

Ref. No: 0655
Date: 05/02/24
Subject: Liver Function Tests

REQUEST

1. The normal range (adults and children) for the following liver enzymes: alanine transaminase (ALT), aspartate transaminase (AST), alkaline phosphatase and gamma GT.
2. The method and machine used with reference so it can be identified.
3. How was your local normal range determined?
 - a. From the reference range specified by the manufacturer
 - b. By the lab of a large group of normal volunteers
 - c. From historical data
 - d. Other – please describe.
4. Do your liver function tests automatically include measurement of AST?
5. 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?
6. How many requests for measurement of AST does your hospital or laboratory complete each year? How many patients does this represent?
7. How many values exceed the upper limit of normal for each liver function test?
8. If you do not hold this information because you consider the analyses to be done externally by an outside laboratory, please provide the name of the laboratory and email address for their FOI officer.

RESPONSE

St Helens and Knowsley Teaching Hospitals NHS Trust and Southport and Ormskirk Hospital NHS Trust became a single legal entity known as Mersey

and West Lancashire Teaching Hospitals NHS Trust on 1st July 2023, as such parts of the response may be provided in two sections relating to the hospital sites of each of the legacy organisations.

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

Analyte	Ref Range	Units	Source
ALT	10 – 49	U/L	Siemens Atellica Kit Insert v5,2020-08
AST	0 – 33	U/L	Siemens Atellica Kit Insert v3, 2020-08
GGT - Female	< 38	U/L	Siemens Atellica CH GTT Kit Insert v3,2022 - 12
GGT - Male	< 73		
Alkaline Phosphatase - Adult	30 – 130	U/L	Pathology Harmony Group – Jan 2011
Alkaline Phosphatase (28 days – 16 years)	60 – 425		
Alkaline Phosphatase (0 days – 28 days)	70 – 380		

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

Siemens Atellica

3. How was your local normal range determined?

Please refer to the response to question one.

4. Do your liver function tests automatically include measurement of AST?

No

5. 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?

570,538 tests in 2023. This represents an estimated 45,607 patients (based on extrapolated data from 1 months data – January 2024).

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

11,712 in 2023. This represents an estimated 8,842 patients (based on extrapolated data from 1 months data – January 2024).

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

	Estimated Annual Number*	Percentage of Total (%)
ALT	63,775	11.2
ALP	65,795	11.5
Total Bili	52,597	9.2
Albumin	3297	0.6
*Extrapolated numbers, based on January 2024 data applied to 2023 workload numbers.		

8. If you do not hold this information because you consider the analyses to be done externally by an outside laboratory, please provide the name of the laboratory and email address for their FOI officer.

N/A