

Reference Range Changes

Chemistry

The change in biochemistry instrumentation will result in changes to some tests and reference ranges. Whilst most of these changes are insignificant, there are a small number which could have a direct impact on patient diagnosis and management for patients who have relevant results prior to service transfer on 13 May. These are shown in the table below:

Test	Approximate % change compared to previous	Reference range change?
Albumin	-20%	Y
Bilirubin	+24%	N
Ca 125	+11%	N
Caeruloplasmin	+26%	Y
Cortisol	-17%	Y
C-peptide	-33%	Y
ft3	-13%	Y
ft4	-25%	Y
iPTH	+24%	Y
LH	-50%	Y
Oestradiol	-5%	Y
TSH	-23%	Y
TRAb	+28%	Y

Transferrin

Transferrin will now be measured (reported in g/L) instead of total iron binding capacity (TIBC). Transferrin saturation (TSat) will still be calculated but using the transferrin measurement instead of the TIBC calculation. This will be a significant improvement as results will no longer be overestimated as seen when using TIBC.

Chemistry trending

For all tests shown above, it is **not clinically appropriate** to trend results with those pre-13 May 2024.

Reference ranges will continue to be included on test reports, and all critical results will be telephoned through to practices as per standard Synnovis operating procedures.

Antiphospholipid antibody testing

All antiphospholipid antibody testing will now be consolidated within the Specialised Haemostasis laboratory at St Thomas' Hospital. This will result in a small change to reference ranges, as shown below.

	St Thomas' Haemostasis reference range	Denmark Hill (previous) reference range
Anti-cardiolipin IgG	0.0-12.1 U/ml	<10 U/ml
Anti-cardiolipin IgM	0.0-9.3 U/ml	<10 U/ml
Anti-beta2 glycoprotein IgG	0.0-10.0 U/ml	<10 U/ml

Anti-beta2 glycoprotein IgG IgM	0.0-6.6 U/ml	<10 U/ml
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Haematology

The change in Haematology instrumentation will result in changes to some tests and reference ranges. Whilst most of these changes are insignificant, there are a small number which could have a direct impact on patient diagnosis and management. These are shown in the table below:

	Current KCH DH/PRUH	Changes on 13 May
Haemoglobin (Adult Male)	130 - 165 g/L	125 – 170 g/L
Haemoglobin (Adult Female)	120 – 155 g/L	115 – 148 g/L
Lymphocyte counts (Adults Male & Female)	1.0 – 4.0 x 10 ⁹ /L	0.80 - 3.50 x 10 ⁹
White Blood Cell (WBC)		White Blood Cell (WBC) differential count reported with 2 decimal places
Eosinophil count high resolution test		Eosinophil count high resolution test will not be available any more as the FBC will report the Eosinophil count with 2 decimal places.
Neutrophil Counts		Neutrophil counts below 1.5x 10 ⁹ /L will trigger the following message: <i>Normal neutrophil counts in healthy people with family origins from Africa may be lower than 1.5 x 10⁹ /L.</i> This will act as a reminder for the ethnic differences of Neutrophil counts.
Paediatric reference range changes		With enhanced age group stratification, this will allow more comprehensive and adequate reference ranges for patients under 12 years old.
Age group parameters	<ul style="list-style-type: none"> • 1 Day • 3 Months • 6 Months • 1 Year • 6 Years • 13 Years <p>>13 years *For some FBC parameters, the age groups differ slightly.</p>	<ul style="list-style-type: none"> • Birth (0 days) • Day 3 • Day 7 • Day 14 • 1 Month • 2 Months • 3 – 6 Months • 1 Year • 2 – 6 Years • 6 – 12 Years • >12 Years
Other new parameters		<ul style="list-style-type: none"> • MCHC (Mean Corpuscular haemoglobin concentration) • PDW (Platelet distribution width)



Nutristasis

Test	Change
Serum B12	<p>Serum B12 – age related reference ranges apply. Ethnicity and pregnancy (trimester specific) ranges are incorporated into comments where applicable</p> <p>0 – 1 yr old: 215 – 1389 ng/L (all ethnicities)</p> <p>2 - 5 yr old: 374 – 1494 ng/L (all ethnicities)</p> <p>6 – 9 yr old: 332 -1081 ng/L (all ethnicities)</p> <p>10 – 13 yr old: 253 – 871 ng/L (all ethnicities)</p> <p>>14 yr: 225 – 1091 ng/L (Black and Black British ethnic group)</p> <p>> 14 yr: 182 – 692 ng/L (White and Asian ethnic group)</p> <p>For pregnancy, trimester specific serum B12 reference ranges apply:</p> <ul style="list-style-type: none"> • First trimester 168-574 ng/L • Second trimester 154-516 ng/L • Third trimester 112-465 ng/L
Serum ferritin	<p>Serum ferritin – sex and age related reference ranges apply</p> <p><u>Females cut-offs</u> 0-5 yrs – 12-150 ug/L ≥6 yrs- 15-150 ug/L</p> <p><u>Males cut-offs</u> 0-5 yrs – 12-200 ug/L ≥6 yrs- 15-200 ug/L</p>
Serum folate	Reference range 3.1 -20.5 µg/L

Compatible tube types for haematology

Yellow top K₃EDTA tubes or large (wide) EDTA tubes will no longer be compatible with the new analytical instruments. If you are using these types of tube, please run down your existing supply and switch to using a compatible tube type. From 13 May 2024, any remaining incompatible tubes must be disposed of safely. Compatible tube types can be found in the table below.

Type of tube		Characteristics
		<p>Dimensions 7x18mm</p> <p>Fill volume: 1.3mL</p>
		<p>Dimensions 15.35x46mm</p> <p>Fill volume: 0.5mL</p>
		<p>Dimensions 13x75mm</p> <p>Fill volume: 2mL</p>
		<p>Dimensions 13x75mm</p> <p>Fill volume: 3.5mL</p> <p>Blue top only for platelet count – citrate and coagulation</p>
		<p>Large tubes & yellow top K₃EDTA tubes</p> <p>Dimensions 13x100mm</p> <p>Fill volume: 6mL</p>

		<p>Wide Tubes</p> <p>Dimensions 16x100mm</p> <p>Fill volume: 10mL</p>
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