



# NHS Tayside reduces liver clinic waiting list by 44% with new testing protocols

An extended Intelligent Liver Function (iLFT) pathway has been developed by the University of Dundee and NHS Tayside. The iLFT pathway uses Siemens Healthineers automation and IT in combination with a laboratory information management system to improve the diagnosis of liver disease and patient outcomes.

[siemens-healthineers.co.uk/liver](https://www.siemens-healthineers.co.uk/liver)

## Requirements for iLFT implementation

The iLFT pathway utilises a fully automated blood sciences approach incorporating analytical parameters covering biochemistry, haematology, immunology and virology. The highly encouraging data acquired by the Tayside iLFT study was established through the integration of laboratory automation and reflex testing algorithms, achieved using the intelligence of Aptio® Automation and the Centralink® Data Management System from Siemens Healthineers, coupled with programming in the Laboratory Information Management System to provide diagnostic and clinical management outputs.

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Since mid-2018 the iLFT pathway has been operating effectively, aiding the diagnosis, stratification and management of patients with liver disease at NHS Tayside.

In 2020, in response to the challenges of the COVID-19 pandemic, NHS Tayside set up community phlebotomy hubs and introduced the Enhanced Liver Fibrosis (ELF) test to the iLFT pathway to provide an end to end solution. The implementation of the ELF test enabled the reduction of the liver clinic waiting list by 44%, aligning the diagnostic pathway with the British Society of Gastroenterology (BSG) guidelines for the management of abnormal liver blood tests<sup>1</sup>, and optimising the routing of patients to the correct intervention.

Decreased demand for laboratory testing at the beginning of the COVID-19 pandemic enabled laboratory staff to begin working through patients on the liver clinic waiting list, using the ELF test on stored samples. In addition the new community phlebotomy hubs set up by NHS Tayside, responsible for deploying blood testing for patients outside of the traditional hospital or GP practice settings, meant that GPs could ensure patient samples were analysed using the extended iLFT pathway. Overall, this resulted in a reduction of the liver clinic waiting list for patients who would otherwise have required alternative hospital-based liver testing, such as a liver stiffness measurement or biopsy.

*“The use of ELF testing has added value to our clinical pathways – helping to separate the more severe liver disease cases from those which can be safely managed in Primary Care, and routing these patients to the correct intervention. During the pandemic, many of our appointments have moved to NearMe solutions, with COVID-19 accelerating the use of this new way of working. With the ELF test now incorporated into the iLFT algorithm, this enables our consultants to see only the patients who need to be seen, reducing waiting times and streamlining the patient pathway.”*

*Ellie Dow, Consultant in Biochemical Medicine at NHS Tayside.*



*“ELF testing is established for use in viral hepatitis, NAFLD and ARLD (Alcohol related liver disease) patients – offering a minimally invasive alternative to a biopsy or liver stiffness measurement, without compromising diagnostic accuracy,”*

*Catherine Spurgeon, Marketing Lead for  
Laboratory Diagnostics at  
Siemens Healthineers GB&I.*

The integration of ELF testing into the existing iLFT pathway at NHS Tayside is key to enabling more effective risk stratification for improved patient management, with the long-term goal of reducing liver disease morbidity and mortality.

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## **Conclusions and future developments**

The extended iLFT pathway at NHS Tayside incorporates the ELF test in line with guidelines recommended by the National Institute for Health and Care Excellence<sup>2</sup>, significantly reducing the liver clinic waiting list, minimising overall waiting times and streamlining patient pathways<sup>3</sup>.

NHS Tayside has recently upgraded its laboratory equipment, including the addition of Atellica® Solution for immunoassay and chemistry testing, with the expectation of additional workflow and analytical benefits.



For more information on the Siemens ELF test visit:  
[siemens-healthineers.co.uk/elf-test](https://siemens-healthineers.co.uk/elf-test)

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References:

1. Newsome PN, Cramb R, Davison SM, et al. Gut 2018;67:6–19. Guidelines on the management of abnormal liver blood tests (bmj.com)
2. Overview | Non-alcoholic fatty liver disease (NAFLD): assessment and management | Guidance | NICE
3. Journal of Hepatology 2019 vol. 71 j 699–706 Intelligent liver function testing (iLFT): A trial of automated diagnosis and staging of liver disease in primary care

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**Siemens Healthineers**

Sir William Siemens Square

Frimley

Camberley

Surrey, GU16 8QD

United Kingdom

[siemens-healthineers.co.uk](https://siemens-healthineers.co.uk)

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