

## Appendix L Priority order of blood analytes

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Tables L.1 to L.3 provide information about the priority order for analysis of blood analytes in NDNS. For each age group, analytes are shown firstly, by the order in which the blood tubes were collected from the participant and, secondly, by the order in which the analyses were performed within each tube.

Blood analyte priorities are shown for all age groups. However, this report only includes results for participants aged 11 to 18 years and 19 to 64 years. Results for participants aged 1.5 to 10 years and 65 years and over are not included in this report nor are they provided in the archived dataset, but will be reported and included in the archived dataset when sufficient data are available.

**Table L.1**

**Blood tube and analyte priorities for participants**

*Aged 1.5-6 years*

*2008/09-2010/11*

Blood tube	Analyte	SI unit	Conversion factor	Alternative unit
2.6mL EDTA	Haemoglobin concentration	g/L	*	
	Red blood cell count	$\times 10^{12}/L$	*	
	Haematocrit	L/L	*	
	Mean cell volume	fL	*	
	Mean cell haemoglobin	pg	*	
	Mean cell haemoglobin concentration	g/L	*	
	Red cell distribution width	%	*	
	Platelet count	$\times 10^9/L$	*	
	White cell count	$\times 10^9/L$	*	
	Neutrophil count	$\times 10^9/L$	*	
	Lymphocyte count	$\times 10^9/L$	*	
	Monocyte count	$\times 10^9/L$	*	
	Eosinophil count	$\times 10^9/L$	*	
	Basophil count	$\times 10^9/L$	*	
	Red cell folate <sup>1</sup>	nmol/L	$\times 0.441$	$\mu\text{g}/L$
	Haemoglobin A1c <sup>2</sup>	n/a	*	%

Table L.1 (continued)

## Blood tube and analyte priorities for participants

Aged 1.5-6 years

2008/09-2010/11

Blood tube	Analyte	SI unit	Conversion factor	Alternative unit
4.5mL lithium heparin	Plasma ferritin	n/a	*	µg/L
	Plasma 25-hydroxyvitamin D	nmol/L	x 0.400	µg/L
	Plasma creatinine	µmol/L	x 0.113	mg/L
	Plasma vitamin C	µmol/L	x 0.176	mg/L
	Plasma retinol	µmol/L	x 0.286	mg/L
	Plasma retinyl palmitate	µmol/L	x 0.525	mg/L
	Plasma α-tocopherol	µmol/L	x 0.431	mg/L
	Plasma γ-tocopherol	µmol/L	x 0.417	mg/L
	Plasma α-cryptoxanthin	µmol/L	x 0.552	mg/L
	Plasma β-cryptoxanthin	µmol/L	x 0.552	mg/L
	Plasma lycopene	µmol/L	x 0.537	mg/L
	Plasma lutein and zeaxanthin	µmol/L	x 0.569	mg/L
	Plasma α-carotene	µmol/L	x 0.537	mg/L
	Plasma β-carotene	µmol/L	x 0.537	mg/L
	Erythrocyte glutathione reductase: activation coefficient (ratio)	n/a	*	n/a
	Erythrocyte transketolase: activation coefficient (ratio)	n/a	*	n/a
	Plasma vitamin B <sub>6</sub> : Pyridoxal-5-phosphate	nmol/L	x 247	ng/L
	Plasma vitamin B <sub>6</sub> : Pyridoxic acid	nmol/L	x 183	ng/L
1.1mL serum gel	Serum total cholesterol	mmol/L	x 0.387	g/L
	Serum high density lipoprotein (HDL) cholesterol	mmol/L	x 0.387	g/L
	Serum low density lipoprotein (LDL) cholesterol <sup>3</sup>	mmol/L	x 0.387	g/L
	Serum triglycerides (triacylglycerols)	mmol/L	*	
	High-sensitivity C-reactive protein	mg/L	*	
	Free T3 <sup>2</sup>	pmol/L	*	
	Free T4 <sup>2</sup>	pmol/L	*	
2.7mL serum	Thyroid-stimulating hormone <sup>2</sup>	mIU/L <sup>4</sup>	*	
	Serum folate <sup>1</sup>	nmol/L	x 0.441	µg/L
	Serum vitamin B <sub>12</sub>	pmol/L	x 1.357	ng/L

<sup>1</sup> Folate analysis is in progress and will be included in a future report.<sup>2</sup> Analysis is funded separately; results will not be reported or archived.<sup>3</sup> LDL was calculated using the Friedewald equation: LDL (mmol/L) = Total cholesterol – HDL cholesterol – (triglycerides/2.2). LDL was not calculated for samples with triglyceride values greater than 4.5mmol/L.<sup>4</sup> mIU/L stands for milli-international units per litre.

\* Conversion not possible or not appropriate.

n/a: not applicable.

Table L.2

## Blood tube and analyte priorities for participants

Aged 7-15 years

2008/09-2010/11

Blood tube	Analyte	SI unit	Conversion factor	Alternative unit
2.6mL EDTA	Haemoglobin concentration	g/L	*	
	Red blood cell count <sup>1</sup>	x 10 <sup>12</sup> /L	*	
	Haematocrit	L/L	*	
	Mean cell volume <sup>1</sup>	fL	*	
	Mean cell haemoglobin <sup>1</sup>	pg	*	
	Mean cell haemoglobin concentration <sup>1</sup>	g/L	*	
	Red cell distribution width <sup>1</sup>	%	*	
	Platelet count <sup>1</sup>	x 10 <sup>9</sup> /L	*	
	White cell count <sup>1</sup>	x 10 <sup>9</sup> /L	*	
	Neutrophil count <sup>1</sup>	x 10 <sup>9</sup> /L	*	
	Lymphocyte count <sup>1</sup>	x 10 <sup>9</sup> /L	*	
	Monocyte count <sup>1</sup>	x 10 <sup>9</sup> /L	*	
	Eosinophil count <sup>1</sup>	x 10 <sup>9</sup> /L	*	
	Basophil count <sup>1</sup>	x 10 <sup>9</sup> /L	*	
	Red cell folate <sup>2</sup>	nmol/L	x 0.441	µg/L
	Haemoglobin A1c <sup>3</sup>	n/a	*	%
7.5mL lithium heparin (trace mineral)	Plasma ferritin	n/a	*	µg/L
	Plasma 25-hydroxyvitamin D	nmol/L	x 0.400	µg/L
	Plasma creatinine <sup>1</sup>	µmol/L	x 0.113	mg/L
	Plasma vitamin C	µmol/L	x 0.176	mg/L
	Plasma retinol	µmol/L	x 0.286	mg/L
	Plasma retinyl palmitate <sup>1</sup>	µmol/L	x 0.525	mg/L
	Plasma α-tocopherol	µmol/L	x 0.431	mg/L
	Plasma γ-tocopherol <sup>1</sup>	µmol/L	x 0.417	mg/L
	Plasma α-cryptoxanthin	µmol/L	x 0.552	mg/L
	Plasma β-cryptoxanthin	µmol/L	x 0.552	mg/L
	Plasma lycopene	µmol/L	x 0.537	mg/L
	Plasma lutein and zeaxanthin	µmol/L	x 0.569	mg/L
	Plasma α-carotene	µmol/L	x 0.537	mg/L
	Plasma β-carotene	µmol/L	x 0.537	mg/L
	Plasma homocysteine	µmol/L	x 0.135	mg/L
	Erythrocyte glutathione reductase:activation coefficient (ratio)	n/a	*	n/a
	Erythrocyte transketolase: activation coefficient (ratio)	n/a	*	n/a
	Plasma selenium	µmol/L	x 0.079	mg/L
	Plasma zinc	µmol/L	x 0.065	mg/L

Table L.2 (continued)

## Blood tube and analyte priorities for participants

Aged 7-15 years

2008/09-2010/11

Blood tube	Analyte	SI unit	Conversion factor	Alternative unit
2.6mL serum gel	Serum total cholesterol	mmol/L	x 0.387	g/L
	Serum high density lipoprotein (HDL) cholesterol	mmol/L	x 0.387	g/L
	Serum low density lipoprotein (LDL) cholesterol <sup>4</sup>	mmol/L	x 0.387	g/L
	Serum triglycerides (triacylglycerols) <sup>1</sup>	mmol/L	*	
	High-sensitivity C-reactive protein	mg/L	*	
	Free T3 <sup>3</sup>	pmol/L	*	
	Free T4 <sup>3</sup>	pmol/L	*	
	Thyroid-stimulating hormone <sup>3</sup>	mIU/L <sup>5</sup>	*	
4.5mL serum	Serum folate <sup>2</sup>	nmol/L	x 0.441	µg/L
	Serum vitamin B <sub>12</sub>	pmol/L	x 1.357	ng/L
2.7mL lithium heparin	Plasma vitamin B <sub>6</sub> : Pyridoxal-5-phosphate	nmol/L	x 247	ng/L
	Plasma vitamin B <sub>6</sub> : Pyridoxic acid <sup>1</sup>	nmol/L	x 183	ng/L
	Plasma transferrin receptors <sup>1</sup>	mg/L	x 1.0	µg/mL
1.2mL fluoride	Plasma glucose (only if fasted) <sup>3</sup>	mmol/L	x18.02	mg/dL

<sup>1</sup> Analyte is not reported in the current report; however the data will be archived for participants aged 11 to 15 years but not for participants aged 7 to 10 years.

<sup>2</sup> Folate analysis is in progress and will be included in a future report.

<sup>3</sup> Analysis is funded separately; results will not be reported or archived.

<sup>4</sup> LDL was calculated using the Friedewald equation: LDL (mmol/L) = Total cholesterol – HDL cholesterol – (triglycerides/2.2). LDL was not calculated for samples with triglyceride values greater than 4.5mmol/L.

<sup>5</sup> mIU/L stands for milli-international units per litre.

\* Conversion not possible or not appropriate.

n/a: not applicable.

Table L.3

## Blood tube and analyte priorities for participants

Aged 16 years and over

2008/09-2010/11

Blood tube	Analyte	SI unit	Conversion factor	Alternative unit
2.6mL EDTA	Haemoglobin concentration	g/L	*	
	Red blood cell count <sup>1</sup>	$\times 10^{12}/L$	*	
	Haematocrit	L/L	*	
	Mean cell volume <sup>1</sup>	fL	*	
	Mean cell haemoglobin <sup>1</sup>	pg	*	
	Mean cell haemoglobin concentration <sup>1</sup>	g/L	*	
	Red cell distribution width <sup>1</sup>	%	*	
	Platelet count <sup>1</sup>	$\times 10^9/L$	*	
	White cell count <sup>1</sup>	$\times 10^9/L$	*	
	Neutrophil count <sup>1</sup>	$\times 10^9/L$	*	
	Lymphocyte count <sup>1</sup>	$\times 10^9/L$	*	
	Monocyte count <sup>1</sup>	$\times 10^9/L$	*	
	Eosinophil count <sup>1</sup>	$\times 10^9/L$	*	
	Basophil count <sup>1</sup>	$\times 10^9/L$	*	
	Red cell folate <sup>2</sup>	nmol/L	x 0.441	µg/L
	Haemoglobin A1c <sup>3</sup>	n/a	*	%
4.7mL serum gel	Serum total cholesterol	mmol/L	x 0.387	g/L
	Serum high density lipoprotein (HDL) cholesterol	mmol/L	x 0.387	g/L
	Serum low density lipoprotein (LDL) cholesterol <sup>4</sup>	mmol/L	x 0.387	g/L
	Serum triglycerides (triacylglycerols) <sup>1</sup>	mmol/L	*	
	High-sensitivity C-reactive protein	mg/L	*	
	Free T3 <sup>3</sup>	pmol/L	*	
	Free T4 <sup>3</sup>	pmol/L	*	
	Thyroid-stimulating hormone <sup>3</sup>	mIU/L <sup>5</sup>	*	
4.5ml serum	Serum folate <sup>2</sup>	nmol/L	x 0.441	µg/L
	Serum vitamin B <sub>12</sub>	pmol/L	x 1.357	ng/L

Table L.3 (continued)

Blood tube and analyte priorities for participants				
Aged 16 years and over			2008/09-2010/11	
Blood tube	Analyte	SI unit	Conversion factor	Alternative unit
7.5mL lithium heparin (trace mineral)	Plasma ferritin	n/a	*	µg/L
	Plasma 25-hydroxyvitamin D	nmol/L	x 0.400	µg/L
	Plasma creatinine <sup>1</sup>	µmol/L	x 0.113	mg/L
	Plasma vitamin C	µmol/L	x 0.176	mg/L
	Plasma retinol	µmol/L	x 0.286	mg/L
	Plasma retinyl palmitate <sup>1</sup>	µmol/L	x 0.525	mg/L
	Plasma α-tocopherol	µmol/L	x 0.431	mg/L
	Plasma γ-tocopherol <sup>1</sup>	µmol/L	x 0.417	mg/L
	Plasma α-cryptoxanthin	µmol/L	x 0.552	mg/L
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	Plasma lutein and zeaxanthin	µmol/L	x 0.569	mg/L
	Plasma α-carotene	µmol/L	x 0.537	mg/L
	Plasma β-carotene	µmol/L	x 0.537	mg/L
	Plasma homocysteine	µmol/L	x 0.135	mg/L
	Plasma transferrin receptors <sup>1</sup>	mg/L	x 1.0	µg/mL
	Erythrocyte glutathione reductase:activation coefficient (ratio)	n/a	*	n/a
	Erythrocyte transketolase: activation coefficient (ratio)	n/a	*	n/a
7.5mL lithium heparin (trace mineral)	Plasma vitamin B <sub>6</sub> : Pyridoxal-5-phosphate	nmol/L	x 247	ng/L
	Plasma vitamin B <sub>6</sub> : Pyridoxic acid <sup>1</sup>	nmol/L	x 183	ng/L
	Plasma selenium	µmol/L	x 0.079	mg/L
	Plasma zinc	µmol/L	x 0.065	mg/L
1.2mL fluoride	Plasma glucose (only if fasted) <sup>3</sup>	mmol/L	x18.02	mg/dL

<sup>1</sup> Analyte is not reported in the current report; however the data will be archived for participants aged 19 to 64 years but not for participants aged 65 years and over.

<sup>2</sup> Folate analysis is in progress and will be included in a future report.

<sup>3</sup> Analysis is funded separately; results will not be reported or archived.

<sup>4</sup> LDL was calculated using the Friedewald equation: LDL (mmol/L) = Total cholesterol – HDL cholesterol – (triglycerides/2.2). LDL was not calculated for samples with triglyceride values greater than 4.5mmol/L.

<sup>5</sup> mIU/L stands for milli-international units per litre.

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n/a: not applicable.