

Extended data: Statistical investigation of the UK Biobank biochemistry assays quality procedures - Inclusion criteria

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1. Inclusion criteria for analyses

All assays

1. Within reportable range at initial measurement
2. No error reported

Assays on serum samples

3. Not in dip period
4. Not in "aliquot misclassification" period
5. Aliquot number 1-3, manual or missing

Inclusion rules for any dilution factor estimation (for other serum results the original result is retained):

6. In a restricted list of assays (see Table S1)
7. Not more than 15 SDs below mean in manual aliquots

Inclusion rules machine-tip dilution factor estimation (for other serum results the original result is retained):

7. Aliquot number 1-3, manual or missing
8. Has machine-tip information or was a manual sample
9. More than 1 result from machine-tip (one of the machines was recorded as being used only once for the resurvey data, so correction was not possible)
10. Not from visits in 2006, a year before the main baseline recruitment, because there were only 4 such samples with data (which is too sparse for this analysis)

Inclusion in sample reduction in concentration estimation:

11. With machine-tip dilution factor estimate but from a restricted list of assays (see Table S2)

Inclusion in date correction:

12. Results not excluded by 1-5 or 7 above
13. In restricted list of assays listed in point 6 plus HbA1c (for other results the original result is retained)

Assay	Change point analysis	Dilution factor estimation	Sample reduction in concentration estimation	Date correction	Rejection based on estimated sample reduction in concentration	
					-1/+1%	-10/+10%
ALB						
ALP						
ALT						
APOA						
APOB						
AST						
BILD						
BUN						
CA						
CHOL						
CRE						
CRP						
CYS						
GGT						
GLU						
HBA1C						
HDL						
IGF1						
LDLD						
LPA						
OES						
PHOS						
RF						
SHBG						
TBIL						
TES						
TP						
TRIG						
UA						
VITD						

Table S1. Assays included in each analysis stage