HIGH RISK FOR OBESITY, INCREASED APPETITE, AND PREFERENCE FOR HIGH-CALORIE FOODS.

HIGH-FIBER FOODS: VEGETABLES (BROCCOLI, SPINACH), FRUITS (APPLES, BERRIES), WHOLE GRAINS (BROWN RICE, OATS); LEAN PROTEINS: CHICKEN BREAST, TURKEY, TOFU, FISH (SALMON, COD).

REFINED SUGARS: WHITE BREAD, SUGARY SNACKS (COOKIES, PASTRIES), PROCESSED FOODS (CHIPS, FAST FOOD); SATURATED FATS: BUTTER, CREAM-BASED SAUCES, FATTY CUTS OF RED MEAT.

CHROMIUM	TCF7L2	TYPE 2 DIABETES CARDIOVASCULAR
MAGNESIUM	rs7903146	
BERBERINE		
ALPHA-LIPOIC ACID		

INCREASED RISK OF TYPE 2 DIABETES, INSULIN RESISTANCE, AND OBESITY.

LOW GLYCEMIC INDEX FOODS: WHOLE GRAINS (QUINOA, BARLEY), LEGUMES (LENTILS, CHICKPEAS), NON-STARCHY VEGETABLES (ZUCCHINI, ASPARAGUS); FIBER-RICH FOODS: BEANS, LENTILS, CHIA SEEDS.

SUGARY FOODS: CANDY, SOFT DRINKS, CAKES; REFINED CARBS: WHITE PASTA, WHITE RICE.

OMEGA-3	MC4R	OBESITY METABOLIC SYNDROME
WHEY PROTEIN	rs17782111	
GLUCOMANNAN		
L-CARNITINE		

STRONG ASSOCIATION WITH OBESITY, INCREASED APPETITE, PARTICULARLY FOR HIGH-CALORIE FOODS.

HIGH-PROTEIN DIET: EGGS, COTTAGE CHEESE, LEGUMES (BLACK BEANS, CHICKPEAS); FIBER-RICH FOODS: OATMEAL, FLAXSEEDS, BRUSSELS SPROUTS; HEALTHY FATS: OLIVE OIL, NUTS (ALMONDS, WALNUTS), AVOCADOS.

HIGH-CALORIE, SUGARY, AND FATTY FOODS: DONUTS, FRIED FOODS (FRENCH FRIES, FRIED CHICKEN), HIGH-FAT DAIRY (ICE CREAM, FULL-FAT CHEESE).

CHROMIUM	AMY1A	OBESITY TYPE 2 DIABETES
PROBIOTICS	rs4244372	

INDIVIDUALS WITH LOW AMY1 GENE COPIES MAY HAVE REDUCED STARCH DIGESTION, LEADING TO WEIGHT GAIN.

MODERATE-STARCH DIET: WHOLE GRAINS (BROWN RICE, QUINOA), LEGUMES (BEANS, LENTILS).

HIGH-STARCH FOODS: WHITE BREAD, PASTA, POTATOES.

OMEGA-3	LEPR	METABOLIC SYNDROME OBESITY TYPE 2 DIABETES
CHROMIUM	rs1137101	
EGCG		

ASSOCIATED WITH LEPTIN RECEPTOR FUNCTION, LEADING TO LEPTIN RESISTANCE, HIGHER APPETITE, AND OBESITY RISK.

HIGH-PROTEIN, HIGH-FIBER DIET: LEAN MEATS (CHICKEN, TURKEY), VEGETABLES (BROCCOLI, SPINACH), LEGUMES (BEANS, LENTILS).

HIGH-CALORIE, PROCESSED FOODS: SUGARY SNACKS, FAST FOOD, SUGARY DRINKS.

CHROMIUM	ADCY5	TYPE 2 DIABETES
OMEGA-3	rs11708067	
INOSITOL		

IMPACTS INSULIN SECRETION AND GLUCOSE METABOLISM; RISK FOR GESTATIONAL DIABETES.

BALANCED DIET WITH MODERATE CARBS: WHOLE GRAINS (BROWN RICE, OATS), LEAN PROTEINS (CHICKEN, FISH), NON-STARCHY VEGETABLES (ZUCCHINI, BELL PEPPERS).

REFINED CARBS: WHITE BREAD, SUGARY SNACKS, SODAS.

INULIN	TAS1R2	TYPE 2 DIABETES OBESITY
CHROMIUM	rs39355701	
ALPHA-LIPOIC ACID		
MOROSIL		

STRONG SWEET PREFERENCE, LEADING TO HIGHER SUGAR INTAKE AND POTENTIAL FOR WEIGHT GAIN.

LOW-SUGAR FOODS: FRESH FRUITS, WHOLE GRAINS, VEGETABLES; FIBER-RICH FOODS: LENTILS, BEANS, FLAXSEEDS.

SUGARY SNACKS: CANDY, CAKES, ICE CREAM; SUGARY BEVERAGES: SODAS, SWEETENED TEAS.

OMEGA-3	PLIN	OBESITY METABOLIC SYNDROME CARDIOVASCULAR
L-CARNITINE	rs894166	
EGCG		
FIBERS		
GARCINIA CAMBOGIA		

ALTERED FAT STORAGE; HIGHER RISK OF OBESITY, PARTICULARLY WITH HIGH-FAT DIETS.

HIGH-FIBER DIETS: WHOLE GRAINS, VEGETABLES, LEGUMES; OMEGA-3S: FATTY FISH, FLAXSEEDS.

HIGH-FAT FOODS: BURGERS, FRIED CHICKEN, PIZZA; PROCESSED SNACKS: POTATO CHIPS, COOKIES.

CLA	ADRB2	CARDIOVASCULAR OBESITY
EGCG	rs1042713	
OMEGA-3	rs1042714	
L-CARNITINE		

VARIANTS INFLUENCE FAT METABOLISM AND RESPONSE TO EXERCISE, WITH POTENTIAL OBESITY RISK.

HIGH-PROTEIN DIETS: EGGS, LEAN MEATS (TURKEY, CHICKEN), LEGUMES (LENTILS, BEANS); HEALTHY FATS: AVOCADOS, OLIVE OIL, NUTS (ALMONDS, CASHEWS); FIBER-RICH FOODS: WHOLE GRAINS (BROWN RICE, OATS), VEGETABLES (BROCCOLI, BRUSSELS SPROUTS).

SUGARY FOODS: DESSERTS, CANDY, SWEETENED CEREALS; REFINED CARBS: WHITE PASTA, WHITE BREAD; TRANS FATS: FAST FOOD, BAKED GOODS, BUTTER, CREAM, FATTY CUTS OF RED MEAT, FRIED FOODS.

VITAMIN B3	APOA5	HYPERTRIGLYCERIDEMIA CARDIOVASCULAR
PLANT STEROLS	rs662799	
OMEGA-3		

LINKED TO TRIGLYCERIDE LEVELS AND LIPID METABOLISM.

LOW-FAT, HIGH-FIBER DIET: VEGETABLES (SPINACH, BROCCOLI), WHOLE GRAINS (OATS, BARLEY).

HIGH-FAT FOODS: FRIED FOODS, HIGH-FAT DAIRY, PROCESSED MEATS.

GLUCOMANNAN	POMC	OBESITY TYPE 2 DIABETES
CHROMIUM	rs28932472	
EGCG	rs6713532	

ASSOCIATED WITH APPETITE REGULATION AND INCREASED OBESITY RISK DUE TO DECREASED SATIETY SIGNALING

HIGH-PROTEIN, HIGH-FIBER DIET: LEAN MEATS (CHICKEN, TURKEY), LEGUMES (LENTILS, BEANS), VEGETABLES (BROCCOLI, SPINACH).

PASTA, WHITE BREAD, HIGH-SUGAR, PROCESSED FOODS: SWEETS, PASTRIES, SUGARY DRINKS, LIKE SODAS, SWEETENED TEAS.

MAGNESIUM	MTNR1B	TYPE 2 DIABETES
BERBERINE	rs10830963	
VITAMIN D		
GARCINIA CAMBOGIA		

IMPAIRED INSULIN SECRETION, HIGHER FASTING GLUCOSE LEVELS.

LOW-CARB, HIGH-FIBER DIET: LEAFY GREENS (KALE, SPINACH), LOW GLYCEMIC FRUITS (BERRIES, APPLES), LEGUMES (BLACK BEANS, CHICKPEAS).

SUGARY FOODS: PASTRIES, COOKIES, SUGARY CEREALS.

RESVERATROL	PPARG	TYPE 2 DIABETES OBESITY
CHROMIUM	rs1801282	
OMEGA-3		

BETTER FAT METABOLISM BUT INCREASED OBESITY RISK WITH HIGH-CARB DIETS.

LOW-CARB DIETS: NON-STARCHY VEGETABLES (ASPARAGUS, BELL PEPPERS), LEAN PROTEINS (TOFU, CHICKEN BREAST), OMEGA-3 RICH FOODS (SALMON, WALNUTS).

HIGH-GLYCEMIC FOODS: WHITE BREAD, PASTRIES, SUGARY CEREALS. HIGH-FAT DIETS: RED MEAT (BEEF, LAMB), BUTTER, FULL-FAT DAIRY (WHOLE MILK, CHEESE), PROCESSED MEATS (SALAMI, BACON)

BERBERINE	IRS1	INSULIN RESISTANCE TYPE 2 DIABETES
CHROMIUM	rs2943641	
ALPHA-LIPOIC ACID		
MITBURN		

LINKED TO INSULIN RESISTANCE, PARTICULARLY WITH HIGH-CARB DIETS.

LOW-GLYCEMIC FOODS: WHOLE GRAINS (BARLEY, QUINOA), LEGUMES (LENTILS, BEANS), VEGETABLES (BROCCOLI, SPINACH).

SUGARY FOODS: SODAS, CANDY, REFINED GRAINS (WHITE RICE, WHITE BREAD).

BERBERINE	GCKR	TYPE 2 DIABETES
MITBURN	rs1260326	
OMEGA-3		
VITAMIN D		

IMPAIRED GLUCOSE METABOLISM, INCREASED FASTING GLUCOSE.

LOW-CARB DIET: LEAFY GREENS (SPINACH, KALE), LEAN PROTEINS (CHICKEN BREAST, FISH), HIGH-FIBER FOODS (OATS, CHIA SEEDS).

SUGARY FOODS: SOFT DRINKS, SWEETS, DESSERTS.

OMEGA-3	CD36	OBESITY CARDIOVASCULAR
L-CARNITINE	rs1781067	

INFLUENCES FAT TASTE PERCEPTION AND FAT METABOLISM, LINKED TO FAT PREFERENCE AND OBESITY RISK.

HEALTHY FATS: OMEGA-3 RICH FOODS (SALMON, FLAXSEEDS), AVOCADO, NUTS.

SATURATED AND TRANS FATS: FRIED FOODS, PROCESSED MEATS, BAKED GOODS.

PLANT STEROLS	APOA2	DYSLIPIDEMIA OBESITY CARDIOVASCULAR
OMEGA-3	rs5062	
FIBERS		

INCREASED RISK OF OBESITY WITH HIGH-FAT DIETS, ESPECIALLY SATURATED FATS

LOW IN SATURATED FATS: LEAN MEATS, PLANT-BASED OILS (OLIVE OIL, CANOLA OIL); HIGH IN MONO AND POLYUNSATURATED FATS: AVOCADOS, NUTS (ALMONDS, PECANS), SEEDS (SUNFLOWER SEEDS).

RED MEAT: BEEF, LAMB, BUTTER, CREAM-BASED SAUCES, FULL-FAT DAIRY: WHOLE MILK, CHEESE, MARGARINE, PACKAGED SNACKS; PROCESSED MEATS: SALAMI, BACON.

OMEGA-3	LPL	CARDIOVASCULAR HYPERLIPIDEMIA
VITAMIN B3	rs1801177	
COQ10		
MITBURN		

ENHANCED LPL ACTIVITY, LOWER TRIGLYCERIDES, PROTECTIVE AGAINST OBESITY.

HEALTHY FATS: OMEGA-3S FROM FISH (SALMON, MACKEREL, SARDINES), NUTS (WALNUTS, FLAXSEEDS); FIBER-RICH FOODS: OATS, CHIA SEEDS, VEGETABLES (CARROTS, KALE, SPINACH).

TRANS FATS: PROCESSED FOODS LIKE MARGARINE, PACKAGED SNACKS (CRACKERS, CHIPS); EXCESSIVE SATURATED FATS: BACON, SAUSAGE, PROCESSED MEATS

VITAMIN D	ADIPOQ	CARDIOVASCULAR TYPE 2 DIABETES METABOLIC SYNDROME
OMEGA-3	rs2667281	
RESVERATROL		
MITBURN		

REDUCED ADIPONECTIN LEVELS, HIGHER RISK OF OBESITY AND INSULIN RESISTANCE.

LOW-CARB DIETS: NON-STARCHY VEGETABLES (SPINACH, BELL PEPPERS), LEAN PROTEINS (TURKEY BREAST, FISH LIKE SALMON AND COD), OMEGA-3S.

HIGH-GLYCEMIC FOODS: WHITE BREAD, POTATOES, SUGARY SNACKS; SUGARY DRINKS: SODAS, FRUIT JUICES.

OMEGA-3	CAPN10	TYPE 2 DIABETES METABOLIC SYNDROME
CLA	rs1322267	
EGCG		
BERBERINE		

LINKED TO INSULIN RESISTANCE AND GLUCOSE INTOLERANCE.

LOW-GLYCEMIC FOODS: VEGETABLES (BROCCOLI, BRUSSELS SPROUTS), HIGH-FIBER FOODS (OATS, FLAXSEEDS), LEAN PROTEINS (TOFU, TURKEY).

SUGARY FOODS: SWEETS, SOFT DRINKS, PROCESSED CARBS (WHITE PASTA, CRACKERS).

OMEGA-3	FABP2	INSULIN RESISTANCE TYPE 2 DIABETES OBESITY
FIBERS	rs1799883	
CLA		
EGCG		

INCREASED FAT ABSORPTION, HIGHER RISK OF OBESITY WITH HIGH-FAT DIETS.

UNSATURATED FATS: OLIVE OIL, AVOCADOS, FATTY FISH (SALMON, TROUT); HIGH-FIBER FOODS: LENTILS, BEANS, BROCCOLI, FRUITS (APPLES, PEARS).

SATURATED FATS: CHEESE, CREAM, FATTY PORK CUTS; FRIED FOODS: FRIED CHICKEN, FRENCH FRIES.

LACTASE	MCM6	LACTOSE INTOLERANCE GASTROINTESTINAL ISSUES
	rs4988235	

LACTASE PERSISTENCE/NON-PERSISTENCE AFFECTING LACTOSE DIGESTION.

LACTOSE-FREE OR REDUCED-LACTOSE DIET: LACTOSE-FREE DAIRY, PLANT-BASED MILKS (ALMOND, SOY).

HIGH-LACTOSE FOODS: MILK, ICE CREAM, SOFT CHEESES.

CLA	GHRL	METABOLIC SYNDROME OBESITY TYPE 2 DIABETES
L-CARNITINE	rs4684077	
GARCINIA CAMBOGIA		

LINKED TO INCREASED APPETITE AND HIGHER CALORIC INTAKE, CONTRIBUTING TO OBESITY RISK.

BALANCED DIET WITH PORTION CONTROL: LEAN PROTEINS (FISH, CHICKEN), WHOLE GRAINS (QUINOA, BARLEY), VEGETABLES (CARROTS, SPINACH).

HIGH-CALORIE FOODS: FRIED FOODS, SUGARY SNACKS, HIGH-FAT DAIRY.