



Codebook

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1. Demography

1.1. Age

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
leeftijd	age at baseline (years)	Numeric	GenQ

1.2. Sex

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
Sexe	sex	Cat / 1'male' 2'female'	Pre-visit administration & GenQ

1.3. Ethnicity

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
etnizelf	ethnic background	Cat / 11 'white' 12 'black' 13 'Turkish' 14 'Moroccan' 15 'South-East Asian' 16 'Hindustan' 18 'other'	GenQ
etnivade	ethnic background of father	Cat / 11 'white' 12 'black' 13 'Turkish' 14 'Moroccan' 15 'South-East Asian' 16 'Hindustan' 18 'other'	GenQ
etnimoe	ethnic background of mother	Cat / 11 'white' 12 'black' 13 'Turkish' 14 'Moroccan' 15 'South-East Asian' 16 'Hindustan' 18 'other'	GenQ
etnwhite	ethnicity (white vs other)	Cat / 1'white' 0'other'	GenQ

1.4. Family composition

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
kinderen	do you have any children (incl diseased)?	Cat / 1 'yes' 2 'no'	GenQ
kindtot	total number of children (incl adopted, step-, foster and diseased children)	Numeric	GenQ
kindadop	number of adopted children	Numeric	GenQ
kindstie	number of stepchildren	Numeric	GenQ
kindplee	number of foster children	Numeric	GenQ
kindthui	number of children still living at home	Numeric	GenQ
kindbiol	number of children ever born	Numeric	GenQ
agefb	age of participant at first birth	Numeric	GenQ

1.5. Household composition

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
huisaant	Number of persons of the household, incl respondent	Numeric	GenQ
hhalleen	household composition - Living alone	Cat / 1 'yes' 0 'no'	GenQ
hhpartn	household composition - Living with a partner	Cat / 1 'yes' 0 'no'	GenQ
hhkind3	household composition - Living with children up to and including 3 years of age	Cat / 1 'yes' 0 'no'	GenQ
hhkind11	household composition - Living with children from 4-11 years of age	Cat / 1 'yes' 0 'no'	GenQ
hhkind17	household composition - Living with children from 12-17 years of age	Cat / 1 'yes' 0 'no'	GenQ
hhkind18	household composition - Living with children of 18 years and older	Cat / 1 'yes' 0 'no'	GenQ
hhvwand	household composition - Living with other adults	Cat / 1 'yes' 0 'no'	GenQ
hhand	household composition - Other	Cat / 1 'yes' 0 'no'	GenQ
huisand	Description of other household composition	String	GenQ
household_bin	household composition - binary	Cat / 1 'living alone' 2 'living with others' 3 'unclear based on incongruent response'	GenQ

1.6. Education

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
opleid	highest level of education that was completed	* Cat/ 1 'none' 2 'primary education, primary school' 3 'lower vocational education' 4 'secondary education' 5 'secondary vocational education' 6 'higher secondary education' 7 'higher vocational education' 8 'university education, KIM, KMA' 9 'university education: doctorate' 10 'other, namely'	GenQ
opland	description of other type of education	String	GenQ
opjaar	year the highest level of education was completed	Numeric	GenQ
oplnu	currently studying / receiving an education	Cat / 1 'yes, full-time' 2 'yes, part-time' 3 'no'	GenQ
eduh	Education	Cat / 0 'other' 1 'high'	GenQ

* LABELS ONLY IN DUTCH: 1 'geen' 2 'basisonderwijs, lagere school' 3 'lager beroepsonderwijs' 4 'middelbaar voortgezet onderwijs' 5 'middelbaar beroepsonderwijs' 6 'hoger voortgezet onderwijs' 7 'hoger beroepsonderwijs' 8 'universitaire opleiding, KIM, KMA' 9 'universitaire opleiding: gepromoveerd' 10 'overig, namelijk'

1.7. Job

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
werkloos	time of unemployment	Cat / 1 '<6 months' 2 '>=6 months and <1 year' 3 '>=1 year and <3 years' 4 '>=3 years'	GenQ
arbong	extent of disablement (% arbeidsongeschikt)	Cat / 1 '<50%' 2 '>=50% and <100%' 3 '100%'	GenQ
vrijwil	voluntary work	Cat / 1 'No' 2 'Yes, <1 hr per week' 3 'Yes, >=1 hr and <2 hr per week' 4 'Yes, >=2 hr per week'	GenQ
werk32	I do paid work for >=32 hrs/wk	Cat / 1 'yes' 0 'no'	GenQ
werk20	I do paid work for >=20 and <32 hrs/wk	Cat / 1 'yes' 0 'no'	GenQ
werk12	I do paid work for >=12 and <20 hrs/wk	Cat / 1 'yes' 0 'no'	GenQ
werk0t12	I do paid work for <12 hrs/wk	Cat / 1 'yes' 0 'no'	GenQ
werkvut	I am retired (AOW, VUT, FPU)	Cat / 1 'yes' 0 'no'	GenQ
werkzoek	I am unemployed/looking for a job (registered at employment agency)	Cat / 1 'yes' 0 'no'	GenQ
werkwao	I cannot work due to sickness or disability (WAO, AAW, WAZ, WAJONG)	Cat / 1 'yes' 0 'no'	GenQ
werkbyst	I receive a social assistance benefit (bijstandsuitkering)	Cat / 1 'yes' 0 'no'	GenQ
werkhuis	I am a fulltime homemaker	Cat / 1 'yes' 0 'no'	GenQ
werkstud	I am studying	Cat / 1 'yes' 0 'no'	GenQ
**	job title of current and past jobs (max 4)		GenQ
**	start age (years) per job title		GenQ
**	end age (years) per job title		GenQ

** crude job information available on request

1.8. Income

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
income	monthly personal net income from salary or government payment	Cat / 1 'less than 500 euro' 2 '500-1000 euro' 3 '1000-1500 euro' 4 '1500-2000 euro' 5 '2000-2500 euro' 6 '2500-3000 euro' 7 'over 3000 euro' 8 'unknown or not willing to report'	GenQ
incomehh	monthly household net income from salary or government payment	Cat / 1 'less than 500 euro' 2 '500-1000 euro' 3 '1000-1500 euro' 4 '1500-2000 euro' 5 '2000-2500 euro' 6 '2500-3000 euro' 7 'over 3000 euro' 8 'unknown or not willing to report'	GenQ

2. Life style and behaviour

2.1. Smoking

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
smoking	smoking behaviour	Cat / 0'never smoker' 1'former smoker' 2'current smoker'	GenQ
packyears1	packyears based on only complete questionnaire items	Numeric	GenQ
packyears2	packyears estimated with imputed missing values	Numeric	GenQ

2.2. Vitamin intake

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
vitamin	regular vitamin or mineral supplement intake	Cat / 1'yes' 2'no'	GenQ
vita	vitamin A intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
vitb1	vitamin B1 intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
vitb6	vitamin B6 intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
vitb11	vitamin B11 intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
vitb12	vitamin B12 intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
vitc	vitamin C intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
vitd	vitamin D intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
vite	vitamin E intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
vitmulti	multivitamin intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
calcium	calcium intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
ijzer	iron intake reported as supplement	Cat / 1'yes' 0'no'	GenQ
vitamin_med_vit	regular vitamin or mineral intake reported as supplement or medication	Cat / 1'yes' 2'no'	GenQ
vitA_med_vit	vitamin A intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ
vitB1_med_vit	vitamin B1 intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ
vitB6_med_vit	vitamin B6 intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ
vitB11_med_vit	vitamin B11 intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ
vitB12_med_vit	vitamin B12 intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ
vitC_med_vit	vitamin C intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ
vitD_med_vit	vitamin D intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ
vitE_med_vit	vitamin E intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ
vitmulti_med_vit	multivitamin intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ
ijzer_med_vit	iron intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ
calcium_med_vit	calcium intake reported as supplement or medication	Cat / 1'yes' 0'no'	GenQ

2.3. Recreational drugs

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
drugsever	Ever used recreational drugs		GenQ
*	Cumulative drug use duration		GenQ
*	Drug types used		GenQ
*	Age of use per drug type		GenQ

* crude data available, but yet to be cleaned

2.4. Physical activity (SQUASH)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
wwlmeth	MET hours per week - commuting - walking	Numeric	GenQ SQUASH
wwfmeth	MET hours per week - commuting - cycling	Numeric	GenQ SQUASH
wanmeth	MET hours per week - leisure time - walking	Numeric	GenQ SQUASH
fietmeth	MET hours per week - leisure time - cycling	Numeric	GenQ SQUASH
tuinmeth	MET hours per week - leisure time - gardening	Numeric	GenQ SQUASH
klusmeth	MET hours per week - leisure time - home repair	Numeric	GenQ SQUASH
werklmeth	MET hours per week - activities at work/school - light	Numeric	GenQ SQUASH
werkzmeth	MET hours per week - activities at work/school - intense	Numeric	GenQ SQUASH
hhlmeth	MET hours per week - household activities - light	Numeric	GenQ SQUASH
hhzmeth	MET hours per week - household activities -intense	Numeric	GenQ SQUASH
sp1meth	MET hours per week - leisure time - sport1	Numeric	GenQ SQUASH
sp2meth	MET hours per week - leisure time - sport2	Numeric	GenQ SQUASH
sp3meth	MET hours per week - leisure time - sport3	Numeric	GenQ SQUASH
sp4meth	MET hours per week - leisure time - sport4	Numeric	GenQ SQUASH
totmeth	MET hours per week - total (of 14 activities)	Numeric	GenQ SQUASH
leismeth	MET hours per week - leisure total (walking, cycling, gardening, home repair, sport)	Numeric	GenQ SQUASH

2.5. Physical activity and energy expenditure (ActiHeart accelerometer)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
ah_weartime	Valid AH wear time (hours)	Numeric	ActiHeart
ah_pae	Total physical activity Energy Expenditure (kj / kg / day)	Numeric	ActiHeart
ah_sed_fr	Fraction of sedentary time (<1.5MET)) per day (%)	Numeric	ActiHeart
ah_sed_h	Hours of sedentary time per day	Numeric	ActiHeart
ah_lpa_fr	Fraction of light-intensity physical activity (LPA) (1.5-3.0 MET)) per day (%)	Numeric	ActiHeart
ah_lpa_h	Hours of light-intensity physical activity (LPA) per day	Numeric	ActiHeart
ah_mvpa_fr	Fraction of moderate-to-vigorous-intensity physical activity (MVPA) (>3.0 MET) per day (%)	Numeric	ActiHeart
ah_mvpa_h	Hours of moderate-to-vigorous-intensity physical activity (MVPA) per day	Numeric	ActiHeart
ah_sleep	Avg sleep time (hours/day)	Numeric	ActiHeart
*	Timing physical activity		ActiHeart

* more detailed information about timing of physical activity (per hour) is available on request

2.6. Diet (FFQ)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
dhd	Dutch Healthy Diet index 2006 (DHD-index)	Numeric	FFQ
dhd15_finalscore	Dutch Healthy Diet Index 2015, max 125 points	Numeric	FFQ
AMED	Alternative Mediterranean Diet (AMED) Score	Numeric	FFQ
hPDI	Healthful plant-based diet index (hPDI)	Numeric	FFQ
DII	Dietary inflammation index (DII)	Numeric	FFQ
EDIH	Empirical Dietary Index for Hyperinsulinemia (EDIH)	Numeric	FFQ
HEI	Alternative Healthy Eating Index (AHEI)-2010	Numeric	FFQ
dieet	diet in last month	Cat / 1 'yes, always' 2 'yes, sometimes' 3 'no'	FFQ
wdieet	kind of diet	Cat / 1 'energy restricted/low calory diet' 2 'sodium controlled diet' 3 'low fat diet' 4 'diet adjusted to diabetes mellitus' 5 'diet adjusted to high serum cholesterol' 6 'diet rich in fibers' 7 'other type of diet'	FFQ
wdieetan	other kind of diet (description)	String	FFQ
wdieet_x	weight loss diet	Cat / 0 'no' 1 'yes'	FFQ
leefrgl	followed a food rule	Cat / 1 'yes, always' 2 'yes, sometimes' 3 'no'	FFQ
wlfrgl	kind of food rule	Cat / 1 'vegetarian (<1x per week meat)' 2 'vegan' 3 'macrobiotic' 4 'anthroposophical' 5 'other'	FFQ
wlfrglan	other kind of food rule (description)	String	FFQ
wlfrgl_x	meatless diet	Cat / 0 'no' 1 'yes'	FFQ
kokzelf	preparation of hot meal by yourself	Cat / 1 'always' 2 'often' 3 'sometimes' 4 'never'	FFQ
kokander	preparation of hot meal by someone else	Cat / 1 'always' 2 'often' 3 'sometimes' 4 'never'	FFQ
ontbijt	how often a breakfast in last month	Cat / 1 'not this month' 2 '1 day per month' 3 '2-3 days per month' 4 '1 day per week' 5 '2-3 days per week' 6 '4-5 days per week' 7 '6-7 days per week'	FFQ
broodeten	how often a bread meal in last month	Cat / 1 'not this month' 2 '1 day per month' 3 '2-3 days per month' 4 '1 day per week' 5 '2-3 days per week' 6 '4-5 days per week' 7 '6-7 days per week'	FFQ
warmeten	how often a hot meal in last month	Cat / 1 'not this month' 2 '1 day per month' 3 '2-3 days per month' 4 '1 day per week' 5 '2-3 days per week' 6 '4-5 days per week' 7 '6-7 days per week'	FFQ
BMRmif	BMR (MJ) according to Mifflin 1990	Numeric	FFQ
BMRgold	BMR (MJ) according to Goldberg 1985	Numeric	FFQ
EI_BMR	energy intake/BMRmif	Numeric	FFQ
Elrange	Selection kJ extreme values Willet	Numeric	FFQ
GoldbergS	Goldberg Energy variation factor	Numeric	FFQ
GoldbergPAL	Assigned Goldberg Physical Activity Level (population)	Numeric	FFQ
GoldbergLlow	Lower confidence limit of GoldbergPAL	Numeric	FFQ
GoldbergLup	Upper confidence limit of GoldbergPAL	Numeric	FFQ
underreport	underreporting energy intake on FFQ, based on Goldberg method	Cat / 0 "good or overreporters" 1 "underreporters"	FFQ
overreport	overreporting energy intake on FFQ, based on Goldberg method	Cat / 0 "good or underreporters" 1 "overreporters"	FFQ
misreport	misreporting energy intake on FFQ, based on Goldberg method	Cat / 0 "good reporters" 1 "misreporters"	FFQ
vet_g	total fat intake (g/day)	Numeric	FFQ
vvz_g	SFA intake (g/day)	Numeric	FFQ
eovz_g	MUFA intake (g/day)	Numeric	FFQ

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
movz_g	PUFA intake (g/day)	Numeric	FFQ
linolz_g	linoleic acid intake (g/day)	Numeric	FFQ
transvz_g	TFA intake (g/day)	Numeric	FFQ
ala_g	alpha-linoleic acid intake (g/day)	Numeric	FFQ
epa_g	EPA intake (g/day)	Numeric	FFQ
dha_g	DHA intake (g/day)	Numeric	FFQ
chol_mg	cholesterol intake (mg/day)	Numeric	FFQ
eiwit_g	protein intake (g/day)	Numeric	FFQ
koolh_g	carbohydrate intake (g/day)	Numeric	FFQ
modisacch_g	mono and disaccharide intake (g/day)	Numeric	FFQ
polysacch_g	polysaccharide intake (g/day)	Numeric	FFQ
vezel_g	fiber intake (g/day)	Numeric	FFQ
water_g	water intake (g/day)	Numeric	FFQ
alc_g	alcohol intake (g/day)	Numeric	FFQ
kalium_mg	potassium intake (mg/day)	Numeric	FFQ
kJ	Total energy intake (kJ/day)	Numeric	FFQ
vet_en	En% derived from total fat intake	Numeric	FFQ
vvz_en	En% derived from SFA intake	Numeric	FFQ
eovz_en	En% derived from MUFA intake	Numeric	FFQ
movz_en	En% derived from PUFA intake	Numeric	FFQ
transvz_en	En% derived from TFA intake	Numeric	FFQ
linolz_en	En% derived from linoleic acid intake	Numeric	FFQ
ala_en	En% derived from alpha-linoleic acid intake	Numeric	FFQ
epa_en	En% derived from EPA intake	Numeric	FFQ
dha_en	En% derived from DHA intake	Numeric	FFQ
eiwit_en	En% derived from protein intake	Numeric	FFQ
koolh_en	En% derived from carbohydrate intake	Numeric	FFQ
modisacch_en	En% derived from mono and disaccharide intake	Numeric	FFQ
polysacch_en	En% derived from polysaccharide intake	Numeric	FFQ
alc_en	En% derived from alcohol intake	Numeric	FFQ
vezel_en	En% derived from fiber intake	Numeric	FFQ
all_food_groups	all food calculated over the groups (g/day)	Numeric	FFQ
gday_cheese	amount food (g/day) any cheese	Numeric	FFQ
gday_milk	amount food (g/day) milk products, yoghurt, cream, icecream	Numeric	FFQ
gday_butter	amount food (g/day) any full-cream butter	Numeric	FFQ
fg_dairy	amount food (g/day) all dairy products	Numeric	FFQ
gday_unproc	amount food (g/day) unprocessed meat	Numeric	FFQ
gday_proc	amount food (g/day) processed meat and lard	Numeric	FFQ
fg_meat	amount food (g/day) all meat and lard	Numeric	FFQ
gday_nuts	amount food (g/day) nuts, seeds and peanutbutter	Numeric	FFQ
gday_smarg	amount food (g/day) low SFA margarines: soft margarines, margarines with stanols, liquid deep-frying oils, liquid baking fat	Numeric	FFQ
gday_hmarg	amount food (g/day) hard margarines	Numeric	FFQ
gday_oil	amount food (g/day) vegetable oils like arichid, olive oil, frying oil	Numeric	FFQ
gday_sauce	amount food (g/day) condiments, sauces, mayonaise, fat-based dressings	Numeric	FFQ
gday_cereal	amount food (g/day) cereals, grains, fruits, vegetables, legumes, potatoes	Numeric	FFQ
fg_plant	amount food (g/day) all plants	Numeric	FFQ

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
gday_fishf	amount food (g/day) salmon, eel, herring or mackerel	Numeric	FFQ
gday_fisho	amount food (g/day) fried bough fish like kibbeling, tuna, fish fingers, catfish, swordfish, other seafood like shrimp, crab, lobster	Numeric	FFQ
fg_fish	amount food (g/day) all fish and seafood products eaten	Numeric	FFQ
gday_cakecandy	amount food (g/day) cakes, candy, chocolate	Numeric	FFQ
gday_unkfat	amount food (g/day) unknown fat	Numeric	FFQ
gday_fried	amount food (g/day) low meat fried snacks	Numeric	FFQ
gday_mixed	amount food (g/day) mixed foods like pizza or soup	Numeric	FFQ
fg_other	amount food (g/day) other foods	Numeric	FFQ
gday_ssb	amount food (g/day) sugar sweetened beverages, fruitjuices	Numeric	FFQ
gday_addsug	amount food (g/day) of added sugar in coffee, tea or yoghurt, water ice	Numeric	FFQ
fg_fatfree	amount food (g/day) fat free products	Numeric	FFQ
gday_yogh	amount food (g/day) yoghurt	Numeric	FFQ
gday_snackbar	amount food (g/day) snackbar meat products	Numeric	FFQ
gday_fruit	amount food (g/day) fruit	Numeric	FFQ
gday_vegetables	amount food (g/day) vegetables	Numeric	FFQ
fg_fruitveg	amount food (g/day) Total fruit and vegetables	Numeric	FFQ
fg_sweetsnacks	amount food (g/day) Total sweet snacks or sugar	Numeric	FFQ
gday_alco	amount food (g/day) of alcohol products	Numeric	FFQ
fg_alcohol	amount food (g/day) alcoholic beverages excl alcohol free beers	Numeric	FFQ
alcdrinker	Type of alcohol drinker (richtlijn Voedingscentrum 2013)	Cat / 0 "abstainer" 1 "moderate" 2 "high"	FFQ
alcabs	alcohol abstainer or user from FFQ	Cat / 0 'abstainer' 1 'user'	FFQ
gday_coffee	amount food (g/day) coffee and tea	Numeric	FFQ
coffeecups	coffee consumption in cups a day (measured by gdag.54/125)	Numeric	FFQ
coffeecupscat	categories coffee consumption a day	Cat / 1'none' 2'1-2 cups a day' 3'3-4 cups a day' 4'5-6 cups a day' 5'7-8 cups a day' 6'>=9 cups a day'	FFQ
*	Other FFQ-based food groups (g/day or portion)		FFQ

* more daily intake variables per food group can be derived from the crude intake data and are available on request

3. Energy expenditure

Notes:

physical activity (SQUASH)

>> see Life style and behaviour

physical activity and energy expenditure (ActiHeart accelerometer)

>> see Life style and behaviour

diet (FFQ)

>> see Life style and behaviour

3.1. Indirect calorimetry

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
baro	Barometric pressure (hPa)	Numeric	indirect calorimetry
temp	Room temperature (Celsius)	Numeric	indirect calorimetry
mean_vco2	Mean CO2 production, excluding outliers (> 2SD) (ml/min)	Numeric	indirect calorimetry
sd_vco2	Standard deviation CO2 production, excluding outliers (>2SD) (ml/min)	Numeric	indirect calorimetry
se_vco2	Standard error mean CO2 production, excluding outliers (>2SD) (ml/min)	Numeric	indirect calorimetry
mean_vo2	Mean O2 consumption, excluding outliers (> 2SD) (ml/min)	Numeric	indirect calorimetry
sd_vo2	Standard deviation O2 consumption, excluding outliers (> 2SD)	Numeric	indirect calorimetry
se_vo2	Standard error mean O2 consumption, excluding outliers (> 2SD)	Numeric	indirect calorimetry
mean_RQ	Mean respiratory quotient (VCO2/VO2), excluding outliers (> 2SD)	Numeric	indirect calorimetry
sd_RQ	Standard deviation respiratory quotient (VCO2/VO2), excluding outliers (> 2SD)	Numeric	indirect calorimetry
se_RQ	Standard error mean respiratory quotient (VCO2/VO2), excluding outliers (> 2SD)	Numeric	indirect calorimetry
REE_measured	REE measured, via Weij's equation, (kcal/day)	Numeric	indirect calorimetry
REE_perkgFFM	REE expressed per kg fat free mass (kcal/day/kg FFM)	Numeric	indirect calorimetry
fat_oxidation	Fat oxidation rate (mg/min)	Numeric	indirect calorimetry
carb_oxidation	Carbohydrate oxidation rate (mg/min)	Numeric	indirect calorimetry

3.2. Basal metabolic rate (BMR)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
bmr	basal metabolic rate (BMR) (kcal)	Numeric	Physical exam, BIA
BMRmif	BMR (MJ) according to Mifflin 1990	Numeric	FFQ
BMRgold	BMR (MJ) according to Goldberg 1985	Numeric	FFQ
EI_BMR	energy intake/BMRmif	Numeric	FFQ
EIrange	Selection kJ extreme values Willet	Numeric	FFQ
GoldbergS	Goldberg Energy variation factor	Numeric	FFQ
GoldbergPAL	Assigned Goldberg Physical Activity Level (population)	Numeric	FFQ
GoldbergLow	Lower confidence limit of GoldbergPAL	Numeric	FFQ
GoldbergLup	Upper confidence limit of GoldbergPAL	Numeric	FFQ
underreport	underreporting energy intake on FFQ, based on Goldberg method	Cat / 0 "good or overreporters" 1 "underreporters"	FFQ
overreport	overreporting energy intake on FFQ, based on Goldberg method	Cat / 0 "good or underreporters" 1 "overreporters"	FFQ
misreport	misreporting energy intake on FFQ, based on Goldberg method	Cat / 0 "good reporters" 1 "misreporters"	FFQ

4. Medical history & medication

Notes:

vertebral fracture assessment (VFA) by DXA

>> see Radiology

4.1. Birth weight

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
birthwt	birth weight (categories)	Cat / 1'<5 pounds / < 2500 gram' 2'5-6 pounds / 2500-3000' 3'6-8 pounds / 3000-4000 gram' 4'8-9 pounds / 4000-4500 gram'	GenQ

4.2. Preterm birth

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
gebvroeg	preterm more than 3 weeks?	Cat / 1'yes' 2'no' 8'I do not know'	GenQ
gebvrwk	number of weeks preterm	Numeric	GenQ
gebvrwn	unknown number of weeks preterm	Cat / 8 'number of preterm weeks unknown'	GenQ

4.3. Family history of disease

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
historyDM	Family history of T2D	Cat / 0'No' 1'Yes' 8'Missing/Unknown'	GenQ
famdmg	no family history of diabetes mellitus	Cat / 0'No' 1'Yes'	GenQ
famdmb	diabetes mellitus father	Cat / 0'No' 1'Yes'	GenQ
fmdmbf	age of first diagnosis diabetes mellitus father	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
famdmbm	diabetes mellitus mother	Cat / 0'No' 1'Yes'	GenQ
fmdmbm	age of first diagnosis diabetes mellitus mother	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
famdmbb	diabetes mellitus brother	Cat / 0'No' 1'Yes'	GenQ
fmdmbbf	age of first diagnosis diabetes mellitus brother	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
famdmbz	diabetes mellitus sister	Cat / 0'No' 1'Yes'	GenQ
fmdmbzf	age of first diagnosis diabetes mellitus sister	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
fammign	no family history of myocardial infarction	Cat / 0'No' 1'Yes'	GenQ
fammiva	myocardial infarction father	Cat / 0'No' 1'Yes'	GenQ
fmivalf	age of first diagnosis myocardial infarction father	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
fammima	myocardial infarction mother	Cat / 0'No' 1'Yes'	GenQ
fmimalf	age of first diagnosis myocardial infarction mother	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
fammibr	myocardial infarction brother	Cat / 0'No' 1'Yes'	GenQ
fmibrbf	age of first diagnosis myocardial infarction brother	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
fammizs	myocardial infarction sister	Cat / 0'No' 1'Yes'	GenQ
fmizsbf	age of first diagnosis myocardial infarction sister	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
famcvagn	no family history of stroke	Cat / 0'No' 1'Yes'	GenQ
famcvava	stroke father	Cat / 0'No' 1'Yes'	GenQ
fcvavalf	age of first diagnosis stroke father	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
famcvama	stroke mother	Cat / 0'No' 1'Yes'	GenQ
fcvamalf	age of first diagnosis stroke mother	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
famcvabr	stroke brother	Cat / 0'No' 1'Yes'	GenQ
fcvabrbf	age of first diagnosis stroke brother	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
famcvazs	stroke sister	Cat / 0'No' 1'Yes'	GenQ
fcvazslf	age of first diagnosis stroke sister	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
famdcagn	no family history of colorectal cancer	Cat / 0'No' 1'Yes'	GenQ
famdcava	colorectal cancer father	Cat / 0'No' 1'Yes'	GenQ
fdcavalf	age of first diagnosis colorectal cancer father	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
famdcama	colorectal cancer mother	Cat / 0'No' 1'Yes'	GenQ
fdcamalf	age of first diagnosis colorectal cancer mother	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
famdcabr	colorectal cancer brother	Cat / 0'No' 1'Yes'	GenQ
fdcabrlf	age of first diagnosis colorectal cancer brother	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
famdcasz	colorectal cancer sister	Cat / 0'No' 1'Yes'	GenQ
fdcaszlf	age of first diagnosis colorectal cancer sister	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
fambcagn	no family history of breast cancer	Cat / 0'No' 1'Yes'	GenQ
fambcama	breast cancer mother	Cat / 0'No' 1'Yes'	GenQ
fbcamalf	age of first diagnosis breast cancer mother	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ
fambcazs	breast cancer sister	Cat / 0'No' 1'Yes'	GenQ
fbcazslf	age of first diagnosis breast cancer sister	Cat / 1'before age 50' 2'age 50-60' 3'age 60-70' 4'after age 70' 5'age unknown'	GenQ

4.4. Self-perceived health

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
gezndalg	self-perceived general physical health status	Cat / 1 'very good' 2 'good' 3 'moderate' 4 'poor' 5 'very poor'	GenQ

4.5. Self-reported history of hypertension

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
blddruk	history of hypertension	Cat / 1 'yes' 2 'no'	GenQ
bldrage	age of diagnosis hypertension	Numeric	GenQ
bldrmed	medication for hypertension	Cat / 1 'yes' 2 'no'	GenQ
bldmedag	age of start medication for hypertension	Numeric	GenQ
bldrlast	impact of hypertension in daily life	Cat / 1 'none' 2 'scarcely' 3 'moderate' 4 'much'	GenQ

4.6. Self-reported history of hypercholesterolemia

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
hypchol	history of hypercholesterolemia	Cat / 1 'yes' 2 'no'	GenQ
hcholage	age of diagnosis hypercholesterolemia	Numeric	GenQ
hcholmed	medication for hypercholesterolemia	Cat / 1 'yes' 2 'no'	GenQ
chomedag	age of start medication hypercholesterolemia	Numeric	GenQ
hchollas	impact of hypercholesterolemia in daily life	Cat / 1 'none' 2 'scarcely' 3 'moderate' 4 'much'	GenQ

4.7. Self-reported cardiac and vascular symptoms and diseases

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
pijninsp	angina pectoris symptoms during (physical) strain	Cat / 1 'yes' 2 'no'	GenQ
pijnin02	angina pectoris symptoms disappearing within 10 min of rest	Cat / 1 'yes' 2 'no'	GenQ
pijnkuit	claudicatio - pain in calf/calves while walking	Cat / 1 'yes' 2 'no'	GenQ
pijнку02	claudicatio - pain in calf/calves disappearing within 10 min of rest	Cat / 1 'yes' 2 'no'	GenQ
*	sleeping on more than 1 pillow because of shortness of breath		GenQ
*	swollen ankles, feet or legs when getting up from bed in the morning		GenQ
cvd	pre-existing cardio-vascular disease (myocardial infarction, angina, congestive heart failure, stroke, or peripheral vascular disease)	Cat / 0 'no' 1 'yes'	GenQ
hartzkt	history of cardiac disorders or myocardial infarction	Cat / 1 'yes' 2 'no'	GenQ
hrtmi	myocardial infarction	Cat / 0 'no' 1 'yes'	GenQ
hrtap	angina pectoris	Cat / 0 'no' 1 'yes'	GenQ
hrtfalen	heart failure	Cat / 0 'no' 1 'yes'	GenQ
hrttritme	arrhythmia	Cat / 0 'no' 1 'yes'	GenQ
hrtand	other cardiac disorder	Cat / 0 'no' 1 'yes'	GenQ
hrtzan	description of other cardiac disorder	String	GenQ
hrtzonb	type of cardiac disorder unknown	Cat / 0 'no' 1 'yes'	GenQ
hrtzage	age at which cardiac disorder developed (years)	Numeric	GenQ
hrtzmed	using medication for cardiac disorder	Cat / 1 'yes' 2 'no'	GenQ
hrtzspec	treated or checked up by a medical specialist for cardiac disorder	Cat / 1 'yes' 2 'no'	GenQ
hartlast	to which extent does the cardiac disorder affect your daily life?	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ
haoknee	history of cardiac surgery - none	Cat / 0 'no' 1 'yes'	GenQ
haokklep	history of cardiac surgery - valve surgery/artificial valve	Cat / 0 'no' 1 'yes'	GenQ
haokbyp	history of cardiac surgery - coronary artery bypass	Cat / 0 'no' 1 'yes'	GenQ
haokdot	history of cardiac surgery - balloon angioplasty	Cat / 0 'no' 1 'yes'	GenQ
haokpace	history of cardiac surgery - pacemaker	Cat / 0 'no' 1 'yes'	GenQ
pacemaker	Pacemaker presence (according to questionnaire or MRI contra-indications)	Cat / 0 'no pacemaker' 1 'pacemaker or ICD'	GenQ; Pre-visit administration
haokand	history of cardiac surgery - other type, not further specified	Cat / 0 'no' 1 'yes'	GenQ
cva	history of stroke (ischemic or hemorrhagic)	Cat / 1 'yes (old version of questionnaire)' 2 'no' 3 'yes, 1 time' 4 'yes, 2 times' 5 'yes, >2 times'	GenQ
cvaage	age of first stroke (years)	Numeric	GenQ
cvaage2	age of latest stroke (years)	Numeric	GenQ
cvamed	using medication for stroke	Cat / 1 'yes' 2 'no'	GenQ
cvaspec	treated or checked up by a medical specialist for stroke	Cat / 1 'yes' 2 'no'	GenQ
cvalast	to which extent does the stroke affect your daily life?	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ
trombose	history of thrombosis or pulmonary embolism	Cat / 1 'yes, once' 2 'yes, twice' 3 'yes, more than twice' 4 'no'	GenQ
trombeen	type of thrombosis on leg	Cat / 1 'left side' 2 'right side' 3 'left and right side' 8 'side unknown'	GenQ
tromarm	type of thrombosis on arm	Cat / 1 'left side' 2 'right side' 3 'left and right side' 8 'side unknown'	GenQ
longembo	type of pulmonary embolism	Cat / 1 'left side' 2 'right side' 3 'left and right side' 8 'side unknown'	GenQ
tromspec	treated or checked up by a medical specialist for thrombosis or pulmonary embolism	Cat / 1 'yes' 2 'no'	GenQ
tromecho	thrombosis or pulmonary embolism diagnosed by ultrasound	Cat / 0 'no' 1 'yes'	GenQ

Variable Name	Label	Format/Categories	Source
tromfleb	thrombosis or pulmonary embolism diagnosed by contrast imaging (phlebography or angiography)	Cat / 0 'no' 1 'yes'	GenQ
tromvpssc	thrombosis or pulmonary embolism diagnosed by ventilation/perfusion scan (nuclear radiology)	Cat / 0 'no' 1 'yes'	GenQ
tromct	thrombosis or pulmonary embolism diagnosed by CT scan	Cat / 0 'no' 1 'yes'	GenQ
tromand	thrombosis or pulmonary embolism diagnosed by other method	Cat / 0 'no' 1 'yes'	GenQ
tromanoz	description of other diagnosis method	String	GenQ
tromgeen	no diagnostic examination for thrombosis or pulmonary embolism performed	Cat / 0 'no' 1 'yes'	GenQ
tromwn	diagnostic method for thrombosis or pulmonary embolism unknown	Cat / 0 'no' 1 'yes'	GenQ
trom1ft	age1 of thrombosis or pulmonary embolism (years)	Numeric	GenQ
trom2ft	age2 of thrombosis or pulmonary embolism (years)	Numeric	GenQ
trom3ft	age3 of thrombosis or pulmonary embolism (years)	Numeric	GenQ
tromlast	to which extent does the thrombosis or pulmonary embolism affect your daily life	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ
vaatljd	history of arterial disease	Cat / 1 'yes' 2 'no'	GenQ
vtlage	age at which arterial disease emerged (years)	Numeric	GenQ
vtlmed	using medication for arterial disease	Cat / 1 'yes' 2 'no'	GenQ
vtlspec	treated or checked up by a medical specialist for arterial disease	Cat / 1 'yes' 2 'no'	GenQ
vtllast	to which extent does the arterial disease affect your daily life?	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ
vtletala	claudicatio intermittens	Cat / 0 'no' 1 'yes'	GenQ
vtlvrsto	arterial occlusion	Cat / 0 'no' 1 'yes'	GenQ
vtlaneur	aortic aneurysm	Cat / 0 'no' 1 'yes'	GenQ
vtlander	other type of arterial disease	Cat / 0 'no' 1 'yes'	GenQ
vtland	description of other type of arterial disease	String	GenQ
vaatok	history of angioplasty or artery surgery	Numeric	GenQ
dotja	balloon angioplasty on artery'	Cat / 0 'no' 1 'yes'	GenQ
dotbypas	artery bypass	Cat / 0 'no' 1 'yes'	GenQ
dotstent	stenting in artery	Cat / 0 'no' 1 'yes'	GenQ
dotbroek	(broekprothese van de aorta)	Cat / 0 'no' 1 'yes'	GenQ
dotaneu	removal of aneurysm	Cat / 0 'no' 1 'yes'	GenQ
dotander	other artery surgery	Cat / 0 'no' 1 'yes'	GenQ
dotand	other type of artery surgery, string variabele	String	GenQ

* crude data available, but yet to be cleaned

4.8. Self-reported history of cancer

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
kanker	history of cancer	Cat / 1 'yes' 2 'no'	GenQ
kankage	age of diagnosis cancer	Numeric	GenQ
kankmed	currently using medication for cancer	Cat / 1 'yes' 2 'no'	GenQ
kankspec	treated or checked up by a medical specialist for cancer	Cat / 1 'yes' 2 'no'	GenQ
kanklast	to which extent does the cancer affect your daily life?	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ
kankcure	cancer cured	Cat / 1 'yes' 2 'no'	GenQ
kacurage	age at which cancer was cured	Numeric	GenQ
kalong	lung cancer	Cat / 0 'no' 1 'yes'	GenQ
kaslok	oesophageal cancer	Cat / 0 'no' 1 'yes'	GenQ
kaborst	breast cancer	Cat / 0 'no' 1 'yes'	GenQ
kamaag	gastric cancer	Cat / 0 'no' 1 'yes'	GenQ
kauterus	uterine cancer	Cat / 0 'no' 1 'yes'	GenQ
kabloed	blood or bone marrow cancer	Cat / 0 'no' 1 'yes'	GenQ
kacervix	cervical cancer	Cat / 0 'no' 1 'yes'	GenQ
kamela	melanoma	Cat / 0 'no' 1 'yes'	GenQ
kadarm	colorectal cancer	Cat / 0 'no' 1 'yes'	GenQ
kahuid	skin cancer non melanoma	Cat / 0 'no' 1 'yes'	GenQ
kaprost	prostate cancer	Cat / 0 'no' 1 'yes'	GenQ
kahersen	brain cancer	Cat / 0 'no' 1 'yes'	GenQ
akeel	throat cancer	Cat / 0 'no' 1 'yes'	GenQ
kalocan	other type of cancer	Cat / 0 'no' 1 'yes'	GenQ
kankloca	other type of cancer - description (NL)	String	GenQ
kametas	metastatic cancer(s)	Cat / 1 'yes' 2 'no'	GenQ
kametbot	bone metastasis	Cat / 0 'no' 1 'yes'	GenQ
kametlev	liver metastasis	Cat / 0 'no' 1 'yes'	GenQ
kamether	brain metastasis	Cat / 0 'no' 1 'yes'	GenQ
kametlon	lung metastasis	Cat / 0 'no' 1 'yes'	GenQ
kametlym	lymph node metastasis	Cat / 0 'no' 1 'yes'	GenQ
kametand	other type of metastasis	Cat / 0 'no' 1 'yes'	GenQ
kametan	other type of metastasis - description (NL)	String	GenQ
kathoper	cancer treatment - surgery	Cat / 0 'no' 1 'yes'	GenQ
kathmed	cancer treatment - medication	Cat / 0 'no' 1 'yes'	GenQ
kathstra	cancer treatment - radiation therapy	Cat / 0 'no' 1 'yes'	GenQ
kathalt	cancer treatment - alternative medicine	Cat / 0 'no' 1 'yes'	GenQ

4.9. Self-reported history of stomach diseases

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
maagzw	ever had an ulcer in your stomach or duodenum	Cat / 1'yes' 2'no'	GenQ
mgzwage	age of first ulcer	Numeric	GenQ
mgzwvaak	frequency of ulcer since first ulcer	Cat / 1'never' 2'a few times' 3'often'	GenQ
mgzwmed	use of medication for ulcer	Cat / 1'yes' 2'no'	GenQ
mgzwspec	treated by a medical specialist for ulcer	Cat / 1'yes' 2'no'	GenQ
mgzwast	to which extent does the ulcer affect your daily life	Cat / 1'not at all' 2'hardly' 3'moderately' 4'a lot'	GenQ

4.10. Self-reported history of bowel diseases

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
*	history of bowel diseases		GenQ
*	type of bowel diseases		GenQ
*	start age of bowel diseases		GenQ
*	using medication for bowel diseases		GenQ
*	start age of medication for bowel diseases		GenQ
*	treated for bowel diseases		GenQ
*	daily impact of bowel diseases		GenQ

* crude data available, but yet to be cleaned

4.11. Self-reported history of liver diseases

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
leverzkt	history of liver disease	Cat / 1'yes' 2'no'	GenQ
leversrt	type of liver disease	Cat / 1'liver cirrhosis' 2'hepatitis' 3'other liver disease' 4'liver steatosis'	GenQ
leveran	specification of other type of liver disease (NL)	String	GenQ
leverage	age at which liver disease developed (years)	Numeric	GenQ
levermed	using medication for liver disease	Cat / 1'yes' 2'no'	GenQ
leverspe	treated or checked up by a medical specialist for liver disease	Cat / 1'yes' 2'no'	GenQ
levlast	to which extent does the liver disease affect your daily life?	Cat / 1'not at all' 2'hardly' 3'moderately' 4'a lot'	GenQ

4.12. Self-reported history of diabetes

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
diabetesvrg	history of diabetes mellitus	Cat / 1 'yes, type 1' 2 'yes, type 2' 3 'no'	GenQ
dmage	age at which diabetes developed (years)	Numeric	GenQ
dmmednee	not using medication for diabetes	Cat / 0 'no' 1 'yes'	GenQ
dmmedinj	using insulin injections for diabetes	Cat / 0 'no' 1 'yes'	GenQ
dmmedtab	using oral medication for diabetes	Cat / 0 'no' 1 'yes'	GenQ
dmspec	treated or checked up by a medical specialist for diabetes	Cat / 1 'yes' 2 'no'	GenQ
dmlast	to which extent does the diabetes affect your daily life?	Cat / 1'not at all' 2'hardly' 3'moderately' 4'a lot'	GenQ
dmcompli	complications from diabetes	Cat / 1 'yes' 2 'no'	GenQ
dmnier	diabetic nephropathy	Cat / 0 'no' 1 'yes'	GenQ
dmneuro	diabetic neuropathy	Cat / 0 'no' 1 'yes'	GenQ
dmretino	diabetic retinopathy	Cat / 0 'no' 1 'yes'	GenQ
dmvoet	diabetic foot	Cat / 0 'no' 1 'yes'	GenQ
dmanders	other diabetes-based complications	Cat / 0 'no' 1 'yes'	GenQ
dmander	description of other diabetes-based complications	String	GenQ

4.13. Glucose metabolism

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
nuchter	Fasting state at first blood sample	Cat / 0 'No, protocol violations regarding fasting' 1 'Yes, fasting state'	Registration form study visit
glucmet2bl	glucose metabolism in 4 categories	Cat / 1 'IFG 6.1-7.0 mmol/L' 2 'self-reported DM I or II or medication' 3 'fasting plasma glucose ≥ 7.0 mmol/L' 0 'no DM or IFG at baseline'	Medication, Blood sample
glucose1	Fasting plasma glucose concentration (mmol/L)	Numeric	Blood sample
glucose2	Plasma glucose concentration second blood sample (mmol/L)	Numeric	Blood sample
glucose3	Plasma glucose concentration third blood sample (mmol/L)	Numeric	Blood sample
insuline.r1	Serum insuline concentration first blood sample (mU/L) _newly measured	Cat / -1 'insulin not measureable because participant uses Novorapid/Levemir' 0,05 '<0,50'	Blood sample
insuline.r2	Serum insuline concentration second blood sample (mU/L) _calibrated	Cat / 99999 'original measurement > 300'	Blood sample
insuline.r3	Serum insuline concentration third blood sample (mU/L) _calibrated	Cat / 99999 'original measurement > 300'	Blood sample
AUCins1	AUC insulin (0-150 min)	Numeric	Blood sample
AUCgluc1	AUC glucose (0-150 min)	Numeric	Blood sample
IGI_tot	Insulinogenic Index: AUCinstot/AUCgluctot	Numeric	Blood sample
IDI_isi	Insulin Disposition index (IGI_tot*ISI_comp)	Numeric	Blood sample
ISI_comp	ISI_comp matsuda	Numeric	Blood sample
homa1B	HOMA1-%B(20*insuline.r1)/(glucose1-3.5)	Numeric	Blood sample
homa1IR	HOMA1-IR(glucose1*insuline.r1)/22.5	Numeric	Blood sample
HOMA2B	HOMA-2 B-cell function [%B], calculated by HOMA2 calculator of Oxford University	Numeric	Blood sample
HOMA2S	HOMA-2 insulin sensitivity [%S], calculated by HOMA2 calculator of Oxford University	Numeric	Blood sample
HOMA2IR	HOMA-2 Insulin Resistance, calculated by HOMA2 calculator of Oxford University	Numeric	Blood sample
ATPIIIglucose	disrupted glucose metabolism according to ATPIII criteria	Cat / 0 'no' 1 'yes'	Medication, Blood sample, Physical exam

4.14. Self-reported history of renal diseases

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
nieren	history of kidney disease	Cat / 1 'yes' 2 'no'	GenQ
nierage	age at which kidney disease developed (years)	Numeric	GenQ
niermed	using medication for kidney disease	Cat / 1 'yes' 2 'no'	GenQ
nierspec	treated or checked up by a medical specialist for kidney disease	Cat / 1 'yes' 2 'no'	GenQ
nierlast	to which extent does the kidney disease affect your daily life?	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ
nieroorz	primary cause of kidney disease	Cat / 1 'Glomerulonephritis' 2 'Interstitial nephritis' 3 'Polycystic Kidney Disease' 4 'Renal vascular disease' 5 'Diabetes mellitus' 6 'other' 8 'unknown'	GenQ
niertran	kidney transplant	Cat / 0 'no' 1 'yes'	GenQ
trans1va	kidney transplant 1 start age (years)	Numeric	GenQ
trans1to	kidney transplant 1 stop age (years)	Numeric	GenQ
trans2va	kidney transplant 2 start age (years)	Numeric	GenQ
trans2to	kidney transplant 2 stop age (years)	Numeric	GenQ
nierpd	peritoneal dialysis	Cat / 0 'no' 1 'yes'	GenQ
pd1van	peritoneal dialysis 1 start age (years)	Numeric	GenQ
pd1tot	peritoneal dialysis 1 stop age (years)	Numeric	GenQ
pd2van	peritoneal dialysis 2 start age (years)	Numeric	GenQ
pd2tot	peritoneal dialysis 2 stop age (years)	Numeric	GenQ
nierhd	hemodialysis	Cat / 0 'no' 1 'yes'	GenQ
hd1van	hemodialysis 1 start age (years)	Numeric	GenQ
hd1tot	hemodialysis 1 stop age (years)	Numeric	GenQ
hd2van	hemodialysis 2 start age (years)	Numeric	GenQ
hd2tot	hemodialysis 2 stop age (years)	Numeric	GenQ
nierverv	renal replacement therapy	Cat / 0 'no' 1 'yes'	GenQ

4.15. Lab-based renal function

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
ALBM1	albumin (serum) [g/L]	Numeric	Blood sample
uralb	urinary albumin (mg/L)	Numeric	Urine sample
screat	serum creatinine (mg/dL)	Numeric	Blood sample
kreat2	urinary creatinine (umol/L)	Numeric	Urine sample
uacr	Urine Albumin-to-Creatinine Ratio (mg/mmol)	Numeric	Urine sample
eGFRcg	estimated glomerular filtration rate (Cockcroft-Gault)	Numeric	Blood sample
eGFRepi	estimated glomerular filtration rate (CKD-EPI)	Numeric	Blood sample
eGFRmdrd	estimated glomerular filtration rate (MDRD)	Numeric	Blood sample

4.16. Self-reported history of thyroid diseases

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
thyreod	history of thyroid disorders	Cat / 1 'yes' 2 'no'	GenQ
thysrt	type of thyroid disorders	Cat / 1 'Graves disease' 2 'hypothyroidism' 3 'hypothyroidism' 4 'other thyroid disorder' 8 'unknown'	GenQ
thyran	specification of other type of thyroid disorder (NL)	String	GenQ
thyrage	start age of thyroid disorders	Numeric	GenQ
thyrmed	using medication for thyroid disorders	Cat / 1 'yes' 2 'no'	GenQ
thyspec	treated for thyroid disorders	Cat / 1 'yes' 2 'no'	GenQ
thylast	daily impact of thyroid disorders	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ

4.17. Self-reported history of pulmonary diseases

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
astma	history of asthma or copd	Cat / 1 'yes' 2 'no'	GenQ
astastma	asthma	Cat / 0 'no' 1 'yes'	GenQ
astcopd	copd	Cat / 0 'no' 1 'yes'	GenQ
astmaage	age of diagnosis asthma/copd	Numeric	GenQ
astmamed	using medication for asthma/copd	Cat / 1 'yes' 2 'no'	GenQ
astmspec	treated or checked up by a medical specialist for asthma/copd	Cat / 1 'yes' 2 'no'	GenQ
astmlast	to which extent does the asthma/copd affect your daily life?	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ
astkgeen	no pulmonary symptoms during the past month	Cat / 0 'no' 1 'yes'	GenQ
astkben	pulmonary symptoms past month - dyspnea	Cat / 0 'no' 1 'yes'	GenQ
astkpiep	pulmonary symptoms past month - wheezing	Cat / 0 'no' 1 'yes'	GenQ
astkslym	pulmonary symptoms past month - dry coughing (no mucus secretion)	Cat / 0 'no' 1 'yes'	GenQ
astkzslm	pulmonary symptoms past month - coughing with mucus secretion	Cat / 0 'no' 1 'yes'	GenQ
astkand	pulmonary symptoms past month - other type	Cat / 0 'no' 1 'yes'	GenQ
astklan	description of other pulmonary symptoms past month	String	GenQ
astergin	pulmonary symptoms increase with physical exercise	Cat / 0 'no' 1 'yes'	GenQ
astergst	pulmonary symptoms increase with exposure to animals, dust or pollen	Cat / 0 'no' 1 'yes'	GenQ
astergms	pulmonary symptoms increase with misty weather	Cat / 0 'no' 1 'yes'	GenQ
astergnc	pulmonary symptoms increase at night	Cat / 0 'no' 1 'yes'	GenQ
astergop	pulmonary symptoms increase at waking up in the morning	Cat / 0 'no' 1 'yes'	GenQ
astergan	pulmonary symptoms increase in other situations	Cat / 0 'no' 1 'yes'	GenQ
asterand	description of other situations that increase pulmonary symptoms	String	GenQ
astaant	frequency of pulmonary symptoms	Cat / 1 'every day' 2 'every week, but not every day' 3 'every month, but not every week' 4 'less than once per month'	GenQ
koukeer	time since last cold ('verkouden')	Cat / 1 'during the past 7 days' 2 '>1 week and <1 month ago' 3 '1-6 months ago' 4 '7-12 months ago' 5 '>12 months ago'	GenQ
*	Family history of asthma		GenQ

* crude data available, but yet to be cleaned

4.18. Self-reported history of allergies

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
*	Allergies		GenQ
*	types of allergies		GenQ
*	start age of allergies		GenQ
*	using medication for allergies		GenQ
*	treated for allergies		GenQ
*	daily impact of allergies		GenQ
*	recent exposures to allergens		GenQ
*	family history of allergy		GenQ

* crude data available, but yet to be cleaned

4.19. Self-reported history of epilepsy

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
epileps	has epilepsy	Cat / 1 'yes' 2 'no'	GenQ
epilage	start age of epilepsy	Numeric	GenQ
epimed	use of medication for epilepsy	Cat / 1 'yes' 2 'no'	GenQ
epispec	treated or checked up by a medical specialist for epilepsy	Cat / 1 'yes' 2 'no'	GenQ
epilast	to which extent does the epilepsy affect your daily life	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ

4.20. Self-reported history of chronic fatigue (ME)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
me	has Chronic Fatigue Syndrome (ME)	Cat / 1 'yes' 2 'no'	GenQ
meage	start age of CFS (ME)	Numeric	GenQ
memed	use of medication for CFS (ME)	Cat / 1 'yes' 2 'no'	GenQ
mespec	treated or checked up by a medical specialist for CFS (ME)	Cat / 1 'yes' 2 'no'	GenQ
melast	to which extent does the CFS (ME) affect your daily life	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ

4.21. Health-related quality of life (SF-36)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
vfys	SF36 transformed scale scores - 1 physical functioning	Numeric	GenQ SF-36
vsoc	SF36 transformed scale scores - 2 social functioning	Numeric	GenQ SF-36
vrolfys	SF36 transformed scale scores - 3 role limitations due to physical health	Numeric	GenQ SF-36
vrolemo	SF36 transformed scale scores - 4 role limitations due to emotional problems	Numeric	GenQ SF-36
vmentgez	SF36 transformed scale scores - 5 mental health/wellbeing	Numeric	GenQ SF-36
vvital	SF36 transformed scale scores - 6 vitality	Numeric	GenQ SF-36
vpijn	SF36 transformed scale scores - 7 bodily pain	Numeric	GenQ SF-36
valggez	SF36 transformed scale scores - 8 general health perceptions	Numeric	GenQ SF-36
vgezver	SF36 transformed scale scores - 9 health change	Numeric	GenQ SF-36
vfystot	SF36 main dimension1 functional status	Numeric	GenQ SF-36
vweltot	SF36 main dimension2 wellbeing	Numeric	GenQ SF-36
valgtot	SF36 main dimension3 general evaluation	Numeric	GenQ SF-36
vgezvertot	SF36 main dimension4 health	Numeric	GenQ SF-36
PCS2	SF36 norm-based physical component summary score	Numeric	GenQ SF-36
MCS2	SF36 norm-based mental component summary score	Numeric	GenQ SF-36
PF2	SF36 norm-based scale scores - 1 physical functioning	Numeric	GenQ SF-36
SO2	SF36 norm-based scale scores - 2 social functioning	Numeric	GenQ SF-36
RP2	SF36 norm-based scale scores - 3 role limitations due to physical health	Numeric	GenQ SF-36
RE2	SF36 norm-based scale scores - 4 role limitations due to emotional problems	Numeric	GenQ SF-36
MH2	SF36 norm-based scale scores - 5 mental health/wellbeing	Numeric	GenQ SF-36
VT2	SF36 norm-based scale scores - 6 vitality	Numeric	GenQ SF-36
BP2	SF36 norm-based scale scores - 7 bodily pain	Numeric	GenQ SF-36
GH2	SF36 norm-based scale scores - 8 general health perceptions	Numeric	GenQ SF-36

4.22. Self-reported history of bone or skull damage or brain injury

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
fractuur	history of a fracture (self-reported)	Cat / 0 'no' 1 'yes'	GenQ
frobli	history of fracture (fr) lower leg (ob) left (li)	Cat / 0 'no' 1 'yes'	GenQ
frobliif	age (lf) of fracture (fr) lower leg (ob) left (li)	Numeric	GenQ
frobliro	X-ray (ro) fracture (fr) lower leg (ob) left (li)	Cat / 1 'yes' 2 'no'	GenQ
frobre	history of fracture (fr) lower leg (ob) right (re)	Cat / 0 'no' 1 'yes'	GenQ
frobrelf	age (lf) of fracture (fr) lower leg (ob) right (re)	Numeric	GenQ
frobbero	X-ray (ro) fracture (fr) lower leg (ob) right (re)	Cat / 1 'yes' 2 'no'	GenQ
frbbli	history of fracture (fr) upper leg (bb) left (li)	Cat / 0 'no' 1 'yes'	GenQ
frbbliif	age (lf) of fracture (fr) upper leg (bb) left (li)	Numeric	GenQ
frbbliro	X-ray (ro) fracture (fr) upper leg (bb) left (li)	Cat / 1 'yes' 2 'no'	GenQ
frbbre	history of fracture (fr) upper leg (bb) right (re)	Cat / 0 'no' 1 'yes'	GenQ
frbbrelf	age (lf) of fracture (fr) upper leg (bb) right (re)	Numeric	GenQ
frbbbero	X-ray (ro) fracture (fr) upper leg (bb) right (re)	Cat / 1 'yes' 2 'no'	GenQ
frhpli	history of fracture (fr) hip (hp) left (li)	Cat / 0 'no' 1 'yes'	GenQ
frhpliif	age (lf) of fracture (fr) hip (hp) left (li)	Numeric	GenQ
frhpliuro	X-ray (ro) fracture (fr) hip (hp) left (li)	Cat / 1 'yes' 2 'no'	GenQ
frhpre	history of fracture (fr) hip (hp) right (re)	Cat / 0 'no' 1 'yes'	GenQ
frhprelf	age (lf) of fracture (fr) hip (hp) right (re)	Numeric	GenQ
frhprero	X-ray (ro) fracture (fr) hip (hp) right (re)	Cat / 1 'yes' 2 'no'	GenQ
frpoli	history of fracture (fr) wrist (po) left (li)	Cat / 0 'no' 1 'yes'	GenQ
frpoliif	age (lf) of fracture (fr) wrist (po) left (li)	Numeric	GenQ
frpoliuro	X-ray (ro) of fracture (fr) wrist (po) left (li)	Cat / 1 'yes' 2 'no'	GenQ
frpore	history of fracture (fr) wrist (po) right (re)	Cat / 0 'no' 1 'yes'	GenQ
frporelf	age (lf) of fracture (fr) wrist (po) right (re)	Numeric	GenQ
frporero	X-ray (ro) of fracture (fr) wrist (po) right (re)	Cat / 1 'yes' 2 'no'	GenQ
frhali	history of fracture (fr) hand (ha) left (li)	Cat / 0 'no' 1 'yes'	GenQ
frhaliif	age (lf) of fracture (fr) hand (ha) left (li)	Numeric	GenQ
frhaliuro	X-ray (ro) of fracture (fr) hand (ha) left (li)	Cat / 1 'yes' 2 'no'	GenQ
frhare	history of fracture (fr) hand (ha) right (re)	Cat / 0 'no' 1 'yes'	GenQ
frharelf	age (lf) of fracture (fr) hand (ha) right (re)	Numeric	GenQ
frharero	X-ray (ro) of fracture (fr) hand (ha) right (re)	Cat / 1 'yes' 2 'no'	GenQ
frhabot	specification of fractured hand bone	String	GenQ
frander	other type of fracture	String	GenQ
*	physical damage in past year due to accidents		GenQ
*	type of physical damage		GenQ
*	using medication for physical damage		GenQ
*	treated for physical damage		GenQ
*	impact of physical damage on daily life		GenQ
*	history of brain or skull damage		GenQ
*	type of brain or skull damage		GenQ
*	age of brain or skull damage		GenQ
*	treated for brain or skull damage		GenQ
*	impact of brain or skull damage on daily life		GenQ
*	loss of consciousness		GenQ

* crude data available, but yet to be cleaned

4.23. Self-reported history of musculoskeletal diseases

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
artrose	presence of osteoarthritis	Cat / 1 'yes' 2 'no'	GenQ
artage	age of first symptoms of osteoarthritis	Numeric	GenQ
artmed	using medication for osteoarthritis	Cat / 1 'yes' 2 'no'	GenQ
artspec	treated or checked up by a medical specialist for osteoarthritis	Cat / 1 'yes' 2 'no'	GenQ
artlast	to which extent does the osteoarthritis affect your daily life?	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ
reuma	presence of rheumatoid arthritis or other musculoskeletal diseases	Cat / 1 'yes' 2 'no'	GenQ
reumsle	SLE	Cat / 0 'no' 1 'yes'	GenQ
reumart	rheumatoid arthritis	Cat / 0 'no' 1 'yes'	GenQ
reumjich	gout	Cat / 0 'no' 1 'yes'	GenQ
reumfib	fibromyalgia	Cat / 0 'no' 1 'yes'	GenQ
reumand	other musculoskeletal disease	Cat / 0 'no' 1 'yes'	GenQ
reuman	other musculoskeletal disease (description)	String	GenQ
reumwn	don't know what specific disease	Cat / 0 'no' 1 'yes'	GenQ
reumage	age at which first rheumatic symptoms started (years)	Numeric	GenQ
reummed	using medication for rheumatic diseases	Cat / 1 'yes' 2 'no'	GenQ
reumspec	treated by a medical specialist for rheumatic disease	Cat / 1 'yes' 2 'no'	GenQ
reumlast	to which extent does rheumatic disease affect your daily life	Cat / 1 'not at all' 2 'hardly' 3 'moderately' 4 'a lot'	GenQ
gwanarp	psoriatic arthritis	Cat / 0 'no' 1 'yes'	GenQ
gwanpsj	pseudogout	Cat / 0 'no' 1 'yes'	GenQ
gwanhem	hemochromatosis	Cat / 0 'no' 1 'yes'	GenQ
gwanbech	M. Bechterew, ankylosing spondylitis	Cat / 0 'no' 1 'yes'	GenQ
gwanpso	psoriasis	Cat / 0 'no' 1 'yes'	GenQ
gwanheup	congenital hip disorder/dysplasia	Cat / 0 'no' 1 'yes'	GenQ
gwanlokf	other local factors, like extreme knock knees, serious scoliosis	Cat / 0 'no' 1 'yes'	GenQ
gwangn	none of these musculoskeletal disorders	Cat / 0 'no' 1 'yes'	GenQ
gwanand	other musculoskeletal disease 2	Cat / 0 'no' 1 'yes'	GenQ
gewrana	other musculoskeletal disease 2 (description)	String	GenQ
gwanage	start age (years) of hemochromatosis, psoriasis, congenital hip disorder, other local factors or other musculoskeletal disease	Numeric	GenQ
gwanmed	using medication for hemochromatosis, psoriasis, congenital hip disorder, other local factors or other musculoskeletal disease	Cat / 1 'yes' 2 'no'	GenQ
gwanspec	treated by a medical specialist for hemochromatosis, psoriasis, congenital hip disorder, other local factors or other musculoskeletal disease	Cat / 1 'yes' 2 'no'	GenQ
gewrpijn	pain in/around joints during most days of the past month	Cat / 0 'no' 1 'yes'	GenQ
gwphipl	presence of hip pain left during past month	Cat / 0 'no' 1 'yes'	GenQ
gwphihr	presence of hip pain right during past month	Cat / 0 'no' 1 'yes'	GenQ
gwpknl	presence of knee pain left during past month	Cat / 0 'no' 1 'yes'	GenQ
gwpknr	presence of knee pain right during past month	Cat / 0 'no' 1 'yes'	GenQ
gwpnek	presence of neck pain during past month	Numeric	GenQ
gwrpgsc	presence of pain between the shoulder blades during past month	Numeric	GenQ
gwrglg	presence of lower back pain during past month	Numeric	GenQ
gewrpnan	presence of other joint pain during past month	String	GenQ
gwpand	description of other joint pain during past month	Numeric	GenQ
handpijn	pain in/around hands during most days of the past month	Cat / 0 'no' 1 'yes'	GenQ

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
rpip3	Pain/stiffness right hand DIP3	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpip3	Pain/stiffness left hand DIP3	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpip4	Pain/stiffness right hand DIP4	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpip4	Pain/stiffness left hand DIP4	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpip2	Pain/stiffness right hand DIP2	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpip2	Pain/stiffness left hand DIP2	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpip3	Pain/stiffness right hand PIP3	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpip5	Pain/stiffness left hand DIP5	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpip3	Pain/stiffness left hand PIP3	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpip4	Pain/stiffness right hand PIP4	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpip5	Pain/stiffness right hand DIP5	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpip4	Pain/stiffness left hand PIP4	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpip2	Pain/stiffness right hand PIP2	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpip2	Pain/stiffness left hand PIP2	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpip5	Pain/stiffness left hand PIP5	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpip5	Pain/stiffness right hand PIP5	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpimcp3	Pain/stiffness right hand MCP3	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpimcp4	Pain/stiffness right hand MCP4	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpimcp4	Pain/stiffness left hand MCP4	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpimcp3	Pain/stiffness left hand MCP3	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpimcp2	Pain/stiffness right hand MCP2	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpimcp5	Pain/stiffness right hand MCP5	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpimcp5	Pain/stiffness left hand MCP5	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpimcp2	Pain/stiffness left hand MCP2	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpiip	Pain/stiffness right hand IP	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpiip	Pain/stiffness left hand IP	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpimcp1	Pain/stiffness left hand MCP1	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpimcp1	Pain/stiffness right hand MCP1	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
rpimc1	Pain/stiffness right hand CMC1	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
lpimc1	Pain/stiffness left hand CMC1	Cat / 0 'No pain or stiffness' 1 'pain/stiffness'	GenQ
knstyfre	presence of knee stiffness right	Cat / 1 'yes, <30 minutes' 2 'yes, 30-60 minutes' 3 'yes, >60 minutes' 4 'no'	GenQ
knstyfli	presence of knee stiffness left	Cat / 1 'yes, <30 minutes' 2 'yes, 30-60 minutes' 3 'yes, >60 minutes' 4 'no'	GenQ
protknli	Prothesis (prot) Knee Left	Cat / 1 'prothesis'	Physical exam
protknre	Prothesis (prot) Knee Right	Cat / 1 'prothesis'	Physical exam
operknie	history of knee surgery (self-reported)	Cat / 1 'yes' 2 'no'	GenQ
opkkli	artificial knee left	Cat / 0 'no' 1 'yes'	GenQ
opkkliif	age at surgery (artificial knee left)	Numeric	GenQ

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
opkklire	reason of surgery (artificial knee left)	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opmenli	meniscus surgery left knee	Cat / 0 'no' 1 'yes'	GenQ
opmelilf	age at surgery (meniscus surgery left knee)	Numeric	GenQ
opmelire	reason of surgery (meniscus surgery left knee)	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opartli	arthroscopy left knee	Cat / 0 'no' 1 'yes'	GenQ
oparliif	age at surgery (arthroscopy left knee)	Numeric	GenQ
oparlire	reason of surgery (arthroscopy left knee)	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opandli	other surgery left knee	Cat / 0 'no' 1 'yes'	GenQ
opanliif	age of other surgery left knee	Numeric	GenQ
opanlire	reason of other surgery left knee	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opanlian	other surgery (description) left knee	String	GenQ
opkkre	artificial knee right	Cat / 0 'no' 1 'yes'	GenQ
opkkrelf	age at surgery (artificial knee right)	Numeric	GenQ
opkkreere	reason of surgery (artificial knee right)	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opmenre	meniscus surgery right knee	Cat / 0 'no' 1 'yes'	GenQ
opmerelf	age at surgery (meniscus surgery right knee)	Numeric	GenQ
opmerere	reason of surgery (meniscus surgery right knee)	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opartre	arthroscopy right knee	Cat / 0 'no' 1 'yes'	GenQ
oparrelf	age at surgery (arthroscopy right knee)	Numeric	GenQ
oparrere	reason of surgery (arthroscopy right knee)	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opandre	other surgery right knee	Cat / 0 'no' 1 'yes'	GenQ
opanrelf	age of other surgery right knee	Numeric	GenQ
opanrere	reason of other surgery right knee	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opanrean	other surgery (description) right knee	String	GenQ
operheup	history of hip surgery (self-reported)	Cat / 1 'yes' 2 'no'	GenQ
opkhli	artificial hip left	Cat / 0 'no' 1 'yes'	GenQ
opkhliif	age at surgery (artificial hip left)	Numeric	GenQ
opkhliire	reason of surgery (artificial hip left)	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
oparhli	arthroscopy left hip	Cat / 0 'no' 1 'yes'	GenQ
oparhlil	age at surgery (arthroscopy left hip)	Numeric	GenQ
oparhlir	reason of surgery (arthroscopy left hip)	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opanhli	other surgery left hip	Cat / 0 'no' 1 'yes'	GenQ
opanhliil	age of other surgery left hip	Numeric	GenQ
opanhliir	reason of other surgery left hip	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opanlihp	other surgery (description) left hip	String	GenQ
opkhre	artificial hip right	Cat / 0 'no' 1 'yes'	GenQ
opkhrelf	age at surgery (artificial hip right)	Numeric	GenQ
opkhreere	reason of surgery (artificial hip right)	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
oparhre	arthroscopy right hip	Cat / 0 'no' 1 'yes'	GenQ
oparhrel	age at surgery (arthroscopy right hip)	Numeric	GenQ
oparhrer	reason of surgery (arthroscopy right hip)	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opanhre	other surgery right hip	Cat / 0 'no' 1 'yes'	GenQ
opanhrel	age of other surgery right hip	Numeric	GenQ

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
opanhrrer	reason of other surgery right hip	Cat / 1 'fracture' 2 'accident or minor injury' 3 'arthrosis' 4 'RA' 5 'infection'	GenQ
opanhrehp	other surgery (description) right hip	String	GenQ
artrfam	arthrosis in family	Cat / 1 'yes' 2 'no'	GenQ
artfamva	arthrosis father	Cat / 0 'no' 1 'yes'	GenQ
artfamma	arthrosis mother	Cat / 0 'no' 1 'yes'	GenQ
artfambr	arthrosis brother	Cat / 0 'no' 1 'yes'	GenQ
artfamzs	arthrosis sister	Cat / 0 'no' 1 'yes'	GenQ
hebrfam	nodules of Heberden in family	Cat / 1 'yes' 2 'no'	GenQ
hebfamva	nodules of Heberden father	Cat / 0 'no' 1 'yes'	GenQ
hebfamma	nodules of Heberden mother	Cat / 0 'no' 1 'yes'	GenQ
hebfambr	nodules of Heberden brother	Cat / 0 'no' 1 'yes'	GenQ
hebfamzs	nodules of Heberden sister	Cat / 0 'no' 1 'yes'	GenQ
totalpain	AUSCAN hand osteoarthritis pain subscale score	Numeric	GenQ AUSCAN
totalfunction	AUSCAN hand osteoarthritis function subscale score	Numeric	GenQ AUSCAN
totalstiff	AUSCAN hand osteoarthritis stiffness subscale score	Numeric	GenQ AUSCAN
AuscanT	AUSCAN hand osteoarthritis total sumscore [SUM(totalpain, totalfunction, totalstiff)]	Numeric	GenQ AUSCAN
ksympt	KOOS knee osteoarthritis symptoms subscale score	Numeric	GenQ KOOS
kpijn	KOOS knee osteoarthritis pain subscale score	Numeric	GenQ KOOS
kadl	KOOS knee osteoarthritis function in daily living subscale score	Numeric	GenQ KOOS
ksportrec	KOOS knee osteoarthritis function in sport and recreation subscale score	Numeric	GenQ KOOS
kqol	KOOS knee osteoarthritis QOL subscale score	Numeric	GenQ KOOS

4.24. Objectively assessed osteoarthritis

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
*	MR-based Knee Osteoarthritis Scoring System (KOSS)		knee MRI
EFFUS	effusion/synovitis	Cat / 0 'absent (small, physiological sliver of synovial fluid)' 1 'small (small amount of fluid distended 1 or 2 joint recesses)' 2 'moderate (>2 joint recesses partially distended)' 3 'massive (full, marked distention of all joint recesses)'	knee MRI
BAKER	bakers cyst	Cat / 0 'absent' 1 'minimal' 2 'moderate' 3 'severe'	knee MRI
ACR_OA_hand	Hand osteoarthritis defined by criteria of the ACR	Cat / 0 'ACR hand OA no' 1 'ACR hand OA yes'	Physical exam
ACR_OA_KR	Knee osteoarthritis (Right Knee) defined by criteria of the ACR	Cat / 0 'ACR OA right knee NO' 1 'ACR OA right knee YES'	GenQ + Physical exam
ACR_OA_KL	Knee osteoarthritis (Left Knee) defined by criteria of the ACR	Cat / 0 'ACR OA left knee NO' 1 'ACR OA left knee YES'	GenQ + Physical exam
ACR_OA_knee	Knee osteoarthritis defined by criteria of the ACR	Cat / 0 'ACR OA knee NO' 1 'ACR OA right and/or left knee YES'	GenQ + Physical exam
ACRclinradOA	ACR clinical/radiographic OA (Right Knee) (MRI subgroup)	Cat / 0 'ACR clinical/radiographic OA right knee NO' 1 'YES'	GenQ + Physical exam + MRI
PF_OA_1	Structural knee OA in patellofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'Patellofemoral OA (cart defects >=1) no' 1 'Patellofemoral OA (cart defects >=1) yes'	knee MRI
PF_OA_2	Structural knee OA in patellofemoral compartment based on >=2 defects (OARSI steering committee)	Cat / 0 'Patellofemoral OA (cart defects >=2) no' 1 'Patellofemoral OA (cart defects >=2) yes'	knee MRI
FT_OA_1	Structural knee OA in tibiofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'Femorotibial OA (cart defects >=1) no' 1 'Femorotibial OA (cart defects >=1) yes'	knee MRI
FT_OA_2	Structural knee OA in tibiofemoral compartment based on >=2 defects (OARSI steering committee)	Cat / 0 'Femorotibial OA (cart defects >=2) no' 1 'Femorotibial OA (cart defects >=2) yes'	knee MRI
FTmed_OA_1	Structural knee OA in medial tibiofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'Medial femorotibial OA (cart defects >=1) no' 1 'Medial femorotibial OA (cart defects >=1) yes'	knee MRI
FTlat_OA_1	Structural knee OA in lateral tibiofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'Lateral femorotibial OA (cart defects >=1) no' 1 'Lateral femorotibial OA (cart defects >=1) yes'	knee MRI
FTmed_OA_2	Structural knee OA in medial tibiofemoral compartment based on >=2 defects (OARSI steering committee)	Cat / 0 'Medial femorotibial OA (cart defects >=2) no' 1 'Medial femorotibial OA (cart defects >=2) yes'	knee MRI
FTlat_OA_2	Structural knee OA in lateral tibiofemoral compartment based on >=2 defects (OARSI steering committee)	Cat / 0 'Lateral femorotibial OA (cart defects >=2) no' 1 'Lateral femorotibial OA (cart defects >=2) yes'	knee MRI
FTenPF_OA_1	Structural knee OA in tibiofemoral and patellofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'FT en PF OA (cart defects >=1) no' 1 'FT en PF OA (cart defects >=1) yes'	knee MRI
FTenofPF_OA_1	Structural knee OA in tibiofemoral and/or patellofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'FT and/or PF OA (cart defects >=1) no' 1 'FT and/or PF OA (cart defects >=1) yes'	knee MRI
ksympt	KOOS knee osteoarthritis symptoms subscale score	Numeric	GenQ KOOS
kpijn	KOOS knee osteoarthritis pain subscale score	Numeric	GenQ KOOS
kadl	KOOS knee osteoarthritis function in daily living subscale score	Numeric	GenQ KOOS
ksportrec	KOOS knee osteoarthritis function in sport and recreation subscale score	Numeric	GenQ KOOS
kqol	KOOS knee osteoarthritis QOL subscale score	Numeric	GenQ KOOS
totalpain	AUSCAN hand osteoarthritis pain subscale score	Numeric	GenQ AUSCAN
totalfunction	AUSCAN hand osteoarthritis function subscale score	Numeric	GenQ AUSCAN
totalstiff	AUSCAN hand osteoarthritis stiffness subscale score	Numeric	GenQ AUSCAN
AuscanT	AUSCAN hand osteoarthritis total sumscore [SUM(totalpain, totalfunction, totalstiff)]	Numeric	GenQ AUSCAN

* All individual variables for KOSS scoring system are available upon request. For further information about KOSS, see Kornaat et al. Skeletal Radiology 2005;34:95-102.

4.25. Self-reported history of osteoporosis

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
osteopor	history of osteoporosis	Cat / 1'yes' 2'no'	GenQ
osteoaage	age at which osteoporosis developed (years)	Numeric	GenQ
osteomed	using medication for osteoporosis	Cat / 1'yes' 2'no'	GenQ
ostspec	treated or checked up by a medical specialist for osteoporosis	Cat / 1'yes' 2'no'	GenQ
ostlast	to which extent does the osteoporosis affect your daily life?	Cat / 1'not at all' 2'hardly' 3'moderately' 4'a lot'	GenQ

4.26. Objectively assessed osteoporosis risk

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
WBTOT_BMD	Whole Body Bone Mineral Density [/cm2] (DEXA)	Numeric	DEXA
TOT_BMD	Bone Mineral Density Total Lumbar Spine [/cm2] (DEXA)	Numeric	DEXA
HTOT_BMD.L	Bone Mineral Density Total Hip Left [/cm2] (DEXA)	Numeric	DEXA
HTOT_BMD.R	Bone Mineral Density Total Hip Right [/cm2] (DEXA)	Numeric	DEXA
T_spine	T-score lumbar spine (DEXA)	Numeric	DEXA
T_hip	T-score total hip (DEXA)	Numeric	DEXA
T_neck	T-score femoral neck (DEXA)	Numeric	DEXA
Z_spine	Z-score lumbar spine (DEXA)	Numeric	DEXA
Z_hip	Z-score total hip (DEXA)	Numeric	DEXA
Z_neck	Z-score femoral neck (DEXA)	Numeric	DEXA
letsrug	Damaged (past year) or fractured (ever) back, created for DXA analysis	Cat / 1'yes' 0'no'	GenQ

4.27. Current medication

For ATC codes, see also https://www.whocc.no/atc_ddd_index/

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
medA02BA01	H2-RECEPTOR ANTAGONISTS cimetidine USE (A02BA01)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medA02BA02	H2-RECEPTOR ANTAGONISTS ranitidine USE (A02BA02)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medA02BC	Proton pump inhibitor use (A02BC)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medA10A	Glucose lowering: insulin use (A10A)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medA10B	Glucose lowering: oral medication (A10B)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medA10glucow	Glucose lowering medication (A10)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medA10BB	Sulfonylurea derivate use (A10BB)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medB01AA	vitamin K antagonist use (B01AA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medB01AB	heparin use (B01AB)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medB01AC	platelet aggregation inhibitor use (B01AC)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN02BA	salicylic acid and derivatives use (N02BA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC01AA5	digoxin (C01AA5)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC01B	class I / III blocking medication use (C01B)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC01BD01	amiodaron (C01BD01)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC01EB17	ivabradine (C01EB17)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medHypertension	antihypertensive drug use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC02	antihypertensives (only C02)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC02A	antihypertensives, centrally acting (C02A)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC02CA	antihypertensives, alpha blockers (C02CA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC02D	antihypertensives, direct vasodilator (C02D)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC03	Diuretics (C03)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC03AA03	Thiazide: HCT (C03AA03)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC03BA04	Thiazide: Chloortalidon (C03BA04)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC03CA01	Thiazide: Furosemide (C03CA01)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC03CA02	Thiazide: Bumetanide (C03CA01)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC03DA01	Thiazide: Spironolacton (C03DA01)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC03DA04	Thiazide: Eplerenon (C03DA04)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC03DB02	Thiazide: Triamterene (C03DB02)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC03EA01	Thiazide: Triamterene/HCT en Amiloride/HCT (C03EA01)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC03EA03	Thiazide: Triamterene/epitizide (C03EA03)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC07	beta blocker (C07)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC07A	beta blocker, plain (C07A)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC07AG	alpha and beta blocker (C07AG)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC07B	beta blocker and thiazide (C07B)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC07C	beta blocker and other diuretic (C07C)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC08	calcium channel blocker use (C08)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC08C	calcium channel blocker use - vascular effects (C08C)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
medC08D	non-dihydropyridin calcium-agonists (C08D)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC08DA01	Verapamil use (C08DA01)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC08DB01	Diltiazem use (C08DB01)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC09	ACE inhibitors / Angiotensin II antagonists (C09)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC09A	ACE inhibitors, plain (C09A)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC09B	ACE inhibitors, combinations (C09B)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC09BA	ACE inhibitors and diuretics (C09BA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC09C	Angiotensin II antagonists, plain (C09C)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC09D	Angiotensin II antagonists, combinations (C09D)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC09DA	Angiotensin II antagonists and diuretics (C09DA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC10statin	Lipid lowering: statin use (C10AA and C10BA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC10fibrate	Lipid lowering: fibrate use (C10AB)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC10AD52	Lipid lowering: nicotinic acid (C10AD52)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medC10liplow	Lipid lowering drugs (C10)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medG02CB	Prolactin Inhibitor USE (G02CB)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medG03_estratype	group of estradiol	Cat / 1'ethinylestradiol / synthetic progestagen' 2'synthetic progestagen' 3'natural estradiol' 4'natural estradiol / natural progestagen' 5'natural estradiol / synthetic progestagen' 6'natural estradiol' 7'geconjugated equine oestrogen' 8'natural progestagen' 9'synthetic progestagen' 10'natural estradiol / natural progestagen' 11'natural estradiol / synthetic progestagen'.	Medication brought to NEO visit
medG03_estraeffect	effect on measured estradiol levels	Cat / 1' suppressed' 2' increased' 3' unknown'	Medication brought to NEO visit
medG03BA03	use of testosterone (G03BA03)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medG03D	use of progestogens (G03D)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medG03XA	use of antigonadotropins (danazol) (G03XA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medG04CA	use of alpha-adrenoreceptor antagonists (G04CA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medH03A	Thyroid hormones (H03A)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medH03B	Antithyroid preparations (H03B)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medL01	Antineoplastic agent use (L01)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medL0104	Antineoplastic and immunomodulating agents (L01-L04)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medL02A	Endocrine therapy - hormones (L02A)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medL02B	Endocrine therapy - hormone antagonists (L02B)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medL03	Immunostimulants (L03)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medL04	Immunosuppressants (L04)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
nsaid	nsaid use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
nsaid_day	nsaid daily use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
ox2	cox 2 use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
cox2_day	cox2 daily use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
pcm 'paracetamol use	paracetamol use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
pcm_day	paracetamol daily use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
naproxen	naproxen use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
lumiracoxib	lumiracoxib use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medM02AA	Use of antiinflammatory preparations, non-steroids (M02AA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medM04	Use of antigout ("jicht") preparations (M04)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medM05B	Bisfosfonate use (M05B)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN02A	opioide use (N02A)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN02AA	opioide use (N02AA, morfine, oxycodon, paracodeine)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN02AB	opioide use (N02AB, fentanyl)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN02AE	opioide use (N02AE, butran pleister)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN02AX	opioide use (N02AX, tramadol, zaldiar)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN02CC	antimigraine preparations use (N02CC)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN03	Anticonvulsant use (N03)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN05A	Antipsychotic use (N05A)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN05B	Anxiolytic use (N05B)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN05CD	Benzodiazepine derivatives (N05CD)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN05CF	Benzodiazepine related drugs (N05CF)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN05CH	Melatonin receptor agonists (N05CH)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN05CM	Other hypnotics and sedatives (N05CM)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN06A	Antidepressant use (N06A)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN06AA	Tricyclic antidepressant use (TCA) (N06AA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN06AB	Selective serotonin reuptake inhibitor use (SSRI) (N06AB)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN06BA04	Psychostimulant use (N06BA04)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medN06DA	Antidementia use (N06DA)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medQTprolong	Drugs associated with QT-prolongation (diff ATC-codes)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medQTprolDEF	Definite QT-prolonging drugs (diff ATC-codes)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
medQTprolPOS	Possible QT-prolonging drugs (diff ATC-codes)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
QTprolCON_n	Number of Conditional QT-prolonging drugs	Numeric	Medication brought to NEO visit
medQTprolCON	Conditional QT-prolonging drugs (diff ATC-codes)	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
longmedicatiegebruik	lung disease medication use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
luchtwegverwijdergebruik	use of bronchodilators	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
inhalatiecorticoagebruik	use of inhaled corticosteroids	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
combicorticoagebruik	use of combination preparation containing corticosteroids	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
antiinflamgebruik	use of other anti inflammatory medicine for lung disease	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
oral_cortico	use of oral corticosteroids	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
systcorticoagebruik	use of systemic corticosteroids	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
saba	short acting beta agonists (SABA): salbutamol(ventolin) or terbutaline(bricanyl) use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
laba	long acting beta agonists (LABA): salmeterol(serevent), formoterol(atimos, foradil, oxis) use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
sama	Short acting muscarinic antagonists (SAMA): ipratropium (atrovent, ipraxa) use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
lama	Long acting muscarinic antagonists (LAMA): tiotropium (spiriva) use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
ics	inhalation corticosteroids (ICS): fluticasone (flixotide), beclomethasone (qvar), budesonide (pulmicort, larbex), ciclesonide (alvesco) use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
combi_no_ics	combination preparation without inhalation corticosteroids (ICS): fenoterol/ipratropium (berodual): R03AL01 use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
combi_ics	combination preparation with inhalation corticosteroids (ICS): salmeterol/fluticasone, formoterol/budesonide, formoterol/beclomethasone use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
leukotr_antag	leukotriene antagonist use: montelukast	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
xant	theophylline use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
mucolytic	acetylcysteine use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
antihist	antihistaminic oral	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
antihist_neus	antihistaminic nose spray	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
cortico_neus	corticosteroid nose spray	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
omalizu	omalizumab use	Cat / 0 'no' 1 'yes'	Medication brought to NEO visit
pill_med	use of contraceptives according to the medicationlist	Cat / 1 'yes' 2 'no'	Medication brought to NEO visit
hrt_med	use of hormone replacement therapy according to the medicationlist	Cat / 1 'yes' 2 'no'	Medication brought to NEO visit

5. Women's health

5.1. Menstruation

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
menstr	age of menarche (years)	Numeric	GenQ

5.2. Menopause

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
menopause	menopausal status with distinction between natural and surgical menopause	Cat / 1'postmenopausal' 2'premenopausal' 3'perimenopausal' 4'surgical menopause' 5'unknown whether natural or surgical menopause'	GenQ
menopause2	menopausal status with all postmenopausal combined	Cat / 1'postmenopausal' 2'premenopausal' 3'perimenopausal'	GenQ
menoage	age of menopause	Numeric	GenQ

5.3. Hormonal treatments and medications

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
hormone3	use of sex hormones, as taken by contraceptive pill or hrt	Cat / 1'yes, currently' 2'yes, in the past' 3'no, never' 9'no information on use of sex hormones'	GenQ
contracep3	use of hormonal contraceptive pill	Cat / 1'yes, currently' 2'yes, in the past' 3'no, never' 9'no information on hormonal contraceptive pill'	GenQ
hrt3	use of hormone replacement therapy	Cat / 1'yes, currently' 2'yes, in the past' 3'no, never' 9'no information on hrt'	GenQ
hrtplst	hrt type - transdermal patch	Numeric	GenQ
hrttbl	hrt type - pills	Numeric	GenQ
hrtcreme	hrt type - cream or gel	Numeric	GenQ
hrtother	hrt type - other type of hrt	Numeric	GenQ

5.4. Pregnancies

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
zwangnum	Number of pregnancies (incl. miscarriages)	Numeric	GenQ
kindnum	Number of liveborn children	Numeric	GenQ
*	Age of mother at birth of each liveborn child		GenQ
*	Duration of pregnancy for each liveborn child		GenQ
*	Birth weight of each liveborn child		GenQ
miskrnum	Number of miscarriages and stillborn children	Numeric	GenQ
*	Year of each miscarriage or stillbirth		GenQ
*	Duration of pregnancy for each miscarriage or stillbirth		GenQ
abprov	Ever undergone abortus provocatus	Cat / 1 'yes' 2 'no'	GenQ
abprovn	Number of times undergone abortus provocatus	Numeric	GenQ

6. Body composition

6.1. Anthropometry

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
lengtevr	self-reported height (meter)	Numeric	GenQ
gewichtvr	self-reported weight (kg)	Numeric	GenQ
gewichtm	weight at baseline (m)	Numeric	Physical exam
lengtem	height at baseline (kg)	Numeric	Physical exam
bmim	BMI (kg/m ²) at baseline	Numeric	Physical exam
middelomtrek	waist circumference (cm)	Numeric	Physical exam
heupomtrek	hip circumference (cm)	Numeric	Physical exam
WHR	waist hip ratio	Numeric	Physical exam
BSA	body surface area (m ²) according to Mosteller formula [weight (kg) × height (cm)]/3600 ^{1/2}	Numeric	Physical exam, BIA
TRUNK_LEAN	Trunk Lean Mass [mg] (DEXA)	Numeric	DEXA
TRUNK_MASS	Total Trunk Mass [mg] (DEXA)	Numeric	DEXA
WBTOT_LEAN	Whole Lean Body Mass [mg] (DEXA)	Numeric	DEXA
WBTOT_MASS	Total Body Mass [mg] (DEXA)	Numeric	DEXA
wchangehy_a	weight change in kg during the past half yr - most strict version	Numeric	GenQ
wchange5y_a	weight change in kg during the past 5 yr - most strict version	Numeric	GenQ
wchangehy_b	weight change in kg during the past half yr - medium strict version	Numeric	GenQ
wchange5y_b	weight change in kg during the past 5 yr - medium strict version	Numeric	GenQ
wchangehy_c	weight change in kg during the past half yr - least strict version	Numeric	GenQ
wchange5y_c	weight change in kg during the past 5 yr - least strict version	Numeric	GenQ
wchangehy_a_rel	% weight change during the past half yr - most strict version	Numeric	GenQ
wchange5y_a_rel	% weight change during the past 5 yr - most strict version	Numeric	GenQ
wchangehy_b_rel	% weight change during the past half yr - medium strict version	Numeric	GenQ
wchange5y_b_rel	% weight change during the past 5 yr - medium strict version	Numeric	GenQ
wchangehy_c_rel	% weight change during the past half yr - least strict version	Numeric	GenQ
wchange5y_c_rel	% weight change during the past 5 yr - least strict version	Numeric	GenQ
wchange_life	weight change in kg between age 20 and age at NEO baseline	Numeric	GenQ
wlossreasonhy	was weight loss during past half yr intentional?	Cat / 1'intentional' 2'unintentional'	GenQ
wlossreason5y	was weight loss during past 5 yr intentional?	Cat / 1'intentional' 2'unintentional'	GenQ

6.2. Body fat

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
bmim	BMI (kg/m ²) at baseline	Numeric	Physical exam
middelomtrek	waist circumference (cm)	Numeric	Physical exam
heupomtrek	hip circumference (cm)	Numeric	Physical exam
WHR	waist hip ratio	Numeric	Physical exam
rohm	bioelectrical impedance (ohm)	Numeric	Physical exam, BIA
vetpercentage	total body fat (%)	Numeric	Physical exam, BIA
fatmass	fat mass (kg)	Numeric	Physical exam, BIA
FFM	fat free mass (kg)	Numeric	Physical exam, BIA
TRUNK_LEAN	Trunk Lean Mass [mg] (DEXA)	Numeric	DEXA
WBTOT_LEAN	Whole Lean Body Mass [mg] (DEXA)	Numeric	DEXA
TRUNK_FAT	Trunk Fat Mass [mg] (DEXA)	Numeric	DEXA
TRUNK_PFAT	Trunk Total Fat Percentage [%] (DEXA)	Numeric	DEXA
WBTOT_FAT	Whole Body Fat Mass [mg] (DEXA)	Numeric	DEXA
WBTOT_PFAT	Whole Body Total Fat Percentage [%] (DEXA)	Numeric	DEXA
MSAT	Abdominal subcutaneous adipose tissue [mean, cm ²]	Numeric	abdominal MRI
MVAT	Abdominal visceral adipose tissue [mean, cm ²]	Numeric	abdominal MRI
VATSATratio	Abdominal visceral adipose tissue/subcutaneous fat adipose tissue	Numeric	abdominal MRI

6.3. Bone

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
WBTOT_BMD	Whole Body Bone Mineral Density [/cm ²] (DEXA)	Numeric	DEXA
TOT_BMD	Bone Mineral Density Total Lumbar Spine [/cm ²] (DEXA)	Numeric	DEXA
HTOT_BMD.L	Bone Mineral Density Total Hip Left [/cm ²] (DEXA)	Numeric	DEXA
HTOT_BMD.R	Bone Mineral Density Total Hip Right [/cm ²] (DEXA)	Numeric	DEXA
T_spine	T-score lumbar spine (DEXA)	Numeric	DEXA
T_hip	T-score total hip (DEXA)	Numeric	DEXA
T_neck	T-score femoral neck (DEXA)	Numeric	DEXA
Z_spine	Z-score lumbar spine (DEXA)	Numeric	DEXA
Z_hip	Z-score total hip (DEXA)	Numeric	DEXA
Z_neck	Z-score femoral neck (DEXA)	Numeric	DEXA

6.4. Water

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
vocht	total body fluid measured by BIA (kg)	Numeric	Physical exam, BIA

6.5. Hepatic triglyceride content by magnetic resonance spectroscopy (MRS) of the liver

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
TG_perc	HTGC (levervet [%])	Numeric	H-magnetic resonance spectroscopy

7. Pulmonary function

self-reported history of pulmonary diseases

>> see *Medical history*

7.1. Pulmonary function test

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
lfno1	pulm func screening: 1st NO measurement (parts per billion)	Numeric	Physical exam, pulmonary function test
lfno2	pulm func screening: 2nd NO measurement (parts per billion)	Numeric	Physical exam, pulmonary function test
lfno3	pulm func screening: 3rd NO measurement (parts per billion)	Numeric	Physical exam, pulmonary function test
lffev1p	pulm func screening: FEV1 (% predicted)	Numeric	Physical exam, pulmonary function test
lffvc	pulm func screening: FVC (% predicted)	Numeric	Physical exam, pulmonary function test
lffev1	pulm func screening: FEV1 (liter)	Numeric	Physical exam, pulmonary function test
lffvc	pulm func screening: FVC (liter)	Numeric	Physical exam, pulmonary function test
lffevfvcc	pulm func screening: FEV1 as percentage of FVC	Numeric	Physical exam, pulmonary function test
lffef2575	Forced expiratory flow at 25–75% of FVC (litres)	Numeric	Physical exam, pulmonary function test
lffef2575p	Forced expiratory flow at 25–75% of FVC (%predicted)	Numeric	Physical exam, pulmonary function test
Season	Season of pulmonary function test	Cat / 1'spring'2'summer'3'autumn'4'winter'	Physical exam, pulmonary function test

8. Cardiovascular

self-reported history of cardiovascular diseases

>> see Medical history

8.1. Measured blood pressure

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
pulse	pulse measured during blood pressure measurement (beats/min)	Numeric	Physical exam
bpsystgem	mean systolic blood pressure	Numeric	Physical exam
bpdiastgem	mean diastolic blood pressure	Numeric	Physical exam
hypertensie	hypertension (systolic bp>=140mmHg or diastolic bp>=90mmHG)	Cat / 0 'no' 1 'yes'	Physical exam

8.2. Measured ECG

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
Heartrate	Mean heart rate automatically calculated from 10sec ECGs [bpm]	Numeric	ECG
P_dur	P duration	Numeric	ECG
QRS_dur	QRS duration	Numeric	ECG
PR_int	PR interval	Numeric	ECG
QT_int	QT interval	Numeric	ECG
QTc_int	corrected QT interval	Numeric	ECG
P_axis	P axis	Numeric	ECG
T_axis	T axis	Numeric	ECG
QRS_axis	QRS axis	Numeric	ECG
mcsite.1	Site of Minnesota code 01	String	ECG
minnocode.1	Minnesota code 01	String	ECG
mcsite.2	Site of Minnesota code 02	String	ECG
minnocode.2	Minnesota code 02	String	ECG
mcsite.3	Site of Minnesota code 03	String	ECG
minnocode.3	Minnesota code 03	String	ECG
mcsite.4	Site of Minnesota code 04	String	ECG
minnocode.4	Minnesota code 04	String	ECG
mcsite.5	Site of Minnesota code 05	String	ECG
minnocode.5	Minnesota code 05	String	ECG
mcsite.6	Site of Minnesota code 06	String	ECG
minnocode.6	Minnesota code 06	String	ECG
mcsite.7	Site of Minnesota code 07	String	ECG
minnocode.7	Minnesota code 07	String	ECG
mcsite.8	Site of Minnesota code 08	String	ECG
minnocode.8	Minnesota code 08	String	ECG
mcsite.9	Site of Minnesota code 09	String	ECG
minnocode.9	Minnesota code 09	String	ECG
mcsite.10	Site of Minnesota code 10	String	ECG
minnocode.10	Minnesota code 10	String	ECG
mcsite.11	Site of Minnesota code 11	String	ECG
minnocode.11	Minnesota code 11	String	ECG
Diagnose1	ECG diagnosis1	String	ECG
Diagnose2	ECG diagnosis2	String	ECG
...	...	...	...
Diagnose24	ECG diagnosis24	String	ECG

8.3. Carotid artery intima-media thickness (IMT) (ultrasonography)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
meanIMT	mean IMT (mm)	Numeric	IMT measmt by ultrasonography
meanminIMT	mean minimum IMT (mm)	Numeric	IMT measmt by ultrasonography
meanmaxIMT	mean maximum IMT (mm)	Numeric	IMT measmt by ultrasonography
meanIMTr	mean IMT right (mm)	Numeric	IMT measmt by ultrasonography
meanIMTI	mean IMT left (mm)	Numeric	IMT measmt by ultrasonography
meanminIMTr	mean minimum IMT right (mm)	Numeric	IMT measmt by ultrasonography
meanminIMTI	mean minimum IMT left (mm)	Numeric	IMT measmt by ultrasonography
meanmaxIMTr	mean maximum IMT right (mm)	Numeric	IMT measmt by ultrasonography
meanmaxIMTI	mean maximum IMT left (mm)	Numeric	IMT measmt by ultrasonography
meanIMTCCAr135	mean IMT right (mm) measured at 135 degrees	Numeric	IMT measmt by ultrasonography
meanIMTCCAr90	mean IMT right (mm) measured at 90 degrees	Numeric	IMT measmt by ultrasonography
meanIMTCCAr180	mean IMT right (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography
meanIMTCCAI225	mean IMT left (mm) measured at 225 degrees	Numeric	IMT measmt by ultrasonography
meanIMTCCAI270	mean IMT left (mm) measured at 270 degrees	Numeric	IMT measmt by ultrasonography
meanIMTCCAI180	mean IMT left (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAr135	mean minimum IMT right (mm) measured at 135 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAr90	mean minimum IMT right (mm) measured at 90 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAr180	mean minimum IMT right (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAI225	mean minimum IMT left (mm) measured at 225 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAI270	mean minimum IMT left (mm) measured at 270 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAI180	mean minimum IMT left (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAr135	mean maximum IMT right (mm) measured at 135 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAr90	mean maximum IMT right (mm) measured at 90 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAr180	mean maximum IMT right (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAI225	mean maximum IMT left (mm) measured at 225 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAI270	mean maximum IMT left (mm) measured at 270 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAI180	mean maximum IMT left (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography

8.4. Cardiac structure and function (cardiac MRI)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
Eaccpeak	E acceleration peak [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Eaccmean	E acceleration mean [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Eaccdur	E acceleration duration [ms]	Numeric	cardiac MRI
EPFR	E peak flow rate [ml/s]	Numeric	cardiac MRI
Edecpeak	E deceleration peak [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Edecmean	E deceleration mean [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Edecdur	E deceleration duration [ms]	Numeric	cardiac MRI
Edur	E duration [ms]	Numeric	cardiac MRI
Diasvol	Diastase volume [ml]	Numeric	cardiac MRI
Diasdur	Diastase duration [ms]	Numeric	cardiac MRI
Aaccpeak	A acceleration peak [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Aaccmean	A acceleration mean [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Aaccdur	A acceleration duration [ms]	Numeric	cardiac MRI
APFR	A peak flow rate [ml/s]	Numeric	cardiac MRI
APFREDV	A peak flow rate / end diastolic volume [1/s]	Numeric	cardiac MRI
Adecpeak	A deceleration peak [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Adecmean	A deceleration mean [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Adecdur	A deceleration duration [ms]	Numeric	cardiac MRI
Adur	A duration [ms]	Numeric	cardiac MRI
EApeak	E/A peak	Numeric	cardiac MRI
EAvol	E/A volume	Numeric	cardiac MRI
LVEDvol	Left Ventricular ED Volume [ml]	Numeric	cardiac MRI
LVESvol	LV ES Volume [ml]	Numeric	cardiac MRI
LVSv	LV Stroke Volume [ml]	Numeric	cardiac MRI
LVCO	LV Cardiac Output [ml/min]	Numeric	cardiac MRI
LVEF	LV Ejection Fraction [%]	Numeric	cardiac MRI
LVMassED	LV mass ED [g]	Numeric	cardiac MRI
LVMassES	LV mass ES [g]	Numeric	cardiac MRI
RVEDvol	Right Ventricular ED Volume [ml]	Numeric	cardiac MRI
RVESvol	RV ES Volume [ml]	Numeric	cardiac MRI
RVSv	RV Stroke Volume [ml]	Numeric	cardiac MRI
RVCO	RV Cardiac Output [ml]	Numeric	cardiac MRI
RVEF	RV Ejection Fraction [%]	Numeric	cardiac MRI
polsMRI	cardiac MRI-based heart rate frequency [bpm]	Numeric	cardiac MRI

8.5. Arterial stiffness (pulse wave velocity MRI)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
PWVboog	pulse wave velocity - aortic arch	Numeric	abdominal MRI
PWVdesc	pulse wave velocity - aorta descendens	Numeric	abdominal MRI
PWVdescth	pulse wave velocity - aorta descendens thoracica	Numeric	abdominal MRI
PWVdescab	pulse wave velocity - aorta descendens abdominalis	Numeric	abdominal MRI
PWVtot	pulse wave velocity - total	Numeric	abdominal MRI

8.6. Heart rate variability (ActiHeart heart rate monitor)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
meanibi	(mean) meanibi	Numeric	ActiHeart
minibi	(mean) minibi	Numeric	ActiHeart
maxibi	(mean) maxibi	Numeric	ActiHeart
sdibi	(mean) sdibi	Numeric	ActiHeart
masnid	(mean) masnid	Numeric	ActiHeart
rmssd	(mean) rmssd	Numeric	ActiHeart
pnn50	(mean) pnn50	Numeric	ActiHeart
lfpower	(mean) lfpower	Numeric	ActiHeart
hfpower	(mean) hfpower	Numeric	ActiHeart

8.7. Abdominal aortic calcifications by DXA

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
calctot	DEXA aortic calcification L1 to L4 total (anterior + posterior)	Cat / 0 'no calcification visible' 1 'calcification ranging over length of 1 or less vertebrae' 2 'calcification ranging over length of 1-2 vertebrae' 3 'calcification ranging over length of 2-3 vertebrae' 4 'calcification ranging over length of 3-4 vertebrae'	DEXA
calcant	DEXA aortic calcification anterior	Cat / 0 'no calcification visible' 1 'calcification ranging over length of 1 or less vertebrae' 2 'calcification ranging over length of 1-2 vertebrae' 3 'calcification ranging over length of 2-3 vertebrae' 4 'calcification ranging over length of 3-4 vertebrae'	DEXA
calcpst	DEXA aortic calcification posterior	Cat / 0 'no calcification visible' 1 'calcification ranging over length of 1 or less vertebrae' 2 'calcification ranging over length of 1-2 vertebrae' 3 'calcification ranging over length of 2-3 vertebrae' 4 'calcification ranging over length of 3-4 vertebrae'	DEXA
calcpneg	DEXA aortic calcification positive or negative	Cat / 1 'positive' 2 'negative'	DEXA

8.8. Sublingual microvasculature (SDF imaging of glycocalyx)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
SDF_ValidDensity	SDF - Valid vessel density capillaries (Density 4-7)	Numeric	SDF
SDF_PreservedFlow	SDF - Preserved flow ($V(\geq 9\mu\text{m}) / V(4-7\mu\text{m})$)	Numeric	SDF
SDF_newMVHSstatic	SDF – Microvascular Health Index	Numeric	SDF
SDF_CBV4to6	SDF – Capillary Blood Volume (CBV 4–6 μm)	Numeric	
SDF_PBR4to25	SDF – Perfused Boundary Region of total vessels (PBR total 4–25 μm)	Numeric	SDF
SDF_V4to7	SDF – RBC velocity in capillaries (V 4–6 μm)	Numeric	SDF
SDF_Vgrt10	SDF – RBC velocity in feed vessels	Numeric	SDF
D4	Perfused vessel density 4 μm	Numeric	SDF
D5	Perfused vessel density 5 μm	Numeric	SDF
D6	Perfused vessel density 6 μm	Numeric	SDF
D7	Perfused vessel density 7 μm	Numeric	SDF
D8	Perfused vessel density 8 μm	Numeric	SDF
D9	Perfused vessel density 9 μm	Numeric	SDF
D10	Perfused vessel density 10 μm	Numeric	SDF
D11	Perfused vessel density 11 μm	Numeric	SDF
D12	Perfused vessel density 12 μm	Numeric	SDF
D13	Perfused vessel density 13 μm	Numeric	SDF
D14	Perfused vessel density 14 μm	Numeric	SDF
D15	Perfused vessel density 15 μm	Numeric	SDF
D16	Perfused vessel density 16 μm	Numeric	SDF
D17	Perfused vessel density 17 μm	Numeric	SDF
D18	Perfused vessel density 18 μm	Numeric	SDF
D19	Perfused vessel density 19 μm	Numeric	SDF
D20	Perfused vessel density 20 μm	Numeric	SDF
D21	Perfused vessel density 21 μm	Numeric	SDF
D22	Perfused vessel density 22 μm	Numeric	SDF
D23	Perfused vessel density 23 μm	Numeric	SDF
D24	Perfused vessel density 24 μm	Numeric	SDF
D25	Perfused vessel density 25 μm	Numeric	SDF
PBR525	Perfused boundary region of total vessels (PBR 5–25 μm)	Numeric	SDF
PBR59	Perfused boundary region of capillaries (PBR 5–9 μm)	Numeric	SDF
PBR1019	Perfused boundary region of feed vessels (PBR 10–19 μm)	Numeric	SDF
PBR2025	Perfused boundary region of small venules (PBR 20–25 μm)	Numeric	SDF
MedianP50		Numeric	SDF
RBCFilling	RBC filling percentage	Numeric	SDF

9. Metabolic syndrome

9.1. Metabolic syndrome according to ATPIII criteria

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
ATPIII_{mets}	metabolic syndrome ATPIII definition (Grundy, 2005)	Cat / 0 'no' 1 'yes'	Medication, Blood sample, Physical exam
ATPIII_{obesity}	abdominal obesity according to ATPIII	Cat / 0 'no' 1 'yes'	Medication, Blood sample, Physical exam
ATPIII_{hypertrig}	ATPIII hypertriglyceridemia	Cat / 0 'no' 1 'yes'	Medication, Blood sample, Physical exam
ATPIII_{lowhdl}	low hdl according to ATPIII	Cat / 0 'no' 1 'yes'	Medication, Blood sample, Physical exam
ATPIII_{hypertension}	hypertension according to ATPIII criteria	Cat / 0 'no' 1 'yes'	Medication, Blood sample, Physical exam
ATPIII_{glucose}	disrupted glucose metabolism according to ATPIII criteria	Cat / 0 'no' 1 'yes'	Medication, Blood sample, Physical exam

10. Mixed meal challenge

10.1. Postprandial responses of satiety and hunger

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
devmeal	protocol violations regarding the mixed meal	Cat / 0 'complete meal' 1 'no meal' 2 'half meal'	
*	postprandial visual analog scale (VAS)-assessed appetite and satiety		Satiety form

* crude data available, but yet to be cleaned

10.2. Postprandial responses glucose metabolism

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
nuchter	Fasting state at first blood sample	Cat / 0 'No, protocol violations regarding fasting' 1 'Yes, fasting state'	Registration form study visit
devmeal	protocol violations regarding the mixed meal	Cat / 0 'complete meal' 1 'no meal' 2 'half meal'	
glucose1	Fasting plasma glucose concentration (mmol/L)	Numeric	Blood sample
glucose2	Plasma glucose concentration second blood sample (mmol/L)	Numeric	Blood sample
glucose3	Plasma glucose concentration third blood sample (mmol/L)	Numeric	Blood sample
Insuline.r1	Serum insuline concentration first blood sample (mU/L) _newly measured	Cat / -1 'insulin not measureable because participant uses Novorapid/Levemir' 0,05 '<0,50'	Blood sample
insuline.r2	Serum insuline concentration second blood sample (mU/L) _calibrated	Cat / 99999 'original measurement > 300'	Blood sample
insuline.r3	Serum insuline concentration third blood sample (mU/L) _calibrated	Cat / 99999 'original measurement > 300'	Blood sample
AUCins1	AUC insulin (0-150 min)	Numeric	Blood sample
AUCgluc1	AUC glucose (0-150 min)	Numeric	Blood sample
IGI_tot	Insulinogenic Index: AUCinstot/AUCgluctot	Numeric	Blood sample
IDI_isi	Insulin Disposition index (IGI_tot*ISI_comp)	Numeric	Blood sample
ISI_comp	ISI_comp matsuda	Numeric	Blood sample
homa1B	HOMA1-%B(20*insuline.r1)/(glucose1-3.5)	Numeric	Blood sample
homa1IR	HOMA1-IR(glucose1*insuline.r1)/22.5	Numeric	Blood sample
HOMA2B	HOMA-2 B-cell function [%B], calculated by HOMA2 calculator of Oxford University	Numeric	Blood sample
HOMA2S	HOMA-2 insulin sensitivity [%S], calculated by HOMA2 calculator of Oxford University	Numeric	Blood sample
HOMA2IR	HOMA-2 Insulin Resistance, calculated by HOMA2 calculator of Oxford University	Numeric	Blood sample
ATPIIIglucose	disrupted glucose metabolism according to ATPIII criteria	Cat / 0 'no' 1 'yes'	Medication, Blood sample, Physical exam
glucmet2bl	glucose metabolism in 4 categories	Cat / 1 'IFG 6.1-7.0 mmol/L' 2 'self-reported DM I or II or medication' 3 'fasting plasma glucose >=7.0 mmol/L' 0 'no DM or IFG at baseline'	Medication, Blood sample

10.3. Postprandial responses triglycerides

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
nuchter	Fasting state at first blood sample	Cat / 0 'No, protocol violations regarding fasting' 1 'Yes, fasting state'	Registration form study visit
devmeal	protocol violations regarding the mixed meal	Cat / 0 'complete meal' 1 'no meal' 2 'half meal'	
trig1	fasting serum concentration triglycerides (mmol/L)	Numeric	Blood sample
trig2	30 min postprandial serum concentration triglycerides (mmol/L)	Numeric	Blood sample
trig3	2,5 hour postprandial serum concentration triglycerides (mmol/L)	Numeric	Blood sample

10.4. Postprandial responses metabolites

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
nuchter	Fasting state at first blood sample	Cat / 0 'No, protocol violations regarding fasting' 1 'Yes, fasting state'	Registration form study visit
devmeal	protocol violations regarding the mixed meal	Cat / 0 'complete meal' 1 'no meal' 2 'half meal'	
*	Brainshake 150 min postprandial metabolites		Blood sample
*	Brainshake Postprandial metabolite response: absolute difference		Blood sample
*	Brainshake Postprandial metabolite response: relative difference (%)		Blood sample
**	Biocrates 150 min postprandial metabolites		Blood sample
**	Biocrates Postprandial metabolite response: absolute difference		Blood sample
**	Biocrates Postprandial metabolite response: relative difference (%)		Blood sample

* Brainshake's Biomarker Analysis Platform; outcomes available for > 200 metabolites, with the exception of Pyruvate, Glycerol, Glycine, Acetoacetate, Urea.

** Biocrates AbsoluteIDQ p150 metabolomics kit; outcomes available for 150 metabolites.

11. Mental health

11.1. Health-related quality of life (SF-36)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
vfys	SF36 transformed scale scores - 1 physical functioning	Numeric	GenQ SF-36
vsoc	SF36 transformed scale scores - 2 social functioning	Numeric	GenQ SF-36
vrolfys	SF36 transformed scale scores - 3 role limitations due to physical health	Numeric	GenQ SF-36
vrolemo	SF36 transformed scale scores - 4 role limitations due to emotional problems	Numeric	GenQ SF-36
vmentgez	SF36 transformed scale scores - 5 mental health/wellbeing	Numeric	GenQ SF-36
vvital	SF36 transformed scale scores - 6 vitality	Numeric	GenQ SF-36
vpijn	SF36 transformed scale scores - 7 bodily pain	Numeric	GenQ SF-36
valgge	SF36 transformed scale scores - 8 general health perceptions	Numeric	GenQ SF-36
vgezver	SF36 transformed scale scores - 9 health change	Numeric	GenQ SF-36
vfystot	SF36 main dimension1 functional status	Numeric	GenQ SF-36
vweltot	SF36 main dimension2 wellbeing	Numeric	GenQ SF-36
valgtot	SF36 main dimension3 general evaluation	Numeric	GenQ SF-36
vgezvertot	SF36 main dimension4 health	Numeric	GenQ SF-36
PCS2	SF36 norm-based physical component summary score	Numeric	GenQ SF-36
MCS2	SF36 norm-based mental component summary score	Numeric	GenQ SF-36
PF2	SF36 norm-based scale scores - 1 physical functioning	Numeric	GenQ SF-36
SO2	SF36 norm-based scale scores - 2 social functioning	Numeric	GenQ SF-36
RP2	SF36 norm-based scale scores - 3 role limitations due to physical health	Numeric	GenQ SF-36
RE2	SF36 norm-based scale scores - 4 role limitations due to emotional problems	Numeric	GenQ SF-36
MH2	SF36 norm-based scale scores - 5 mental health/wellbeing	Numeric	GenQ SF-36
VT2	SF36 norm-based scale scores - 6 vitality	Numeric	GenQ SF-36
BP2	SF36 norm-based scale scores - 7 bodily pain	Numeric	GenQ SF-36
GH2	SF36 norm-based scale scores - 8 general health perceptions	Numeric	GenQ SF-36

11.2. Anxiety questionnaire (BAI)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
BAI_total_score	Beck Anxiety Inventory Total Score (Range 0-63)	Numeric	GenQ, BAI

11.3. Depression questionnaire (IDS)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
IDS_total_score	Inventory of Depressive Symptomatology Total Score (Range 0-84)	Numeric	GenQ, IDS

11.4. Life events questionnaire (brugha)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
*	Brugha Life Threatening Experiences Questionnaire		GenQ, Brugha
LTEQ_totaal	Total number of stressful life events in last year (List of Threatening Experiences)	Numeric	GenQ, Brugha
LTEQ_cat		Cat /	GenQ, Brugha

* crude data available, but yet to be cleaned and available on request

11.5. Weight perception

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
wopinon	how do you regard your own weight?	Cat / 1 'too light' 2 '(approximately) good' 3 'a little too heavy' 4 'much too heavy'	GenQ
wimportance	how important is weight watching to you?	Cat / 1 'very unimportant' 2 'unimportant' 3 'neutral' 4 'important' 5 'very important'	GenQ

11.6. Brief Illness Perception Questionnaire [IPQ] for overweight

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
*	Brief Illness Perception Questionnaire [IPQ] for overweight		GenQ, IPQ
gewoorz1clean	self-reported causes of (over)weight – cause 1	String	GenQ, IPQ
gewoorz2clean	self-reported causes of (over)weight – cause 2	String	GenQ, IPQ
gewoorz3clean	self-reported causes of (over)weight – cause 3	String	GenQ, IPQ

12. Sleep

12.1. Eppworth Sleep questionnaire

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
Total_ESS	Total Epworth Sleepiness Scale	Numeric	GenQ, ESS
EDS	Epworth Disturbance Score	Numeric	GenQ, ESS

12.2. Pittsburgh Sleep questionnaire

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
sleepduration	sleepduration in hours and minutes	Numeric	GenQ, PSQI
bedtijd	time going to bed in hours and minutes	Date	GenQ, PSQI
opstatijd	time getting up in hours and minutes	Date	GenQ, PSQI
tijd_in_bed	total time in bed	Numeric	GenQ, PSQI
slaapefficiëntie	sleep efficiency	Numeric	GenQ, PSQI
pitts_comp1tot	PSQI component 1 score - subjective sleep quality	Numeric	GenQ, PSQI
pitts_comp2tot	PSQI component 2 score - sleep latency	Numeric	GenQ, PSQI
pitts_comp3tot	PSQI component 3 score - sleep duration	Numeric	GenQ, PSQI
pitts_comp4tot	PSQI component 4 score - habitual sleep efficiency	Numeric	GenQ, PSQI
pitts_comp5tot	PSQI component 5 score - sleep disturbances	Numeric	GenQ, PSQI
pitts_comp6tot	PSQI component 6 score - use of sleeping medication	Numeric	GenQ, PSQI
pitts_comp7tot	PSQI component 7 score - daytime dysfunction	Numeric	GenQ, PSQI
Pittstotal	PSQI composite score	Numeric	GenQ, PSQI

12.3. Berlin Sleep questionnaire

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
Ber_cat1	Berlin questionnaire for obstructive sleep apnea - category 1 score	Numeric	GenQ, Berlin Sleep Q
Ber_cat2	Berlin questionnaire for obstructive sleep apnea - category 2 score	Numeric	GenQ, Berlin Sleep Q
Ber_cat3	Berlin questionnaire for obstructive sleep apnea - category 3 score	Numeric	GenQ, Berlin Sleep Q
Ber_cat1_pos	Berlin questionnaire for obstructive sleep apnea - category 1 positive	Cat / 0 'no' 1 'yes'	GenQ, Berlin Sleep Q
Ber_cat2_pos	Berlin questionnaire for obstructive sleep apnea - category 2 positive	Cat / 0 'no' 1 'yes'	GenQ, Berlin Sleep Q
Ber_cat3_pos	Berlin questionnaire for obstructive sleep apnea - category 3 positive	Cat / 0 'no' 1 'yes'	GenQ, Berlin Sleep Q
Ber_highrisk	Berlin questionnaire - high risk for obstructive sleep apnea	Cat / 0 'no' 1 'yes'	GenQ, Berlin Sleep Q

12.4. Sleep duration measured by ActiWatch actigraphy

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
TB	Time in bed	Date	Actiwatch
ActualST	Actual sleep time	Date	Actiwatch
SE	Sleep efficiency	Numeric	Actiwatch
SL	Sleep latency	Date	Actiwatch
FI	Fragmentation Index	Numeric	Actiwatch

13. Radiology

13.1. MRI knee

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
*	MR-based Knee Osteoarthritis Scoring System (KOSS)		knee MRI
EFFUS	effusion/synovitis	Cat / 0 'absent (small, physiological sliver of synovial fluid)' 1 'small (small amount of fluid distended 1 or 2 joint recesses)' 2 'moderate (>2 joint recesses partially distended)' 3 'massive (full, marked distention of all joint recesses)'	knee MRI
BAKER	bakers cyst	Cat / 0 'absent' 1 'minimal' 2 'moderate' 3 'severe'	knee MRI
PF_OA_1	Structural knee OA in patellofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'Patellofemoral OA (cart defects >=1)' no' 1 'Patellofemoral OA (cart defects >=1)' yes'	knee MRI
PF_OA_2	Structural knee OA in patellofemoral compartment based on >=2 defects (OARSI steering committee)	Cat / 0 'Patellofemoral OA (cart defects >=2)' no' 1 'Patellofemoral OA (cart defects >=2)' yes'	knee MRI
FT_OA_1	Structural knee OA in tibiofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'Femorotibial OA (cart defects >=1)' no' 1 'Femorotibial OA (cart defects >=1)' yes'	knee MRI
FT_OA_2	Structural knee OA in tibiofemoral compartment based on >=2 defects (OARSI steering committee)	Cat / 0 'Femorotibial OA (cart defects >=2)' no' 1 'Femorotibial OA (cart defects >=2)' yes'	knee MRI
FTmed_OA_1	Structural knee OA in medial tibiofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'Medial femorotibial OA (cart defects >=1)' no' 1 'Medial femorotibial OA (cart defects >=1)' yes'	knee MRI
FTlat_OA_1	Structural knee OA in lateral tibiofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'Lateral femorotibial OA (cart defects >=1)' no' 1 'Lateral femorotibial OA (cart defects >=1)' yes'	knee MRI
FTmed_OA_2	Structural knee OA in medial tibiofemoral compartment based on >=2 defects (OARSI steering committee)	Cat / 0 'Medial femorotibial OA (cart defects >=2)' no' 1 'Medial femorotibial OA (cart defects >=2)' yes'	knee MRI
FTlat_OA_2	Structural knee OA in lateral tibiofemoral compartment based on >=2 defects (OARSI steering committee)	Cat / 0 'Lateral femorotibial OA (cart defects >=2)' no' 1 'Lateral femorotibial OA (cart defects >=2)' yes'	knee MRI
FTenPF_OA_1	Structural knee OA in tibiofemoral and patellofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'FT en PF OA (cart defects >=1)' no' 1 'FT en PF OA (cart defects >=1)' yes'	knee MRI
FTenofPF_OA_1	Structural knee OA in tibiofemoral and/or patellofemoral compartment based on >=1 defects (OARSI steering committee)	Cat / 0 'FT and/or PF OA (cart defects >=1)' no' 1 'FT and/or PF OA (cart defects >=1)' yes'	knee MRI

* All individual variables for KOSS scoring system are available upon request. For further information about KOSS, see Kornaat et al. Skeletal Radiology 2005;34:95-102.

13.2. MRI abdomen: subcutaneous and visceral fat

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
MSAT	Abdominal subcutaneous adipose tissue [mean, cm2]	Numeric	abdominal MRI
MVAT	Abdominal visceral adipose tissue [mean, cm2]	Numeric	abdominal MRI
VATSATratio	Abdominal visceral adipose tissue/subcutaneous fat adipose tissue	Numeric	abdominal MRI

13.3. MRI heart: cardiac structure and function

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
Eaccpeak	E acceleration peak [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Eaccmean	E acceleration mean [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Eaccdur	E acceleration duration [ms]	Numeric	cardiac MRI
EPFR	E peak flow rate [ml/s]	Numeric	cardiac MRI
Edecpeak	E deceleration peak [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Edecmean	E deceleration mean [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Edecdur	E deceleration duration [ms]	Numeric	cardiac MRI
Edur	E duration [ms]	Numeric	cardiac MRI
Diasvol	Diastase volume [ml]	Numeric	cardiac MRI
Diasdur	Diastase duration [ms]	Numeric	cardiac MRI
Aaccpeak	A acceleration peak [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Aaccmean	A acceleration mean [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Aaccdur	A acceleration duration [ms]	Numeric	cardiac MRI
APFR	A peak flow rate [ml/s]	Numeric	cardiac MRI
APFREDV	A peak flow rate / end diastolic volume [1/s]	Numeric	cardiac MRI
Adecpeak	A deceleration peak [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Adecmean	A deceleration mean [ml/s ² *10 ⁻³]	Numeric	cardiac MRI
Adecdur	A deceleration duration [ms]	Numeric	cardiac MRI
Adur	A duration [ms]	Numeric	cardiac MRI
EApeak	E/A peak	Numeric	cardiac MRI
EAvol	E/A volume	Numeric	cardiac MRI
LVEDvol	Left Ventricular ED Volume [ml]	Numeric	cardiac MRI
LVESvol	LV ES Volume [ml]	Numeric	cardiac MRI
LVSv	LV Stroke Volume [ml]	Numeric	cardiac MRI
LVCO	LV Cardiac Output [ml/min]	Numeric	cardiac MRI
LVEF	LV Ejection Fraction [%]	Numeric	cardiac MRI
LVMassED	LV mass ED [g]	Numeric	cardiac MRI
LVMassES	LV mass ES [g]	Numeric	cardiac MRI
RVEDvol	Right Ventricular ED Volume [ml]	Numeric	cardiac MRI
RVESvol	RV ES Volume [ml]	Numeric	cardiac MRI
RVSv	RV Stroke Volume [ml]	Numeric	cardiac MRI
RVCO	RV Cardiac Output [ml]	Numeric	cardiac MRI
RVEF	RV Ejection Fraction [%]	Numeric	cardiac MRI
polsMRI	cardiac MRI-based heart rate frequency [bpm]	Numeric	cardiac MRI

13.4. MRI pulse wave velocity: arterial stiffness

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
PWVboog	pulse wave velocity - aortic arch	Numeric	abdominal MRI
PWVdesc	pulse wave velocity - aorta descendens	Numeric	abdominal MRI
PWVdescth	pulse wave velocity - aorta descendens thoracica	Numeric	abdominal MRI
PWVdescab	pulse wave velocity - aorta descendens abdominalis	Numeric	abdominal MRI
PWVtot	pulse wave velocity - total	Numeric	abdominal MRI

13.5. MRS of the liver: hepatic triglyceride content

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
TG_perc	HTGC (levervet [%])	Numeric	H-magnetic resonance spectroscopy

13.6. ultrasonography: carotid artery intima-media thickness (IMT)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
meanIMT	mean IMT (mm)	Numeric	IMT measmt by ultrasonography
meanminIMT	mean minimum IMT (mm)	Numeric	IMT measmt by ultrasonography
meanmaxIMT	mean maximum IMT (mm)	Numeric	IMT measmt by ultrasonography
meanIMTr	mean IMT right (mm)	Numeric	IMT measmt by ultrasonography
meanIMTI	mean IMT left (mm)	Numeric	IMT measmt by ultrasonography
meanminIMTr	mean minimum IMT right (mm)	Numeric	IMT measmt by ultrasonography
meanminIMTI	mean minimum IMT left (mm)	Numeric	IMT measmt by ultrasonography
meanmaxIMTr	mean maximum IMT right (mm)	Numeric	IMT measmt by ultrasonography
meanmaxIMTI	mean maximum IMT left (mm)	Numeric	IMT measmt by ultrasonography
meanIMTCCAr135	mean IMT right (mm) measured at 135 degrees	Numeric	IMT measmt by ultrasonography
meanIMTCCAr90	mean IMT right (mm) measured at 90 degrees	Numeric	IMT measmt by ultrasonography
meanIMTCCAr180	mean IMT right (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography
meanIMTCCAI225	mean IMT left (mm) measured at 225 degrees	Numeric	IMT measmt by ultrasonography
meanIMTCCAI270	mean IMT left (mm) measured at 270 degrees	Numeric	IMT measmt by ultrasonography
meanIMTCCAI180	mean IMT left (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAr135	mean minimum IMT right (mm) measured at 135 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAr90	mean minimum IMT right (mm) measured at 90 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAr180	mean minimum IMT right (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAI225	mean minimum IMT left (mm) measured at 225 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAI270	mean minimum IMT left (mm) measured at 270 degrees	Numeric	IMT measmt by ultrasonography
meanminIMTCCAI180	mean minimum IMT left (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAr135	mean maximum IMT right (mm) measured at 135 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAr90	mean maximum IMT right (mm) measured at 90 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAr180	mean maximum IMT right (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAI225	mean maximum IMT left (mm) measured at 225 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAI270	mean maximum IMT left (mm) measured at 270 degrees	Numeric	IMT measmt by ultrasonography
meanmaxIMTCCAI180	mean maximum IMT left (mm) measured at 180 degrees	Numeric	IMT measmt by ultrasonography

13.7. Abdominal aortic calcifications by DXA

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
calctot	DEXA aortic calcification L1 to L4 total (anterior + posterior)	Cat / 0 'no calcification visible' 1 'calcification ranging over length of 1 or less vertebrae' 2 'calcification ranging over length of 1-2 vertebrae' 3 'calcification ranging over length of 2-3 vertebrae' 4 'calcification ranging over length of 3-4 vertebrae'	DEXA
calcant	DEXA aortic calcification anterior	Cat / 0 'no calcification visible' 1 'calcification ranging over length of 1 or less vertebrae' 2 'calcification ranging over length of 1-2 vertebrae' 3 'calcification ranging over length of 2-3 vertebrae' 4 'calcification ranging over length of 3-4 vertebrae'	DEXA
calcpst	DEXA aortic calcification posterior	Cat / 0 'no calcification visible' 1 'calcification ranging over length of 1 or less vertebrae' 2 'calcification ranging over length of 1-2 vertebrae' 3 'calcification ranging over length of 2-3 vertebrae' 4 'calcification ranging over length of 3-4 vertebrae'	DEXA
calcpstneg	DEXA aortic calcification positive or negative	Cat / 1 'positive' 2 'negative'	DEXA

13.8. vertebral fracture assessment (VFA) by DXA

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
VFATh4	Vertebral Fracture Assessment (VFA) by DXA at level Th4	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFATh5	VFA at level Th5	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFATh6	VFA at level Th6	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFATh7	VFA at level Th7	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFATh8	VFA at level Th8	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFATh9	VFA at level Th9	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFATh10	VFA at level Th10	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFATh11	VFA at level Th11	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFATh12	VFA at level Th12	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFAL1	VFA at level L1	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFAL2	VFA at level L2	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFAL3	VFA at level L3	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA
VFAL4	VFA at level L4	Cat / 0 'normal, no fracture' 1 'mild, Genant grade 1' 2 'moderate, Genant grade 2' 3 'severe, Genant grade 3' 4 'absent, wervels niet goed afgrensbaar'	DEXA

13.9. Objectively assessed osteoporosis risk by DXA

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
WBTOT_BMD	Whole Body Bone Mineral Density [/cm2] (DEXA)	Numeric	DEXA
TOT_BMD	Bone Mineral Density Total Lumbar Spine [/cm2] (DEXA)	Numeric	DEXA
HTOT_BMD.L	Bone Mineral Density Total Hip Left [/cm2] (DEXA)	Numeric	DEXA
HTOT_BMD.R	Bone Mineral Density Total Hip Right [/cm2] (DEXA)	Numeric	DEXA
T_spine	T-score lumbar spine (DEXA)	Numeric	DEXA
T_hip	T-score total hip (DEXA)	Numeric	DEXA
T_neck	T-score femoral neck (DEXA)	Numeric	DEXA
Z_spine	Z-score lumbar spine (DEXA)	Numeric	DEXA
Z_hip	Z-score total hip (DEXA)	Numeric	DEXA
Z_neck	Z-score femoral neck (DEXA)	Numeric	DEXA
letsrug	Damaged (past year) or fractured (ever) back, created for DXA analysis	Cat / 1'yes' 0'no'	GenQ

14. Urine sample

14.1. Parameters measured in morning spot urine

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
kreat2	urinary creatinine (umol/L)	Numeric	Urine sample
uralb	urinary albumin (mg/L)	Numeric	Urine sample
uacr	Urine Albumin-to-Creatinine Ratio (mg/mmol)	Numeric	Urine sample

14.2. Parameters measured in 24-h urine

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
CHLR24hur	CHLOOR in 24-h-urine [mmol/L]	Numeric	Urine sample*
KALI24hur	KALIUM in 24-h-urine [mmol/L]	Numeric	Urine sample*
NATR24hur	KALIUM in 24-h-urine [mmol/L]	Numeric	Urine sample*
UREA24hur	UREA in 24-h-urine [mmol/L]	Numeric	Urine sample*
Stikstof	Nitrogen level in urine [g/100ml]	Numeric	Urine sample*
TLHQSO31	TLHQ-SO3-1, Normalised against creatinine (nmol/mmol)	Numeric	Urine sample*
TLHQGLU1	TLHQ-GLU-1, Normalised against creatinine (nmol/mmol)	Numeric	Urine sample*
TLHQGLU2	TLHQ-GLU-2, Normalised against creatinine (nmol/mmol)	Numeric	Urine sample*
CEHC SO31	CEHC-SO3-1, Normalised against creatinine (nmol/mmol)	Numeric	Urine sample*
CEHCGLU1	CEHC-GLU-1, Normalised against creatinine (nmol/mmol)	Numeric	Urine sample*
CEHCGLU2	CEHC-GLU-2, Normalised against creatinine (nmol/mmol)	Numeric	Urine sample*
TP_gL	total urinary protein (g/L)	Numeric	Urine sample*
creat_mmol_L	urinary creatinine (mmol/L)	Numeric	Urine sample*
B2M_ug_L	beta-2-microglobulin (ug/L), LOD = 150 ug/L, LLoQ = 200 ug/L	Numeric	Urine sample*
Osmo_mOsmol_kg	osmolality (mOsmol/kg)	Numeric	Urine sample*
IGFBP7_TELLPGDR_pmol_L	Quantifying peptide for IGFBP7 concentration quantitation (pmol/L)	Numeric	Urine sample*
DNLA IQTR_pmol_L	Qualifier peptide IGFBP7 (pmol/L)	Numeric	Urine sample*
ITVVDALHEIPVK_pmol_L	Qualifier peptide IGFBP7 (pmol/L)	Numeric	Urine sample*
NGAL_ITLGYR_pmol_L	Quantifying peptide for NGAL concentration quantitation (pmol/L)	Numeric	Urine sample*
SYPLT SYLVR_pmol_L	Qualifier peptide NGAL (pmol/L)	Numeric	Urine sample*
VPLQQ_pmol_L	Qualifier peptide NGAL (pmol/L)	Numeric	Urine sample*
TIMP2_EYLIAGK_pmol_L	Quantifying peptide for TIMP2 concentration quantitation (pmol/L)	Numeric	Urine sample*
IQYEIK_pmol_L	Qualifier peptide TIMP2 (pmol/L)	Numeric	Urine sample*
FFAccmIK_pmol_L	Qualifier peptide TIMP2 (pmol/L)	Numeric	Urine sample*
KIM1_pmol_L	Quantifying peptide for KIM-1 concentration quantitation (pmol/L)	Numeric	Urine sample*
KIM1_GWDFMK_pmol_L	Qualifier peptide KIM-1 (pmol/L)	Numeric	Urine sample*
Cubilin_EQAGEPK_AU	Quantifying peptide for Cubilin concentration quantitation Arbitrary units)	Numeric	Urine sample*
Uromodulin_YFIQDR_AU	Quantifying peptide for Uromodulin concentration quantitation (AU)	Numeric	Urine sample*
Uromodulin_TLDEYWR_AU	Qualifier peptide UMOD (AU)	Numeric	Urine sample*
Calbindin_AU	Quantifying peptide for Calbindin concentration quantitation (AU)	Numeric	Urine sample*
SLC22A2_pmol_L	Quantifying peptide for SLC22A2 concentration quantitation (pmol/L)	Numeric	Urine sample*
Nephrin_pmol_L	Quantifying peptide for Nephrin concentration quantitation (pmol/L)	Numeric	Urine sample*
CXCL9_pmol_L	Quantifying peptide for CXCL9 concentration quantitation (pmol/L)	Numeric	Urine sample*
TGFbeta1_AU	Quantifying peptide for TGF-beta1 concentration quantitation (AU)	Numeric	Urine sample*

* measurements are done in selection of samples

15. Blood parameters

15.1. Parameters measured in fasting blood sample

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
nuchter	Fasting state at first blood sample	Cat / 0 'No, protocol violations regarding fasting' 1 'Yes, fasting state'	Registration form study visit
glucose1	Fasting plasma glucose concentration (mmol/L)	Numeric	Blood sample
Insuline.r1	Serum insuline concentration first blood sample (mU/L) _newly measured	Cat / -1 'insulin not measureable because participant uses Novorapid/Levemir' 0,05 '<0,50'	Blood sample
HBA1C	Glycated hemoglobin A1C (%)	Numeric	Blood sample
choltot1	fasting serum concentration total cholesterol (mmol/L)	Numeric	Blood sample
trig1	fasting serum concentration triglycerides (mmol/L)	Numeric	Blood sample
hdlc1	fasting serum concentration hdl cholesterol (mmol/L)	Numeric	Blood sample
cholhdlr1	fasting serum concentration total cholesterol hdl ratio	Numeric	Blood sample
fldl1	fasting ldl cholesterol calculated with Friedewald formula	Numeric	Blood sample
ALBM1	albumin (serum) [g/L]	Numeric	Blood sample
screat	serum creatinine (mg/dL)	Numeric	Blood sample
VitD25OH1_cal	Vitamine D 25(OH) [nmol/L], calibrated to LC-MS/MS method	Numeric	Blood sample
calcialb	Calcium (corr. Albumin) [mmol/L]	Numeric	Blood sample
calcium1	Calcium [mmol/L]	Numeric	Blood sample
natrium	sodium [mmol/L]	Numeric	Blood sample
kalium	potassium [mmol/L]	Numeric	Blood sample
urizuur	uric acid [mmol/L]	Numeric	Blood sample
hsCRP.1	hsCRP.1: hsCRP [mg/L]	Cat / 0,05 '<0,1' 20,05 '>20,00'	Blood sample
ASAT1	Aspartate transaminase (U/L)	Numeric	Blood sample
ALAT1	Alanine transaminase (U/L)	Numeric	Blood sample
leptin	serum leptin concentration (ug/L)	Cat / -1 'no sample received' 0.5 '<lower than the detection limit of 0.8 mg/L'	Blood sample
adiponectin	serum adiponectin concentration (mg/L)	Cat / -1 'no sample received' 0.5 '<lower than the detection limit of 0.7 mg/L'	Blood sample
CETP	cholesteryl ester transfer protein CETP [ug/ml]	Numeric	Blood sample
HCT	hematocrit	Numeric	Blood sample
HB	hemoglobin	Numeric	Blood sample
MCV	MCV	Numeric	Blood sample
MCHC	MCHC	Numeric	Blood sample
MCH	MCH	Numeric	Blood sample
LEUKO	leukocytes	Numeric	Blood sample
ERYT	erythrocytes	Numeric	Blood sample
TROMBO	thrombocytes	Numeric	Blood sample
RDW_CV	RDW-CV	Numeric	Blood sample
PDW	PDW	Numeric	Blood sample
MPV	MPV	Numeric	Blood sample
FIX	Factor IX activity [%]	Numeric	Blood sample
FVIII	Factor VIII activity [%]	Numeric	Blood sample
FXI	Factor XI activity [%]	Numeric	Blood sample
Fib	Fibrinogen [mg/dL]	Numeric	Blood sample
gGT	gamma GT (U/L)	Numeric	Blood sample
SHBG	SHBG (nmol/L)	Numeric	Blood sample
Estradiol	Estradiol (pmol/L)	Numeric	Blood sample

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
Estron	Estron (pmol/L)	Numeric	Blood sample
TES	Testosterone (nmol/L)	Numeric	Blood sample
OHP	17-hydroxyprogesteron (ook wel 17OHP) (nmol/L)	Numeric	Blood sample
Adion	Androsteendion (nmol/L)	Numeric	Blood sample
DOCL11	11-deoxycortisol (nmol/L)	Numeric	Blood sample
DOCCSN	11-deoxycorticosteron (nmol/L)	Numeric	Blood sample
Cortison	cortison (nmol/L)	Numeric	Blood sample
Cortisol	cortisol (nmol/L)	Numeric	Blood sample
CCSN	corticosteron (nmol/L)	Numeric	Blood sample
DOCL21	21-deoxycortisol (nmol/L)	Numeric	Blood sample
ApoanmolLLFLEP	Apo(a) nmol/L LFLEP	Numeric	Blood sample
ApoA1gLAKPAL	ApoA-I g/L AKPAL	Numeric	Blood sample
ApoAIIimgLSPELQ	ApoA-II mg/L SPELQ	Numeric	Blood sample
ApoAIVmgLLEPYA	ApoA-IV mg/L LEPYA	Numeric	Blood sample
ApoAIVmgLSLAPY	ApoA-IV mg/L SLAPY	Numeric	Blood sample
ApoBgLTGISP	ApoB g/L TGISP	Numeric	Blood sample
ApoCIimgLEFGNT	ApoC-I mg/L EFGNT	Numeric	Blood sample
ApoCIIimgLESLSS	ApoC-II mg/L ESLSS	Numeric	Blood sample
ApoCIIIimgLGWVTD	ApoC-III mg/L GWVTD	Numeric	Blood sample
ApoEmgLSELEE	ApoE mg/L SELEE	Numeric	Blood sample
ApoEPhenotype	ApoE Phenotype	String	Blood sample

15.2. Parameters measured in postprandial blood sample (30 and/or 150 min after mixed meal)

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
devmeal	protocol violations regarding the mixed meal	Cat / 0 'complete meal' 1 'no meal' 2 'half meal'	
glucose2	Plasma glucose concentration second blood sample (mmol/L)	Numeric	Blood sample
glucose3	Plasma glucose concentration third blood sample (mmol/L)	Numeric	Blood sample
insuline.r2	Serum insuline concentration second blood sample (mU/L) _calibrated	Cat / 99999 'original measurement > 300'	Blood sample
insuline.r3	Serum insuline concentration third blood sample (mU/L) _calibrated	Cat / 99999 'original measurement > 300'	Blood sample
trig2	30 min postprandial serum concentration triglycerides (mmol/L)	Numeric	Blood sample
trig3	2,5 hour postprandial serum concentration triglycerides (mmol/L)	Numeric	Blood sample
AUCins1	AUC insulin (0-150 min)	Numeric	Blood sample
AUCgluc1	AUC glucose (0-150 min)	Numeric	Blood sample
IGI_tot	Insulinogenic Index: AUCinstot/AUCgluctot	Numeric	Blood sample
IDI_isi	Insulin Disposition index (IGI_tot*ISI_comp)	Numeric	Blood sample
ISI_comp	ISI_comp matsuda	Numeric	Blood sample

16. Clinical Endpoints

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
visitdd	date of baseline study visit	Date	registration NEO site
eind2 / eind2s	reason end of follow-up	Cat / 1 'GP extraction 2018' 2 'departure from GP' 3 'departure from GP, exact date unknown' 4 'death' 5 'GP extraction 2012/2013, then lost-to follow-up' 6 'death, data until GP extraction 2012/2013' 8 'lost-to-follow-up'	registration NEO site / Electronic patient record GP
einddatum2 / einddatum2s	date end of follow-up (date of extraction at GP, or lost to follow-up)	Date	registration NEO site / Electronic patient record GP
diabetes2	any diagnosis of diabetes after 2nd extraction (1=yes, 0=no)	Cat / 1 'yes' 0'no'	Electronic patient record GP
diabetes2_date	date of diagnosis diabetes	Date	Electronic patient record GP
t2d_inc	incident diagnosis of type 2 diabetes	Cat / 1 'yes' 0'no'	Electronic patient record GP
diab_prev	prevalent diagnosis of diabetes	Cat / 1 'yes' 0'no'	Electronic patient record GP
t2d_30d	diagnosis of type 2 diabetes <30 days after inclusion	Cat / 1 'yes' 0'no'	Electronic patient record GP
prediab_inc	incident diagnosis of prediabetes	Cat / 1 'yes' 0'no'	Electronic patient record GP
prediab_prev	prevalent diagnosis of prediabetes	Cat / 1 'yes' 0'no'	Electronic patient record GP
prediab_30d	diagnosis of prediabetes <30 days after inclusion	Cat / 1 'yes' 0'no'	Electronic patient record GP
MI2_diagnosis	diagnosis of Myocardial Infarction	Cat / 1 'definite event' 2 'doubtful event'	Electronic patient record GP
MI2_Date.1	Date of (first) MI event	Date	Electronic patient record GP
MI2_Date.2	Date of second MI event	Date	Electronic patient record GP
MI2_Date.3	Date of third MI event	Date	Electronic patient record GP
MI2_inc	incident diagnosis of myocardial infarction	Cat / 1 'yes' 0'no'	Electronic patient record GP
MI2_prev	prevalent diagnosis of myocardial infarction	Cat / 1 'yes' 0'no'	Electronic patient record GP
MI2_recur	recurrent diagnosis of MI during follow-up	Cat / 1 'yes' 0'no'	Electronic patient record GP
cva2_diagnosis.1	type of (first) CVA event (TIA or stroke)	Cat / 1 'Stroke: infarction, definite' 2 'Stroke: infarction, doubt' 3 'Stroke: aspecific/undefined, definite' 4 'Stroke: aspecific/undefined, doubt'	Electronic patient record GP
cva2_diagnosis.2	type of second CVA event (TIA or stroke)	5 'Stroke: intracerebral bleed, definite' 6 'Stroke: intracerebral bleed, doubt' 7 'Stroke: subarachnoid bleed, definite' 8 'Stroke: subarachnoid bleed, doubt' 9 'Stroke: other causes, definite' 10 'Stroke: other causes, doubt' 11 'Transient ischemic attack, definite' 12 'Transient ischemic attack, doubt'	Electronic patient record GP
cva2_diagnosis.3	type of third CVA event (TIA or stroke)		Electronic patient record GP
CVA2_Date.1	Date of (first) CVA event	Date	Electronic patient record GP
CVA2_Date.2	Date of second CVA event	Date	Electronic patient record GP
CVA2_Date.3	Date of third CVA event	Date	Electronic patient record GP
Stroke2_Date.1	Date of (first) Stroke event	Date	Electronic patient record GP
Stroke2_Date.2	Date of second Stroke event	Date	Electronic patient record GP
Stroke2_Date.3	Date of third Stroke event	Date	Electronic patient record GP
TIA2_Date.1	Date of (first) CVA event	Date	Electronic patient record GP
TIA2_Date.2	Date of second CVA event	Date	Electronic patient record GP
TIA2_Date.3	Date of third CVA event	Date	Electronic patient record GP
VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
Stroke2_inc	incident diagnosis of stroke	Cat / 1 'yes' 0'no'	Electronic patient record GP

Stroke2_prev	prevalent diagnosis of stroke	Cat / 1 'yes' 0'no'	Electronic patient record GP
Stroke2_recur	recurrent diagnosis of stroke during follow-up	Cat / 1 'yes' 0'no'	Electronic patient record GP
TIA2_inc	incident diagnosis of TIA	Cat / 1 'yes' 0'no'	Electronic patient record GP
TIA2_prev	prevalent diagnosis of TIA	Cat / 1 'yes' 0'no'	Electronic patient record GP
TIA2_recur	recurrent diagnosis of TIA during follow-up	Cat / 1 'yes' 0'no'	Electronic patient record GP
CVA2_inc	incident diagnosis of CVA (stroke or TIA)	Cat / 1 'yes' 0'no'	Electronic patient record GP
CVA2_prev	prevalent diagnosis of CVA (stroke or TIA)	Cat / 1 'yes' 0'no'	Electronic patient record GP
CVA2_recur	recurrent diagnosis of CVA during follow-up	Cat / 1 'yes' 0'no'	Electronic patient record GP
CVD2_date_first	Date of (first) CVD event	Date	Electronic patient record GP
CVD2_inc	incident diagnosis of CVD	Cat / 1 'yes' 0'no'	Electronic patient record GP
CVD2_prev	prevalent diagnosis of CVD	Cat / 1 'yes' 0'no'	Electronic patient record GP
CVD2_recur	recurrent diagnosis of CVD	Cat / 1 'yes' 0'no'	Electronic patient record GP

*Data based on data extraction in 2018

17. Omics

17.1. Single SNP analysis

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
	CYP21A2 genetic variants	variants in the CYP21A2 gene - only measured in those with a measureable 21-DOCL level	DNA
fii20210	Prothrombin FII 20210 G>A mutation	Cat / 1 'GG' 2 'AG' 3 'AA' 8 'undetermined'	DNA
fvle	Prothrombin FII 20210 G>A mutation	Cat / 1 'GG' 2 'AG' 3 'AA' 8 'undetermined'	DNA
rs2066865	fibrinogen gamma (FGG) 10034C>T polymorphism (rs2066865)	Cat / 1 'GG' 2 'AG' 3 'AA' 7 'undetermined' 8 'undetermined'	NDA

17.2. GWAS

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
NPC1 to NPC10	Principal components 1 to 10 for GWAS	Numeric	DNA
BMIgenrisksexcombi	weighted BMI genetic risk score all sexes	Numeric	DNA
BMIgenriskmen	weighted BMI genetic risk score for men	Numeric	DNA
BMIgenriskwomen	weighted BMI genetic risk score for women	Numeric	DNA

Researchers interested in specific GWAS results can request the SNP's of interest from the NEO research team. In addition, the following variables are available:

17.3. Nightingale's Biomarker Analysis Platform

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
nuchter	Fasting state at first blood sample	Cat / 0 'No, protocol violations regarding fasting' 1 'Yes, fasting state'	Registration form study visit
*	Nightingale Postprandial metabolite response: absolute difference		Blood sample
*	Nightingale Postprandial metabolite response: relative difference (%)		Blood sample
*	Nightingale Fasting metabolites		Blood sample
*	Nightingale 150 min postprandial metabolites		Blood sample

* Nightingale's Biomarker Analysis Platform; outcomes available for > 200 metabolites, with the exception of Pyruvate, Glycerol, Glycine, Acetoacetate, Urea.

Short name	Full name
Lipoprotein subclasses	
Chylomicrons and extremely large VLDL particles: with an average particle diameter over 75 nm	
XXLVLDLP	Particle concentration (mmol/l)
XXLVLDLL	Total lipids (mmol/l)
XXLVLDLPL	Phospholipids (mmol/l)
XXLVLDLC	Total cholesterol (mmol/l)
XXLVLDLCE	Cholesterol esters (mmol/l)
XXLVLDLFC	Free cholesterol (mmol/l)
XXLVLDLTG	Triglycerides (mmol/l)
Very large VLDL particles: with an average particle diameter of 64 nm	
XLVLDLP	Particle concentration (mmol/l)
XLVLDLL	Total lipids (mmol/l)
XLVLDLPL	Phospholipids (mmol/l)
XLVLDLC	Total cholesterol (mmol/l)
XLVLDLCE	Cholesterol esters (mmol/l)
XLVLDLFC	Free cholesterol (mmol/l)
XLVLDLTG	Triglycerides (mmol/l)
Large VLDL particles: with an average particle diameter of 53.6 nm	
LVLDLP	Particle concentration (mmol/l)
LVLDLL	Total lipids (mmol/l)
LVLDLPL	Phospholipids (mmol/l)
LVLDLC	Total cholesterol (mmol/l)
LVLDLCE	Cholesterol esters (mmol/l)
LVLDLFC	Free cholesterol (mmol/l)
LVLDLTG	Triglycerides (mmol/l)
Medium VLDL particles: with an average particle diameter of 44.5 nm	
MVLDLP	Particle concentration (mmol/l)
MVLDLL	Total lipids (mmol/l)
MVLDLPL	Phospholipids (mmol/l)
MVLDLC	Total cholesterol (mmol/l)
MVLDLCE	Cholesterol esters (mmol/l)
MVLDLFC	Free cholesterol (mmol/l)
MVLDLTG	Triglycerides (mmol/l)
Small VLDL particles: with an average particle diameter of 36.8 nm	
SVLDLP	Particle concentration (mmol/l)
SVLDLL	Total lipids (mmol/l)
SVLDLPL	Phospholipids (mmol/l)
SVLDLC	Total cholesterol (mmol/l)
SVLDLCE	Cholesterol esters (mmol/l)
SVLDLFC	Free cholesterol (mmol/l)
SVLDLTG	Triglycerides (mmol/l)
Very small VLDL particles: with an average particle diameter of 31.3 nm	
XSVLDLP	Particle concentration (mmol/l)
XSVLDLL	Total lipids (mmol/l)
XSVLDLPL	Phospholipids (mmol/l)
XSVLDLC	Total cholesterol (mmol/l)
XSVLDLCE	Cholesterol esters (mmol/l)
XSVLDLFC	Free cholesterol (mmol/l)
XSVLDLTG	Triglycerides (mmol/l)
IDL particles: intermediate-density lipoprotein particles with an average particle diameter of 28.6 nm	
IDLP	Particle concentration (mmol/l)
IDLL	Total lipids (mmol/l)
IDLPL	Phospholipids (mmol/l)
IDLC	Total cholesterol (mmol/l)
IDLCE	Cholesterol esters (mmol/l)
IDLFC	Free cholesterol (mmol/l)
IDLTG	Triglycerides (mmol/l)

SHORT NAME	FULL NAME
Large LDL particles: low-density lipoprotein particles with an average particle diameter of 25.5 nm	
LLDLP	Particle concentration (mmol/l)
LLDLL	Total lipids (mmol/l)
LLDLPL	Phospholipids (mmol/l)
LLDLC	Total cholesterol (mmol/l)
LLDLCE	Cholesterol esters (mmol/l)
LLDLFC	Free cholesterol (mmol/l)
LLDLTG	Triglycerides (mmol/l)
Medium LDL particles: low-density lipoprotein particles with an average particle diameter of 23.0 nm	
MLDLP	Particle concentration (mmol/l)
MLDLL	Total lipids (mmol/l)
MLDLPL	Phospholipids (mmol/l)
MLDLC	Total cholesterol (mmol/l)
MLDLCE	Cholesterol esters (mmol/l)
MLDLFC	Free cholesterol (mmol/l)
MLDLTG	Triglycerides (mmol/l)
Small LDL particles: low-density lipoprotein particles with an average particle diameter of 18.7 nm	
SLDLP	Particle concentration (mmol/l)
SLDLL	Total lipids (mmol/l)
SLDLPL	Phospholipids (mmol/l)
SLDLC	Total cholesterol (mmol/l)
SLDLCE	Cholesterol esters (mmol/l)
SLDLFC	Free cholesterol (mmol/l)
SLDLTG	Triglycerides (mmol/l)
Very large HDL particles: high-density lipoprotein particles with an average particle diameter of 14.3 nm	
XLHDL	Particle concentration (mmol/l)
XLHDL	Total lipids (mmol/l)
XLHDLPL	Phospholipids (mmol/l)
XLHDL	Total cholesterol (mmol/l)
XLHDLCE	Cholesterol esters (mmol/l)
XLHDLFC	Free cholesterol (mmol/l)
XLHDLTG	Triglycerides (mmol/l)
Large HDL particles: high-density lipoprotein particles with an average particle diameter of 12.1 nm	
LHDL	Particle concentration (mmol/l)
LHDL	Total lipids (mmol/l)
SHORT NAME FULL NAME	
LHDLPL	Phospholipids (mmol/l)
LHDL	Total cholesterol (mmol/l)
LHDLCE	Cholesterol esters (mmol/l)
LHDLFC	Free cholesterol (mmol/l)
LHDLTG	Triglycerides (mmol/l)
Medium HDL particles: high-density lipoprotein particles with an average particle diameter of 10.9 nm	
MHDL	Particle concentration (mmol/l)
MHDL	Total lipids (mmol/l)
MHDLPL	Phospholipids (mmol/l)
MHDL	Total cholesterol (mmol/l)
MHDLCE	Cholesterol esters (mmol/l)
MHDLFC	Free cholesterol (mmol/l)
MHDLTG	Triglycerides (mmol/l)
Small HDL particles	
SHDL	Particle concentration (mmol/l)
SHDL	Total lipids (mmol/l)
SHDLPL	Phospholipids (mmol/l)
SHDL	Total cholesterol (mmol/l)

SHORT NAME	FULL NAME
SHDLCE	Cholesterol esters (mmol/l)
SHDLFC	Free cholesterol (mmol/l)
SHDLTG	Triglycerides (mmol/l)
Lipoprotein particle sizes	
VLDLD	Mean diameter of VLDL particles (nm) // calculated as the particle concentration weighted average of the XXL-, XL-, L-, M-, S, and XS-VLDL subclass diameters
LDLD	Mean diameter of LDL particles (nm) //calculated as the particle concentration weighted average of all the LDL and the IDL subclass diameters
HDLD	Mean diameter of HDL particles (nm) //calculated as the particle concentration weighted average of all the HDL subclass diameters
Cholesterol	
SerumC	Serum total cholesterol (mmol/l)
VLDLC	Total cholesterol in VLDL (mmol/l)
RemnantC	Remnant cholesterol (non-HDL, non-LDL-cholesterol) (mmol/l)
LDLC	Total cholesterol in LDL (mmol/l)
HDLC	Total cholesterol in HDL (mmol/l)
HDL2C	Total cholesterol in HDL2 (mmol/l) //HDL particles within the density range of 1.063-1.125 g/mL
HDL3C	Total cholesterol in HDL3 (mmol/l) // HDL particles within the density range of 1.125-1.210 g/mL
EstC	Esterified cholesterol (mmol/l)
FreeC	Free cholesterol (mmol/l)
Glycerides & phospholipids	
SerumTG	Serum total triglycerides (mmol/l)
VDLTG	Triglycerides in VLDL (mmol/l)
SHORT NAME FULL NAME	
LDLTG	Triglycerides in LDL (mmol/l)
HDLTG	Triglycerides in HDL (mmol/l)
DAG	Diacylglycerol (mmol/l)
TotPG	Total phosphoglycerides (mmol/l)
PC	Phosphatidylcholine and other cholines (mmol/l)
SM	Sphingomyelins (mmol/l)
TotCho	Total cholines (mmol/l)
Apolipoproteins	
ApoA1	Apolipoprotein A-I (g/l)

SHORT NAME	FULL NAME
ApoB	Apolipoprotein B (g/l)
Fatty acids (FA) & saturation	
TotFA	Total fatty acids (mmol/l)
FALen	Estimated description of fatty acid chain length, not actual carbon number
UnSat	Estimated degree of unsaturation
DHA	22:6, docosahexaenoic acid (mmol/l)
LA	18:2, linoleic acid (mmol/l)
CLA	Conjugated linoleic acid (mmol/l)
FAw3	Omega-3 fatty acids (mmol/l)
FAw6	Omega-6 fatty acids (mmol/l)
PUFA	Polyunsaturated fatty acids (mmol/l)
MUFA	Monounsaturated fatty acids; 16:1, 18:1 (mmol/l)
SFA	Saturated fatty acids (mmol/l)
Glycolysis related metabolites	
Glc	Glucose (mmol/l)
Lac	Lactate (mmol/l)
Cit	Citrate (mmol/l)
Amino acids	
Ala	Alanine (mmol/l)
Gln	Glutamine (mmol/l)
His	Histidine (mmol/l)
Ile	Isoleucine (mmol/l)
Leu	Leucine (mmol/l)
Val	Valine (mmol/l)
Phe	Phenylalanine (mmol/l)
Tyr	Tyrosine (mmol/l)
Ketone bodies	
Ace	Acetate (mmol/l)
bOHBut	3-hydroxybutyrate (mmol/l)
Fluid balance	
Crea	Creatinine (mmol/l)
Alb	Albumin
Inflammation	
Gp	Glycoprotein acetyls, mainly a1-acid glycoprotein (mmol/l)

17.4. Biocrates Metabolomics Kit

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
nuchter	Fasting state at first blood sample	Cat / 0 'No, protocol violations regarding fasting' 1 'Yes, fasting state'	Registration form study visit
*	Biocrates Fasting metabolites		** Blood sample
*	Biocrates 150 min postprandial metabolites		** Blood sample
*	Biocrates Postprandial metabolite response: absolute difference		** Blood sample
*	Biocrates Postprandial metabolite response: relative difference (%)		** Blood sample

* Biocrates AbsoluteIDQ p150 metabolomics kit; outcomes available for 150 metabolites.

SHORT_NAME	BIOCHEMICAL_NAME	CATEGORY
C0	DL-Carnitine	Acylcarnitines
C10	Decanoyl-L-carnitine	Acylcarnitines
C10:1	Decenoyl-L-carnitine	Acylcarnitines
C10:2	Decadienyl-L-carnitine	Acylcarnitines
C12	Dodecanoyl-L-carnitine	Acylcarnitines
C12:1	Dodecenoyl-L-carnitine	Acylcarnitines
C12-DC	Dodecanedioyl-L-carnitine	Acylcarnitines
C14	Tetradecanoyl-L-carnitine	Acylcarnitines
C14:1	Tetradecenoyl-L-carnitine	Acylcarnitines
C14:1-OH	Hydroxytetradecenoyl-L-carnitine	Acylcarnitines
C14:2	Tetradecadienyl-L-carnitine	Acylcarnitines
C14:2-OH	Hydroxytetradecadienyl-L-carnitine	Acylcarnitines
C16	Hexadecanoyl-L-carnitine	Acylcarnitines
C16:1	Hexadecenoyl-L-carnitine	Acylcarnitines
C16:1-OH	Hydroxyhexadecenoyl-L-carnitine	Acylcarnitines
C16:2	Hexadecadienyl-L-carnitine	Acylcarnitines
C16:2-OH	Hydroxyhexadecadienyl-L-carnitine	Acylcarnitines
C16-OH	Hydroxyhexadecanoyl-L-carnitine	Acylcarnitines
C18	Octadecanoyl-L-carnitine	Acylcarnitines
C18:1	Octadecenoyl-L-carnitine	Acylcarnitines
C18:1-OH	Hydroxyoctadecenoyl-L-carnitine	Acylcarnitines
C18:2	Octadecadienyl-L-carnitine	Acylcarnitines
C2	Acetyl-L-carnitine	Acylcarnitines
C3	Propionyl-L-carnitine	Acylcarnitines
C3:1	Propenyl-L-carnitine	Acylcarnitines
C3-DC / C4-OH	Malonyl-L-carnitine/Hydroxybutyryl-L-carnitine	Acylcarnitines
C3-DC-M / C5-OH	Methylmalonyl-L-carnitine/Hydroxyvaleryl-L-carnitine	Acylcarnitines
C3-OH	Hydroxypropionyl-L-carnitine	Acylcarnitines
C4	Butyryl-L-carnitine	Acylcarnitines
C4:1	Butenyl-L-carnitine	Acylcarnitines
C4:1-DC / C6	Fumaryl-L-carnitine/Hexanoyl-L-carnitine	Acylcarnitines
C5	Valeryl-L-carnitine	Acylcarnitines
C5:1	Tiglyl-L-carnitine	Acylcarnitines
C5:1-DC	Glutaconyl-L-carnitine	Acylcarnitines
C5-DC / C6-OH	Glutaryl-L-carnitine/Hydroxyhexanoyl-L-carnitine	Acylcarnitines
C5-M-DC	Methylglutaryl-L-carnitine	Acylcarnitines
C6:1	Hexenoyl-L-carnitine	Acylcarnitines
C7-DC	Pimelyl-L-carnitine	Acylcarnitines
C8	Octanoyl-L-carnitine	Acylcarnitines
C8:1	Octenoyl-L-carnitine	Acylcarnitines
C9	Nonayl-L-carnitine	Acylcarnitines
H1	Hexose	Sugars
Arg	Arginine	Amino acids
Gln	Glutamine	Amino acids
Gly	Glycine	Amino acids
His	Histidine	Amino acids
Met	Methionine	Amino acids
Orn	Ornithine	Amino acids
Phe	Phenylalanine	Amino acids
Pro	Proline	Amino acids
Ser	Serine	Amino acids
Thr	Threonine	Amino acids
Trp	Tryptophan	Amino acids
Tyr	Tyrosine	Amino acids
Val	Valine	Amino acids
xLeu	xLeucine	Amino acids
lysoPC a C14:0	lysoPhosphatidylcholine acyl C14:0	Glycerophospholipids
lysoPC a C16:0	lysoPhosphatidylcholine acyl C16:0	Glycerophospholipids
lysoPC a C16:1	lysoPhosphatidylcholine acyl C16:1	Glycerophospholipids
lysoPC a C17:0	lysoPhosphatidylcholine acyl C17:0	Glycerophospholipids

Short_name	Biochemical_name	Category
PC ae C42:2	Phosphatidylcholine acyl-alkyl C 42:2	Glycerophospholipids
PC ae C42:3	Phosphatidylcholine acyl-alkyl C 42:3	Glycerophospholipids
PC ae C42:4	Phosphatidylcholine acyl-alkyl C 42:4	Glycerophospholipids
PC ae C42:5	Phosphatidylcholine acyl-alkyl C 42:5	Glycerophospholipids
PC ae C44:3	Phosphatidylcholine acyl-alkyl C 44:3	Glycerophospholipids
PC ae C44:4	Phosphatidylcholine acyl-alkyl C 44:4	Glycerophospholipids
PC ae C44:5	Phosphatidylcholine acyl-alkyl C 44:5	Glycerophospholipids
PC ae C44:6	Phosphatidylcholine acyl-alkyl C 44:6	Glycerophospholipids
SM (OH) C14:1	Hydroxysphingomyeline C 14:1	Sphinglipids
SM (OH) C16:0	Hydroxysphingomyeline C 16:0	Sphinglipids
SM (OH) C22:1	Hydroxysphingomyeline C 22:1	Sphinglipids
SM (OH) C22:2	Hydroxysphingomyeline C 22:2	Sphinglipids
SM (OH) C24:1	Hydroxysphingomyeline C 24:1	Sphinglipids
SM C16:0	Sphingomyeline C 16:0	Sphinglipids
SM C16:1	Sphingomyeline C 16:1	Sphinglipids
SM C18:0	Sphingomyeline C 18:0	Sphinglipids
SM C18:1	Sphingomyeline C 18:1	Sphinglipids
SM C20:2	Sphingomyeline C 20:2	Sphinglipids
SM C22:3	Sphingomyeline C 22:3	Sphinglipids
SM C24:0	Sphingomyeline C 24:0	Sphinglipids
SM C24:1	Sphingomyeline C 24:1	Sphinglipids
SM C26:0	Sphingomyeline C 26:0	Sphinglipids
SM C26:1	Sphingomyeline C 26:1	Sphinglipids

17.5. Olink Explore HT inflammation panel

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
nuchter	Fasting state at first blood sample	Cat / 0 'No, protocol violations regarding fasting' 1 'Yes, fasting state'	Registration form study visit
*	Olink Explore HT fasting proteins		** Blood sample

*Olink Explore HT inflammation panel

** measurements are done in selection of samples

UNIPROT ID	PROTEIN NAME	GENE NAME
P60568	Interleukin-2	IL2
Q13651	Interleukin-10 receptor subunit alpha	IL10RA
Q13219	Pappalysin-1	PAPPA
Q9UHF4	Interleukin-20 receptor subunit alpha	IL20RA
P63241	Eukaryotic translation initiation factor 5A-1	EIF5A
P05412	Transcription factor AP-1	JUN
Q96AX2	Ras-related protein Rab-37	RAB37
P05112	Interleukin-4	IL4
P01584	Interleukin-1 beta	IL1B
O95760	Interleukin-33	IL33
Q8NHJ6	Leukocyte immunoglobulin-like receptor subfamily B member 4	LILRB4
P35225	Interleukin-13	IL13
P22301	Interleukin-10	IL10
P27540	Aryl hydrocarbon receptor nuclear translocator	ARNT
O95379	Tumor necrosis factor alpha-induced protein 8	TNFAIP8
Q8WV07	Protein LTO1 homolog	LTO1
O43707	Alpha-actinin-4	ACTN4
P28838	Cytosol aminopeptidase	LAP3
Q9NP70	Ameloblastin	AMBN
Q6UXK5	Leucine-rich repeat neuronal protein 1	LRRN1
Q9HCU5	Prolactin regulatory element-binding protein	PREB
Q13007	Interleukin-24	IL24
Q9UPV0	Centrosomal protein of 164 kDa	CEP164
O60934	Nibrin	NBN
Q96P31	Fc receptor-like protein 3	FCRL3
Q9Y478	5'-AMP-activated protein kinase subunit beta-1	PRKAB1
Q8TCS8	Polyribonucleotide nucleotidyltransferase 1, mitochondrial	PNPT1
Q5T4W7	Artemin	ARTN
Q5R372	Rab GTPase-activating protein 1-like	RABGAP1L
Q969V3	Nicalin	NCLN
Q8N6P7	Interleukin-22 receptor subunit alpha-1	IL22RA1
P14784	Interleukin-2 receptor subunit beta	IL2RB
Q13459	Unconventional myosin-IXb	MYO9B
P19801	Amiloride-sensitive amine oxidase [copper-containing]	AOC1
Q9NYY1	Interleukin-20	IL20
P57771	Regulator of G-protein signaling 8	RG58
P20809	Interleukin-11	IL11
Q96PD4	Interleukin-17F	IL17F
O76038	Secretagogin	SCGN
O95715	C-X-C motif chemokine 14	CXCL14
Q03426	Mevalonate kinase	MVK
O14904	Protein Wnt-9a	WNT9A
P26951	Interleukin-3 receptor subunit alpha	IL3RA
Q9Y3P8	Signaling threshold-regulating transmembrane adapter 1	SIT1
Q96DB9	FXYD domain-containing ion transport regulator 5	FXYD5
P48061	Stromal cell-derived factor 1	CXCL12
Q99748	Neurturin	NRTN
Q13574	Diacylglycerol kinase zeta	DGKZ
Q9Y2J8	Protein-arginine deiminase type-2	PADI2
Q04759	Protein kinase C theta type	PRKCQ
Q16552	Interleukin-17A	IL17A
Q12968	Nuclear factor of activated T-cells, cytoplasmic 3	NFATC3
Q14435	Polypeptide N-acetylgalactosaminyltransferase 3	GALNT3
P05113	Interleukin-5	IL5
P01375	Tumor necrosis factor	TNF
Q92844	TRAF family member-associated NF-kappa-B activator	TANK
O43597	Protein sprouty homolog 2	SPRY2
P13693	Translationally-controlled tumor protein	TPT1
Q9P0M4	Interleukin-17C	IL17C
Q72739	YTH domain-containing family protein 3	YTHDF3
P42768	Wiskott-Aldrich syndrome protein	WAS
Q96RJ3	Tumor necrosis factor receptor superfamily member 13C	TNFRSF13C
Q8TAD2	Interleukin-17D	IL17D
Q726M3	Allergin-1	MILR1
P30048	Thioredoxin-dependent peroxide reductase, mitochondrial	PRDX3
Q05084	Islet cell autoantigen 1	ICA1
P51617	Interleukin-1 receptor-associated kinase 1	IRAK1
P42701	Interleukin-12 receptor subunit beta-1	IL12RB1
Q9HB29	Interleukin-1 receptor-like 2	IL1RL2
P01583	Interleukin-1 alpha	IL1A
P32456	Guanylate-binding protein 2	GBP2
P12034	Fibroblast growth factor 5	FGF5
P09919	Granulocyte colony-stimulating factor	CSF3
Q9BXJ7	Protein amnionless	AMN

UniProt ID	Protein name	Gene name
P18564	Integrin beta-6	ITGB6
P01591	Immunoglobulin J chain	JCHAIN
P01579	Interferon gamma	IFNG
Q13291	Signaling lymphocytic activation molecule	SLAMF1
Q8N8S7	Protein enabled homolog	ENAH
Q13261	Interleukin-15 receptor subunit alpha	IL15RA
P09874	Poly [ADP-ribose] polymerase 1	PARP1
Q0Z7S8	Fatty acid-binding protein 9	FABP9
P78362	SRSF protein kinase 2	SRPK2
P09038	Fibroblast growth factor 2	FGF2
O43736	Integral membrane protein 2A	ITM2A
O14867	Transcription regulator protein BACH1	BACH1
Q8IU57	Interferon lambda receptor 1	IFNLR1
Q12933	TNF receptor-associated factor 2	TRAF2
Q06520	Bile salt sulfotransferase	SULT2A1
O60575	Serine protease inhibitor Kazal-type 4	SPINK4
Q9Y5A7	NEDD8 ultimate buster 1	NUB1
O60542	Persephin	PSPN
P30838	Aldehyde dehydrogenase, dimeric NADP-preferring	ALDH3A1
O43521-2	Bcl-2-like protein 11, Isoform BimL	BCL2L11
O60880	SH2 domain-containing protein 1A	SH2D1A
Q12778	Forkhead box protein O1	FOXO1
Q7L8A9	Tubuliny-Tyr carboxypeptidase 1	VASH1
P55957	BH3-interacting domain death agonist	BID
Q6UB28	Methionine aminopeptidase 1D, mitochondrial	METAP1D
P01903	HLA class II histocompatibility antigen, DR alpha chain	HLA-DRA
Q92609	TBC1 domain family member 5	TBC1D5
P01588	Erythropoietin	EPO
P80098	C-C motif chemokine 7	CCL7
Q9UN19	Dual adapter for phosphotyrosine and 3-phosphotyrosine and 3-phosphoinositide	DAPP1
Q9UNE0	Tumor necrosis factor receptor superfamily member EDAR	EDAR
Q9C035	Tripartite motif-containing protein 5	TRIM5
Q8N608	Inactive dipeptidyl peptidase 10	DPP10
P23229	Integrin alpha-6	ITGA6
Q6DN72	Fc receptor-like protein 6	FCRL6
P33241	Lymphocyte-specific protein 1	LSP1
Q9UNK0	Syntaxin-8	STX8
P13747	HLA class I histocompatibility antigen, alpha chain E	HLA-E
P19474	E3 ubiquitin-protein ligase TRIM21	TRIM21
O75475	PC4 and SFRS1-interacting protein	PSIP1
P13232	Interleukin-7	IL7
Q8IVG5	Sterile alpha motif domain-containing protein 9-like	SAMD9L
Q96LC7	Sialic acid-binding Ig-like lectin 10	SIGLEC10
B1AKI9	Isthmin-1	ISM1
Q6ZMH5	Zinc transporter ZIP5	SLC39A5
P78410	Butyrophilin subfamily 3 member A2	BTN3A2
P12872	Promotilin	MLN
Q12765	Secernin-1	SCRN1
P58294	Prokineticin-1	PROK1
Q9Y6K9	NF-kappa-B essential modulator	IKBK
O95644	Nuclear factor of activated T-cells, cytoplasmic 1	NFATC1
Q9Y258	C-C motif chemokine 26	CCL26
Q8WTT0	C-type lectin domain family 4 member C	CLEC4C
Q3KPI0	Carcinoembryonic antigen-related cell adhesion molecule 21	CEACAM21
Q9BT73	Proteasome assembly chaperone 3	PSMG3
P20849	Collagen alpha-1(I) chain	COL9A1
Q9HD26	Golgi-associated PDZ and coiled-coil motif-containing protein	GOPC
P52564	Dual specificity mitogen-activated protein kinase kinase 6	MAP2K6
Q9H0P0	Cytosolic 5'-nucleotidase 3A	NT5C3A
Q9NZN5	Rho guanine nucleotide exchange factor 12	ARHGEF12
P42575	Caspase-2	CASP2
Q9UHC6	Contactin-associated protein-like 2	CNTNAP2
P45984	Mitogen-activated protein kinase 9	MAPK9
P11274	Breakpoint cluster region protein	BCR
Q9UDT6	CAP-Gly domain-containing linker protein 2	CLIP2
Q14242	P-selectin glycoprotein ligand 1	SELPLG
P78310	Coxsackievirus and adenovirus receptor	CXADR
P40933	Interleukin-15	IL15
P05231	Interleukin-6	IL6
P24071	Immunoglobulin alpha Fc receptor	FCAR
Q01151	CD83 antigen	CD83
O76036	Natural cytotoxicity triggering receptor 1	NCR1
P19878	Neutrophil cytosol factor 2	NCF2
P23582	C-type natriuretic peptide	NPPC
Q9NRJ3	C-C motif chemokine 28	CCL28
P26022	Pentraxin-related protein PTX3	PTX3
Q03431	Parathyroid hormone/parathyroid hormone-related peptide receptor	PTH1R
Q9GZT9	Egl nine homolog 1	EGLN1
Q9UMR7	C-type lectin domain family 4 member A	CLEC4A
P13725	Oncostatin-M	OSM
P28845	Corticosteroid 11-beta-dehydrogenase isozyme 1	HSD11B1
P24394	Interleukin-4 receptor subunit alpha	IL4R
Q9NWZ3	Interleukin-1 receptor-associated kinase 4	IRAK4
Q14773	Intercellular adhesion molecule 4	ICAM4
Q16698	2,4-dienoyl-CoA reductase, mitochondrial	DECR1
O60449	Lymphocyte antigen 75	LY75
Q9UKX5	Integrin alpha-11	ITGA11
O15169	Axin-1	AXIN1
P50995	Annexin A11	ANXA11

UniProt ID	Protein name	Gene name
P01730	T-cell surface glycoprotein CD4	CD4
Q9NRM6	Interleukin-17 receptor B	IL17RB
P01374	Lymphotoxin-alpha	LTA
Q62UJ8	Phosphoinositide 3-kinase adapter protein 1	PIK3AP1
P16455	Methylated-DNA--protein-cysteine methyltransferase	MGMT
O94992	Protein HEXIM1	HEXIM1
Q6UXB4	C-type lectin domain family 4 member G	CLEC4G
P20783	Neurotrophin-3	NTF3
O14788	Tumor necrosis factor ligand superfamily member 11	TNFSF11
Q29980_Q29983	MHC class I polypeptide-related sequence A_MHC class I polypeptide-related sequence B	MICB_MICA
Q8NDB2	B-cell scaffold protein with ankyrin repeats	BANK1
Q8TD46	Cell surface glycoprotein CD200 receptor 1	CD200R1
P08727	Keratin, type I cytoskeletal 19	KRT19
Q9HCM2	Plexin-A4	PLXNA4
P28827	Receptor-type tyrosine-protein phosphatase mu	PTPRM
P32970	CD70 antigen	CD70
P01135	Protransforming growth factor alpha	TGFA
Q01344	Interleukin-5 receptor subunit alpha	IL5RA
Q9NQ25	SLAM family member 7	SLAMF7
P41217	OX-2 membrane glycoprotein	CD200
P10144	Granzyme B	GZMB
P24001	Interleukin-32	IL32
P42702	Leukemia inhibitory factor receptor	LIFR
Q9UIB8	SLAM family member 5	CD84
P20340	Ras-related protein Rab-6A	RAB6A
Q8WXI8	C-type lectin domain family 4 member D	CLEC4D
P10147	C-C motif chemokine 3	CCL3
P50591	Tumor necrosis factor ligand superfamily member 10	TNFSF10
O15455	Toll-like receptor 3	TLR3
P80162	C-X-C motif chemokine 6	CXCL6
Q08174	Protocadherin-1	PCDH1
P37235	Hippocalcin-like protein 1	HPCAL1
P29965	CD40 ligand	CD40LG
Q07065	Cytoskeleton-associated protein 4	CKAP4
P68106	Peptidyl-prolyl cis-trans isomerase FKBP1B	FKBP1B
P22304	Iduronate 2-sulfatase	IDS
O00273	DNA fragmentation factor subunit alpha	DFFA
P01137	Transforming growth factor beta-1 proprotein	TGFB1
Q6UXB2	C-X-C motif chemokine 17	CXCL17
Q9Y266	Nuclear migration protein nudC	NUDC
O43508	Tumor necrosis factor ligand superfamily member 12	TNFSF12
Q04637	Eukaryotic translation initiation factor 4 gamma 1	EIF4G1
P35613	Basigin	BSG
O60884	DnaJ homolog subfamily A member 2	DNAJA2
Q9BZW8	Natural killer cell receptor 2B4	CD244
Q12918	Killer cell lectin-like receptor subfamily B member 1	KLRB1
P50452	Serpin B8	SERPINB8
P10145	Interleukin-8	CXCL8
Q13241	Natural killer cells antigen CD94	KLRD1
Q14005	Pro-interleukin-16	IL16
O94856	Neurofascin	NFASC
P40259	B-cell antigen receptor complex-associated protein beta chain	CD79B
Q9BXN2	C-type lectin domain family 7 member A	CLEC7A
P20273	B-cell receptor CD22	CD22
Q9UQV4	Lysosome-associated membrane glycoprotein 3	LAMP3
Q96LA5	Fc receptor-like protein 2	FCRL2
O43561	Linker for activation of T-cells family member 1	LAT
P36959	GMP reductase 1	GMPR
Q15661	Tryptase alpha/beta-1	TPSAB1
Q965B3	Neurabin-2	PPP1R9B
P30044	Peroxiredoxin-5, mitochondrial	PRDX5
P00813	Adenosine deaminase	ADA
Q9Y6Q6	Tumor necrosis factor receptor superfamily member 11A	TNFRSF11A
O95971	CD160 antigen	CD160
P14317	Hematopoietic lineage cell-specific protein	HCLS1
P30203	T-cell differentiation antigen CD6	CD6
P15692	Vascular endothelial growth factor A	VEGFA
O75077	Disintegrin and metalloproteinase domain-containing protein 23	ADAM23
Q13478	Interleukin-18 receptor 1	IL18R1
P43489	Tumor necrosis factor receptor superfamily member 4	TNFRSF4
P02745	Complement C1q subcomponent subunit A	C1QA
Q99616	C-C motif chemokine 13	CCL13
P14210	Hepatocyte growth factor	HGF
Q12866	Tyrosine-protein kinase Mer	MERTK
O00253	Agouti-related protein	AGRP
P43234	Cathepsin O	CTSO
P49771	Fms-related tyrosine kinase 3 ligand	FLT3LG
Q43915	Vascular endothelial growth factor D	VEGFD
P12544	Granzyme A	GZMA
Q9H4D0	Calsyntenin-2	CLSTN2
P48023	Tumor necrosis factor ligand superfamily member 6	FASLG
P29460	Interleukin-12 subunit beta	IL12B
Q15517	Corneodesmosin	CDSN
P51671	Eotaxin	CCL11
Q16719	Kynureninase	KYNU
Q9HBG7	T-lymphocyte surface antigen Ly-9	LY9
P78556	C-C motif chemokine 20	CCL20
P03956	Interstitial collagenase	MMP1

UniProt ID	Protein name	Gene name
P49763	Placenta growth factor	PGF
O15444	C-C motif chemokine 25	CCL25
Q07325	C-X-C motif chemokine 9	CXCL9
Q92484	Acid sphingomyelinase-like phosphodiesterase 3a	SMPDL3A
P21709	Ephrin type-A receptor 1	EPHA1
P15260	Interferon gamma receptor 1	IFNGR1
P53634	Dipeptidyl peptidase 1	CTSC
Q5ZPR3	CD276 antigen	CD276
Q9UJU6	Drebrin-like protein	DBNL
P30613	Pyruvate kinase PKLR	PKLR
O43639	Cytoplasmic protein NCK2	NCK2
P35625	Metalloproteinase inhibitor 3	TIMP3
P47712	Cytosolic phospholipase A2	PLA2G4A
O00585	C-C motif chemokine 21	CCL21
P09238	Stromelysin-2	MMP10
P11684	Uteroglobin	SCGB1A1
Q6UWV6	Ectonucleotide pyrophosphatase/phosphodiesterase family member 7	ENPP7
Q9BZ22	Sialoadhesin	SIGLEC1
P25116	Proteinase-activated receptor 1	F2R
P09326	CD48 antigen	CD48
P55773	C-C motif chemokine 23	CCL23
Q14116	Interleukin-18	IL18
P13236	C-C motif chemokine 4	CCL4
Q08334	Interleukin-10 receptor subunit beta	IL10RB
P02778	C-X-C motif chemokine 10	CXCL10
P01133	Pro-epidermal growth factor	EGF
O75462	Cytokine receptor-like factor 1	CRLF1
P18510	Interleukin-1 receptor antagonist protein	IL1RN
Q9NZV1	Cysteine-rich motor neuron 1 protein	CRIM1
O14836	Tumor necrosis factor receptor superfamily member 13B	TNFRSF13B
Q9BY76	Angiopoietin-related protein 4	ANGPTL4
O76096	Cystatin-F	CST7
P21860	Receptor tyrosine-protein kinase erbB-3	ERBB3
Q99435	Protein kinase C-binding protein NELL2	NELL2
P55145	Mesencephalic astrocyte-derived neurotrophic factor	MANF
Q14210	Lymphocyte antigen 6D	LY6D
P29279	CCN family member 2	CCN2
Q9HC38	Glyoxalase domain-containing protein 4	GLOD4
Q99685	Monoglyceride lipase	MGLL
Q8NFT8	Delta and Notch-like epidermal growth factor-related receptor	DNER
Q7KYR7	Butyrophilin subfamily 2 member A1	BTN2A1
P34896	Serine hydroxymethyltransferase, cytosolic	SHMT1
O95750	Fibroblast growth factor 19	FGF19
P19256	Lymphocyte function-associated antigen 3	CD58
P29350	Tyrosine-protein phosphatase non-receptor type 6	PTPN6
P0DMV8	Heat shock 70 kDa protein 1A	HSPA1A
P09603	Macrophage colony-stimulating factor 1	CSF1
O43291	Kunitz-type protease inhibitor 2	SPINT2
P12532	Creatine kinase U-type, mitochondrial	CKMT1A_CKMT1B
Q9Y3D6	Mitochondrial fission 1 protein	FIS1
Q96PL1	Secretoglobulin family 3A member 2	SCGB3A2
P25942	Tumor necrosis factor receptor superfamily member 5	CD40
Q99983	Osteomodulin	OMD
Q9UKU9	Angiopoietin-related protein 2	ANGPTL2
P22466	Galanin peptides	GAL
Q8WXD2	Secretogranin-3	SCG3
Q9NR12	PDZ and LIM domain protein 7	PDLIM7
Q9H3U7	SPARC-related modular calcium-binding protein 2	SMOC2
Q9NZC2	Triggering receptor expressed on myeloid cells 2	TREM2
Q8WU39	Marginal zone B- and B1-cell-specific protein	MZB1
O75888	Tumor necrosis factor ligand superfamily member 13	TNFSF13
Q9Y6N7	Roundabout homolog 1	ROBO1
O00300	Tumor necrosis factor receptor superfamily member 11B	TNFRSF11B
Q9UJA9	Ectonucleotide pyrophosphatase/phosphodiesterase family member 5	ENPP5
Q6GTX8	Leukocyte-associated immunoglobulin-like receptor 1	LAIR1
Q5KU26	Collectin-12	COLEC12
O00241	Signal-regulatory protein beta-1	SIRPB1
Q15389	Angiopoietin-1	ANGPT1
P01127	Platelet-derived growth factor subunit B	PDGFB
P46109	Crk-like protein	CRKL
P16422	Epithelial cell adhesion molecule	EPCAM
O43598	2'-deoxynucleoside 5'-phosphate N-hydrolase 1	DNPH1
Q92583	C-C motif chemokine 17	CCL17
Q96KG7	Multiple epidermal growth factor-like domains protein 10	MEGF10
P24387	Corticotropin-releasing factor-binding protein	CRHBP
P56470	Galectin-4	LGALS4
Q9H008	Phospholysine phosphohistidine inorganic pyrophosphate phosphatase	LHPP
O14773	Tripeptidyl-peptidase 1	TPP1
Q6UXH1	Protein disulfide isomerase CRELD2	CRELD2
Q99895	Chymotrypsin-C	CTRC
Q9NQ76	Matrix extracellular phosphoglycoprotein	MEPE
Q4KMG0	Cell adhesion molecule-related/down-regulated by oncogenes	CDON
Q9UHX3	Adhesion G protein-coupled receptor E2	ADGRE2
Q15109	Advanced glycosylation end product-specific receptor	AGER
P27930	Interleukin-1 receptor type 2	IL1R2
Q9NQ30	Endothelial cell-specific molecule 1	ESM1
Q9HCB6	Spondin-1	SPON1
Q9UII2	ATPase inhibitor, mitochondrial	ATP5IF1
O75563	Src kinase-associated phosphoprotein 2	SKAP2

UniProt ID	Protein name	Gene name
P09341	Growth-regulated alpha protein	CXCL1
Q16651	Prostasin	PRSS8
Q03405	Urokinase plasminogen activator surface receptor	PLAUR
O00626	C-C motif chemokine 22	CCL22
P51888	Prolargin	PRELP
O00339	Matrilin-2	MATN2
P36941	Tumor necrosis factor receptor superfamily member 3	LTBR
Q16363	Laminin subunit alpha-4	LAMA4
P19883	Follistatin	FST
Q9BU40	Chordin-like protein 1	CHRD1
O00175	C-C motif chemokine 24	CCL24
Q99538	Legumain	LGMN
Q14118	Dystroglycan	DAG1
P54317	Pancreatic lipase-related protein 2	PNLIPRP2
Q8IY55	Osteoclast-associated immunoglobulin-like receptor	OSCAR
Q15166	Serum paraoxonase/lactonase 3	PON3
P07148	Fatty acid-binding protein, liver	FABP1
Q95866	Megakaryocyte and platelet inhibitory receptor G6b	MP1G6B
P15291	Beta-1,4-galactosyltransferase 1	B4GALT1
O00182	Galectin-9	LGALS9
Q95633	Follistatin-related protein 3	FSTL3
Q92956	Tumor necrosis factor receptor superfamily member 14	TNFRSF14
Q9BYZ8	Regenerating islet-derived protein 4	REG4
Q8TEU8	WAP, Kazal, immunoglobulin, Kunitz and NTR domain-containing protein 2	WFIKN2
O00468	Aggrin	AGRN
Q03403	Trefoil factor 2	TFF2
P19876	C-X-C motif chemokine 3	CXCL3
Q13232	Nucleoside diphosphate kinase 3	NME3

17.6. Metabolon HD4 metabolomics

VARIABLE NAME	LABEL	FORMAT/CATEGORIES	SOURCE
nuchter	Fasting state at first blood sample	Cat / 0 'No, protocol violations regarding fasting' 1 'Yes, fasting state'	Registration form study visit
*	Metabolon Fasting metabolites		** Blood sample

*Metabolon Global Discovery Pannel

BIOCHEMICAL	SUPER PATHWAY	SUB PATHWAY
(14 or 15)-methylpalmitate (a17:0 or i17:0)	Lipid	Fatty Acid, Branched
(16 or 17)-methylstearate (a19:0 or i19:0)	Lipid	Fatty Acid, Branched
(2 or 3)-decanoate (10:1n7 or n8)	Lipid	Medium Chain Fatty Acid
(2,4 or 2,5)-dimethylphenol sulfate	Xenobiotics	Food Component/Plant
(2-butoxyethoxy)acetic acid	Xenobiotics	Chemical
(N(1) + N(8))-acetylspermidine	Amino Acid	Polyamine Metabolism
(R)-3-hydroxybutyrylcarnitine	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Hydroxy)
(S)-3-hydroxybutyrylcarnitine	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Hydroxy)
1-(1-enyl-oleoyl)-GPE (P-18:1)*	Lipid	Lysoplasmalogen
1-(1-enyl-palmitoyl)-2-arachidonoyl-GPC (P-16:0/20:4)*	Lipid	Plasmalogen
1-(1-enyl-palmitoyl)-2-arachidonoyl-GPE (P-16:0/20:4)*	Lipid	Plasmalogen
1-(1-enyl-palmitoyl)-2-linoleoyl-GPC (P-16:0/18:2)*	Lipid	Plasmalogen
1-(1-enyl-palmitoyl)-2-linoleoyl-GPE (P-16:0/18:2)*	Lipid	Plasmalogen
1-(1-enyl-palmitoyl)-2-oleoyl-GPC (P-16:0/18:1)*	Lipid	Plasmalogen
1-(1-enyl-palmitoyl)-2-oleoyl-GPE (P-16:0/18:1)*	Lipid	Plasmalogen
1-(1-enyl-palmitoyl)-2-palmitoleoyl-GPC (P-16:0/16:1)*	Lipid	Plasmalogen
1-(1-enyl-palmitoyl)-2-palmitoyl-GPC (P-16:0/16:0)*	Lipid	Plasmalogen
1-(1-enyl-palmitoyl)-GPC (P-16:0)*	Lipid	Lysoplasmalogen
1-(1-enyl-palmitoyl)-GPE (P-16:0)*	Lipid	Lysoplasmalogen
1-(1-enyl-stearoyl)-2-arachidonoyl-GPE (P-18:0/20:4)*	Lipid	Plasmalogen
1-(1-enyl-stearoyl)-2-linoleoyl-GPE (P-18:0/18:2)*	Lipid	Plasmalogen
1-(1-enyl-stearoyl)-2-oleoyl-GPE (P-18:0/18:1)	Lipid	Plasmalogen
1-(1-enyl-stearoyl)-GPE (P-18:0)*	Lipid	Lysoplasmalogen
1,2,3-benzenetriol sulfate (2)	Xenobiotics	Chemical
1,2-dilinoleoyl-GPE (18:2/18:2)*	Lipid	Phosphatidylethanolamine (PE)
1,2-dipalmitoyl-GPC (16:0/16:0)	Lipid	Phosphatidylcholine (PC)
1,3,7-trimethylurate	Xenobiotics	Xanthine Metabolism
1,3-dimethylurate	Xenobiotics	Xanthine Metabolism
1,5-anhydroglucitol (1,5-AG)	Carbohydrate	Glycolysis, Gluconeogenesis, and Pyruvate Metabolism
1,7-dimethylurate	Xenobiotics	Xanthine Metabolism
10-heptadecenoate (17:1n7)	Lipid	Long Chain Monounsaturated Fatty Acid
10-nonadecenoate (19:1n9)	Lipid	Long Chain Monounsaturated Fatty Acid
10-undecenoate (11:1n1)	Lipid	Medium Chain Fatty Acid
11beta-hydroxyandrostosterone glucuronide	Lipid	Androgenic Steroids
12,13-DiHOME	Lipid	Fatty Acid, Dihydroxy
12-HETE	Lipid	Eicosanoid
12-HHTre	Lipid	Eicosanoid
13-HODE + 9-HODE	Lipid	Fatty Acid, Monohydroxy
14-HDoHE/17-HDoHE	Lipid	Docosanoid
16a-hydroxy DHEA 3-sulfate	Lipid	Androgenic Steroids
16-hydroxypalmitate	Lipid	Fatty Acid, Monohydroxy
17alpha-hydroxypregnanolone glucuronide	Lipid	Pregnenolone Steroids
17alpha-hydroxypregnenolone 3-sulfate	Lipid	Pregnenolone Steroids
1-arachidonoyl-GPA (20:4)	Lipid	Lysophospholipid
1-arachidonoyl-GPC* (20:4)*	Lipid	Lysophospholipid
1-arachidonoyl-GPE (20:4n6)*	Lipid	Lysophospholipid
1-arachidonoyl-GPI* (20:4)*	Lipid	Lysophospholipid
1-arachidonylglycerol (20:4)	Lipid	Monoacylglycerol
1-carboxyethylisoleucine	Amino Acid	Leucine, Isoleucine and Valine Metabolism
1-carboxyethylleucine	Amino Acid	Leucine, Isoleucine and Valine Metabolism
1-carboxyethylphenylalanine	Amino Acid	Phenylalanine Metabolism
1-carboxyethyltyrosine	Amino Acid	Tyrosine Metabolism
1-carboxyethylvaline	Amino Acid	Leucine, Isoleucine and Valine Metabolism
1-dihomo-linolenylglycerol (20:3)	Lipid	Monoacylglycerol
1-docosahexaenoylglycerol (22:6)	Lipid	Monoacylglycerol
1-eicosapentaenoylglycerol (20:5)*	Lipid	Monoacylglycerol
1H-indole-7-acetic acid	Xenobiotics	Bacterial/Fungal
1-hydroxy-2-naphthalenecarboxylate	Xenobiotics	Drug - Other
1-lignoceryl-GPC (24:0)	Lipid	Lysophospholipid
1-linolenylglycerol (18:3)	Lipid	Monoacylglycerol
1-linolenoyl-GPC (18:3)*	Lipid	Lysophospholipid
1-linoleoyl-2-linolenoyl-GPC (18:2/18:3)*	Lipid	Phosphatidylcholine (PC)
1-linoleoylglycerol (18:2)	Lipid	Monoacylglycerol
1-linoleoyl-GPA (18:2)*	Lipid	Lysophospholipid
1-linoleoyl-GPC (18:2)	Lipid	Lysophospholipid
1-linoleoyl-GPE (18:2)*	Lipid	Lysophospholipid
1-linoleoyl-GPG (18:2)*	Lipid	Lysophospholipid
1-linoleoyl-GPI* (18:2)*	Lipid	Lysophospholipid

1-margaroylglycerol (17:0)	Lipid	Monoacylglycerol
1-methyl-4-imidazoleacetate	Amino Acid	Histidine Metabolism
1-methyl-5-imidazoleacetate	Amino Acid	Histidine Metabolism
1-methylguanidine	Amino Acid	Guanidino and Acetamido Metabolism
1-methylhistidine	Amino Acid	Histidine Metabolism
1-methylnicotinamide	Cofactors and Vitamins	Nicotinate and Nicotinamide Metabolism
1-methylurate	Xenobiotics	Xanthine Metabolism
1-methylxanthine	Xenobiotics	Xanthine Metabolism
1-myristoyl-2-arachidonoyl-GPC (14:0/20:4)*	Lipid	Phosphatidylcholine (PC)
1-myristoyl-2-palmitoyl-GPC (14:0/16:0)	Lipid	Phosphatidylcholine (PC)
1-myristoylglycerol (14:0)	Lipid	Monoacylglycerol
1-oleoyl-2-docosahexaenoyl-GPC (18:1/22:6)*	Lipid	Phosphatidylcholine (PC)
1-oleoyl-2-docosahexaenoyl-GPE (18:1/22:6)*	Lipid	Phosphatidylethanolamine (PE)
1-oleoyl-2-linoleoyl-GPE (18:1/18:2)*	Lipid	Phosphatidylethanolamine (PE)
1-oleoylglycerol (18:1)	Lipid	Monoacylglycerol
1-oleoyl-GPC (18:1)	Lipid	Lysophospholipid
1-oleoyl-GPE (18:1)	Lipid	Lysophospholipid
1-oleoyl-GPG (18:1)*	Lipid	Lysophospholipid
1-oleoyl-GPI (18:1)	Lipid	Lysophospholipid
1-palmitoleoyl-2-linolenoyl-GPC (16:1/18:3)*	Lipid	Phosphatidylcholine (PC)
1-palmitoleoylglycerol (16:1)*	Lipid	Monoacylglycerol
1-palmitoleoyl-GPC* (16:1)*	Lipid	Lysophospholipid
1-palmitoyl-2-arachidonoyl-GPC (16:0/20:4n6)	Lipid	Phosphatidylcholine (PC)
1-palmitoyl-2-arachidonoyl-GPE (16:0/20:4)*	Lipid	Phosphatidylethanolamine (PE)
1-palmitoyl-2-arachidonoyl-GPI (16:0/20:4)*	Lipid	Phosphatidylinositol (PI)
1-palmitoyl-2-dihomo-linolenoyl-GPC (16:0/20:3n3 or 6)*	Lipid	Phosphatidylcholine (PC)
1-palmitoyl-2-docosahexaenoyl-GPC (16:0/22:6)	Lipid	Phosphatidylcholine (PC)
1-palmitoyl-2-docosahexaenoyl-GPE (16:0/22:6)*	Lipid	Phosphatidylethanolamine (PE)
1-palmitoyl-2-linoleoyl-GPC (16:0/18:2)	Lipid	Phosphatidylcholine (PC)
1-palmitoyl-2-linoleoyl-GPE (16:0/18:2)	Lipid	Phosphatidylethanolamine (PE)
1-palmitoyl-2-linoleoyl-GPI (16:0/18:2)	Lipid	Phosphatidylinositol (PI)
1-palmitoyl-2-oleoyl-GPC (16:0/18:1)	Lipid	Phosphatidylcholine (PC)
1-palmitoyl-2-oleoyl-GPE (16:0/18:1)	Lipid	Phosphatidylethanolamine (PE)
1-palmitoyl-2-oleoyl-GPI (16:0/18:1)*	Lipid	Phosphatidylinositol (PI)
1-palmitoyl-2-palmitoleoyl-GPC (16:0/16:1)*	Lipid	Phosphatidylcholine (PC)
1-palmitoyl-2-stearoyl-GPC (16:0/18:0)	Lipid	Phosphatidylcholine (PC)
1-palmitoylglycerol (16:0)	Lipid	Monoacylglycerol
1-palmitoyl-GPC (16:0)	Lipid	Lysophospholipid
1-palmitoyl-GPE (16:0)	Lipid	Lysophospholipid
1-palmitoyl-GPG (16:0)*	Lipid	Lysophospholipid
1-palmitoyl-GPI* (16:0)	Lipid	Lysophospholipid
1-pentadecanoylglycerol (15:0)	Lipid	Monoacylglycerol
1-ribosyl-imidazoleacetate*	Amino Acid	Histidine Metabolism
1-stearoyl-2-arachidonoyl-GPC (18:0/20:4)	Lipid	Phosphatidylcholine (PC)
1-stearoyl-2-arachidonoyl-GPE (18:0/20:4)	Lipid	Phosphatidylethanolamine (PE)
1-stearoyl-2-arachidonoyl-GPI (18:0/20:4)	Lipid	Phosphatidylinositol (PI)
1-stearoyl-2-docosahexaenoyl-GPC (18:0/22:6)	Lipid	Phosphatidylcholine (PC)
1-stearoyl-2-docosahexaenoyl-GPE (18:0/22:6)*	Lipid	Phosphatidylethanolamine (PE)
1-stearoyl-2-linoleoyl-GPC (18:0/18:2)*	Lipid	Phosphatidylcholine (PC)
1-stearoyl-2-linoleoyl-GPE (18:0/18:2)*	Lipid	Phosphatidylethanolamine (PE)
1-stearoyl-2-linoleoyl-GPI (18:0/18:2)	Lipid	Phosphatidylinositol (PI)
1-stearoyl-2-oleoyl-GPC (18:0/18:1)	Lipid	Phosphatidylcholine (PC)
1-stearoyl-2-oleoyl-GPE (18:0/18:1)	Lipid	Phosphatidylethanolamine (PE)
1-stearoyl-2-oleoyl-GPG (18:0/18:1)	Lipid	Phosphatidylglycerol (PG)
1-stearoyl-2-oleoyl-GPI (18:0/18:1)*	Lipid	Phosphatidylinositol (PI)
1-stearoyl-GPC (18:0)	Lipid	Lysophospholipid
1-stearoyl-GPE (18:0)	Lipid	Lysophospholipid
1-stearoyl-GPG (18:0)	Lipid	Lysophospholipid
1-stearoyl-GPI (18:0)	Lipid	Lysophospholipid
2,2'-Methylenebis(6-tert-butyl-p-cresol)	Xenobiotics	Chemical
2,3-dihydroxy-2-methylbutyrate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
2,3-dihydroxy-5-methylthio-4-pentenoate (DMTPA)*	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
2,3-dihydroxyisovalerate	Xenobiotics	Food Component/Plant
2,6-dihydroxybenzoic acid	Xenobiotics	Drug - Topical Agents
21-hydroxypregnenolone disulfate	Lipid	Pregnenolone Steroids
21-hydroxypregnenolone monosulfate (1)	Lipid	Pregnenolone Steroids
2-acetamidophenol sulfate	Xenobiotics	Drug - Analgesics, Anesthetics
2-aminoadipate	Amino Acid	Lysine Metabolism
2-aminobutyrate	Amino Acid	Glutathione Metabolism
2-aminoheptanoate	Lipid	Fatty Acid, Amino
2-aminooctanoate	Lipid	Fatty Acid, Amino
2-aminophenol sulfate	Xenobiotics	Chemical
2-arachidonoylglycerol (20:4)	Lipid	Monoacylglycerol
2'-deoxyuridine	Nucleotide	Pyrimidine Metabolism, Uracil containing
2-ethylphenylsulfate	Xenobiotics	Benzoate Metabolism
2-hydroxy-3-methylvalerate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
2-hydroxyacetaminophen sulfate*	Xenobiotics	Drug - Analgesics, Anesthetics
2-hydroxyarachidate*	Lipid	Fatty Acid, Monohydroxy
2-hydroxybutyrate/2-hydroxyisobutyrate	Amino Acid	Glutathione Metabolism
2-hydroxydecanoate	Lipid	Fatty Acid, Monohydroxy
2-hydroxyglutarate	Lipid	Fatty Acid, Dicarboxylate

2-hydroxyheptanoate*	Lipid	Fatty Acid, Monohydroxy
2-hydroxyhippurate (salicylurate)	Xenobiotics	Benzoate Metabolism
2-hydroxyibuprofen	Xenobiotics	Drug - Analgesics, Anesthetics
2-hydroxynervonate*	Lipid	Fatty Acid, Monohydroxy
2-hydroxyoctanoate	Lipid	Fatty Acid, Monohydroxy
2-hydroxypalmitate	Lipid	Fatty Acid, Monohydroxy
2-hydroxyphenylacetate	Amino Acid	Phenylalanine Metabolism
2-hydroxysebacate	Lipid	Fatty Acid, Dicarboxylate
2-hydroxystearate	Lipid	Fatty Acid, Monohydroxy
2-ketocaprylate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
2-linoleoylglycerol (18:2)	Lipid	Monoacylglycerol
2-methoxyacetaminophen glucuronide*	Xenobiotics	Drug - Analgesics, Anesthetics
2-methoxyacetaminophen sulfate*	Xenobiotics	Drug - Analgesics, Anesthetics
2-methoxyresorcinol sulfate	Xenobiotics	Chemical
2-methylbutyrylcarnitine (C5)	Amino Acid	Leucine, Isoleucine and Valine Metabolism
2-methylcitrate/homocitrate	Energy	TCA Cycle
2-naphthol sulfate	Xenobiotics	Chemical
2'-O-methylcytidine	Nucleotide	Pyrimidine Metabolism, Cytidine containing
2'-O-methyluridine	Nucleotide	Pyrimidine Metabolism, Uracil containing
2-oxoarginine*	Amino Acid	Urea cycle; Arginine and Proline Metabolism
2-palmitoleoyl-GPC* (16:1)*	Lipid	Lysophospholipid
2-palmitoylglycerol (16:0)	Lipid	Monoacylglycerol
2-palmitoyl-GPC* (16:0)*	Lipid	Lysophospholipid
2-piperidinone	Xenobiotics	Food Component/Plant
2-propyl-2-pentenoate (2-ene-valproate)	Xenobiotics	Drug - Neurological
2-propyl-4-pentenoate (4-ene-valproate)	Xenobiotics	Drug - Neurological
2R,3R-dihydroxybutyrate	Lipid	Fatty Acid, Dihydroxy
2S,3R-dihydroxybutyrate	Lipid	Fatty Acid, Dihydroxy
2-stearoyl-GPE (18:0)*	Lipid	Lysophospholipid
3-(3-amino-3-carboxypropyl)uridine*	Nucleotide	Pyrimidine Metabolism, Uracil containing
3-(3-hydroxyphenyl)propionate	Xenobiotics	Benzoate Metabolism
3-(3-hydroxyphenyl)propionate sulfate	Xenobiotics	Benzoate Metabolism
3-(4-hydroxyphenyl)lactate (HPLA)	Amino Acid	Tyrosine Metabolism
3-(cystein-5-yl)acetaminophen*	Xenobiotics	Drug - Analgesics, Anesthetics
3-(methylthio)acetaminophen sulfate*	Xenobiotics	Drug - Analgesics, Anesthetics
3-(N-acetyl-L-cystein-5-yl) acetaminophen	Xenobiotics	Drug - Analgesics, Anesthetics
3,4-dihydroxybutyrate	Lipid	Fatty Acid, Dihydroxy
3,4-methyleneheptanoate	Xenobiotics	Food Component/Plant
3,7-dimethylurate	Xenobiotics	Xanthine Metabolism
3-acetylphenol sulfate	Xenobiotics	Chemical
3-amino-2-piperidone	Amino Acid	Urea cycle; Arginine and Proline Metabolism
3-aminoisobutyrate	Nucleotide	Pyrimidine Metabolism, Thymine containing
3beta,7alpha-dihydroxy-5-cholestenoate	Lipid	Sterol
3beta-hydroxy-5-cholestenoate	Lipid	Sterol
3b-hydroxy-5-cholenoic acid	Lipid	Secondary Bile Acid Metabolism
3-carboxy-4-methyl-5-pentyl-2-furanpropionate (3-CMPFP)	Lipid	Fatty Acid, Dicarboxylate
3-carboxy-4-methyl-5-propyl-2-furanpropanoate (CMPF)	Lipid	Fatty Acid, Dicarboxylate
3-decenoylcarnitine	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Monounsaturated)
3-ethylcatechol sulfate (1)	Xenobiotics	Food Component/Plant
3-ethylcatechol sulfate (2)	Xenobiotics	Food Component/Plant
3-formylindole	Xenobiotics	Food Component/Plant
3-hydroxy-2-ethylpropionate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
3-hydroxy-2-methylpyridine sulfate	Xenobiotics	Chemical
3-hydroxy-3-methylglutarate	Lipid	Mevalonate Metabolism
3-hydroxyadipate*	Lipid	Fatty Acid, Dicarboxylate
3-hydroxybutyrate (BHBA)	Lipid	Ketone Bodies
3-hydroxybutyrylglycine	Lipid	Fatty Acid Metabolism (Acyl Glycine)
3-hydroxycotinine glucuronide	Xenobiotics	Tobacco Metabolite
3-hydroxydecanoate	Lipid	Fatty Acid, Monohydroxy
3-hydroxydecanoylcarnitine	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Hydroxy)
3-hydroxydodecanedioate*	Lipid	Fatty Acid, Dicarboxylate
3-hydroxyhexanoate	Lipid	Fatty Acid, Monohydroxy
3-hydroxyhippurate	Xenobiotics	Benzoate Metabolism
3-hydroxyhippurate sulfate	Xenobiotics	Benzoate Metabolism
3-hydroxyisobutyrate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
3-hydroxylaurate	Lipid	Fatty Acid, Monohydroxy
3-hydroxymyristate	Lipid	Fatty Acid, Monohydroxy
3-hydroxyoctanoate	Lipid	Fatty Acid, Monohydroxy
3-hydroxyoleate*	Lipid	Fatty Acid, Monohydroxy
3-hydroxypyridine glucuronide	Xenobiotics	Chemical
3-hydroxypyridine sulfate	Xenobiotics	Chemical
3-hydroxysebacate	Lipid	Fatty Acid, Monohydroxy
3-hydroxystachydrine*	Xenobiotics	Food Component/Plant
3-hydroxyvalproate	Xenobiotics	Drug - Neurological
3-indoxyl sulfate	Amino Acid	Tryptophan Metabolism
3-methoxycatechol sulfate (1)	Xenobiotics	Benzoate Metabolism
3-methoxytyramine sulfate	Amino Acid	Tyrosine Metabolism
3-methoxytyrosine	Amino Acid	Tyrosine Metabolism
3-methyl catechol sulfate (1)	Xenobiotics	Benzoate Metabolism
3-methyl catechol sulfate (2)	Xenobiotics	Benzoate Metabolism

3-methyl-2-oxobutyrate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
3-methyl-2-oxovalerate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
3-methyladipate	Lipid	Fatty Acid, Dicarboxylate
3-methylcytidine	Nucleotide	Pyrimidine Metabolism, Cytidine containing
3-methylglutaconate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
3-methylglutaryl carnitine (2)	Amino Acid	Leucine, Isoleucine and Valine Metabolism
3-methylhistidine	Amino Acid	Histidine Metabolism
3-methylurate*	Xenobiotics	Xanthine Metabolism
3-methylxanthine	Xenobiotics	Xanthine Metabolism
3-phenylpropionate (hydrocinnamate)	Xenobiotics	Benzoate Metabolism
3-ureidopropionate	Nucleotide	Pyrimidine Metabolism, Uracil containing
4-acetamidobutanoate	Amino Acid	Polyamine Metabolism
4-acetamidophenol	Xenobiotics	Drug - Analgesics, Anesthetics
4-acetamidophenylglucuronide	Xenobiotics	Drug - Analgesics, Anesthetics
4-acetaminophen sulfate	Xenobiotics	Drug - Analgesics, Anesthetics
4-acetylcatechol sulfate (1)	Xenobiotics	Food Component/Plant
4-acetylphenyl sulfate	Xenobiotics	Benzoate Metabolism
4-allylphenol sulfate	Xenobiotics	Food Component/Plant
4-ethylcatechol sulfate	Xenobiotics	Benzoate Metabolism
4-ethylphenyl sulfate	Xenobiotics	Benzoate Metabolism
4-guanidinobutanoate	Amino Acid	Guanidino and Acetamido Metabolism
4-hydroxychlorothalonil	Xenobiotics	Chemical
4-hydroxycoumarin	Xenobiotics	Drug - Cardiovascular
4-hydroxyglutamate	Amino Acid	Glutamate Metabolism
4-hydroxyhippurate	Xenobiotics	Benzoate Metabolism
4-hydroxyphenylacetate	Amino Acid	Phenylalanine Metabolism
4-hydroxyphenylacetylglutamine	Peptide	Acetylated Peptides
4-hydroxyphenylpyruvate	Amino Acid	Tyrosine Metabolism
4-imidazoleacetate	Amino Acid	Histidine Metabolism
4-methoxyphenol sulfate	Amino Acid	Tyrosine Metabolism
4-methyl-2-oxopentanoate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
4-methylcatechol sulfate	Xenobiotics	Benzoate Metabolism
4-methylguaiaicol sulfate	Xenobiotics	Benzoate Metabolism
4-methylhexanoylglutamine	Lipid	Fatty Acid Metabolism (Acyl Glutamine)
4-phenylbutyrate	Xenobiotics	Drug - Other
4-vinylguaiaicol sulfate	Xenobiotics	Food Component/Plant
4-vinylphenol sulfate	Xenobiotics	Benzoate Metabolism
5-(galactosylhydroxy)-L-lysine	Amino Acid	Lysine Metabolism
5,6-dihydrothymine	Nucleotide	Pyrimidine Metabolism, Thymine containing
5,6-dihydrouracil	Nucleotide	Pyrimidine Metabolism, Uracil containing
5,6-dihydrouridine	Nucleotide	Pyrimidine Metabolism, Uracil containing
5-acetyl amino-6-amino-3-methyluracil	Xenobiotics	Xanthine Metabolism
5-acetyl amino-6-formyl amino-3-methyluracil	Xenobiotics	Xanthine Metabolism
5alpha-androstan-3alpha,17alpha-diol monosulfate	Lipid	Androgenic Steroids
5alpha-androstan-3alpha,17beta-diol 17-glucuronide	Lipid	Androgenic Steroids
5alpha-androstan-3alpha,17beta-diol disulfate	Lipid	Androgenic Steroids
5alpha-androstan-3alpha,17beta-diol monosulfate (1)	Lipid	Androgenic Steroids
5alpha-androstan-3alpha,17beta-diol monosulfate (2)	Lipid	Androgenic Steroids
5alpha-androstan-3beta,17alpha-diol disulfate	Lipid	Androgenic Steroids
5alpha-androstan-3beta,17beta-diol disulfate	Lipid	Androgenic Steroids
5alpha-androstan-3beta,17beta-diol monosulfate (2)	Lipid	Androgenic Steroids
5alpha-pregnan-3beta,20alpha-diol disulfate	Lipid	Progestin Steroids
5alpha-pregnan-3beta,20alpha-diol monosulfate (2)	Lipid	Progestin Steroids
5alpha-pregnan-3beta,20beta-diol monosulfate (1)	Lipid	Progestin Steroids
5alpha-pregnan-diol disulfate	Lipid	Progestin Steroids
5-dodecenoate (12:1n7)	Lipid	Medium Chain Fatty Acid
5-dodecenoyl carnitine (C12:1)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Monounsaturated)
5-hydroxy-2-methylpyridine sulfate	Xenobiotics	Chemical
5-hydroxyhexanoate	Lipid	Fatty Acid, Monohydroxy
5-hydroxyindole sulfate	Amino Acid	Tryptophan Metabolism
5-hydroxyindoleacetate	Amino Acid	Tryptophan Metabolism
5-hydroxylysine	Amino Acid	Lysine Metabolism
5-hydroxyvalproate	Lipid	Fatty Acid, Monohydroxy
5-methylthioadenosine (MTA)	Amino Acid	Polyamine Metabolism
5-methylthioribose	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
5-methyluridine (ribothymidine)	Nucleotide	Pyrimidine Metabolism, Uracil containing
5-oxoproline	Amino Acid	Glutathione Metabolism
6-bromotryptophan	Amino Acid	Tryptophan Metabolism
6-hydroxyindole sulfate	Xenobiotics	Chemical
6-oxopiperidine-2-carboxylate	Amino Acid	Lysine Metabolism
7-HOCA	Lipid	Sterol
7-hydroxyoctanoate	Lipid	Fatty Acid, Monohydroxy
7-ketodeoxycholate	Lipid	Secondary Bile Acid Metabolism
7-methylguanine	Nucleotide	Purine Metabolism, Guanine containing
7-methylurate	Xenobiotics	Xanthine Metabolism
7-methylxanthine	Xenobiotics	Xanthine Metabolism
8-hydroxyoctanoate	Lipid	Fatty Acid, Monohydroxy
8-methoxykynurenate	Amino Acid	Tryptophan Metabolism
9,10-DiHOME	Lipid	Fatty Acid, Dihydroxy
9-hydroxystearate	Lipid	Fatty Acid, Monohydroxy

acesulfame	Xenobiotics	Food Component/Plant
acetoacetate	Lipid	Ketone Bodies
acetylcarnitine (C2)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Short Chain)
acisoga	Amino Acid	Polyamine Metabolism
aconitate [cis or trans]	Energy	TCA Cycle
adenine	Nucleotide	Purine Metabolism, Adenine containing
adenosine	Nucleotide	Purine Metabolism, Adenine containing
adipoylcarnitine (C6-DC)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Dicarboxylate)
adrenate (22:4n6)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
adrenoylcarnitine (C22:4)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Polyunsaturated)
alanine	Amino Acid	Alanine and Aspartate Metabolism
allantoin	Nucleotide	Purine Metabolism, (Hypo)Xanthine/Inosine containing
alliin	Xenobiotics	Food Component/Plant
alpha-CEHC sulfate	Cofactors and Vitamins	Tocopherol Metabolism
alpha-hydroxycaproate	Lipid	Fatty Acid, Monohydroxy
alpha-hydroxyisocaproate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
alpha-hydroxyisovalerate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
alpha-ketobutyrate	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
alpha-ketoglutarate*	Amino Acid	Glutamate Metabolism
alpha-ketoglutarate	Energy	TCA Cycle
alpha-tocopherol	Cofactors and Vitamins	Tocopherol Metabolism
andro steroid monosulfate C19H28O6S (1)*	Lipid	Androgenic Steroids
androstenediol (3alpha, 17alpha) monosulfate (2)	Lipid	Androgenic Steroids
androstenediol (3alpha, 17alpha) monosulfate (3)	Lipid	Androgenic Steroids
androstenediol (3beta,17beta) disulfate (1)	Lipid	Androgenic Steroids
androstenediol (3beta,17beta) disulfate (2)	Lipid	Androgenic Steroids
androstenediol (3beta,17beta) monosulfate (1)	Lipid	Androgenic Steroids
androstenediol (3beta,17beta) monosulfate (2)	Lipid	Androgenic Steroids
androsterone glucuronide	Lipid	Androgenic Steroids
androsterone sulfate	Lipid	Androgenic Steroids
anthranilate	Amino Acid	Tryptophan Metabolism
arabinose	Carbohydrate	Pentose Metabolism
arabitol/xylitol	Carbohydrate	Pentose Metabolism
arabonate/xylonate	Carbohydrate	Pentose Metabolism
arachidate (20:0)	Lipid	Long Chain Saturated Fatty Acid
arachidonate (20:4n6)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
arachidonoyl ethanolamide	Lipid	Endocannabinoid
arachidonoylcarnitine (C20:4)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Polyunsaturated)
arachidonoylcholine	Lipid	Fatty Acid Metabolism (Acyl Choline)
arachidoylecarnitine (C20)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Long Chain Saturated)
argininate*	Amino Acid	Urea cycle; Arginine and Proline Metabolism
arginine	Amino Acid	Urea cycle; Arginine and Proline Metabolism
asparagine	Amino Acid	Alanine and Aspartate Metabolism
aspartate	Amino Acid	Alanine and Aspartate Metabolism
atenolol	Xenobiotics	Drug - Cardiovascular
azelate (nonanedioate; C9)	Lipid	Fatty Acid, Dicarboxylate
baclofen	Xenobiotics	Drug - Neurological
behenoyl dihydrosphingomyelin (d18:0/22:0)*	Lipid	Dihydrosphingomyelins
behenoyl sphingomyelin (d18:1/22:0)*	Lipid	Sphingomyelins
behenoylcarnitine (C22)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Long Chain Saturated)
benzoate	Xenobiotics	Benzoate Metabolism
benzoylcarnitine*	Xenobiotics	Chemical
beta-alanine	Nucleotide	Pyrimidine Metabolism, Uracil containing
beta-citrylglycinate	Amino Acid	Glutamate Metabolism
beta-cryptoxanthin	Cofactors and Vitamins	Vitamin A Metabolism
beta-guanidinopropionate	Xenobiotics	Food Component/Plant
beta-hydroxyisovalerate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
betaine	Amino Acid	Glycine, Serine and Threonine Metabolism
beta-sitosterol	Lipid	Sterol
bilirubin (E,E)*	Cofactors and Vitamins	Hemoglobin and Porphyrin Metabolism
bilirubin (E,Z or Z,E)*	Cofactors and Vitamins	Hemoglobin and Porphyrin Metabolism
bilirubin	Cofactors and Vitamins	Hemoglobin and Porphyrin Metabolism
biliverdin	Cofactors and Vitamins	Hemoglobin and Porphyrin Metabolism
bradykinin, des-arg(9)	Peptide	Polypeptide
branched chain 14:0 dicarboxylic acid	Lipid	Fatty Acid, Dicarboxylate
butyrylcarnitine (C4)	Lipid	Fatty Acid Metabolism (also BCAA Metabolism)
butyrylglycine (C4)	Lipid	Fatty Acid Metabolism (also BCAA Metabolism)
caffeic acid sulfate	Xenobiotics	Food Component/Plant
caffeine	Xenobiotics	Xanthine Metabolism
campesterol	Lipid	Sterol
candesartan	Xenobiotics	Drug - Cardiovascular
caprate (10:0)	Lipid	Medium Chain Fatty Acid
caproate (6:0)	Lipid	Medium Chain Fatty Acid
caprylate (8:0)	Lipid	Medium Chain Fatty Acid
carboxyethyl-GABA	Amino Acid	Glutamate Metabolism
carboxybupropfen	Xenobiotics	Drug - Analgesics, Anesthetics
carboxybupropfen glucuronide*	Xenobiotics	Drug - Analgesics, Anesthetics
carnitine	Lipid	Carnitine Metabolism
carotene diol (1)	Cofactors and Vitamins	Vitamin A Metabolism

carotene diol (2)	Cofactors and Vitamins	Vitamin A Metabolism
carotene diol (3)	Cofactors and Vitamins	Vitamin A Metabolism
catechol sulfate	Xenobiotics	Benzoate Metabolism
ceramide (d16:1/24:1, d18:1/22:1)*	Lipid	Ceramides
ceramide (d18:1/14:0, d16:1/16:0)*	Lipid	Ceramides
ceramide (d18:1/20:0, d16:1/22:0, d20:1/18:0)*	Lipid	Ceramides
ceramide (d18:2/24:1, d18:1/24:2)*	Lipid	Ceramides
cerotylcarnitine (C26)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Long Chain Saturated)
cetirizine	Xenobiotics	Drug - Respiratory
C-glycosyltryptophan	Amino Acid	Tryptophan Metabolism
chenodeoxycholate	Lipid	Primary Bile Acid Metabolism
chiro-inositol	Lipid	Inositol Metabolism
chlorthalidone	Xenobiotics	Drug - Cardiovascular
cholate	Lipid	Primary Bile Acid Metabolism
cholesterol	Lipid	Sterol
cholic acid glucuronide	Lipid	Primary Bile Acid Metabolism
choline	Lipid	Phospholipid Metabolism
phosphocholine	Lipid	Phospholipid Metabolism
cimetidine	Xenobiotics	Drug - Gastrointestinal
cinnamoylglycine	Xenobiotics	Food Component/Plant
cis-4-decenoate (10:1n6)*	Lipid	Medium Chain Fatty Acid
cis-4-decenoylcarnitine (C10:1)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Monounsaturated)
citalopram propionate*	Xenobiotics	Drug - Psychoactive
citrate	Energy	TCA Cycle
citrulline	Amino Acid	Urea cycle; Arginine and Proline Metabolism
clomipramine	Xenobiotics	Drug - Psychoactive
corticosterone	Lipid	Corticosteroids
cortisol	Lipid	Corticosteroids
cortisone	Lipid	Corticosteroids
cortolone glucuronide (1)	Lipid	Corticosteroids
cotinine	Xenobiotics	Tobacco Metabolite
cotinine N-oxide	Xenobiotics	Tobacco Metabolite
creatine	Amino Acid	Creatine Metabolism
creatinine	Amino Acid	Creatine Metabolism
cys-gly, oxidized	Amino Acid	Glutathione Metabolism
cystathionine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
cysteine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
cysteine s-sulfate	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
cysteine sulfinic acid	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
cysteine-glutathione disulfide	Amino Acid	Glutathione Metabolism
cysteinylglycine	Amino Acid	Glutathione Metabolism
cysteinylglycine disulfide*	Amino Acid	Glutathione Metabolism
cystine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
cytidine	Nucleotide	Pyrimidine Metabolism, Cytidine containing
cytosine	Nucleotide	Pyrimidine Metabolism, Cytidine containing
daidzein sulfate (2)	Xenobiotics	Food Component/Plant
decanoylcarnitine (C10)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Medium Chain)
dehydroepiandrosterone sulfate (DHEA-S)	Lipid	Androgenic Steroids
delta-CEHC	Cofactors and Vitamins	Tocopherol Metabolism
delta-CEHC glucuronide*	Cofactors and Vitamins	Tocopherol Metabolism
deoxycarnitine	Lipid	Carnitine Metabolism
deoxycholate	Lipid	Secondary Bile Acid Metabolism
desmethylcitalopram*	Xenobiotics	Drug - Psychoactive
desmethylnaproxen	Xenobiotics	Drug - Analgesics, Anesthetics
desmethylnaproxen sulfate	Xenobiotics	Drug - Analgesics, Anesthetics
diacylglycerol (12:0/18:1, 14:0/16:1, 16:0/14:1) [2]*	Lipid	Diacylglycerol
diacylglycerol (14:0/18:1, 16:0/16:1) [1]*	Lipid	Diacylglycerol
diacylglycerol (14:0/18:1, 16:0/16:1) [2]*	Lipid	Diacylglycerol
diacylglycerol (16:1/18:2 [2], 16:0/18:3 [1])*	Lipid	Diacylglycerol
diclofenac	Xenobiotics	Drug - Analgesics, Anesthetics
diglycerol	Xenobiotics	Chemical
dihomolinoleate (20:2n6)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
dihomolinolenate (20:3n3 or 3n6)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
dihomo-linolenoylcarnitine (C20:3n3 or 6)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Polyunsaturated)
dihomo-linolenoyl-choline	Lipid	Fatty Acid Metabolism (Acyl Choline)
dihomo-linoleoylcarnitine (C20:2)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Polyunsaturated)
dihydrocaffeate sulfate (2)	Xenobiotics	Food Component/Plant
dihydroferulate	Xenobiotics	Food Component/Plant
dihydroferulic acid sulfate	Xenobiotics	Food Component/Plant
dihydroorotate	Nucleotide	Pyrimidine Metabolism, Orotate containing
dimethyl sulfone	Xenobiotics	Chemical
dimethylarginine (ADMA + SDMA)	Amino Acid	Urea cycle; Arginine and Proline Metabolism
dimethylglycine	Amino Acid	Glycine, Serine and Threonine Metabolism
docosadienoate (22:2n6)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
docosadioate (C22-DC)	Lipid	Fatty Acid, Dicarboxylate
docosahexaenoate (DHA; 22:6n3)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
docosahexaenoylcarnitine (C22:6)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Polyunsaturated)
docosahexaenoylcholine	Lipid	Fatty Acid Metabolism (Acyl Choline)

docosapentaenoate (DPA; 22:5n3)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
docosapentaenoate (n6 DPA; 22:5n6)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
docosapentaenoylcarnitine (C22:5n3)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Polyunsaturated)
docosatrienoate (22:3n3)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
docosatrienoate (22:3n6)*	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
dodecadienoate (12:2)*	Lipid	Fatty Acid, Dicarboxylate
dodecanedioate (C12)	Lipid	Fatty Acid, Dicarboxylate
dodecenedioate (C12:1-DC)*	Lipid	Fatty Acid, Dicarboxylate
dopamine 3-O-sulfate	Amino Acid	Tyrosine Metabolism
dopamine 4-sulfate	Amino Acid	Tyrosine Metabolism
doxycycline	Xenobiotics	Drug - Antibiotic
doxylamine	Xenobiotics	Drug - Respiratory
ectoine	Xenobiotics	Chemical
efavirenz	Xenobiotics	Drug - Antiviral
eicosadienamide (20:2)*	Lipid	Fatty Acid, Amide
eicosanedioate (C20-DC)	Lipid	Fatty Acid, Dicarboxylate
eicosapentaenoate (EPA; 20:5n3)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
eicosapentaenoylcholine	Lipid	Fatty Acid Metabolism (Acyl Choline)
eicosenamide (20:1)*	Lipid	Fatty Acid, Amide
eicosenedioate (C20:1-DC)*	Lipid	Fatty Acid, Dicarboxylate
eicosenoate (20:1n9 or 1n11)	Lipid	Long Chain Monounsaturated Fatty Acid
eicosenoylcarnitine (C20:1)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Monounsaturated)
emtricitabine	Xenobiotics	Drug - Antiviral
enalapril	Xenobiotics	Drug - Cardiovascular
enalaprilat*	Xenobiotics	Drug - Cardiovascular
epiandrosterone sulfate	Lipid	Androgenic Steroids
ergothioneine	Xenobiotics	Food Component/Plant
erucate (22:1n9)	Lipid	Long Chain Monounsaturated Fatty Acid
erythritol	Xenobiotics	Food Component/Plant
erythronate*	Carbohydrate	Aminosugar Metabolism
escitalopram	Xenobiotics	Drug - Psychoactive
estrone 3-sulfate	Lipid	Estrogenic Steroids
ethyl alpha-glucopyranoside	Xenobiotics	Food Component/Plant
ethyl glucuronide	Xenobiotics	Chemical
ethylmalonate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
etiocholanolone glucuronide	Lipid	Androgenic Steroids
eugenol sulfate	Xenobiotics	Food Component/Plant
ferulic acid 4-sulfate	Xenobiotics	Food Component/Plant
ferulylglycine (1)	Xenobiotics	Food Component/Plant
ferulylglycine (2)	Xenobiotics	Food Component/Plant
Fibrinopeptide A (2-15)	Peptide	Fibrinogen Cleavage Peptide
Fibrinopeptide A (3-15)	Peptide	Fibrinogen Cleavage Peptide
Fibrinopeptide A (3-16)	Peptide	Fibrinogen Cleavage Peptide
Fibrinopeptide A (4-15)	Peptide	Fibrinogen Cleavage Peptide
Fibrinopeptide A (5-16)*	Peptide	Fibrinogen Cleavage Peptide
Fibrinopeptide A (7-16)*	Peptide	Fibrinogen Cleavage Peptide
Fibrinopeptide A (8-16)	Peptide	Fibrinogen Cleavage Peptide
ADSGEGDFXAEGGGVR*	Peptide	Fibrinogen Cleavage Peptide
DSGEGDFXAEGGGVR*	Peptide	Fibrinogen Cleavage Peptide
ADpSGEGDFXAEGGGVR*	Peptide	Fibrinogen Cleavage Peptide
Fibrinopeptide B (1-11)	Peptide	Fibrinogen Cleavage Peptide
Fibrinopeptide B (1-12)	Peptide	Fibrinogen Cleavage Peptide
Fibrinopeptide B (1-13)	Peptide	Fibrinogen Cleavage Peptide
Fibrinopeptide B (1-9)	Peptide	Fibrinogen Cleavage Peptide
flvoxamine	Xenobiotics	Drug - Psychoactive
formiminoglutamate	Amino Acid	Histidine Metabolism
fructose	Carbohydrate	Fructose, Mannose and Galactose Metabolism
fructosyllysine	Amino Acid	Lysine Metabolism
fumarate	Energy	TCA Cycle
galactonate	Carbohydrate	Fructose, Mannose and Galactose Metabolism
gamma-carboxyglutamate	Amino Acid	Glutamate Metabolism
gamma-CEHC	Cofactors and Vitamins	Tocopherol Metabolism
gamma-CEHC glucuronide*	Cofactors and Vitamins	Tocopherol Metabolism
gamma-glutamyl-2-aminobutyrate	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylalanine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamyl-alpha-lysine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylcitrulline*	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamyl-epsilon-lysine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylglutamate	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylglutamine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylglycine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylhistidine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylisoleucine*	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylleucine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylmethionine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylphenylalanine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylserine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamylthreonine	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamyltryptophan	Peptide	Gamma-glutamyl Amino Acid
gamma-glutamyltyrosine	Peptide	Gamma-glutamyl Amino Acid

gamma-glutamylvaline	Peptide	Gamma-glutamyl Amino Acid
gamma-tocopherol/beta-tocopherol	Cofactors and Vitamins	Tocopherol Metabolism
gemfibrozil	Xenobiotics	Drug - Metabolic
genistein sulfate*	Xenobiotics	Food Component/Plant
gentisate	Amino Acid	Tyrosine Metabolism
gluconate	Xenobiotics	Food Component/Plant
glucose	Carbohydrate	Glycolysis, Gluconeogenesis, and Pyruvate Metabolism
glucuronate	Carbohydrate	Aminosugar Metabolism
glucuronide of C10H18O2 (1)*	Partially Characterized Molecules	Partially Characterized Molecules
glucuronide of C10H18O2 (7)*	Partially Characterized Molecules	Partially Characterized Molecules
glucuronide of C10H18O2 (8)*	Partially Characterized Molecules	Partially Characterized Molecules
glucuronide of piperine metabolite C17H21NO3 (3)*	Xenobiotics	Food Component/Plant
glucuronide of piperine metabolite C17H21NO3 (4)*	Xenobiotics	Food Component/Plant
glucuronide of piperine metabolite C17H21NO3 (5)*	Xenobiotics	Food Component/Plant
glu-gly-asn-val	Peptide	Polypeptide
glutamate	Amino Acid	Glutamate Metabolism
glutamate, gamma-methyl ester	Amino Acid	Glutamate Metabolism
glutamine	Amino Acid	Glutamate Metabolism
glutarate (C5-DC)	Lipid	Fatty Acid, Dicarboxylate
glutaryl carnitine (C5)	Amino Acid	Lysine Metabolism
glycerate	Carbohydrate	Glycolysis, Gluconeogenesis, and Pyruvate Metabolism
glycerol	Lipid	Glycerolipid Metabolism
glycerol 3-phosphate	Lipid	Glycerolipid Metabolism
glycerophosphoethanolamine	Lipid	Phospholipid Metabolism
glycerophosphoinositol*	Lipid	Phospholipid Metabolism
glycerophosphorylcholine (GPC)	Lipid	Phospholipid Metabolism
glycerophosphoserine*	Lipid	Phospholipid Metabolism
glycine	Amino Acid	Glycine, Serine and Threonine Metabolism
glycine conjugate of C10H12O2*	Partially Characterized Molecules	Partially Characterized Molecules
glycine conjugate of C10H14O2 (1)*	Partially Characterized Molecules	Partially Characterized Molecules
glyco-beta-muricholate	Lipid	Primary Bile Acid Metabolism
glycochenodeoxycholate	Lipid	Primary Bile Acid Metabolism
glycochenodeoxycholate 3-sulfate	Lipid	Primary Bile Acid Metabolism
glycochenodeoxycholate glucuronide (1)	Lipid	Primary Bile Acid Metabolism
glycocholate	Lipid	Primary Bile Acid Metabolism
glycocholate glucuronide (1)	Lipid	Primary Bile Acid Metabolism
glycochenolate sulfate*	Lipid	Secondary Bile Acid Metabolism
glycodeoxycholate	Lipid	Secondary Bile Acid Metabolism
glycodeoxycholate 3-sulfate	Lipid	Secondary Bile Acid Metabolism
glycohyocholate	Lipid	Secondary Bile Acid Metabolism
glycolithocholate	Lipid	Secondary Bile Acid Metabolism
glycolithocholate sulfate*	Lipid	Secondary Bile Acid Metabolism
glycosyl ceramide (d18:1/20:0, d16:1/22:0)*	Lipid	Hexosylceramides (HCER)
glycosyl ceramide (d18:2/24:1, d18:1/24:2)*	Lipid	Hexosylceramides (HCER)
glycosyl-N-(2-hydroxynervonoyl)-sphingosine (d18:1/24:1(2OH))*	Lipid	Hexosylceramides (HCER)
glycosyl-N-behenoyl-sphingadienine (d18:2/22:0)*	Lipid	Hexosylceramides (HCER)
glycosyl-N-palmitoyl-sphingosine (d18:1/16:0)	Lipid	Hexosylceramides (HCER)
glycosyl-N-stearoyl-sphingosine (d18:1/18:0)	Lipid	Hexosylceramides (HCER)
glycoursodeoxycholate	Lipid	Secondary Bile Acid Metabolism
glycylvaline	Peptide	Dipeptide
glycyrrhetinate	Xenobiotics	Food Component/Plant
guaiacol sulfate	Xenobiotics	Benzoate Metabolism
guanidinoacetate	Amino Acid	Creatine Metabolism
guanidininosuccinate	Amino Acid	Guanidino and Acetamido Metabolism
guanine	Nucleotide	Purine Metabolism, Guanine containing
guanosine	Nucleotide	Purine Metabolism, Guanine containing
gulonate*	Cofactors and Vitamins	Ascorbate and Aldarate Metabolism
heneicosapentaenoate (21:5n3)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
heptadecenamide (17:1)*	Lipid	Fatty Acid, Amide
heptenedioate (C7:1-DC)*	Lipid	Fatty Acid, Dicarboxylate
hexadecadienoate (16:2n6)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
hexadecanedioate (C16)	Lipid	Fatty Acid, Dicarboxylate
hexadecenedioate (C16:1-DC)*	Lipid	Fatty Acid, Dicarboxylate
hexanoyl carnitine (C6)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Medium Chain)
hexanoyl glutamine	Lipid	Fatty Acid Metabolism (Acyl Glutamine)
hexanoyl glycine (C6)	Lipid	Fatty Acid Metabolism (Acyl Glycine)
hippurate	Xenobiotics	Benzoate Metabolism
histidine	Amino Acid	Histidine Metabolism
histidine betaine (hercynine)*	Xenobiotics	Food Component/Plant
homoarginine	Amino Acid	Urea cycle; Arginine and Proline Metabolism
homocitrulline	Amino Acid	Urea cycle; Arginine and Proline Metabolism
homostachydrine*	Xenobiotics	Food Component/Plant
homovanillate (HVA)	Amino Acid	Tyrosine Metabolism
HWESASXX*	Peptide	Polypeptide
hydantoin-5-propionate	Amino Acid	Histidine Metabolism
hydrochlorothiazide	Xenobiotics	Drug - Cardiovascular
hydroquinone sulfate	Xenobiotics	Drug - Topical Agents
hydroxyasparagine	Amino Acid	Alanine and Aspartate Metabolism
hydroxy-CMPF*	Lipid	Fatty Acid, Dicarboxylate
hydroxycotinine	Xenobiotics	Tobacco Metabolite
hydroxy-N6,N6,N6-trimethyllysine*	Amino Acid	Lysine Metabolism

hydroxypalmitoyl sphingomyelin (d18:1/16:0(OH))	Lipid	Sphingomyelins
hyocholate	Lipid	Secondary Bile Acid Metabolism
hypotaurine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
hypoxanthine	Nucleotide	Purine Metabolism, (Hypo)Xanthine/Inosine containing
ibuprofen	Xenobiotics	Drug - Analgesics, Anesthetics
ibuprofen acyl glucuronide	Xenobiotics	Drug - Analgesics, Anesthetics
imidazole lactate	Amino Acid	Histidine Metabolism
imidazole propionate	Amino Acid	Histidine Metabolism
indole-3-carboxylate	Amino Acid	Tryptophan Metabolism
indoleacetate	Amino Acid	Tryptophan Metabolism
indoleacetyl carnitine*	Amino Acid	Tryptophan Metabolism
indoleacetylglutamine	Amino Acid	Tryptophan Metabolism
indolelactate	Amino Acid	Tryptophan Metabolism
indolepropionate	Amino Acid	Tryptophan Metabolism
indolepropionylglycine	Amino Acid	Tryptophan Metabolism
indolin-2-one	Xenobiotics	Food Component/Plant
indomethacin	Xenobiotics	Drug - Analgesics, Anesthetics
inosine	Nucleotide	Purine Metabolism, (Hypo)Xanthine/Inosine containing
isobutyryl carnitine (C4)	Amino Acid	Leucine, Isoleucine and Valine Metabolism
isobutyrylglycine (C4)	Amino Acid	Leucine, Isoleucine and Valine Metabolism
isocaproate (i6:0)	Lipid	Fatty Acid, Branched
isocitrate	Energy	TCA Cycle
isoeugenol sulfate	Xenobiotics	Food Component/Plant
isoleucine	Amino Acid	Leucine, Isoleucine and Valine Metabolism
isoleucylglycine	Peptide	Dipeptide
isoursodeoxycholate	Lipid	Secondary Bile Acid Metabolism
isovalerate (C5)	Amino Acid	Leucine, Isoleucine and Valine Metabolism
isovaleryl carnitine (C5)	Amino Acid	Leucine, Isoleucine and Valine Metabolism
isovaleryl glycine	Amino Acid	Leucine, Isoleucine and Valine Metabolism
I-urobilinogen	Cofactors and Vitamins	Hemoglobin and Porphyrin Metabolism
kynurenate	Amino Acid	Tryptophan Metabolism
kynurenine	Amino Acid	Tryptophan Metabolism
lactate	Carbohydrate	Glycolysis, Gluconeogenesis, and Pyruvate Metabolism
lactosyl-N-behenoyl-sphingosine (d18:1/22:0)*	Lipid	Lactosylceramides (LCER)
lactosyl-N-nervonoyl-sphingosine (d18:1/24:1)*	Lipid	Lactosylceramides (LCER)
lactosyl-N-palmitoyl-sphingosine (d18:1/16:0)	Lipid	Lactosylceramides (LCER)
lamotrigine	Xenobiotics	Drug - Neurological
lanthionine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
laurate (12:0)	Lipid	Medium Chain Fatty Acid
lauryl carnitine (C12)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Medium Chain)
leucine	Amino Acid	Leucine, Isoleucine and Valine Metabolism
leucylalanine	Peptide	Dipeptide
leucylglutamine*	Peptide	Dipeptide
leucylglycine	Peptide	Dipeptide
levetiracetam	Xenobiotics	Drug - Neurological
lignoceroyl sphingomyelin (d18:1/24:0)	Lipid	Sphingomyelins
lignoceroyl carnitine (C24)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Long Chain Saturated)
linoleamide (18:2n6)	Lipid	Fatty Acid, Amide
linoleate (18:2n6)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
linolenamide (18:3)*	Lipid	Fatty Acid, Amide
linolenate (18:3n3 or 3n6)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
linolenoyl carnitine (C18:3)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Polyunsaturated)
linoleoyl ethanolamide	Lipid	Endocannabinoid
linoleoyl-arachidonoyl-glycerol (18:2/20:4) [1]*	Lipid	Diacylglycerol
linoleoyl-arachidonoyl-glycerol (18:2/20:4) [2]*	Lipid	Diacylglycerol
linoleoyl carnitine (C18:2)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Polyunsaturated)
linoleoylcholine*	Lipid	Fatty Acid Metabolism (Acyl Choline)
linoleoyl-docosaheptaenoyl-glycerol (18:2/22:6) [1]*	Lipid	Diacylglycerol
linoleoyl-linolenoyl-glycerol (18:2/18:3) [1]*	Lipid	Diacylglycerol
linoleoyl-linoleoyl-glycerol (18:2/18:2) [1]*	Lipid	Diacylglycerol
lithocholate sulfate (1)	Lipid	Secondary Bile Acid Metabolism
lithocholic acid sulfate (2)	Lipid	Secondary Bile Acid Metabolism
L-urobilin	Cofactors and Vitamins	Hemoglobin and Porphyrin Metabolism
lysine	Amino Acid	Lysine Metabolism
malate	Energy	TCA Cycle
maleate	Lipid	Fatty Acid, Dicarboxylate
malonyl carnitine	Lipid	Fatty Acid Synthesis
maltose	Carbohydrate	Glycogen Metabolism
mannitol/sorbitol	Carbohydrate	Fructose, Mannose and Galactose Metabolism
mannonate*	Xenobiotics	Food Component/Plant
mannose	Carbohydrate	Fructose, Mannose and Galactose Metabolism
margaramide (17:0)*	Lipid	Fatty Acid, Amide
margarate (17:0)	Lipid	Long Chain Saturated Fatty Acid
margaroyl carnitine (C17)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Long Chain Saturated)
melamine	Xenobiotics	Chemical
metabolonic lactone sulfate	Partially Characterized Molecules	Partially Characterized Molecules
metformin	Xenobiotics	Drug - Metabolic
methionine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
methionine sulfone	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism

methionine sulfoxide	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
methyl glucopyranoside (alpha + beta)	Xenobiotics	Food Component/Plant
methyl indole-3-acetate	Xenobiotics	Food Component/Plant
methyl-4-hydroxybenzoate sulfate	Xenobiotics	Benzoate Metabolism
methylmalonate (MMA)	Lipid	Fatty Acid Metabolism (also BCAA Metabolism)
methylnaphthyl sulfate (2)*	Xenobiotics	Chemical
methylphosphate	Nucleotide	Purine and Pyrimidine Metabolism
methylsuccinate	Amino Acid	Leucine, Isoleucine and Valine Metabolism
methylsuccinoylcarnitine	Amino Acid	Leucine, Isoleucine and Valine Metabolism
metoprolol	Xenobiotics	Drug - Cardiovascular
metoprolol acid metabolite*	Xenobiotics	Drug - Cardiovascular
metronidazole	Xenobiotics	Drug - Antibiotic
mirtazapine	Xenobiotics	Drug - Psychoactive
myo-inositol	Lipid	Inositol Metabolism
myristamide (14:0)*	Lipid	Fatty Acid, Amide
myristate (14:0)	Lipid	Long Chain Saturated Fatty Acid
myristoleamide (14:1)*	Lipid	Fatty Acid, Amide
myristoleate (14:1n5)	Lipid	Long Chain Monounsaturated Fatty Acid
myristoleoylcarnitine (C14:1)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Monounsaturated)
myristoyl dihydrosphingomyelin (d18:0/14:0)*	Lipid	Dihydrosphingomyelins
myristoylcarnitine (C14)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Long Chain Saturated)
myristoyl-linoleoyl-glycerol (14:0/18:2) [1]*	Lipid	Diacylglycerol
N-(2-furoyl)glycine	Xenobiotics	Food Component/Plant
N,N,N-trimethyl-5-aminovalerate	Amino Acid	Lysine Metabolism
N,N,N-trimethyl-alanylproline betaine (TMAP)	Amino Acid	Urea cycle; Arginine and Proline Metabolism
N,N-dimethyl-5-aminovalerate	Amino Acid	Lysine Metabolism
N,N-dimethylalanine	Amino Acid	Alanine and Aspartate Metabolism
N,O-didesmethylvenlafaxine glucuronide	Xenobiotics	Drug - Psychoactive
N1-Methyl-2-pyridone-5-carboxamide	Cofactors and Vitamins	Nicotinate and Nicotinamide Metabolism
N1-Methyl-4-pyridone-3-carboxamide	Cofactors and Vitamins	Nicotinate and Nicotinamide Metabolism
1-methyladenosine	Nucleotide	Purine Metabolism, Adenine containing
N1-methylinosine	Nucleotide	Purine Metabolism, (Hypo)Xanthine/Inosine containing
N2,N2-dimethylguanosine	Nucleotide	Purine Metabolism, Guanine containing
N2,N5-diacetylornithine	Amino Acid	Urea cycle; Arginine and Proline Metabolism
N2-acetyl,N6,N6-dimethyllysine	Amino Acid	Lysine Metabolism
N2-acetyl,N6-methyllysine	Amino Acid	Lysine Metabolism
N4-acetyl-5-hydroxysulfamethoxazole*	Xenobiotics	Drug - Antibiotic
N4-acetylsulfamethoxazole*	Xenobiotics	Drug - Antibiotic
N6,N6,N6-trimethyllysine	Amino Acid	Lysine Metabolism
N6,N6-dimethyllysine	Amino Acid	Lysine Metabolism
N6-acetyllysine	Amino Acid	Lysine Metabolism
N6-carbamoylthreonyladenosine	Nucleotide	Purine Metabolism, Adenine containing
N6-carboxymethyllysine	Carbohydrate	Advanced Glycation End-product
N6-methyladenosine	Nucleotide	Purine Metabolism, Adenine containing
N6-methyllysine	Amino Acid	Lysine Metabolism
N-acetyl-1-methylhistidine*	Amino Acid	Histidine Metabolism
N-acetyl-2-aminooctanoate*	Lipid	Fatty Acid, Amino
N-acetyl-3-methylhistidine*	Amino Acid	Histidine Metabolism
N-acetylalanine	Amino Acid	Alanine and Aspartate Metabolism
N-acetylalliin	Xenobiotics	Food Component/Plant
N-acetylgarginine	Amino Acid	Urea cycle; Arginine and Proline Metabolism
N-acetylasparagine	Amino Acid	Alanine and Aspartate Metabolism
N-acetylaspartate (NAA)	Amino Acid	Alanine and Aspartate Metabolism
N-acetyl-aspartyl-glutamate (NAAG)	Amino Acid	Glutamate Metabolism
N-acetyl-beta-alanine	Nucleotide	Pyrimidine Metabolism, Uracil containing
N-acetyl-cadaverine	Amino Acid	Lysine Metabolism
N-acetylcarnosine	Amino Acid	Histidine Metabolism
N-acetylcitrulline	Amino Acid	Urea cycle; Arginine and Proline Metabolism
N-acetylglucosamine/N-acetylgalactosamine	Carbohydrate	Aminosugar Metabolism
N-acetylglucosaminylasparagine	Carbohydrate	Aminosugar Metabolism
N-acetylglutamate	Amino Acid	Glutamate Metabolism
N-acetylglutamine	Amino Acid	Glutamate Metabolism
N-acetylglycine	Amino Acid	Glycine, Serine and Threonine Metabolism
N-acetylhistidine	Amino Acid	Histidine Metabolism
N-acetylisoleucine	Amino Acid	Leucine, Isoleucine and Valine Metabolism
N-acetyl-isoputrescine*	Amino Acid	Polyamine Metabolism
N-acetylkynurenine (2)	Amino Acid	Tryptophan Metabolism
N-acetylleucine	Amino Acid	Leucine, Isoleucine and Valine Metabolism
N-acetylmethionine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
N-acetylneuraminate	Carbohydrate	Aminosugar Metabolism
N-acetylphenylalanine	Amino Acid	Phenylalanine Metabolism
N-acetylproline	Amino Acid	Urea cycle; Arginine and Proline Metabolism
N-acetylputrescine	Amino Acid	Polyamine Metabolism
N-acetylserine	Amino Acid	Glycine, Serine and Threonine Metabolism
N-acetyltaurine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
N-acetylthreonine	Amino Acid	Glycine, Serine and Threonine Metabolism
N-acetyltryptophan	Amino Acid	Tryptophan Metabolism
N-acetyltyrosine	Amino Acid	Tyrosine Metabolism
N-acetylvaline	Amino Acid	Leucine, Isoleucine and Valine Metabolism

N-alpha-acetylornithine	Amino Acid	Urea cycle; Arginine and Proline Metabolism
naproxen	Xenobiotics	Drug - Analgesics, Anesthetics
naringenin 7-glucuronide	Xenobiotics	Food Component/Plant
N-behenoyl-sphingadienine (d18:2/22:0)*	Lipid	Ceramides
N-carbamoylvaline	Amino Acid	Leucine, Isoleucine and Valine Metabolism
N-delta-acetylornithine	Amino Acid	Urea cycle; Arginine and Proline Metabolism
N-desalkylquetiapine*	Xenobiotics	Drug - Psychoactive
N-desmethyl tramadol	Xenobiotics	Drug - Analgesics, Anesthetics
nervonoylcarnitine (C24:1)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Monounsaturated)
N-formylanthranilic acid	Amino Acid	Tryptophan Metabolism
N-formylmethionine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
N-formylphenylalanine	Amino Acid	Tyrosine Metabolism
nicotinamide	Cofactors and Vitamins	Nicotinate and Nicotinamide Metabolism
nisinate (24:6n3)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
N-linoleoylglycine	Lipid	Fatty Acid Metabolism (Acyl Glycine)
N-linoleoylserine*	Lipid	Fatty Acid, Amide
N-linoleoyltaurine*	Lipid	Endocannabinoid
N-methylhydroxyproline	Amino Acid	Urea cycle; Arginine and Proline Metabolism
N-methylpicolate	Xenobiotics	Bacterial/Fungal
N-methylproline	Amino Acid	Urea cycle; Arginine and Proline Metabolism
N-methyltaurine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
N-oleoylserine	Lipid	Endocannabinoid
N-oleoyltaurine	Lipid	Endocannabinoid
nonadecanoate (19:0)	Lipid	Long Chain Saturated Fatty Acid
nonadecenamide (19:1)*	Lipid	Fatty Acid, Amide
nonanoylcarnitine (C9)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Medium Chain)
norcotinine	Xenobiotics	Tobacco Metabolite
N-palmitoylglycine	Lipid	Fatty Acid Metabolism (Acyl Glycine)
N-palmitoyl-heptadecaphosphingosine (d17:1/16:0)*	Lipid	Ceramides
N-palmitoylserine	Lipid	Endocannabinoid
N-palmitoyl-sphingadienine (d18:2/16:0)*	Lipid	Ceramides
N-palmitoyl-sphinganine (d18:0/16:0)	Lipid	Dihydroceramides
N-palmitoyl-sphingosine (d18:1/16:0)	Lipid	Ceramides
N-palmitoyltaurine	Lipid	Endocannabinoid
N-stearoylserine*	Lipid	Endocannabinoid
N-stearoyl-sphingadienine (d18:2/18:0)*	Lipid	Ceramides
N-stearoyl-sphinganine (d18:0/18:0)*	Lipid	Dihydroceramides
N-stearoyl-sphingosine (d18:1/18:0)*	Lipid	Ceramides
N-stearoyltaurine	Lipid	Endocannabinoid
O-acetylhomoserine	Amino Acid	Glycine, Serine and Threonine Metabolism
o-cresol sulfate	Xenobiotics	Benzoate Metabolism
octadecadienedioate (C18:2-DC)*	Lipid	Fatty Acid, Dicarboxylate
octadecanedioate (C18)	Lipid	Fatty Acid, Dicarboxylate
octadecanedioylcarnitine (C18-DC)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Dicarboxylate)
octadecenedioate (C18:1-DC)*	Lipid	Fatty Acid, Dicarboxylate
octadecenedioylcarnitine (C18:1-DC)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Dicarboxylate)
octanoylcarnitine (C8)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Medium Chain)
O-desmethyltramadol	Xenobiotics	Drug - Analgesics, Anesthetics
O-desmethyltramadol glucuronide	Xenobiotics	Drug - Analgesics, Anesthetics
O-desmethylvenlafaxine	Xenobiotics	Drug - Psychoactive
oleamide	Lipid	Fatty Acid, Amide
oleate/vaccenate (18:1)	Lipid	Long Chain Monounsaturated Fatty Acid
oleoyl ethanolamide	Lipid	Endocannabinoid
oleoyl-arachidonoyl-glycerol (18:1/20:4) [1]*	Lipid	Diacylglycerol
oleoyl-arachidonoyl-glycerol (18:1/20:4) [2]*	Lipid	Diacylglycerol
oleoylcarnitine (C18)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Monounsaturated)
oleoylcholine	Lipid	Fatty Acid Metabolism (Acyl Choline)
oleoyl-linolenoyl-glycerol (18:1/18:3) [2]*	Lipid	Diacylglycerol
oleoyl-linoleoyl-glycerol (18:1/18:2) [1]	Lipid	Diacylglycerol
oleoyl-linoleoyl-glycerol (18:1/18:2) [2]	Lipid	Diacylglycerol
oleoyl-oleoyl-glycerol (18:1/18:1) [1]*	Lipid	Diacylglycerol
oleoyl-oleoyl-glycerol (18:1/18:1) [2]*	Lipid	Diacylglycerol
omeprazole	Xenobiotics	Drug - Gastrointestinal
ornithine	Amino Acid	Urea cycle; Arginine and Proline Metabolism
orotate	Nucleotide	Pyrimidine Metabolism, Orotate containing
orotidine	Nucleotide	Pyrimidine Metabolism, Orotate containing
O-sulfo-L-tyrosine	Xenobiotics	Chemical
oxalate (ethanedioate)	Cofactors and Vitamins	Ascorbate and Aldarate Metabolism
oxypurinol	Xenobiotics	Drug - Metabolic
palmitamide (16:0)	Lipid	Fatty Acid, Amide
palmitate (16:0)	Lipid	Long Chain Saturated Fatty Acid
palmitoleamide (16:1)*	Lipid	Fatty Acid, Amide
palmitoleate (16:1n7)	Lipid	Long Chain Monounsaturated Fatty Acid
palmitoleoylcarnitine (C16:1)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Monounsaturated)
palmitoleoyl-linoleoyl-glycerol (16:1/18:2) [1]*	Lipid	Diacylglycerol
palmitoleoyl-oleoyl-glycerol (16:1/18:1) [1]*	Lipid	Diacylglycerol
palmitoleoyl-oleoyl-glycerol (16:1/18:1) [2]*	Lipid	Diacylglycerol
palmitoleoylcholine	Lipid	Fatty Acid Metabolism (Acyl Choline)
palmitoyl dihydrosphingomyelin (d18:0/16:0)*	Lipid	Dihydrosphingomyelins

palmitoyl ethanolamide	Lipid	Endocannabinoid
palmitoyl sphingomyelin (d18:1/16:0)	Lipid	Sphingomyelins
palmitoyl-arachidonoyl-glycerol (16:0/20:4) [1]*	Lipid	Diacylglycerol
palmitoyl-arachidonoyl-glycerol (16:0/20:4) [2]*	Lipid	Diacylglycerol
palmitoylcarnitine (C16)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Long Chain Saturated)
palmitoylcholine	Lipid	Fatty Acid Metabolism (Acyl Choline)
palmitoyl-linoleoyl-glycerol (16:0/18:2) [1]*	Lipid	Diacylglycerol
palmitoyl-linoleoyl-glycerol (16:0/18:2) [2]*	Lipid	Diacylglycerol
palmitoyl-oleoyl-glycerol (16:0/18:1) [1]*	Lipid	Diacylglycerol
palmitoyl-oleoyl-glycerol (16:0/18:1) [2]*	Lipid	Diacylglycerol
palmitoyl-sphingosine-phosphoethanolamine (d18:1/16:0)	Lipid	Ceramide PEs
pantoprazole	Xenobiotics	Drug - Gastrointestinal
pantothenate (Vitamin B5)	Cofactors and Vitamins	Pantothenate and CoA Metabolism
paraxanthine	Xenobiotics	Xanthine Metabolism
paroxetine	Xenobiotics	Drug - Psychoactive
p-cresol glucuronide*	Amino Acid	Tyrosine Metabolism
p-cresol sulfate	Xenobiotics	Benzoate Metabolism
pelargonate (9:0)	Lipid	Medium Chain Fatty Acid
pentadecanamide (15:0)*	Lipid	Fatty Acid, Amide
pentadecanoate (15:0)	Lipid	Long Chain Saturated Fatty Acid
pentose acid*	Partially Characterized Molecules	Partially Characterized Molecules
perfluorooctanesulfonate (PFOS)	Xenobiotics	Chemical
perfluorooctanoate (PFOA)	Xenobiotics	Chemical
perindopril	Xenobiotics	Drug - Cardiovascular
phenol sulfate	Amino Acid	Tyrosine Metabolism
phenylacetate	Amino Acid	Phenylalanine Metabolism
phenylacetyl carnitine	Peptide	Acetylated Peptides
phenylacetylglutamate	Peptide	Acetylated Peptides
phenylacetylglutamine	Peptide	Acetylated Peptides
phenylalanine	Amino Acid	Phenylalanine Metabolism
phenylalanylglycine	Peptide	Dipeptide
phenyllactate (PLA)	Amino Acid	Phenylalanine Metabolism
phenylpyruvate	Amino Acid	Phenylalanine Metabolism
phosphate	Energy	Oxidative Phosphorylation
phosphoethanolamine (PE)	Lipid	Phospholipid Metabolism
phytanate	Xenobiotics	Food Component/Plant
picolinate	Amino Acid	Tryptophan Metabolism
picolinoylglycine	Lipid	Fatty Acid Metabolism (Acyl Glycine)
pimeloylcarnitine/3-methyladipoylcarnitine (C7-DC)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Dicarboxylate)
pipecolate	Amino Acid	Lysine Metabolism
piperine	Xenobiotics	Food Component/Plant
pivaloylcarnitine (C5)	Xenobiotics	Drug - Topical Agents
pregabalin	Xenobiotics	Drug - Neurological
pregnanediol-3-glucuronide	Lipid	Progestin Steroids
pregnanolone/allopregnanolone sulfate	Lipid	Progestin Steroids
pregnen-diol disulfate*	Lipid	Pregnenolone Steroids
pregnenediol sulfate (C21H34O5S)*	Lipid	Pregnenolone Steroids
pregnenetriol disulfate*	Lipid	Pregnenolone Steroids
pregnenetriol sulfate*	Lipid	Pregnenolone Steroids
pregnenolone sulfate	Lipid	Pregnenolone Steroids
pristanate	Lipid	Fatty Acid, Branched
prolylhydroxyproline	Amino Acid	Urea cycle; Arginine and Proline Metabolism
proline	Amino Acid	Urea cycle; Arginine and Proline Metabolism
prolylglycine	Peptide	Dipeptide
propionylcarnitine (C3)	Lipid	Fatty Acid Metabolism (also BCAA Metabolism)
propionylglycine (C3)	Lipid	Fatty Acid Metabolism (also BCAA Metabolism)
propyl 4-hydroxybenzoate sulfate	Xenobiotics	Benzoate Metabolism
pseudouridine	Nucleotide	Pyrimidine Metabolism, Uracil containing
putrescine	Amino Acid	Polyamine Metabolism
pyridoxate	Cofactors and Vitamins	Vitamin B6 Metabolism
pyroglutamine*	Amino Acid	Glutamate Metabolism
pyrraline	Xenobiotics	Food Component/Plant
pyruvate	Carbohydrate	Glycolysis, Gluconeogenesis, and Pyruvate Metabolism
quetiapine	Xenobiotics	Drug - Psychoactive
quinat	Xenobiotics	Food Component/Plant
quinine	Xenobiotics	Drug - Antibiotic
quinolinate	Cofactors and Vitamins	Nicotinate and Nicotinamide Metabolism
ranitidine	Xenobiotics	Drug - Gastrointestinal
ranitidine N-oxide*	Xenobiotics	Drug - Gastrointestinal
resveratrol sulfate (2)*	Xenobiotics	Food Component/Plant
retinol (Vitamin A)	Cofactors and Vitamins	Vitamin A Metabolism
ribitol	Carbohydrate	Pentose Metabolism
riboflavin (Vitamin B2)	Cofactors and Vitamins	Riboflavin Metabolism
ritalinic acid	Xenobiotics	Drug - Neurological
S-1-pyrroline-5-carboxylate	Amino Acid	Glutamate Metabolism
saccharin	Xenobiotics	Food Component/Plant
salicylate	Xenobiotics	Drug - Topical Agents
salicyluric glucuronide*	Xenobiotics	Drug - Analgesics, Anesthetics
S-allylcysteine	Xenobiotics	Food Component/Plant
sarcosine	Amino Acid	Glycine, Serine and Threonine Metabolism

S-carboxymethyl-L-cysteine	Xenobiotics	Drug - Other
sebacate (C10-DC)	Lipid	Fatty Acid, Dicarboxylate
serine	Amino Acid	Glycine, Serine and Threonine Metabolism
serotonin	Amino Acid	Tryptophan Metabolism
S-methylcysteine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
S-methylcysteine sulfoxide	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
S-methylmethionine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
solanidine	Xenobiotics	Food Component/Plant
spermidine	Amino Acid	Polyamine Metabolism
sphinganine	Lipid	Sphingolipid Synthesis
sphinganine-1-phosphate	Lipid	Sphingolipid Synthesis
sphingomyelin (d17:1/14:0, d16:1/15:0)*	Lipid	Sphingomyelins
sphingomyelin (d17:1/16:0, d18:1/15:0, d16:1/17:0)*	Lipid	Sphingomyelins
sphingomyelin (d17:2/16:0, d18:2/15:0)*	Lipid	Sphingomyelins
sphingomyelin (d18:0/18:0, d19:0/17:0)*	Lipid	Dihydrosphingomyelins
sphingomyelin (d18:0/20:0, d16:0/22:0)*	Lipid	Dihydrosphingomyelins
sphingomyelin (d18:1/14:0, d16:1/16:0)*	Lipid	Sphingomyelins
sphingomyelin (d18:1/17:0, d17:1/18:0, d19:1/16:0)	Lipid	Sphingomyelins
sphingomyelin (d18:1/18:1, d18:2/18:0)	Lipid	Sphingomyelins
sphingomyelin (d18:1/19:0, d19:1/18:0)*	Lipid	Sphingomyelins
sphingomyelin (d18:1/20:0, d16:1/22:0)*	Lipid	Sphingomyelins
sphingomyelin (d18:1/20:1, d18:2/20:0)*	Lipid	Sphingomyelins
sphingomyelin (d18:1/20:2, d18:2/20:1, d16:1/22:2)*	Lipid	Sphingomyelins
sphingomyelin (d18:1/21:0, d17:1/22:0, d16:1/23:0)*	Lipid	Sphingomyelins
sphingomyelin (d18:1/22:1, d18:2/22:0, d16:1/24:1)*	Lipid	Sphingomyelins
sphingomyelin (d18:1/22:2, d18:2/22:1, d16:1/24:2)*	Lipid	Sphingomyelins
sphingomyelin (d18:1/24:1, d18:2/24:0)*	Lipid	Sphingomyelins
sphingomyelin (d18:1/25:0, d19:0/24:1, d20:1/23:0, d19:1/24:0)*	Lipid	Sphingomyelins
sphingomyelin (d18:2/14:0, d18:1/14:1)*	Lipid	Sphingomyelins
sphingomyelin (d18:2/16:0, d18:1/16:1)*	Lipid	Sphingomyelins
sphingomyelin (d18:2/18:1)*	Lipid	Sphingomyelins
sphingomyelin (d18:2/21:0, d16:2/23:0)*	Lipid	Sphingomyelins
sphingomyelin (d18:2/23:0, d18:1/23:1, d17:1/24:1)*	Lipid	Sphingomyelins
sphingomyelin (d18:2/23:1)*	Lipid	Sphingomyelins
sphingomyelin (d18:2/24:1, d18:1/24:2)*	Lipid	Sphingomyelins
sphingomyelin (d18:2/24:2)*	Lipid	Sphingomyelins
sphingosine	Lipid	Sphingosines
sphingosine 1-phosphate	Lipid	Sphingosines
stachydrine	Xenobiotics	Food Component/Plant
stearamide (18:0)	Lipid	Fatty Acid, Amide
stearate (18:0)	Lipid	Long Chain Saturated Fatty Acid
stearidonate (18:4n3)	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
stearoyl sphingomyelin (d18:1/18:0)	Lipid	Sphingomyelins
stearoyl-arachidonoyl-glycerol (18:0/20:4) [1]*	Lipid	Diacylglycerol
stearoyl-arachidonoyl-glycerol (18:0/20:4) [2]*	Lipid	Diacylglycerol
stearoylcarnitine (C18)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Long Chain Saturated)
stearoylcholine*	Lipid	Fatty Acid Metabolism (Acyl Choline)
suberate (C8-DC)	Lipid	Fatty Acid, Dicarboxylate
suberoylcarnitine (C8-DC)	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Dicarboxylate)
succinate	Energy	TCA Cycle
succinimide	Xenobiotics	Chemical
succinylcarnitine (C4)	Energy	TCA Cycle
sucralose	Xenobiotics	Food Component/Plant
sucrose	Carbohydrate	Disaccharides and Oligosaccharides
sulfamethoxazole	Xenobiotics	Drug - Antibiotic
sulfate of piperine metabolite C16H19NO3 (2)*	Xenobiotics	Food Component/Plant
sulfate of piperine metabolite C16H19NO3 (3)*	Xenobiotics	Food Component/Plant
sulfate of piperine metabolite C18H21NO3 (1)*	Xenobiotics	Food Component/Plant
sulfate of piperine metabolite C18H21NO3 (3)*	Xenobiotics	Food Component/Plant
sulfate*	Xenobiotics	Chemical
tartarate	Xenobiotics	Food Component/Plant
tartronate (hydroxymalonate)	Xenobiotics	Food Component/Plant
taurine	Amino Acid	Methionine, Cysteine, SAM and Taurine Metabolism
tauro-beta-muricholate	Lipid	Primary Bile Acid Metabolism
taurochenodeoxycholate	Lipid	Primary Bile Acid Metabolism
taurochenodeoxycholic acid 3-sulfate	Lipid	Secondary Bile Acid Metabolism
taurocholate	Lipid	Primary Bile Acid Metabolism
taurochenolate sulfate*	Lipid	Secondary Bile Acid Metabolism
taurodeoxycholate	Lipid	Secondary Bile Acid Metabolism
taurodeoxycholic acid 3-sulfate	Lipid	Secondary Bile Acid Metabolism
tauroolithocholate 3-sulfate	Lipid	Secondary Bile Acid Metabolism
tauroursodeoxycholate	Lipid	Secondary Bile Acid Metabolism
tetradecadienedioate (C14:2-DC)*	Lipid	Fatty Acid, Dicarboxylate
tetradecadienoate (14:2)*	Lipid	Long Chain Polyunsaturated Fatty Acid (n3 and n6)
tetradecanedioate (C14)	Lipid	Fatty Acid, Dicarboxylate
tetrahydrocortisol sulfate (1)	Lipid	Corticosteroids
THC carboxylic acid glucuronide	Xenobiotics	Drug - Psychoactive
theanine	Xenobiotics	Food Component/Plant
theobromine	Xenobiotics	Xanthine Metabolism
theophylline	Xenobiotics	Xanthine Metabolism

thioprolin	Xenobiotics	Chemical
threonate	Cofactors and Vitamins	Ascorbate and Aldarate Metabolism
threonine	Amino Acid	Glycine, Serine and Threonine Metabolism
threonylphenylalanine	Peptide	Dipeptide
thymol sulfate	Xenobiotics	Food Component/Plant
thyroxine	Amino Acid	Tyrosine Metabolism
tigloylglycine	Amino Acid	Leucine, Isoleucine and Valine Metabolism
tiglyl carnitine (C5)	Amino Acid	Leucine, Isoleucine and Valine Metabolism
tramadol	Xenobiotics	Drug - Analgesics, Anesthetics
hydroxyproline	Amino Acid	Urea cycle; Arginine and Proline Metabolism
trans-uocanate	Amino Acid	Histidine Metabolism
triamterene	Xenobiotics	Drug - Cardiovascular
tricolan sulfate	Xenobiotics	Drug - Antibiotic
tricosanoyl sphingomyelin (d18:1/23:0)*	Lipid	Sphingomyelins
tridecenedioate (C13:1-DC)*	Lipid	Fatty Acid, Dicarboxylate
trigonelline (N'-methylnicotinate)	Cofactors and Vitamins	Nicotinate and Nicotinamide Metabolism
trimethylamine N-oxide	Lipid	Phospholipid Metabolism
tryptophan	Amino Acid	Tryptophan Metabolism
tryptophan betaine	Amino Acid	Tryptophan Metabolism
tyramine O-sulfate	Amino Acid	Tyrosine Metabolism
tyrosine	Amino Acid	Tyrosine Metabolism
umbelliferone sulfate	Xenobiotics	Food Component/Plant
uracil	Nucleotide	Pyrimidine Metabolism, Uracil containing
urate	Nucleotide	Purine Metabolism, (Hypo)Xanthine/Inosine containing
urea	Amino Acid	Urea cycle; Arginine and Proline Metabolism
uridine	Nucleotide	Pyrimidine Metabolism, Uracil containing
ursocholate	Lipid	Secondary Bile Acid Metabolism
ursodeoxycholate	Lipid	Secondary Bile Acid Metabolism
valerate (5:0)	Lipid	Short Chain Fatty Acid
valine	Amino Acid	Leucine, Isoleucine and Valine Metabolism
valproate (2-propylpentanoate)	Xenobiotics	Drug - Neurological
valproic acid glucuronide	Xenobiotics	Drug - Neurological
valsartan	Xenobiotics	Drug - Cardiovascular
valylglycine	Peptide	Dipeptide
valylleucine	Peptide	Dipeptide
vanillactate	Amino Acid	Tyrosine Metabolism
vanillic alcohol sulfate	Amino Acid	Tyrosine Metabolism
vanillylmandelate (VMA)	Amino Acid	Tyrosine Metabolism
xanthine	Nucleotide	Purine Metabolism, (Hypo)Xanthine/Inosine containing
xanthosine	Nucleotide	Purine Metabolism, (Hypo)Xanthine/Inosine containing
xanthurenate	Amino Acid	Tryptophan Metabolism
ximenoylcarnitine (C26:1)*	Lipid	Fatty Acid Metabolism (Acyl Carnitine, Monounsaturated)
xylose	Carbohydrate	Pentose Metabolism
zolpidem	Xenobiotics	Drug - Psychoactive
X - 07765		
X - 10458		
X - 11261		
X - 11299		
X - 11308		
X - 11315		
X - 11372		
X - 11378		
X - 11381		
X - 11407		
X - 11441		
X - 11442		
X - 11444		
X - 11470		
X - 11478		
X - 11483		
X - 11491- retired for deoxycholic acid glucuronide		
X - 11522		
X - 11530		
X - 11632		
X - 11640		
X - 11787		
X - 11795		
X - 11843		
X - 11847		
X - 11849		
X - 11850		
X - 11852		
X - 11858		
X - 11880		
X - 12007		
X - 12013		
X - 12015		
X - 12026		
X - 12027		
X - 12100		

X - 12101		
X - 12104		
X - 12111		
X - 12126		
X - 12127		
X - 12193		
X - 12199		
X - 12206 - retired for ascorbic acid 3-sulfate*		
X - 12212 - retired for 4-allylcatechol sulfate		
X - 12216		
X - 12221		
X - 12261		
X - 12262		
X - 12306		
X - 12407		
X - 12410		
X - 12411		
X - 12456		
X - 12462		
X - 12472 - retired for glutamine conjugate of C6H10O2 (2)*		
X - 12524		
X - 12543		
X - 12544		
X - 12680		
X - 12707		
X - 12714		
X - 12726		
X - 12729		
X - 12730		
X - 12731		
X - 12738		
X - 12739 - retired for glutamine conjugate of C6H10O2 (1)*		
X - 12740		
X - 12753		
X - 12798		
X - 12812		
X - 12816		
X - 12822		
X - 12830		
X - 12844		
X - 12847		
X - 12849		
X - 12851		
X - 13431		
X - 13507		
X - 13658		
X - 13684		
X - 13689		
X - 13723		
X - 13728		
X - 13729		
X - 13835		
X - 13844		
X - 13846		
X - 13866		
X - 14056		
X - 14082		
X - 14662		
X - 14939		
X - 15220		
X - 15245		
X - 15461		
X - 15469		
X - 15486		
X - 15492		
X - 15503		
X - 15666		
X - 15674		
X - 15728		
X - 16087		
X - 16124		
X - 16397		
X - 16570		
X - 16576		
X - 16649		
X - 16654 - retired for deoxycholic acid (12 or 24)-sulfate*		
X - 16935		
X - 16938		
X - 16944		
X - 16946		
X - 16964		

X - 17010		
X - 17185		
X - 17325		
X - 17328		
X - 17335		
X - 17337 - retired for undecenoylcarnitine (C11:1)		
X - 17340		
X - 17343		
X - 17346		
X - 17348		
X - 17351		
X - 17353		
X - 17354		
X - 17357		
X - 17361		
X - 17367		
X - 17398		
X - 17438		
X - 17612		
X - 17653		
X - 17654		
X - 17655		
X - 17676		
X - 17685		
X - 17690		
X - 18240		
X - 18249 - retired for 3,5-dichloro-2,6-dihydroxybenzoic acid		
X - 18345		
X - 18886		
X - 18887		
X - 18899		
X - 18901		
X - 18913		
X - 18914 - retired for 3-bromo-5-chloro-2,6-dihydroxybenzoic acid*		
X - 18921		
X - 18922		
X - 19141		
X - 19183		
X - 19438		
X - 21258		
X - 21286		
X - 21295		
X - 21310		
X - 21312		
X - 21315		
X - 21319		
X - 21327		
X - 21339		
X - 21353		
X - 21364		
X - 21383		
X - 21410		
X - 21441		
X - 21442		
X - 21448		
X - 21467		
X - 21470		
X - 21471		
X - 21607		
X - 21628		
X - 21661		
X - 21729		
X - 21733		
X - 21736		
X - 21740		
X - 21742		
X - 21752		
X - 21785		
X - 21796		
X - 21803		
X - 21807		
X - 21815		
X - 21816		
X - 21821		
X - 21829		
X - 21830		
X - 21834		
X - 21842		
X - 21845		
X - 21851		

X - 22143		
X - 22162		
X - 22509		
X - 22519		
X - 22520		
X - 22764 - retired for branched-chain, straight-chain, or cyclopropyl 12:1 fatty acid*		
X - 22771		
X - 22775		
X - 22776		
X - 22834		
X - 22918		
X - 23157		
X - 23276		
X - 23314		
X - 23583		
X - 23587		
X - 23593		
X - 23639		
X - 23641		
X - 23644		
X - 23648		
X - 23654		
X - 23655		
X - 23659		
X - 23662		
X - 23665		
X - 23666		
X - 23680		
X - 23739		
X - 23780		
X - 23782		
X - 23787		
X - 23974		
X - 23997		
X - 24243		
X - 24295		
X - 24328		
X - 24337		
X - 24348 - retired for GlcNAc sulfate conjugate of C21H34O2 steroid**		
X - 24362		
X - 24408		
X - 24410		
X - 24411		
X - 24418		
X - 24422		
X - 24425		
X - 24431		
X - 24432		
X - 24455		
X - 24456		
X - 24473		
X - 24475		
X - 24494		
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X - 24556		
X - 24565		
X - 24576		
X - 24585		
X - 24588		
X - 24608		
X - 24637		
X - 24669		
X - 24686		
X - 24699		
X - 24736		
X - 24757		
X - 24811		
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X - 24951		
X - 24952		
X - 24953		
X - 24980		
X - 25217		
X - 25271		
X - 25279		
X - 25343		
X - 25371		
X - 25417		
X - 25418		
X - 25419		
X - 25420		
X - 25422		
X - 25432		
X - 25433		
X - 25464		
X - 25503		
X - 25519		
X - 25523		