

Hepatology referral pathways for GPs

1 Scope

For use within hepatology

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Hepatology

Division C

2 Liver blood tests and what they mean

Test	Normal range	What does it mean?	Actions if abnormal
ALT	7-40	Hepatocellular injury	Raised ALT
Bilirubin isolated raised Bilirubin with abnormal LFT	<21	Gilberts Haemolysis Liver or biliary pathology	Isolated asymptomatic raised bilirubin Refer (routine vs urgent acc to values)
Alkaline Phosphatase (ALP)	30-130	Biliary disease (if raised GGT) Bone disease Pregnancy (placenta) Acute phase response	Raised ALP and normal ALT
Gamma glutamyl transferase (GGT)	Male 0-73 Female 0-38	Non-specific – can reflect alcohol intake, non-alcoholic fatty liver or biliary disease if associated with raised ALP	Follow relevant pathway
Prothrombin time (PT)		Elevated with impaired synthetic function or biliary obstruction	Refer if could be liver related
Albumin	35-50	Non-specific, but may represent impaired synthetic function if low	Refer if could be liver related
Ferritin		Not necessarily iron overload	Raised ferritin
Reduced platelets		Can be a feature of cirrhosis with portal hypertension	Refer if could be liver related

<p>Chronic liver screen U/E, LFT, FBC, PT, FIB-4 if suspected NAFLD Hepatitis B & C serology Liver autoantibodies Serum immunoglobulins Ferritin Alpha-1 antitrypsin level Random glucose, HBA1c, lipids if ?NAFLD If under 50 caeruloplasmin</p>	<p>Acute liver screen LFT, FBC, PT Hepatitis A, hepatitis B and hepatitis E serology (IgM & IgG), EBV and CMV Liver autoantibodies Serum immunoglobulins If under 50 caeruloplasmin</p>
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<p>Hepatitis B screen Chronic liver screen plus: HBV DNA Hepatitis A IgG HIV screen</p>	<p>Hepatitis C screen Chronic liver screen plus: HCV RNA and genotype Hepatitis A IgG HIV screen</p>
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3 Hepatology A&G FAQs

Result	What it means
BLOOD	
ALP raised with normal GGT	Not likely to relate to liver, more likely bony origin
Bilirubin (isolated raised)	Likely Gilbert's if nil else to suggest liver disease, normal Hb, 'split' bilirubin predominantly unconjugated. NB may have family history
Caeruloplasmin 0.17-2.0	Unlikely to be significant if no other pointers to Wilson's disease
Ferritin raised/normal tf sat	Common in NAFLD, Alcohol-related liver disease (ArLD)
FIB4 <1.3 (<2.0 over age 65)	Can be requested on T-Quest. Use for NAFLD assessment only. Means low risk of significant fibrosis. Not valid < age 35 or > age 75
FibroScan < 7 kPa (NAFLD)	Means low risk of significant fibrosis in NAFLD
FibroScan < 8 kPa (Alcohol)	Means low risk of significant fibrosis in Alcohol-related liver disease
Hepatitis C Ab positive	Past exposure - requires HCV RNA to assess for active infection
HepBcAb +ve /HepBsAg -ve	Previous exposure, natural immunity, not chronic infection
IgA raised	Common in NAFLD, ArLD – not concerning in itself
SmA/ANA Weak positive	This will always be non-specific, common in NAFLD. Not a concern if IgG normal.
IMAGING	
Focal lesion on US	If likely benign but report not definitive – repeat at CUH if done elsewhere otherwise A&G
Gallbladder polyps	Refer to 'HPB surgery' for advice/ follow their guidance

4 Isolated raised ALT (+/- GGT)

- THINK about and address Risk Factors
- Metabolic syndrome
 - Diabetes
 - Alcohol
 - Risks for viral hepatitis (ethnicity, IV drug use)
 - Medication
 - Vigorous exercise (check CK)

ALT >300 at any stage → [Acute liver screen](#) , urgent CUH USS → [Urgent referral](#)

Features of significant liver disease at any stage
(eg possible cirrhotic appearance, splenomegaly, raised bilirubin/PT, low platelets) → [Routine referral](#)

ALT >150
Repeat 2/52

ALT remains >150 → USS and [Chronic liver screen](#) → [Routine referral](#)

ALT <150 → USS and [Chronic liver screen](#)

ALT normal → Reinforce lifestyle advice/ monitor

Do all the features below apply?
NO hepatomegaly/splenomegaly
NO cirrhosis/portal hypertension

NO → [Routine referral](#)

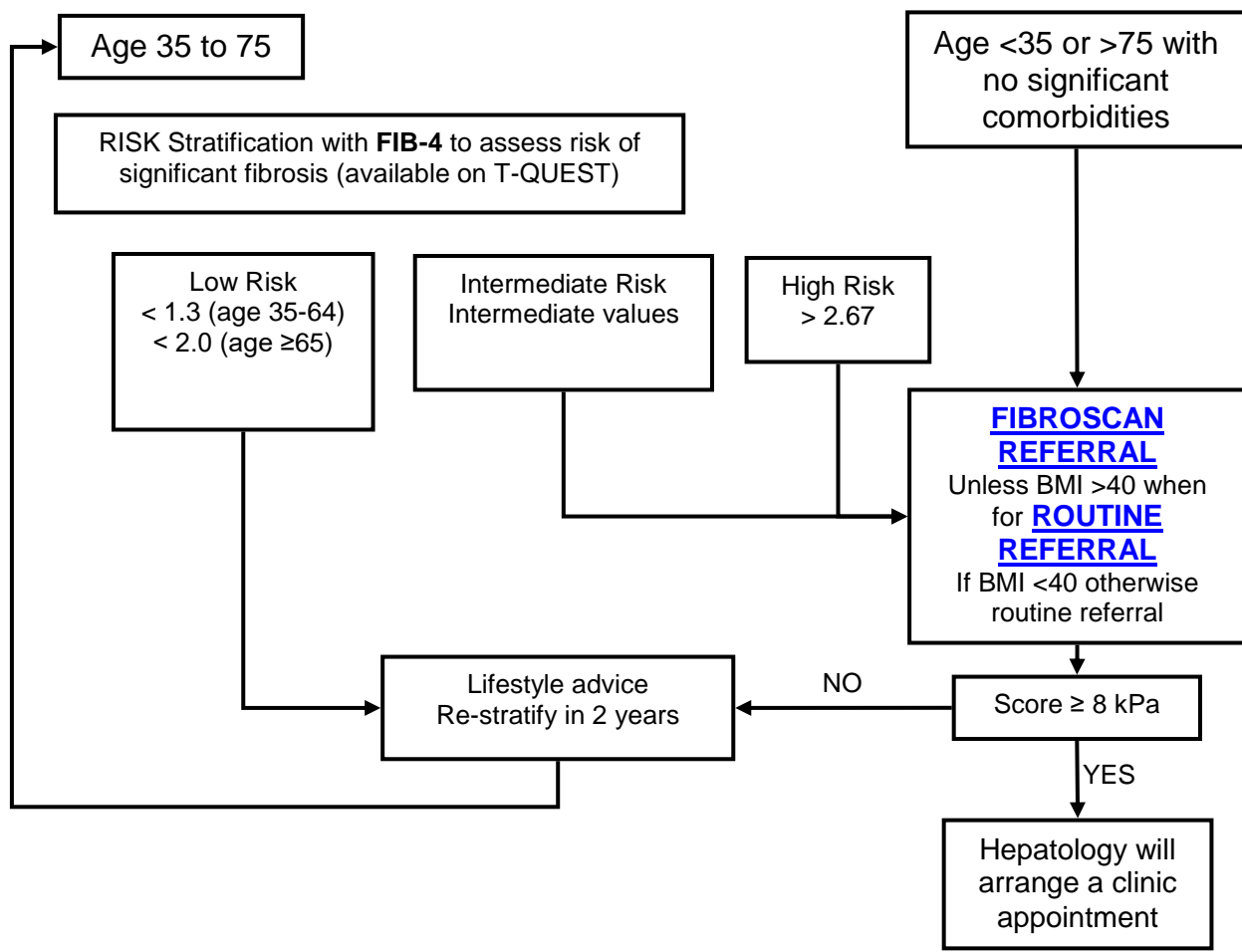
YES → **> 14 units alcohol per week**

NO → [NAFLD pathway](#)

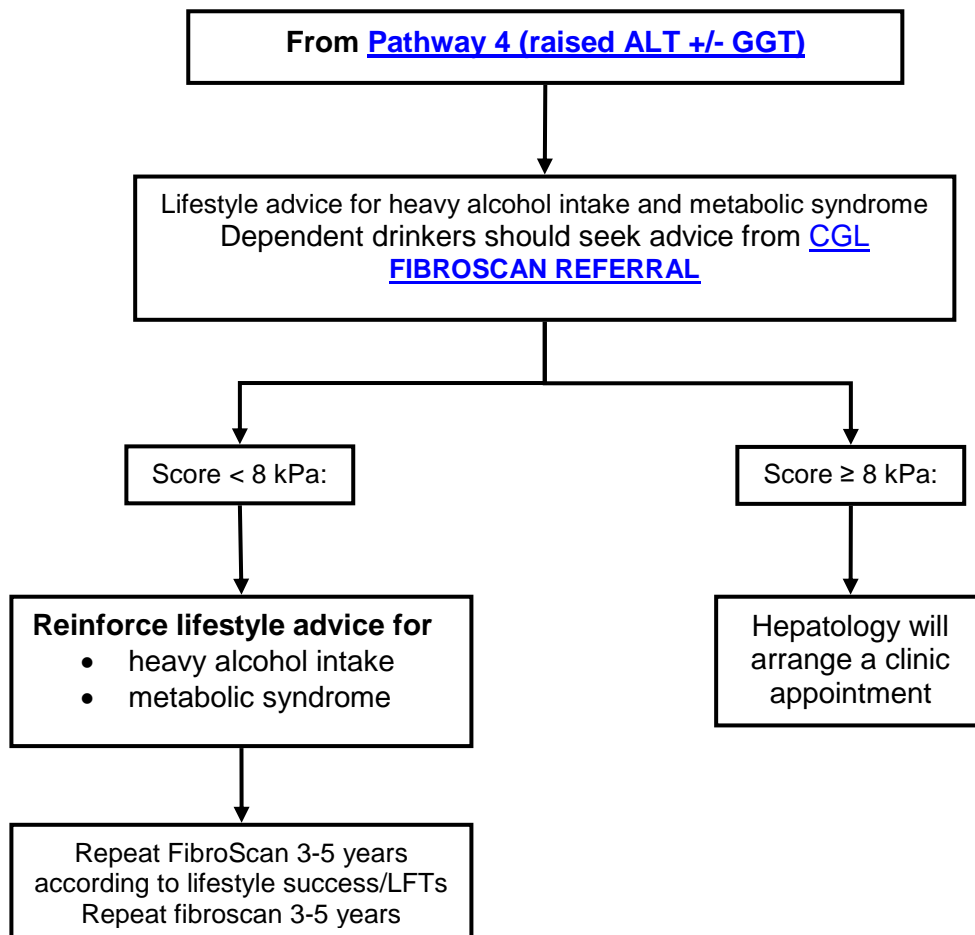
YES → [Alcohol related liver disease pathway](#)

5 Non Alcoholic Fatty liver Disease (NAFLD) pathway

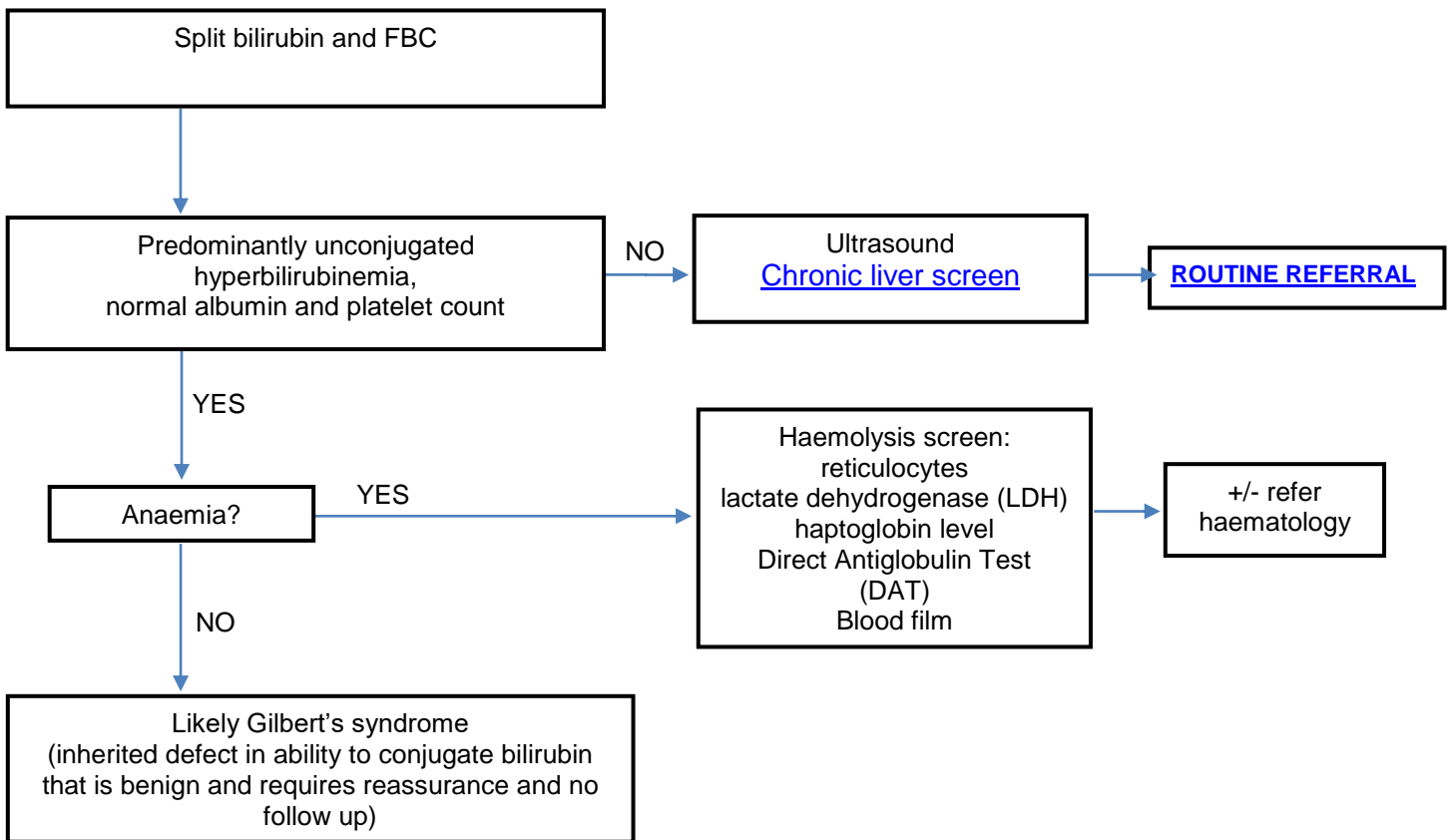
From [Pathway 4 \(raised ALT +/- GGT\)](#)
OR
Type 2 diabetic or morbid obesity with BMI >35 kg/m² (often with isolated elevated GGT)



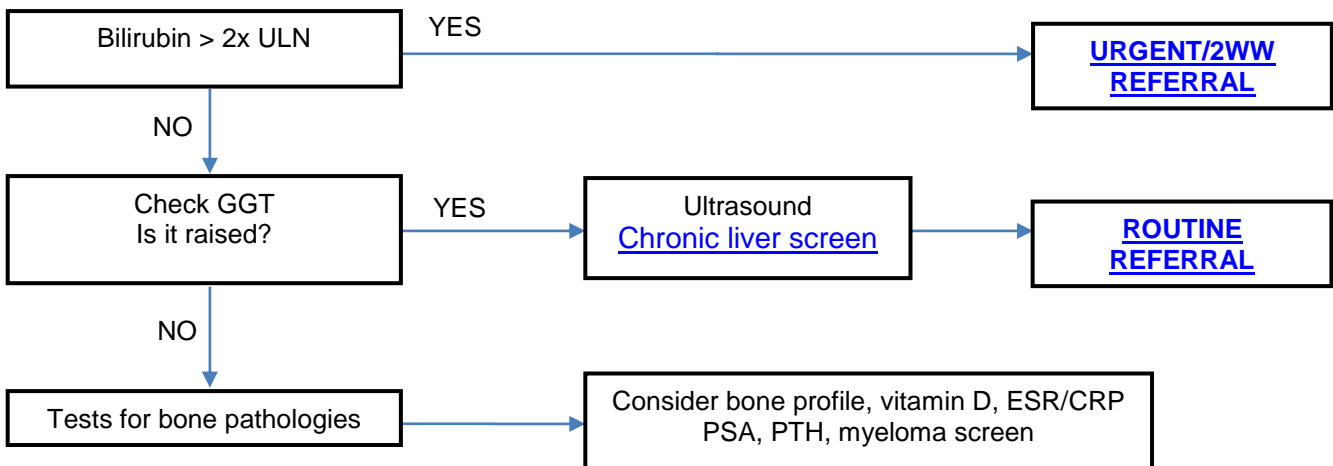
6 Alcohol-related Liver Disease (ArLD) pathway



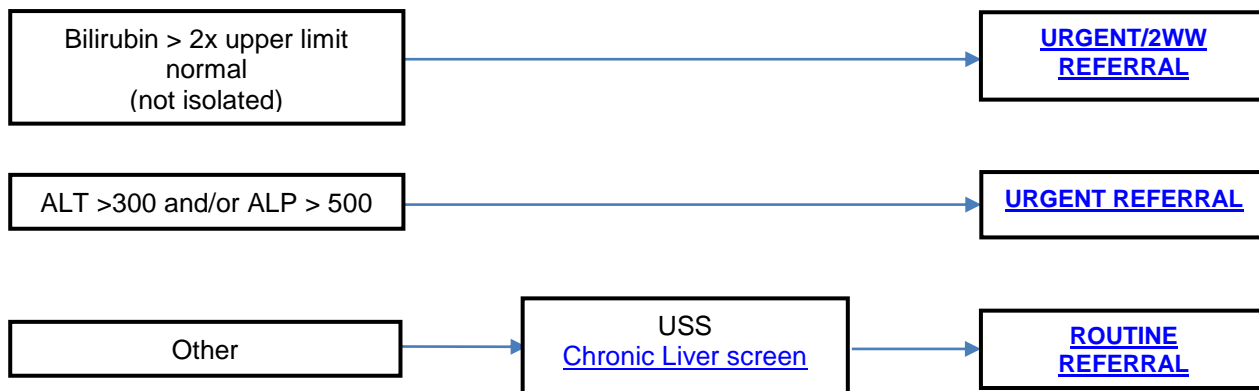
7 Isolated asymptomatic raised bilirubin



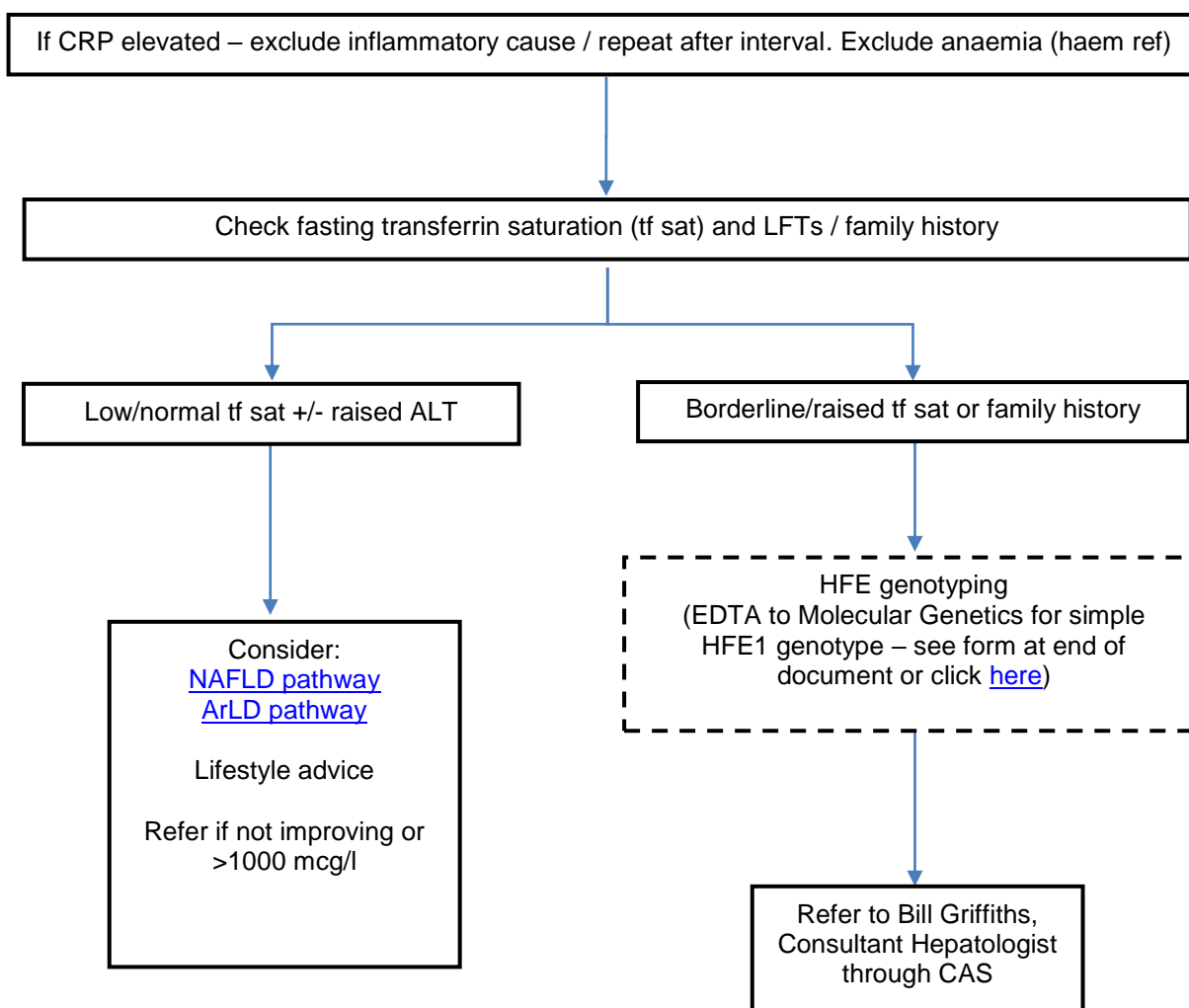
8 Raised ALP and normal ALT



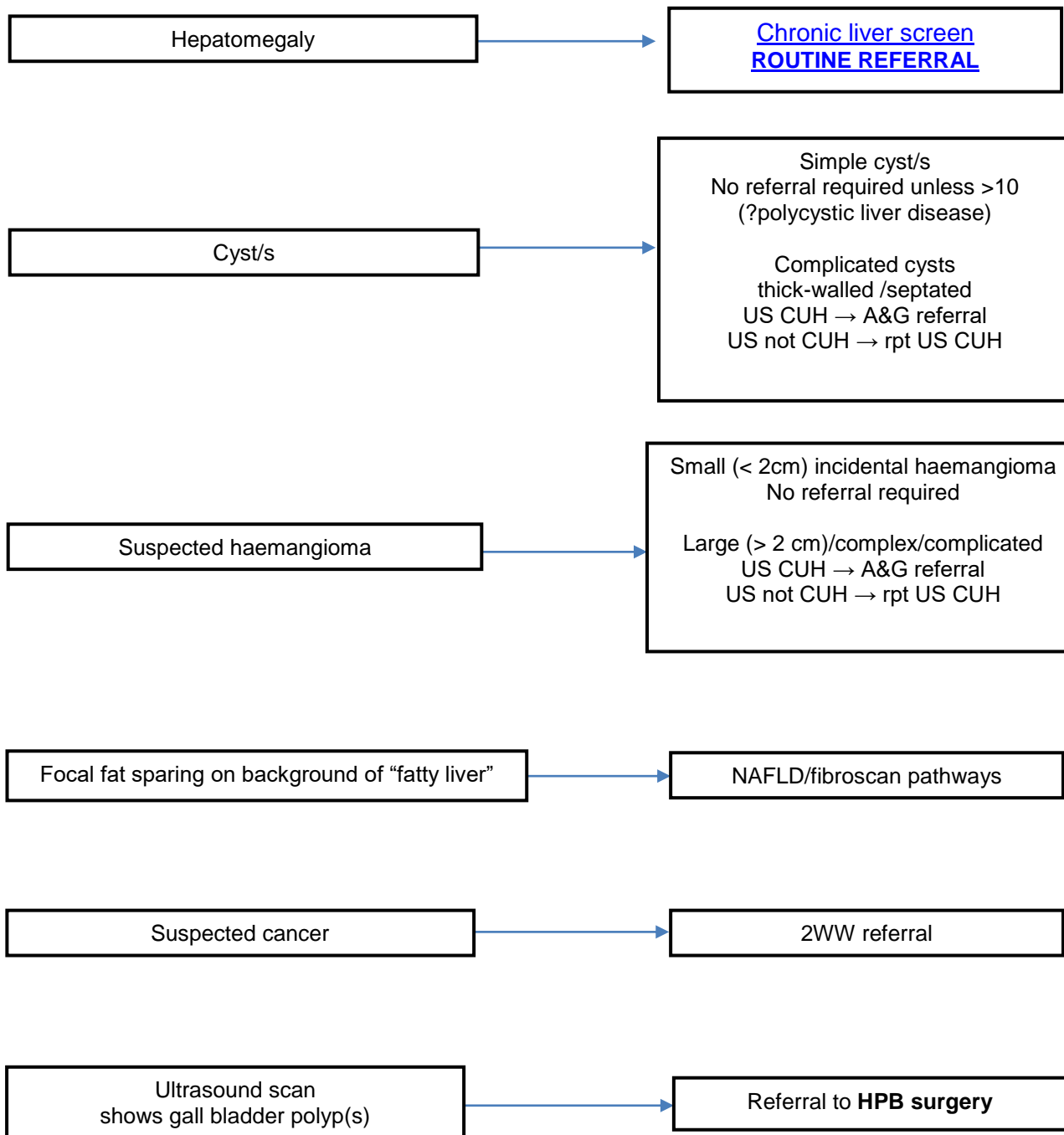
9 Combination of LFT abnormalities



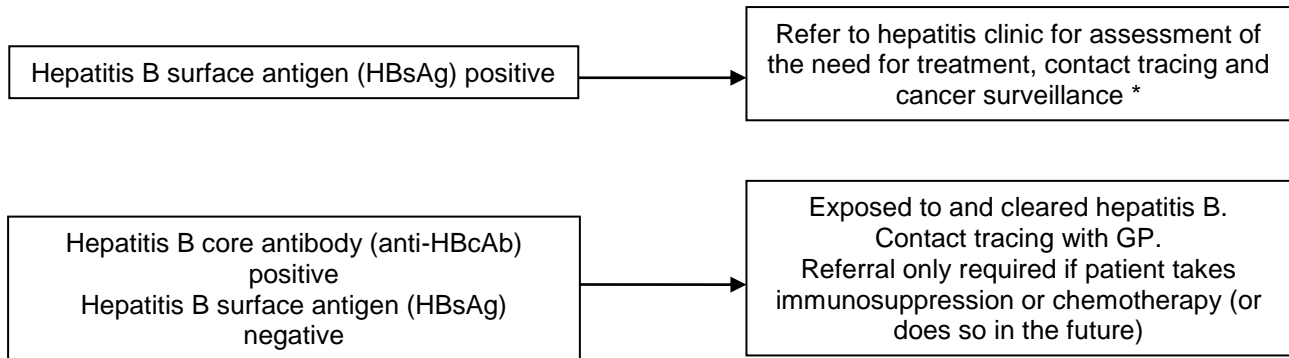
10 Raised ferritin



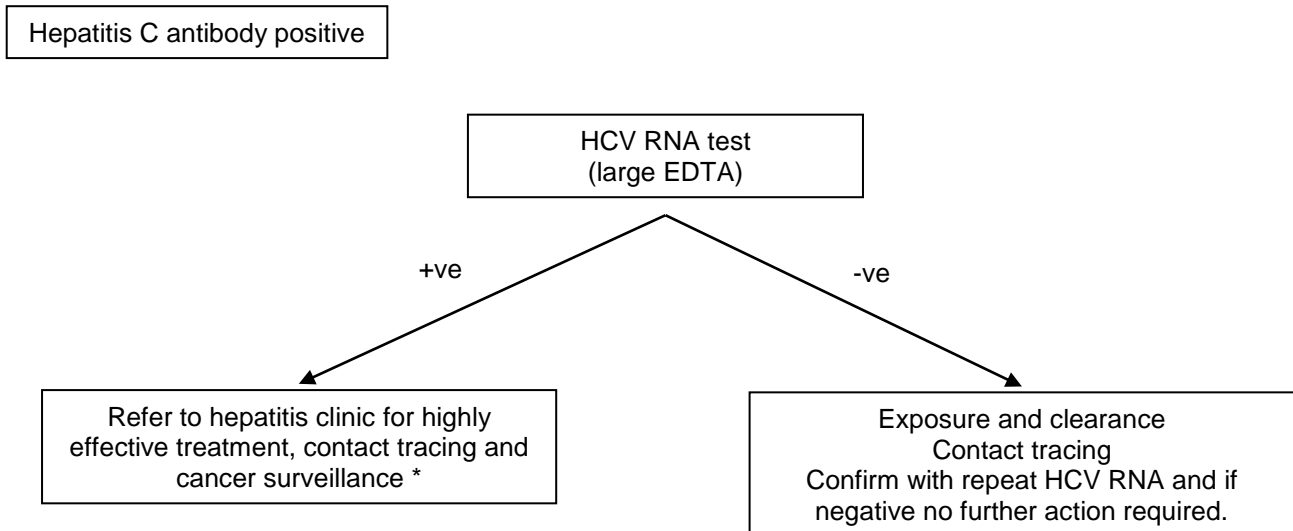
11 Abnormal liver imaging



12 Hepatitis B



13 Hepatitis C



* **Pre-clinic workup:** (see T-Quest Groups)

For HBV and HCV: Chronic liver screen plus HIV and hepatitis A immunity serology

For HCV: HCV RNA and genotype (large EDTA tube)

For HBV: HBV DNA (large EDTA tube)

14 Referral pathways

Urgency	Conditions	Proforma
2WW REFERRAL	Jaundice >40 yrs Suspected liver cancer	2WW proforma
URGENT REFERRAL	Jaundice <40 yrs Tense ascites ALT > 300 and/or ALP > 500 Suspected cirrhotic decompensation	Urgent CAS referral with hepatology proforma
ROUTINE REFERRAL (please review guidance first)	Abnormal LFTs Suspected chronic liver disease Raised ferritin Hep B or C new diagnosis FibroScan- include ultrasound scan	Routine CAS referral with hepatology proforma
	Benign abnormal liver imaging	Referral according to guidance
ADVICE & GUIDANCE		A&G CAS referral with hepatology proforma

- [Addenbrookes Hepatology Webpage](#)
- Further information: <https://easternliver.net>

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Document management

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REGIONAL GENETICS LABORATORIES TEST REQUEST

All tests requested will be reviewed against departmental criteria. If testing is not arranged, the samples will be stored and the referring clinicians informed. After testing, samples may be used anonymously for the development of new tests and for quality monitoring.

Surname *	Date of Birth *	Age at Presentation	Venous blood samples: Adult: 5ml; Children: 1-5ml <input checked="" type="checkbox"/> DNA test: EDTA tube <input type="checkbox"/> Chromosomes: Lithium Heparin tube <input type="checkbox"/> Microarray: Lithium Heparin and EDTA tubes Other samples: <input type="checkbox"/> Cord/Placenta/insertion site/skin <input type="checkbox"/> Products of Conception (whole specimen in sterile pot) <input type="checkbox"/> Amniotic Fluid <input type="checkbox"/> CVS <input type="checkbox"/> Other (please contact the laboratory) Sample obtained by (Signature)..... Printed Name Date.....
First Names *		Sex *	
NHS Number *		Ethnicity	
Hospital Number * (If known)	Family Number		
Home Address *			
Postcode			
Patient email address			
GP Name (Printed) *			
GP Address			
Postcode			
GP email address (nhs.net preferred)			
Consultant (PRINT)	Hospital		Billing to: Private Patient: <input type="checkbox"/>
Speciality/Dept/Ward			
Contact telephone number			
Email address (nhs.net preferred)			
Results to (if different from above) inc email address (nhs.net preferred)			In Submitting this sample, the clinician confirms * that consent has been obtained for: a) Testing and Storage <input type="checkbox"/> Yes <input type="checkbox"/> No b) The use of this sample and the information generated from it to be shared with members of the patient's family and their health professionals (if appropriate) <input type="checkbox"/> Yes <input type="checkbox"/> No
Clinical Synopsis Please provide clinical synopsis and pedigree with relevant family history to help the team generate a laboratory report *			
Tests Required: HFE1 p.(Cys282Tyr) and p.(His63Asp) genotypes. Please send EDTA tube to Regional Genetics Laboratory (See address overleaf). Storage Only (no testing at this time): <input type="checkbox"/>			
Gestation in weeks (If pregnant): Partners Name and DOB: Index Case (if not this patient):			

The Laboratory does NOT report results via the telephone

**All samples MUST be labelled with FULL name, date of birth and NHS number
Processing of samples will be delayed if information is incomplete**

Send samples at room temperature by 1st class post or courier to:
**East Anglian Medical Genetics Service, Genetics Laboratories, Box 143
ATC Level 6, Addenbrooke's Hospital, Hills Road, Cambridge, CB2 0QQ**

Laboratory opening hours: 8.30am - 5.30pm Monday to Friday
Telephone: 01223 348866 Fax: 01223 348712
E-mail: geneticslaboratories@nhs.net

For further information about sample requirements and tests available see: www.cuh.org.uk/genetics-labs

Indication for Genetic Testing:

- 1. To establish a diagnosis
- 2. Guide clinical management
- 3. Information regarding prognosis/recurrence risk
- 4. Predictive testing
- 5. PGD/Prenatal diagnosis
- Has the test been discussed at a clinical meeting?
If so, please provide information on clinical meeting
(i.e.: Neurology meeting, cancer meeting)
- Is the test urgent?
(i.e. pregnant or will alter management)
- Please confirm that your department will fund the test*
- Has the test been approved by patient's consultant

* Please see UKGTN website (<http://ukgtn.nhs.uk/>) for approximate cost or contact the duty scientist (tel: 01223 348866)

CUH Laboratory Use Only:

Receipt date and time:	Other Information:
Tube type: Volume:	
No of tubes:	
Shire Only <input type="checkbox"/>	
Patient Demographics Checked:	
Send out approved by:..... Signature:.....	
Date:.....	