Contact points:

Pervaz Mohammed
BCPS Specialist services clinical lead
Tel: 0121 507 5353
Email: Pervaz.Mohammed@nhs.net

Dudley Laboratory
Tel: 01384 244082
Opening times: week days: 9.00am to 17:30pm
Weekends & Bank Holidays: closed

Mailing Address
Department of Clinical Biochemistry
Russell's Hall Hospital
Pensnett Road
Dudley, West Midlands
DY1 2HQ

A Teaching Trust of The University of Birmingham
Incorporating City, Sandwell and Rowley Regis Hospitals

ML6205
Issue Date: March 2021
Review Date: March 2024

NHS
Black Country Pathology Services

ELF Test

Trace Elements Laboratory
Clinical Biochemistry

BCPS
NHS Pathology Serving the Black Country

Provided by Sandwell and West Birmingham NHS Trust, The Dudley Group NHS Foundation Trust, The Royal Wolverhampton NHS Trust and Walsall Healthcare NHS Trust.

Sample requirements

Minimum of 250µl of serum.

- Allow samples to clot adequately before centrifugation.
- Keep tubes stoppered at all times.
- Tightly cap and freeze separated serum sample at -20°C until transport.

Clinical Use

ELF stands for Enhanced Liver Fibrosis. The ELF™ blood test is a routine blood test used to assess the severity of liver fibrosis. Liver fibrosis is the scarring process that represents the liver's response to injury or disease. Chronic liver disease can lead to liver fibrosis, liver cancer and death. Cirrhosis and liver cancer are now among the top ten causes of death worldwide, and in many developed countries, liver disease is now one of the top 5 causes of death in middle age. There are four main causes of fibrosis:

1. Fatty liver disease associated with obesity
2. Viral hepatitis B and C
3. Type 2 Diabetes/Metabolic Syndrome
4. Alcohol Abuse

The ELF blood test combines three serum biomarkers, which, when correlated, are able to identify a quantifiable level of liver fibrosis. The extent of liver damage is determined by a score based on the measurement of three substances:

- Hyaluronic acid (HA)
- Procollagen III amino terminal peptide (PIIINP)
- Tissue inhibitor of metalloproteinase 1 (TIMP-1)

The algorithm of these three markers creates an ELF Score. This ELF score has been proven to correlate to the level of fibrosis assessed by liver biopsy. The spectrum of liver disease can range from simple steatosis, to cirrhosis and may be present for many years in the absence of abnormal liver function tests – mild to moderate liver fibrosis can exist without symptoms, which in itself supports its use for early detection and assessment.

This test offers the following benefits:

- Identification of early or significant liver disease.
- Allows for cost effective screening test and subsequent review/follow-up response to treatment.
- Minimally-invasive routine serum sample vs invasive biopsy.
- Mathematical algorithm to assess extent of liver damage.

Reference ranges:

Interpretation of ELF score results	
<7.7	None to mild
≥ 7.7 - <9.8	Moderate
≥ 9.8	Severe

Method:

Hyaluronic acid (HA), Procollagen III amino terminal peptide (PIIINP) and Tissue inhibitor of metalloproteinase 1 (TIMP-1) are measured in serum using Siemens ADVIA Centaur immunoassay systems. The ELF score is calculated. We offer electronic reporting of results by PDF and NPEX.

Turn round

We aim to analyse and report the results within 5 working days from receipt of sample.

References

1. Non-alcoholic fatty liver disease (NAFLD) assessment and management https://www.nice.org.uk/guidance/ng49/chapter/recommendations
2. Cost-comparison analysis of FIB-4, ELF and fibroscan in community pathways for non-alcoholic fatty liver disease. Srivastava et al. BMC Gastroenterology (2019) 19:122 https://doi.org/10.1186/s12876-019-1039-4
3. Staufer K, Halilbasic E, Spindelboeck W, et al. Evaluation and comparison of six noninvasive tests for prediction of significant or advanced fibrosis in nonalcoholic fatty liver disease. United European Gastroenterol J. 2019;7(8):1113-1123. doi:10.1177/2050640619865133

UKAS Accredited