THE ALSPAC STUDY

Mother based blood assay results

Prepared by

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Documentation summarising the data available and the variable names.

Last updated for version 5a of the RELEASE file.

October 2019

Introduction

This documentation simply gives a summary of the assay results that are available from blood and urine samples from study Mothers (pregnancy through to the fourth Focus on Mothers (FOM) clinic currently).

All assay results have now been brought together and labelled in a systematic way such that the start of the label refers to the assay and the end of the label refers to the time point. Tables 1 and 2 overleaf summarises the assays (blood and urine respectively) that have been completed and when. The numbers in the table refer to how many cases have data available. A cross in a cell means that assays are being completed or have been completed but the data is not yet available.

Note that blood samples from the Focus on Mothers clinics were **fasting**, those in pregnancy were **non-fasting**. For the majority of assays completed on samples collected during pregnancy there is an accompanying variable to indicate gestation (in weeks) when the sample was obtained.

Detailed methodologies for each assay will follow in due course; many are already published in peer reviewed papers.

All users are advised to check any variables they use for distributions and outliers.

Table 3 provides a list of all variable names and labels which may assist users who will be making formal data requests.

Release File Version History

Release version 1a – November 2013: The first version of the release file

Release version 2a – February 2015

- Corrects error in calculation of FOM1 LDL and adds FOM1 CTx results and all FOM2 blood results.

Release version 2b – January 2017

- Measurement scale for variable label for ‘Pbadj_preg’ has been corrected from ‘ug/l’ to ‘ug/dl’.

Release version 3a – August 2018

- Several new samples added to the release file:
    - Iodine and creatinine data obtained from pregnancy urine sample(s)
    - Thyroid function (Anti-thyroid peroxidase hormone, thyroid stimulating hormone and thyroxine (FT4) from pregnancy trimesters 1 and 3

    - Adiponectin from FOM1 (although note that some samples come from FOM2; see the 'adiponectin_FOMclinic' variable)
    - Testosterone data (testosterone, androstenedione, 17OHP, 11DOC and 21DOC) from FOM1
    - Insulin-like growth factor data (IGF-I, IGF-II, IGFBP3 and IGFBP2) from FOM1 (although note that a handful of samples come from FOM2; see the 'IGF_FOMclinic' variable)
    - C-terminal peptide (CTx) and sRANKL data from FOM2
    - Lipids data (cholesterol, triglycerides, glucose and C-reactive protein) from FOM3 and FOM4
    - Hormone data (luteinizing hormone, follicle stimulating hormone, sex hormone binding hormone and anti-Müllerian hormone) from all four FOM clinics

- Other existing samples have also been updated:
    - Non-core Mothers in the ALSPAC sample were previously not included in this dataset (despite samples being obtained from these individuals at the FOM clinics). These have now been incorporated and a new 'Core_ALSPAC' variable created to identify whether the samples are from core or non-core individuals. Note that this issue does not apply to pregnancy samples, as non-core mums were only enrolled post-partum, so pregnancy samples data would not be held by ALSPAC.
    - Sex hormone binding globulin (SHBG_preg), testosterone (Test_preg) and gestation of blood sample for sex hormones (sexH_gest) previously had some unnecessary values of '-6' (which originally meant 'not in study' and '999' (which originally meant 'no data available from assay'). These have now been coded as '-1' (missing/not assayed).
    - The variable label for 'alb_gest' was previously ambiguous. It has now been clarified to denote that it refers to the trimester of blood sample for Albumin (albumin_preg) through Protein (protein_preg) variables.
    - Heavy metals data during pregnancy have been altered, so that now only the values which are adjusted for the limit or detection have been kept (Pb_Preg, Cd_Preg, Hg_Preg, Se_Preg). The uncorrected data has been removed from the release file.
    - The 'Hb_FOM1' variable was also previously in 'g/l', but has now been converted to 'g/dl' for consistency with haemoglobin data from other FOM clinics.

- Other changes to the release file:
    - As mentioned above, previously non-core ALSPAC Mothers were not included in this release file. As these have now been added, a new 'Core_ALSPAC' variable has been created to identify whether the samples are from core or non-core individuals.
    - For reasons of confidentiality, data from Mothers of triplet or quadruplet births has been coded as a missing value of '-11'.
    - A new variable to identify Mothers who appear in the data file more than once has been added. See the 'Important note for all data users' below. Note also that this only applies when linking to FOM samples data; pregnancy-based samples remain unaffected.

Release version 3b – January 2019

- For clarity, variable names for pregnancy-based heavy metal samples have been altered to make it clear that these variables have been adjusted for the limit of detection. That is, lead, cadmium, mercury and selenium have been renamed from 'Pb_Preg, Cd_Preg, Hg_Preg and Se_Preg' to 'Pbadj_preg, Cdadj_preg, Hgadj_preg and Seadj_preg'.
- In the previous version of the release file (3a), variable labels for cadmium, mercury and selenium pregnancy assays incorrectly stated that they were in the units 'ug/dl', when in fact these labels should have said 'ug/l'. These variable labels have now been updated.

Release version 4a – March 2019

- The following samples have been added to the release file:
    - Cotinine data obtained from pregnancy urine sample(s) during trimesters 1 and 3. Note that a variable regarding cotinine urine assays from trimester 1 previously existed in the release file (cotinine_preg). As the new cotinine variables were obtained from the same project, but contain additional information regarding first, second and average samples results, plus gestational age at time of sample, this old variable has been removed from the release file.
    - Details of genetic data available for Mothers (frequencies presented below)

mum_GWAS_1kg 1000Genome imputation data is available for this person

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 No	6230	42.1	42.1	42.1
	1 Yes	8551	57.8	57.9	100.0
	Total	14781	100.0	100.0	
Missing	-11 Mother of trip/quad	4	.0		
Total		14785	100.0		

mum_GWAS_hrc HRC imputation data is available for this person

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 No	6230	42.1	42.1	42.1
	1 Yes	8551	57.8	57.9	100.0
	Total	14781	100.0	100.0	
Missing	-11 Mother of trip/quad	4	.0		
Total		14785	100.0		

mum_aries ARIES methylation data is available for this person

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 No	13792	93.3	93.3	93.3
	1 Yes	989	6.7	6.7	100.0
	Total	14781	100.0	100.0	
Missing	-11 Mother of trip/quad	4	.0		
Total		14785	100.0		

mum_GWAS_1kg_F 1000Genome imputation data (from Father clinic) is available for this person

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 No	14305	96.8	96.8	96.8
	1 Yes	476	3.2	3.2	100.0
	Total	14781	100.0	100.0	
Missing	-11 Mother of trip/quad	4	.0		
Total		14785	100.0		

Release version 5a – October 2019

- Several new samples added to the release file for each of the four Focus on Mothers (FoM) clinics. These samples include: FT4 (thyroxine); High-sensitive cardiac troponin T (TnThs); Insulin; N-terminal pro-B-type natriuretic peptide (NT-ProBNP); Anti-thyroperoxidase (TPO); Thyroid stimulating hormone (TSH); Parathyroid hormone; and Vitamin D-T.

This ‘Core_ALSPAC’ variable details whether the blood samples originate from ‘core’ ALSPAC Mothers enrolled during pregnancy (*n*=14541) or from other eligible Mothers recruited during later phases of ALSPAC enrolment post-pregnancy. Samples from pregnancy assays therefore only include core ALSPAC Mothers, while samples from the Focus on Mothers clinics include both core and non-core Mothers.

Core_ALSPAC Mother is in core ALSPAC sample

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Core ALSPAC	14537	98.3	98.3	98.3
	2 Non-Core ALSPAC	244	1.7	1.7	100.0
	Total	14781	100.0	100.0	
Missing	-11 Mother of trip/quad	4	.0		
Total		14785	100.0		

Important Note for all data users

Please be aware that some women may appear in the release file more than once. This is due to the way in which women were originally enrolled into the study and were assigned IDs. ALSPAC started by enrolling pregnant women and the main study ID is a pregnancy based ID. Therefore if a women enrolled with two different pregnancies (both having an expected delivery date within the recruitment period (April 1991-December 1992)), she will have two separate IDs to uniquely identify these women and their pregnancies. An indicator variable has been included in the file, called ‘fom_mult_mum’ to identify these women. If you are carrying out mother based research that does not require you to consider repeat pregnancies for which we have data then please select fom_mult_mum = 2 to remove the duplicate entries. This will keep one pregnancy and drop the other. If you are matching the data included in this file to child based data or have been provided with a dataset that includes the children of the ALSPAC pregnancies, as well as the mother-based data, you need not do anything as each pregnancy (and hence each child from a separate pregnancy) has a unique identifier and a mother’s data has been included/repeated here for each of her pregnancies where appropriate. Each of the frequencies below therefore contains duplicate data due to these multiple pregnancies.

Note also that this duplicate data issue only applies to FOM data; for Mothers with multiple pregnancies in ALSPAC the data associated with each ALN will be unique.

fom_mult_mum Entry is a duplicate for FOM data - Remove if only looking at Mothers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	124	.8	2.6	2.6
	2 No	4723	31.9	97.4	100.0
	Total	4847	32.8	100.0	
Missing	-11 Mother of trip/quad	4	.0		
	-1 No FOM data for this Mother	9934	67.2		
	Total	9938	67.2		
Total		14785	100.0		

Table 1: Summary of maternal blood assays

Assay	Pregnancy	FOM1	FOM2	FOM3	FOM4
Adiponectin		1104	68		
Alkaline phosphate	7912				
Albumin	7927				
Calcium	7903				
Cadmium	3013				
Cholesterol	6446	4309	2729	2924	2816
CRP		4309	2574	2805	2659
CTx		3899	310		
Daidzein	149				
Equol	54				
Enterol	179				
Fatty acid profile	5144				
Gensitein	137				
Glucose		4309	2725	2924	2816
Globulin	7927				
Haemoglobin		4301	2741	2943	2836
Helicobacter pylori Status	463				
HDL Cholesterol		4309	2729	2924	2816
High-sensitive cardiac troponin T		4630	2306	2919	2790
Hormones (LH, FSH, SHBG, AMH)		4112	2371	2565	2411
IGF I	626	234	6		
IGF II	580	234	6		
IGF BP2		234	6		
IGF BP3	626	234	6		
Insulin		4292 / 4630[a]	2306	2919	2790
LDL Cholesterol		4307	2729	2924	2815
Lead	4110				
Mercury	3966				
N-terminal pro-B type natriuretic peptide (NT pro-BNP)		4630	2306	2919	2790
Parathyroid hormone (PTH)		4630	2306	2919	2790
Phosphate	7927				
Proinsulin		3414			
Protein	7927				
Selenium	4113				
SHBG	232				
sRANKL			310		
Testosterone	232	4476			
Thyroid function (TSH, FT4, TPO)	6600	4630	2306	2919	2790
Triglycerides		4309	2729	2924	2816
Vitamin D (25OHD)	7861				
Vitamin D (25 (OH) D2)	7861				
Vitamin D (25 (OH) D3)	7861				
Vitamin D-T		4630	2306	2919	2790
vLDL cholesterol		4309	2729	2924	2816

[a] Note that two independent FOM1 insulin variables exist (insulin_FOM1 and insul_FOM1).

X means the assays are either being completed or are not yet available for general use; the numbers in brackets are the numbers of samples sent for assay.

Table 2: Summary of maternal urine assays

Assay	Pregnancy
Albumin	
Atrazines	
Cotinine	4221
Creatinine	3554
Iodine	3554

Table 3: variable names and labels

Variable	Label
Core_ALSPAC	Mother is in core ALSPAC sample
fom_mult_mum	Entry is a duplicate for FOM data - Remove if only looking at Mothers
IGF1_preg	IGF1, blood: Pregnancy
IGFII_preg	IGFII, blood: Pregnancy
IGFBP3_preg	IGFBP3, blood: Pregnancy
IGF_gest	Gestation of blood sample for IGF measures
IGF_preg_sam	Type of blood sample for IGF measures
Chol_preg	Cholesterol, blood: Pregnancy
Chol_gest	Gestation of blood sample for Cholesterol measure
HeavyMetal_gest	Gestational age at which blood sample was taken for heavy metal analysis
Pbadj_Preg	Lead, adjusted for limit of detection ug/dl, blood: Pregnancy
Cdadj_Preg	Cadmium, adjusted for limit of detection ug/l, blood: Pregnancy
Hgadj_Preg	Mercury, adjusted for limit of detection ug/l, blood: Pregnancy
Seadj_Preg	Selenium, adjusted for limit of detection ug/l, blood: Pregnancy
VitDd2_preg	Vitamin D2 nmol/l, blood: pregnancy
VitDd3_preg	Vitamin D3 nmol/l, blood: pregnancy
VitDtot_preg	Vitamin D Total nmol/l, blood: pregnancy
VitD_gest	Gestation of blood sample for Vitamin D
Helico_preg	Helicobacter pylori status, blood: Pregnancy
Helico_gest	Gestation of blood sample for Helicobacter pylori status
SHBG_preg	SHBG nmol/l, blood: Pregnancy
Test_preg	Testosterone nmol/l, blood: Pregnancy
sexH_gest	Gestation of blood sample for sex hormone measures
equol_preg	Equol, blood: Pregnancy
enterol_preg	Enterol, blood: Pregnancy
daidzein_preg	Daidzein, blood: Pregnancy
genist_preg	Genistein, blood: Pregnancy
albumin_preg	Albumin g/l, blood: pregnancy
alkphos_preg	Alkaline Phosphate u/l, blood: pregnancy
calcium_preg	Calcium mmol/l, blood: pregnancy
globulin_preg	Globulin g/l, blood: pregnancy
phos_preg	Phosphate g/l, blood: pregnancy
protein_preg	Protein g/l, blood: pregnancy
alb_gest	Trimester of blood sample for Albumin through Protein
FAa_gest	Gestation of blood sample 1 for Fatty acids
FAb_gest	Gestation of blood sample 2 for Fatty acids
FAc_gest	Gestation of blood sample 3 for Fatty acids
FAd_gest	Gestation of blood sample 4 for Fatty acids
FAe_gest	Gestation of blood sample 5 for Fatty acids
FAf_gest	Gestation of blood sample 6 for Fatty acids
m120a_preg	Fatty acids (red blood cells)- 120, sample 1: Pregnancy
m130a_preg	Fatty acids (red blood cells)- 130, sample 1: Pregnancy

Variable	Label
m140a_preg	Fatty acids (red blood cells)- 140, sample 1: Pregnancy
m141n5a_preg	Fatty acids (red blood cells)- 141:5, sample 1: Pregnancy
m150a_preg	Fatty acids (red blood cells)- 150, sample 1: Pregnancy
m160a_preg	Fatty acids (red blood cells)- 160, sample 1: Pregnancy
m161n7a_preg	Fatty acids (red blood cells)- 161:7, sample 1: Pregnancy
m170a_preg	Fatty acids (red blood cells)- 170, sample 1: Pregnancy
m171n7a_preg	Fatty acids (red blood cells)- 171:7, sample 1: Pregnancy
m180a_preg	Fatty acids (red blood cells)- 180, sample 1: Pregnancy
m181n7a_preg	Fatty acids (red blood cells)- 181:7, sample 1: Pregnancy
m181n9a_preg	Fatty acids (red blood cells)- 181:9, sample 1: Pregnancy
m181n12a_preg	Fatty acids (red blood cells)- 181:12, sample 1: Pregnancy
m182n6a_preg	Fatty acids (red blood cells)- 182:6, sample 1: Pregnancy
m183n6a_preg	Fatty acids (red blood cells)- 183:6, sample 1: Pregnancy
m183n3a_preg	Fatty acids (red blood cells)- 183:3, sample 1: Pregnancy
m184n3a_preg	Fatty acids (red blood cells)- 184:3, sample 1: Pregnancy
m190a_preg	Fatty acids (red blood cells)- 190, sample 1: Pregnancy
m200a_preg	Fatty acids (red blood cells)- 200, sample 1: Pregnancy
m201n9a_preg	Fatty acids (red blood cells)- 201:9, sample 1: Pregnancy
m202n6a_preg	Fatty acids (red blood cells)- 202:6, sample 1: Pregnancy
m203n3a_preg	Fatty acids (red blood cells)- 203:3, sample 1: Pregnancy
m203n6a_preg	Fatty acids (red blood cells)- 203:6, sample 1: Pregnancy
m203n9a_preg	Fatty acids (red blood cells)- 203:9, sample 1: Pregnancy
m204n6a_preg	Fatty acids (red blood cells)- 204:6, sample 1: Pregnancy
m205n3a_preg	Fatty acids (red blood cells)- 205:3, sample 1: Pregnancy
m210a_preg	Fatty acids (red blood cells)- 210, sample 1: Pregnancy
m211n9a_preg	Fatty acids (red blood cells)- 211:9, sample 1: Pregnancy
m220a_preg	Fatty acids (red blood cells)- 220, sample 1: Pregnancy
m221n9a_preg	Fatty acids (red blood cells)- 221:9, sample 1: Pregnancy
m222n6a_preg	Fatty acids (red blood cells)- 222:6, sample 1: Pregnancy
m230a_preg	Fatty acids (red blood cells)- 230, sample 1: Pregnancy
m224n6a_preg	Fatty acids (red blood cells)- 224:6, sample 1: Pregnancy
m225n6a_preg	Fatty acids (red blood cells)- 225:6, sample 1: Pregnancy
m225n3a_preg	Fatty acids (red blood cells)- 225:3, sample 1: Pregnancy
m226n3a_preg	Fatty acids (red blood cells)- 226:3, sample 1: Pregnancy
m223n3a_preg	Fatty acids (red blood cells)- 223:3, sample 1: Pregnancy
m231n9a_preg	Fatty acids (red blood cells)- 231:9, sample 1: Pregnancy
m240a_preg	Fatty acids (red blood cells)- 240, sample 1: Pregnancy
m241n9a_preg	Fatty acids (red blood cells)- 241:9, sample 1: Pregnancy
mtotala_preg	Total Fatty acids (red blood cells), sample 1: Pregnancy
m120b_preg	Fatty acids (red blood cells)- 120, sample 2: Pregnancy
m130b_preg	Fatty acids (red blood cells)- 130, sample 2: Pregnancy
m140b_preg	Fatty acids (red blood cells)- 140, sample 2: Pregnancy
m141n5b_preg	Fatty acids (red blood cells)- 141:5, sample 2: Pregnancy
m150b_preg	Fatty acids (red blood cells)- 150, sample 2: Pregnancy
m160b_preg	Fatty acids (red blood cells)- 160, sample 2: Pregnancy

Variable	Label
m161n7b_preg	Fatty acids (red blood cells)- 161:7, sample 2: Pregnancy
m170b_preg	Fatty acids (red blood cells)- 170, sample 2: Pregnancy
m171n7b_preg	Fatty acids (red blood cells)- 171:7, sample 2: Pregnancy
m180b_preg	Fatty acids (red blood cells)- 180, sample 2: Pregnancy
m181n7b_preg	Fatty acids (red blood cells)- 181:7, sample 2: Pregnancy
m181n9b_preg	Fatty acids (red blood cells)- 181:9, sample 2: Pregnancy
m181n12b_preg	Fatty acids (red blood cells)- 181:12, sample 2: Pregnancy
m182n6b_preg	Fatty acids (red blood cells)- 182:6, sample 2: Pregnancy
m183n6b_preg	Fatty acids (red blood cells)- 183:6, sample 2: Pregnancy
m183n3b_preg	Fatty acids (red blood cells)- 183:3, sample 2: Pregnancy
m184n3b_preg	Fatty acids (red blood cells)- 184:3, sample 2: Pregnancy
m190b_preg	Fatty acids (red blood cells)- 190, sample 2: Pregnancy
m200b_preg	Fatty acids (red blood cells)- 200, sample 2: Pregnancy
m201n9b_preg	Fatty acids (red blood cells)- 201:9, sample 2: Pregnancy
m202n6b_preg	Fatty acids (red blood cells)- 202:6, sample 2: Pregnancy
m203n3b_preg	Fatty acids (red blood cells)- 203:3, sample 2: Pregnancy
m203n6b_preg	Fatty acids (red blood cells)- 203:6, sample 2: Pregnancy
m203n9b_preg	Fatty acids (red blood cells)- 203:9, sample 2: Pregnancy
m204n6b_preg	Fatty acids (red blood cells)- 204:6, sample 2: Pregnancy
m205n3b_preg	Fatty acids (red blood cells)- 205:3, sample 2: Pregnancy
m210b_preg	Fatty acids (red blood cells)- 210, sample 2: Pregnancy
m211n9b_preg	Fatty acids (red blood cells)- 211:9, sample 2: Pregnancy
m220b_preg	Fatty acids (red blood cells)- 220, sample 2: Pregnancy
m221n9b_preg	Fatty acids (red blood cells)- 221:9, sample 2: Pregnancy
m222n6b_preg	Fatty acids (red blood cells)- 222:6, sample 2: Pregnancy
m230b_preg	Fatty acids (red blood cells)- 230, sample 2: Pregnancy
m224n6b_preg	Fatty acids (red blood cells)- 224:6, sample 2: Pregnancy
m225n6b_preg	Fatty acids (red blood cells)- 225:6, sample 2: Pregnancy
m225n3b_preg	Fatty acids (red blood cells)- 225:3, sample 2: Pregnancy
m226n3b_preg	Fatty acids (red blood cells)- 226:3, sample 2: Pregnancy
m223n3b_preg	Fatty acids (red blood cells)- 223:3, sample 2: Pregnancy
m231n9b_preg	Fatty acids (red blood cells)- 231:9, sample 2: Pregnancy
m240b_preg	Fatty acids (red blood cells)- 240, sample 2: Pregnancy
m241n9b_preg	Fatty acids (red blood cells)- 241:9, sample 2: Pregnancy
mtotalb_preg	Total Fatty acids (red blood cells), sample 2: Pregnancy
m120c_preg	Fatty acids (red blood cells)- 120, sample 3: Pregnancy
m130c_preg	Fatty acids (red blood cells)- 130, sample 3: Pregnancy
m140c_preg	Fatty acids (red blood cells)- 140, sample 3: Pregnancy
m141n5c_preg	Fatty acids (red blood cells)- 141:5, sample 3: Pregnancy
m150c_preg	Fatty acids (red blood cells)- 150, sample 3: Pregnancy
m160c_preg	Fatty acids (red blood cells)- 160, sample 3: Pregnancy
m161n7c_preg	Fatty acids (red blood cells)- 161:7, sample 3: Pregnancy
m170c_preg	Fatty acids (red blood cells)- 170, sample 3: Pregnancy
m171n7c_preg	Fatty acids (red blood cells)- 171:7, sample 3: Pregnancy
m180c_preg	Fatty acids (red blood cells)- 180, sample 3: Pregnancy

Variable	Label
m181n7c_preg	Fatty acids (red blood cells)- 181:7, sample 3: Pregnancy
m181n9c_preg	Fatty acids (red blood cells)- 181:9, sample 3: Pregnancy
m181n12c_preg	Fatty acids (red blood cells)- 181:12, sample 3: Pregnancy
m182n6c_preg	Fatty acids (red blood cells)- 182:6, sample 3: Pregnancy
m183n6c_preg	Fatty acids (red blood cells)- 183:6, sample 3: Pregnancy
m183n3c_preg	Fatty acids (red blood cells)- 183:3, sample 3: Pregnancy
m184n3c_preg	Fatty acids (red blood cells)- 184:3, sample 3: Pregnancy
m190c_preg	Fatty acids (red blood cells)- 190, sample 3: Pregnancy
m200c_preg	Fatty acids (red blood cells)- 200, sample 3: Pregnancy
m201n9c_preg	Fatty acids (red blood cells)- 201:9, sample 3: Pregnancy
m202n6c_preg	Fatty acids (red blood cells)- 202:6, sample 3: Pregnancy
m203n3c_preg	Fatty acids (red blood cells)- 203:3, sample 3: Pregnancy
m203n6c_preg	Fatty acids (red blood cells)- 203:6, sample 3: Pregnancy
m203n9c_preg	Fatty acids (red blood cells)- 203:9, sample 3: Pregnancy
m204n6c_preg	Fatty acids (red blood cells)- 204:6, sample 3: Pregnancy
m205n3c_preg	Fatty acids (red blood cells)- 205:3, sample 3: Pregnancy
m210c_preg	Fatty acids (red blood cells)- 210, sample 3: Pregnancy
m211n9c_preg	Fatty acids (red blood cells)- 211:9, sample 3: Pregnancy
m220c_preg	Fatty acids (red blood cells)- 220, sample 3: Pregnancy
m221n9c_preg	Fatty acids (red blood cells)- 221:9, sample 3: Pregnancy
m222n6c_preg	Fatty acids (red blood cells)- 222:6, sample 3: Pregnancy
m230c_preg	Fatty acids (red blood cells)- 230, sample 3: Pregnancy
m224n6c_preg	Fatty acids (red blood cells)- 224:6, sample 3: Pregnancy
m225n6c_preg	Fatty acids (red blood cells)- 225:6, sample 3: Pregnancy
m225n3c_preg	Fatty acids (red blood cells)- 225:3, sample 3: Pregnancy
m226n3c_preg	Fatty acids (red blood cells)- 226:3, sample 3: Pregnancy
m223n3c_preg	Fatty acids (red blood cells)- 223:3, sample 3: Pregnancy
m231n9c_preg	Fatty acids (red blood cells)- 231:9, sample 3: Pregnancy
m240c_preg	Fatty acids (red blood cells)- 240, sample 3: Pregnancy
m241n9c_preg	Fatty acids (red blood cells)- 241:9, sample 3: Pregnancy
mtotalc_preg	Total Fatty acids (red blood cells), sample 3: Pregnancy
m120d_preg	Fatty acids (red blood cells)- 120, sample 4: Pregnancy
m130d_preg	Fatty acids (red blood cells)- 130, sample 4: Pregnancy
m140d_preg	Fatty acids (red blood cells)- 140, sample 4: Pregnancy
m141n5d_preg	Fatty acids (red blood cells)- 141:5, sample 4: Pregnancy
m150d_preg	Fatty acids (red blood cells)- 150, sample 4: Pregnancy
m160d_preg	Fatty acids (red blood cells)- 160, sample 4: Pregnancy
m161n7d_preg	Fatty acids (red blood cells)- 161:7, sample 4: Pregnancy
m170d_preg	Fatty acids (red blood cells)- 170, sample 4: Pregnancy
m171n7d_preg	Fatty acids (red blood cells)- 171:7, sample 4: Pregnancy
m180d_preg	Fatty acids (red blood cells)- 180, sample 4: Pregnancy
m181n7d_preg	Fatty acids (red blood cells)- 181:7, sample 4: Pregnancy
m181n9d_preg	Fatty acids (red blood cells)- 181:9, sample 4: Pregnancy
m181n12d_preg	Fatty acids (red blood cells)- 181:12, sample 4: Pregnancy
m182n6d_preg	Fatty acids (red blood cells)- 182:6, sample 4: Pregnancy

Variable	Label
m183n6d_preg	Fatty acids (red blood cells)- 183:6, sample 4: Pregnancy
m183n3d_preg	Fatty acids (red blood cells)- 183:3, sample 4: Pregnancy
m184n3d_preg	Fatty acids (red blood cells)- 184:3, sample 4: Pregnancy
m190d_preg	Fatty acids (red blood cells)- 190, sample 4: Pregnancy
m200d_preg	Fatty acids (red blood cells)- 200, sample 4: Pregnancy
m201n9d_preg	Fatty acids (red blood cells)- 201:9, sample 4: Pregnancy
m202n6d_preg	Fatty acids (red blood cells)- 202:6, sample 4: Pregnancy
m203n3d_preg	Fatty acids (red blood cells)- 203:3, sample 4: Pregnancy
m203n6d_preg	Fatty acids (red blood cells)- 203:6, sample 4: Pregnancy
m203n9d_preg	Fatty acids (red blood cells)- 203:9, sample 4: Pregnancy
m204n6d_preg	Fatty acids (red blood cells)- 204:6, sample 4: Pregnancy
m205n3d_preg	Fatty acids (red blood cells)- 205:3, sample 4: Pregnancy
m210d_preg	Fatty acids (red blood cells)- 210, sample 4: Pregnancy
m211n9d_preg	Fatty acids (red blood cells)- 211:9, sample 4: Pregnancy
m220d_preg	Fatty acids (red blood cells)- 220, sample 4: Pregnancy
m221n9d_preg	Fatty acids (red blood cells)- 221:9, sample 4: Pregnancy
m222n6d_preg	Fatty acids (red blood cells)- 222:6, sample 4: Pregnancy
m230d_preg	Fatty acids (red blood cells)- 230, sample 4: Pregnancy
m224n6d_preg	Fatty acids (red blood cells)- 224:6, sample 4: Pregnancy
m225n6d_preg	Fatty acids (red blood cells)- 225:6, sample 4: Pregnancy
m225n3d_preg	Fatty acids (red blood cells)- 225:3, sample 4: Pregnancy
m226n3d_preg	Fatty acids (red blood cells)- 226:3, sample 4: Pregnancy
m223n3d_preg	Fatty acids (red blood cells)- 223:3, sample 4: Pregnancy
m231n9d_preg	Fatty acids (red blood cells)- 231:9, sample 4: Pregnancy
m240d_preg	Fatty acids (red blood cells)- 240, sample 4: Pregnancy
m241n9d_preg	Fatty acids (red blood cells)- 241:9, sample 4: Pregnancy
mtotald_preg	Total Fatty acids (red blood cells), sample 4: Pregnancy
m120e_preg	Fatty acids (red blood cells)- 120, sample 5: Pregnancy
m130e_preg	Fatty acids (red blood cells)- 130, sample 5: Pregnancy
m140e_preg	Fatty acids (red blood cells)- 140, sample 5: Pregnancy
m141n5e_preg	Fatty acids (red blood cells)- 141:5, sample 5: Pregnancy
m150e_preg	Fatty acids (red blood cells)- 150, sample 5: Pregnancy
m160e_preg	Fatty acids (red blood cells)- 160, sample 5: Pregnancy
m161n7e_preg	Fatty acids (red blood cells)- 161:7, sample 5: Pregnancy
m170e_preg	Fatty acids (red blood cells)- 170, sample 5: Pregnancy
m171n7e_preg	Fatty acids (red blood cells)- 171:7, sample 5: Pregnancy
m180e_preg	Fatty acids (red blood cells)- 180, sample 5: Pregnancy
m181n7e_preg	Fatty acids (red blood cells)- 181:7, sample 5: Pregnancy
m181n9e_preg	Fatty acids (red blood cells)- 181:9, sample 5: Pregnancy
m181n12e_preg	Fatty acids (red blood cells)- 181:12, sample 5: Pregnancy
m182n6e_preg	Fatty acids (red blood cells)- 182:6, sample 5: Pregnancy
m183n6e_preg	Fatty acids (red blood cells)- 183:6, sample 5: Pregnancy
m183n3e_preg	Fatty acids (red blood cells)- 183:3, sample 5: Pregnancy
m184n3e_preg	Fatty acids (red blood cells)- 184:3, sample 5: Pregnancy
m190e_preg	Fatty acids (red blood cells)- 190, sample 5: Pregnancy

Variable	Label
m200e_preg	Fatty acids (red blood cells)- 200, sample 5: Pregnancy
m201n9e_preg	Fatty acids (red blood cells)- 201:9, sample 5: Pregnancy
m202n6e_preg	Fatty acids (red blood cells)- 202:6, sample 5: Pregnancy
m203n3e_preg	Fatty acids (red blood cells)- 203:3, sample 5: Pregnancy
m203n6e_preg	Fatty acids (red blood cells)- 203:6, sample 5: Pregnancy
m203n9e_preg	Fatty acids (red blood cells)- 203:9, sample 5: Pregnancy
m204n6e_preg	Fatty acids (red blood cells)- 204:6, sample 5: Pregnancy
m205n3e_preg	Fatty acids (red blood cells)- 205:3, sample 5: Pregnancy
m210e_preg	Fatty acids (red blood cells)- 210, sample 5: Pregnancy
m211n9e_preg	Fatty acids (red blood cells)- 211:9, sample 5: Pregnancy
m220e_preg	Fatty acids (red blood cells)- 220, sample 5: Pregnancy
m221n9e_preg	Fatty acids (red blood cells)- 221:9, sample 5: Pregnancy
m222n6e_preg	Fatty acids (red blood cells)- 222:6, sample 5: Pregnancy
m230e_preg	Fatty acids (red blood cells)- 230, sample 5: Pregnancy
m224n6e_preg	Fatty acids (red blood cells)- 224:6, sample 5: Pregnancy
m225n6e_preg	Fatty acids (red blood cells)- 225:6, sample 5: Pregnancy
m225n3e_preg	Fatty acids (red blood cells)- 225:3, sample 5: Pregnancy
m226n3e_preg	Fatty acids (red blood cells)- 226:3, sample 5: Pregnancy
m223n3e_preg	Fatty acids (red blood cells)- 223:3, sample 5: Pregnancy
m231n9e_preg	Fatty acids (red blood cells)- 231:9, sample 5: Pregnancy
m240e_preg	Fatty acids (red blood cells)- 240, sample 5: Pregnancy
m241n9e_preg	Fatty acids (red blood cells)- 241:9, sample 5: Pregnancy
mtotale_preg	Total Fatty acids (red blood cells), sample 5: Pregnancy
m120f_preg	Fatty acids (red blood cells)- 120, sample 6: Pregnancy
m130f_preg	Fatty acids (red blood cells)- 130, sample 6: Pregnancy
m140f_preg	Fatty acids (red blood cells)- 140, sample 6: Pregnancy
m141n5f_preg	Fatty acids (red blood cells)- 141:5, sample 6: Pregnancy
m150f_preg	Fatty acids (red blood cells)- 150, sample 6: Pregnancy
m160f_preg	Fatty acids (red blood cells)- 160, sample 6: Pregnancy
m161n7f_preg	Fatty acids (red blood cells)- 161:7, sample 6: Pregnancy
m170f_preg	Fatty acids (red blood cells)- 170, sample 6: Pregnancy
m171n7f_preg	Fatty acids (red blood cells)- 171:7, sample 6: Pregnancy
m180f_preg	Fatty acids (red blood cells)- 180, sample 6: Pregnancy
m181n7f_preg	Fatty acids (red blood cells)- 181:7, sample 6: Pregnancy
m181n9f_preg	Fatty acids (red blood cells)- 181:9, sample 6: Pregnancy
m181n12f_preg	Fatty acids (red blood cells)- 181:12, sample 6: Pregnancy
m182n6f_preg	Fatty acids (red blood cells)- 182:6, sample 6: Pregnancy
m183n6f_preg	Fatty acids (red blood cells)- 183:6, sample 6: Pregnancy
m183n3f_preg	Fatty acids (red blood cells)- 183:3, sample 6: Pregnancy
m184n3f_preg	Fatty acids (red blood cells)- 184:3, sample 6: Pregnancy
m190f_preg	Fatty acids (red blood cells)- 190, sample 6: Pregnancy
m200f_preg	Fatty acids (red blood cells)- 200, sample 6: Pregnancy
m201n9f_preg	Fatty acids (red blood cells)- 201:9, sample 6: Pregnancy
m202n6f_preg	Fatty acids (red blood cells)- 202:6, sample 6: Pregnancy
m203n3f_preg	Fatty acids (red blood cells)- 203:3, sample 6: Pregnancy

Variable	Label
m203n6f_preg	Fatty acids (red blood cells)- 203:6, sample 6: Pregnancy
m203n9f_preg	Fatty acids (red blood cells)- 203:9, sample 6: Pregnancy
m204n6f_preg	Fatty acids (red blood cells)- 204:6, sample 6: Pregnancy
m205n3f_preg	Fatty acids (red blood cells)- 205:3, sample 6: Pregnancy
m210f_preg	Fatty acids (red blood cells)- 210, sample 6: Pregnancy
m211n9f_preg	Fatty acids (red blood cells)- 211:9, sample 6: Pregnancy
m220f_preg	Fatty acids (red blood cells)- 220, sample 6: Pregnancy
m221n9f_preg	Fatty acids (red blood cells)- 221:9, sample 6: Pregnancy
m222n6f_preg	Fatty acids (red blood cells)- 222:6, sample 6: Pregnancy
m230f_preg	Fatty acids (red blood cells)- 230, sample 6: Pregnancy
m224n6f_preg	Fatty acids (red blood cells)- 224:6, sample 6: Pregnancy
m225n6f_preg	Fatty acids (red blood cells)- 225:6, sample 6: Pregnancy
m225n3f_preg	Fatty acids (red blood cells)- 225:3, sample 6: Pregnancy
m226n3f_preg	Fatty acids (red blood cells)- 226:3, sample 6: Pregnancy
m223n3f_preg	Fatty acids (red blood cells)- 223:3, sample 6: Pregnancy
m231n9f_preg	Fatty acids (red blood cells)- 231:9, sample 6: Pregnancy
m240f_preg	Fatty acids (red blood cells)- 240, sample 6: Pregnancy
m241n9f_preg	Fatty acids (red blood cells)- 241:9, sample 6: Pregnancy
mtotalf_preg	Total Fatty acids (red blood cells), sample 6: Pregnancy
creatinine_mmoll_1_preg	Creatinine (mmol/L) - Pregnancy sample 1
creatinine_gl_1_preg	Creatinine (g/L) - Pregnancy sample 1
iodine_mcgl_1_preg	Iodine (mcg/L) - Pregnancy sample 1
iod_creat_1_preg	Iodine to Creatinine (mcg/g) - Pregnancy sample 1
iod_creat_gest1	Gestation (weeks) of urine sample - Pregnancy sample 1
creatinine_mmoll_2_preg	Creatinine (mmol/L) - Pregnancy sample 2
creatinine_gl_2_preg	Creatinine (g/L) - Pregnancy sample 2
iodine_mcgl_2_preg	Iodine (mcg/L) - Pregnancy sample 2
iod_creat_2_preg	Iodine to Creatinine (mcg/g) - Pregnancy sample 2
iod_creat_gest2	Gestation (weeks) of urine sample - Pregnancy sample 2
creatinine_mmoll_3_preg	Creatinine (mmol/L) - Pregnancy sample 3
creatinine_gl_3_preg	Creatinine (g/L) - Pregnancy sample 3
iodine_mcgl_3_preg	Iodine (mcg/L) - Pregnancy sample 3
iod_creat_3_preg	Iodine to Creatinine (mcg/g) - Pregnancy sample 3
iod_creat_gest3	Gestation (weeks) of urine sample - Pregnancy sample 3
creatinine_mmoll_4_preg	Creatinine (mmol/L) - Pregnancy sample 4
creatinine_gl_4_preg	Creatinine (g/L) - Pregnancy sample 4
iodine_mcgl_4_preg	Iodine (mcg/L) - Pregnancy sample 4
iod_creat_4_preg	Iodine to Creatinine (mcg/g) - Pregnancy sample 4
iod_creat_gest4	Gestation (weeks) of urine sample - Pregnancy sample 4
Thyroid_gestweeks_trim1	Length of gestation (in weeks) at trimester 1 thyroid sample
antiTPO_preg_trim1	Anti-thyroid peroxidase antibodies (IU/ml) - Pregnancy: Trimester 1
TSH_preg_trim1	Thyroid-stimulating hormone (mIU/L) - Pregnancy: Trimester 1
FT4_preg_trim1	Thyroxine (FT4: pmol/L) - Pregnancy: Trimester 1
Thyroid_gestweeks_trim3	Length of gestation (in weeks) at trimester 3 thyroid sample
antiTPO_preg_trim3	Anti-thyroid peroxidase antibodies (IU/ml) - Pregnancy: Trimester 3

Variable	Label
TSH_preg_trim3	Thyroid-stimulating hormone (IU/ml) - Pregnancy: Trimester 3
FT4_preg_trim3	Thyroxine (FT4: pmol/L) - Pregnancy: Trimester 3
cotinine_Preg_Trim1_s1	Cotinine ng/ml (sample 1), Pregnancy Trimester 1
cotinine_Preg_Trim1_s2	Cotinine ng/ml (sample 2), Pregnancy Trimester 1
cotinine_Preg_Trim1_avg	DV: Cotinine ng/ml (average), Pregnancy Trimester 1
cotinine_GestAge_Preg_Trim1	Gestation in weeks at cotinine sample, Pregnancy Trimester 1
cotinine_Preg_Trim3_s1	Cotinine ng/ml (sample 1), Pregnancy Trimester 3
cotinine_Preg_Trim3_s2	Cotinine ng/ml (sample 2), Pregnancy Trimester 3
cotinine_Preg_Trim3_avg	DV: Cotinine ng/ml (average), Pregnancy Trimester 3
cotinine_GestAge_Preg_Trim3	Gestation in weeks at cotinine sample, Pregnancy Trimester 3
Hb_FOM1	Haemoglobin g/dl, fasting FOM1
insulin_FOM1	Insulin u/ml, fasting FOM1
insulinp_FOM1	Insulin pmol/l, fasting FOM1
proinsulin_FOM1	Proinsulin pmol/l, fasting FOM1
glucose_FOM1	Glucose mmol/l, fasting FOM1
chol_FOM1	Cholesterol mmol/l, fasting FOM1
trig_FOM1	Triglycerides mmol/l, fasting FOM1
hdl_FOM1	HDL cholesterol mmol/l, fasting FOM1
ldl_FOM1	LDL cholesterol mmol/l, fasting FOM1
vldl_FOM1	vLDL cholesterol mmol/l, fasting FOM1
crp_FOM1	C-Reactive Protein mg/l, fasting FOM1
LH_FOM1	Luteinizing hormone (LH) mIU/ml, FOM1
FSH_FOM1	Follicle stimulating hormone (FSH) mIU/ml, FOM1
SHBG_FOM1	Sex hormone binding globulin (SHBG) nmol/L, FOM1
AMH_FOM1	Anti-Müllerian hormone (AMH) ng/ml, FOM1
CTx_FOM1	CTx ng/mL, fasting FOM1
testosterone_FOM1	Testosterone nmol/L, FOM1
androstenedione_FOM1	Androstenedione nmol/L, FOM1
OHP17_FOM1	17α-hydroxyprogesterone (17OHP) nmol/L, FOM1
DOC11_FOM1	11-deoxycorticosterone (11DOC) nmol/L, FOM1
DOC21_FOM1	21-deoxycorticosterone (21DOC) nmol/L, FOM1
adiponectin_FOM1	Adiponectin ng/ml, FOM1
adiponectin_FOMclinic	FOM clinic adiponectin sample was taken from
IGFI_FOM1	Insulin-like Growth Factor I (IGF-I) ng/ml, FOM1
IGFI_CV_FOM1	Coefficient of variation for IGF-I (%), FOM1
IGFII_FOM1	Insulin-like Growth Factor II (IGF-II) ng/ml, FOM1
IGFII_CV_FOM1	Coefficient of variation for IGF-II (%), FOM1
IGFBP3_FOM1	Insulin-like Growth Factor Binding Protein 3 (IGFBP3) ng/ml, FOM1
IGFBP3_CV_FOM1	Coefficient of variation for IGFBP3 (%), FOM1
IGFBP2_FOM1	Insulin-like Growth Factor Binding Protein 2 (IGFBP2) ng/ml, FOM1
IGFBP2_CV_FOM1	Coefficient of variation for IGFBP2 (%), FOM1
IGF_FOMclinic	FOM clinic IGF measures taken from
FT4_FOM1	FT4 (thyroxine; pmol/L): FOM1
TnThs_FOM1	High-sensitive cardiac troponin T (pg/ml): FOM1
Insul_FOM1	Insulin (uU/ml): FOM1

Variable	Label
NTproBNP_FOM1	N-terminal pro-B-type natriuretic peptide (pg/ml): FOM1
ATPO_FOM1	Anti-thyroperoxidase (TPO; IU/ml): FOM1
TSH_FOM1	Thyroid stimulating hormone (mIU/L): FOM1
PTH_FOM1	Parathyroid hormone (pg/ml): FOM1
VitDt_FOM1	Vitamin D-T (ng/ml): FOM1
Hb_FOM2	Haemoglobin g/dl, fasting FOM2
glucose_FOM2	Glucose mmol/l, fasting FOM2
chol_FOM2	Cholesterol mmol/l, fasting FOM2
trig_FOM2	Triglycerides mmol/l, fasting FOM2
hdl_FOM2	HDL cholesterol mmol/l, fasting FOM2
ldl_FOM2	LDL cholesterol mmol/l, fasting FOM2
vldl_FOM2	vLDL cholesterol mmol/l, fasting FOM2
crp_FOM2	C-Reactive Protein mg/l, fasting FOM2
LH_FOM2	Luteinizing hormone (LH) mIU/ml, FOM2
FSH_FOM2	Follicle stimulating hormone (FSH) mIU/ml, FOM2
SHBG_FOM2	Sex hormone binding globulin (SHBG) nmol/L, FOM2
AMH_FOM2	Anti-Müllerian hormone (AMH) ng/ml, FOM2
sRANKL_FOM2	sRANKL pmol/L-1, FOM2
CTX_FOM2	C-terminal telopeptide (CTX) ng/ml-1, FOM2
FT4_FOM2	FT4 (thyroxine; pmol/L): FOM2
TnThs_FOM2	High-sensitive cardiac troponin T (pg/ml): FOM2
Insul_FOM2	Insulin (uU/ml): FOM2
NTproBNP_FOM2	N-terminal pro-B-type natriuretic peptide (pg/ml): FOM2
ATPO_FOM2	Anti-thyroperoxidase (TPO; IU/ml): FOM2
TSH_FOM2	Thyroid stimulating hormone (mIU/L): FOM2
PTH_FOM2	Parathyroid hormone (pg/ml): FOM2
VitDt_FOM2	Vitamin D-T (ng/ml): FOM2
Hb_FOM3	Haemoglobin g/dl, fasting FOM3
glucose_FOM3	Glucose mmol/l, fasting FOM3
chol_FOM3	Cholesterol mmol/l, fasting FOM3
trig_FOM3	Triglycerides mmol/l, fasting FOM3
hdl_FOM3	HDL cholesterol mmol/l, fasting FOM3
ldl_FOM3	LDL cholesterol mmol/l, fasting FOM3
vldl_FOM3	vLDL cholesterol mmol/l, fasting FOM3
crp_FOM3	C-Reactive Protein mg/l, fasting FOM3
LH_FOM3	Luteinizing hormone (LH) mIU/ml, FOM3
FSH_FOM3	Follicle stimulating hormone (FSH) mIU/ml, FOM3
SHBG_FOM3	Sex hormone binding globulin (SHBG) nmol/L, FOM3
AMH_FOM3	Anti-Müllerian hormone (AMH) ng/ml, FOM3
FT4_FOM3	FT4 (thyroxine; pmol/L): FOM3
TnThs_FOM3	High-sensitive cardiac troponin T (pg/ml): FOM3
Insul_FOM3	Insulin (uU/ml): FOM3
NTproBNP_FOM3	N-terminal pro-B-type natriuretic peptide (pg/ml): FOM3
ATPO_FOM3	Anti-thyroperoxidase (TPO; IU/ml): FOM3
TSH_FOM3	Thyroid stimulating hormone (mIU/L): FOM3

Variable	Label
PTH_FOM3	Parathyroid hormone (pg/ml): FOM3
VitDt_FOM3	Vitamin D-T (ng/ml): FOM3
Hb_FOM4	Haemoglobin g/dl, fasting FOM4
glucose_FOM4	Glucose mmol/l, fasting FOM4
chol_FOM4	Cholesterol mmol/l, fasting FOM4
trig_FOM4	Triglycerides mmol/l, fasting FOM4
hdl_FOM4	HDL cholesterol mmol/l, fasting FOM4
ldl_FOM4	LDL cholesterol mmol/l, fasting FOM4
vldl_FOM4	vLDL cholesterol mmol/l, fasting FOM4
crp_FOM4	C-Reactive Protein mg/l, fasting FOM4
LH_FOM4	Luteinizing hormone (LH) mIU/ml, FOM4
FSH_FOM4	Follicle stimulating hormone (FSH) mIU/ml, FOM4
SHBG_FOM4	Sex hormone binding globulin (SHBG) nmol/L, FOM4
AMH_FOM4	Anti-Müllerian hormone (AMH) ng/ml, FOM4
FT4_FOM4	FT4 (thyroxine; pmol/L): FOM4
TnThs_FOM4	High-sensitive cardiac troponin T (pg/ml): FOM4
Insul_FOM4	Insulin (uU/ml): FOM4
NTproBNP_FOM4	N-terminal pro-B-type natriuretic peptide (pg/ml): FOM4
ATPO_FOM4	Anti-thyroperoxidase (TPO; IU/ml): FOM4
TSH_FOM4	Thyroid stimulating hormone (mIU/L): FOM4
PTH_FOM4	Parathyroid hormone (pg/ml): FOM4
VitDt_FOM4	Vitamin D-T (ng/ml): FOM4
mum_GWAS_1kg	1000Genome imputation data is available for this person
mum_GWAS_hrc	HRC imputation data is available for this person
mum_aries	ARIES methylation data is available for this person
mum_GWAS_1kg_F	1000Genome imputation data (from Father clinic) is available for this person