

Request under Freedom of Information Act 2000

Thank you for your request for information which we received on Monday 5th February 2024. I am pleased to confirm the following.

The normal range (adults and children) for the following liver enzymes: alanine transaminase (ALT), aspartate transaminase (AST), alkaline phosphatase and gamma GT.

See table below.

The method and machine used with reference so it can be identified.

All LFT analytes are performed on the Beckman Coulter AU5800 analyser. A link to the manufacturer's website is include below.

[AU5800 Series Chemistry Analyzers | Beckman Coulter](#)

How was your local normal range determined?

Analyte	Reference range and source	Method in use at MKUH
ALT	female < 35 U/L male < 50 U/L (as per manufacturer's instructions for use)	TRIS buffer without PLP (enzymatic)
AST	female < 35 U/L male < 50 U/L (as per manufacturer's instructions for use)	TRIS buffer without PLP (enzymatic)
ALP	30 – 130 U/L (as per Pathology harmony.co.uk, Working to harmonise standards in UK pathology)	AMP buffer (enzymatic)
GGT	female < 38 U/L male < 55 U/L (as per manufacturer's instructions for use)	Carboxynitroanilide (enzymatic)

From the reference range specified by the manufacturer

By the lab of a large group of normal volunteers

From historical data

Other – please describe.

Do your liver function tests automatically include measurement of AST?

The LFT profile currently does not include AST. The following comprise the current LFT profile:

ALT, GGT, ALP, Total Bilirubin, Total protein, Albumin and Globulin (calculated)

How many sets of liver function tests, which include measurement of ALT and alkaline phosphatase, does your hospital or laboratory complete each year? How many patients does this represent?

292461 total liver function test requests.

120968 unique patients (calculated via count of unique MRNs in extract).

How many requests for measurement of AST does your hospital or laboratory complete each year? How many patients does this represent?

2469 total AST test requests.

1411 unique patients (calculated via count of unique MRNs in extract).

How many values exceed the upper limit of normal for each liver function test?

Test	total count	total count exceeding upper limit of normal range	% of count exceeding upper limit of normal range
ALT	289743	39263	13.55%
Gamma GT	289740	86678	29.92%
Alkaline Phosphatase	290034	44065	15.19%
Total Bilirubin	290310	20396	7.03%
Total Protein	282423	8057	2.85%
Albumin	290283	404	0.14%
Globulin	282326	4962	1.76%

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If you need any further assistance, please do not hesitate to contact us at the address above.

Yours sincerely

Freedom of Information Co-ordinator
For and on behalf of Milton Keynes Hospital NHS Foundation Trust

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