

CONFIRMATION: Referral Received
TRIAGE CATEGORY: Enhanced Primary Care Pathway
REFERRAL STATUS: **CLOSED**

NAFLD

Dear Colleague,

The clinical and diagnostic information you have provided for the above-named patient is consistent with a diagnosis of non-alcoholic fatty liver disease (NAFLD). Based on full review of your referral, it has been determined that **management of this patient within an Enhanced Primary Care Pathway is appropriate, without need for specialist consultation at this time.**

This clinical pathway has been developed by the Division of Gastroenterology in partnership with the South Island and Victoria Divisions of Family Practice. These local guidelines are based on best available clinical evidence, and are practical in the primary care setting. This package includes:

1. Checklist of basic and scenario-specific investigations
2. Non-invasive indices for scoring hepatic fibrosis
3. Management principles and additional resources

This referral is CLOSED.

If you would like to discuss this referral, one of our Gastroenterologists is available for phone advice via the South Island RACE program 08:00-17:00 weekdays. This service is accessible by downloading the RACEApp+ on your smart phone.

If your patient completes the Enhanced Primary Care Pathway and remains symptomatic or if your patient's status or symptoms change, a new referral indicating 'completed care pathway' or 'new information' should be faxed to 1-888-398-7091.

Thank you.



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Enhanced Primary Care Pathway: NAFLD

1. Basic investigations

Suspected liver disease: CBC, ALT, AST, ALP, GGT, INR, albumin, bilirubin, and creatinine

Steatosis on imaging: lipid profile and diabetes screening, in addition to above

New liver enzyme elevation: hold any new medication and look up current medications for known liver toxicity at <https://livertox.nlm.nih.gov/index.html>

2. Noninvasive assessment of hepatic fibrosis

NAFLD fibrosis score

<http://naflscore.com>

- Uses Age, BMI, DM/IFG, platelet count, albumin and AST/ALT ratio
- Predicts F0-F2 vs. F3-F4
- PPV for advanced fibrosis 78%

APRI (AST platelet ratio index) score = (AST/lab normal)/platelets x 100

<https://www.hepatitisc.uw.edu/page/clinical-calculators/apri>

- The NPV is 93% and PPV 54%, thus better for ruling out

FIB-4 score = (Age*AST)/(Platelets* \sqrt{ALT})

<https://www.mdcalc.com/fibrosis-4-fib-4-index-liver-fibrosis>

- NPV of 90% and PPV of 65% for advanced fibrosis, better for ruling out than ruling in
- It underestimates degree of fibrosis in patients that are younger than 35, and overestimates in patients older than 65

	APRI	NAFLD Score	Fib-4
No Significant Fibrosis	<0.5	<-1.455	<1.3
Indeterminate	0.5-0.95	-1.455-0.675	1.3-3.25
Advanced Fibrosis	>0.95	>0.675	>3.25

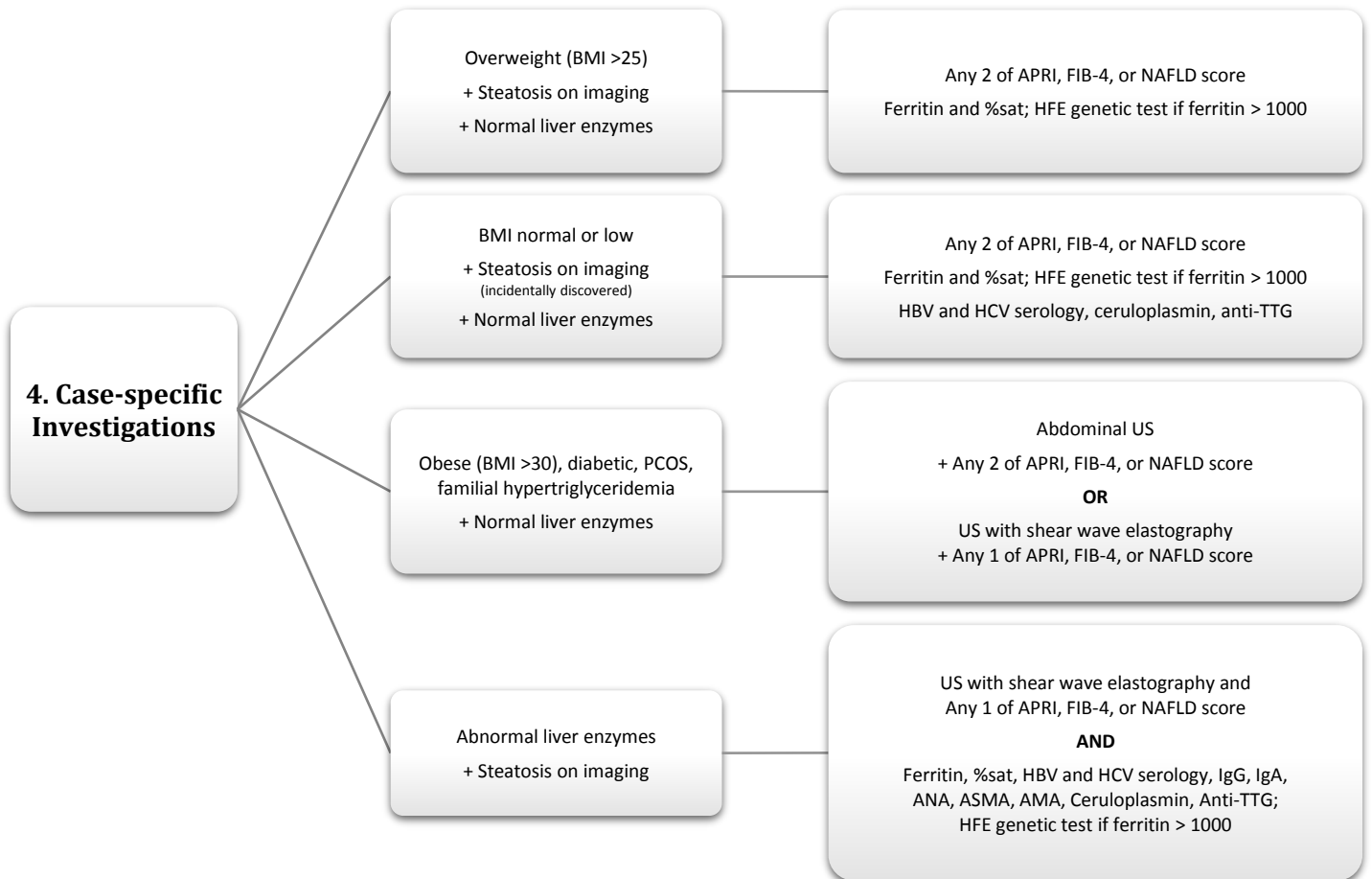
Enhanced Primary Care Pathway: NAFLD

3. Ultrasound Elastography

Elastography is a sonographic measure of liver stiffness which can help estimate degree of fibrosis, risk of clinically significant portal hypertension, and risk of hepatocellular carcinoma. It should only be used for chronic liver disease, as it will be falsely elevated in acute hepatitis due to inflammation. Infiltrative processes such as cancer, and hepatic congestion as seen in heart failure will also give elevated results that are not due to fibrosis.

FibroScan® is a dedicated liver elastography test that can only be ordered by Gastroenterologists, Infectious Disease specialists who treat viral hepatitis, or Internists at metabolic clinics.

US with shear wave elastography is an abdominal US that assesses stiffness of the liver in addition to structural detail, and can be ordered by general practitioners. **This should be ordered if any of the non-invasive indices (APRI, FIB-4, NAFLD score) are indeterminate or suggest advanced fibrosis, or as per case-specific indications (below).** >>> Please use the standard Island Health ultrasound requisition and specify “abdominal sonogram with shear wave elastography; APRI/FIB-4/NAFLD score suggest advanced fibrosis.”



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5. Management

Patients with fatty liver disease should have all aspects of their metabolic syndrome looked after. They should be screened for and treated for diabetes, hypertriglyceridemia, hypertension, PCOS, and OSA.

Statins have been shown to be safe to use in patients with NASH. Emerging evidence suggests simvastatin may reduce all-cause mortality in patients with cirrhosis by reducing portal hypertension without causing systemic hypotension. Statins as a class reduce risk of hepatocellular carcinoma.

The main treatment of fatty liver disease is weight reduction through diet and exercise. The goal is to lose 10% of body weight over the course of 1 year, losing no more than 2 lbs per week. Patients should avoid refined sugar and high fructose corn syrup. They should have protein with every meal.

Exercise can be difficult due to osteoarthritis and mobility issues that often accompany being overweight. Low impact exercises such as cycling, swimming, and rowing should be encouraged.

Coffee consumption may also be beneficial as demonstrated in several retrospective studies, but the threshold of effect is three cups per day, without cream or sugar.

Alcohol should be limited to <2 standard drinks per day in males and <1 drink per day in females.

Physician should review medications for any known hepatotoxic drugs (steroids, tamoxifen, methotrexate, amiodarone) and switch to safer alternatives, if feasible. See LiverTox website, referenced above.

Tylenol is generally safer than NSAIDs, which can cause bleeding, ascites, and hepatorenal syndrome. However, if patients regularly consume alcohol the safe daily dose of Tylenol is only 2 grams.

All patients should be vaccinated against Hepatitis A and B.

Patients who fail to lose weight, normalize lipid profile, control diabetes, or continue to have elevated liver enzymes should be reassessed for degree of fibrosis every 3-5 years.

Patients are best looked after by multidisciplinary clinics. We recommend referring to either:

Revive Lifestyle Clinic

- Near Westshore Centre (Second location might open in Uptown)
- Focus on nutrition, exercise, and mindfulness for treatment of lifestyle associated illnesses
- Also provides GIM consults, cardiac treadmill testing, ECG, and Holter monitoring
- Fax 1-866-573-8483

The Cardio-Metabolic Collaborative Clinic

- Near Hillside Mall
- Consults on all aspects of metabolic syndrome
- Includes 12 week lifestyle program to help with weight loss
- Ambulatory BP monitoring, stress testing, Holter monitoring, OSA testing
- Individual and group counselling by dietician
- Fax 250-412-6464

Patients that need to be seen SEMI URGENTLY by Gastroenterology

- Have diagnostic uncertainty
- Are suspected to have a second liver disease in addition to NAFLD
- Have evidence of cirrhosis and require screening or management of varices, ascites, HCC

