Liver function tests (LFTs): blood tests associated with liver damage. They are commonly abnormal, but much less commonly are a sign of curable potentially fatal liver disease. Many with abnormal LFTs are not investigated and for those that are current care pathways are geared to find an explanation for the abnormality by a lengthy process of investigation and exclusion, with the costs to the patient and to the health service. With the dramatic rise in the rate of testing of LFTs and the number of abnormalities this is not sustainable. So how to investigate them to maximise health gain and minimise health costs. The proposed study uses a synthesis of existing evidence, combined with new algorithms that can be integrated into current laboratory biochemical analysers, to produce a diagnosis in many patients. So that on any sample sent for LFTs it would be possible to generate a diagnosis or prognosis.