

# Non-Alcoholic Fatty Liver Disease (NAFLD) Primary Care Pathway

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## 1. Suspected NAFLD

- Incidental finding of abnormal alanine aminotransferase (ALT)
- Incidental ultrasound finding of fatty liver

Note: this pathway is not designed for use in patients with significant alcohol consumption because FIB-4 has not been validated in this population.

Is ALT > 2x ULN for 6 months?

No

Yes

## 2. Rule out other causes of liver disease in addition to NAFLD through the following stepwise testing

- Medication review (including herbals and supplements)
- Liver ultrasound (order if not completed within one year)
- HbsAg and anti-HCV
- Other testing: ANA, anti-actin/anti-smooth muscle antibody, immunoglobulins (IgG, IgM, IgA), ferritin and iron/TIBC, celiac disease screen, serum ceruloplasmin (age < 30 years)

Abnormal results

Treat or refer for consultation (see Expanded Details)

NAFLD diagnosis suspected (and alternative causes of abnormal ALT investigated)

## 3. Medication and lifestyle review

- Complete medication review if not already done in Step 2. Stop or modify offending agent, if possible.
- Repeat liver function tests after 3-6 months.
- Review and address alcohol use.

## 4. Baseline investigations

- Liver tests: ALT, AST, ALP, GGT
- CBC with platelets
- HbA1C and lipid profiles
- If cirrhosis is suspected: test INR, bilirubin, albumin

## 5. NAFLD diagnosed

Further follow-up is dependent on risk stratification by the FIB-4 score

## 6. Assess risk of liver fibrosis using FIB-4 index

[Free FIB-4 calculator](#)

FIB-4 < 1.30

FIB-4 ≥ 1.30

### 6a. Low risk

### 6b. Indeterminate/high risk

## 6a. Care within the Patient Medical Home

- Physical activity (20+ minutes/day, aiming for 150 min/week)
- Diet & weight loss (increase fibre, lower sugars and saturated fats, choose lean proteins)
- Screen for Type 2 diabetes, hypertension, and hyperlipidemia. Treat/optimize therapy.
- Encourage smoking cessation
- Limit alcohol intake
- Consider immunizations for hepatitis A and B

Ongoing Monitoring: re-calculate FIB-4 every 2-3 years (order ALT, AST, platelets).  
If FIB-4 continues to be < 1.30, continue care within the Patient Medical Home.

If FIB-4 becomes ≥ 1.30

Refer to a Specialist trained in management of liver disease

This primary care pathway was co-developed by primary and specialty care and includes input from multidisciplinary teams. It is intended to be used in conjunction with specialty advice services, when required, to support care within the medical home. Wide adoption of primary care pathways can facilitate timely, evidence-based support to physicians and their teams who care for patients with common low-risk gastrointestinal (GI) conditions and improve appropriate access to specialty care, when needed. To learn more about primary care pathways, check out this [short video](#) or visit the [Primary Care Supports](#) webpage.

## NAFLD PATHWAY PRIMER

- Metabolic dysfunction associated steatotic liver disease (MASLD) is the finding of hepatic steatosis in the presence of cardiometabolic risk factors. Formerly known as non-alcoholic fatty liver disease (NAFLD), the new nomenclature provides less stigmatizing and more descriptive terminology. However, given its recent implementation in 2023, studies reviewed to generate the present document used NAFLD. Furthermore, healthcare providers may be unfamiliar with the new term MASLD. Therefore, we have retained the term “NAFLD” in the current version document. The working group has every intention of updating the terminology with the next iteration of the document as MASLD becomes more integrated into clinical practice.
- Non-alcoholic fatty liver disease (NAFLD) results from liver damage due to the accumulation of fat (triglycerides) within liver cells.
- It is the most common liver disease in Canada, affecting approximately 25% of the general population, and is often associated with obesity, diabetes, and/or hyperlipidemia.
- The term NAFLD actually refers to a group of related liver conditions, including simple fatty liver (i.e. steatosis), non-alcoholic steatohepatitis (steatosis with liver damage/NASH), fatty liver with liver fibrosis (i.e. liver scarring), or fatty liver with advanced liver fibrosis/cirrhosis.
  - In general, steatosis is considered to be relatively benign, but can still progress to cirrhosis in 2-3% of people within 1-2 decades (even when ALT levels are persistently normal).
  - In contrast, NASH is considered a potentially progressive disease that can lead to cirrhosis in up to 20% of people within 20 years.<sup>1</sup> The gold standard for NASH diagnosis is a liver biopsy, though this is rarely done in practice.
  - Increasing liver fibrosis in people with NAFLD is associated with an exponential increase in risk of liver-related mortality<sup>2</sup>, which appears to be most pronounced in people with NAFLD who have developed moderate to severe liver fibrosis.
  - NAFLD that has progressed to cirrhosis is an increasingly common indication for liver transplantation and liver cancer in North America. Therefore, it is critical to identify people with NAFLD who have developed significant liver fibrosis in order to better manage these individuals to try to prevent progressive liver fibrosis.
- Given the prevalence of NAFLD, specialist consultation for all patients with NAFLD is not feasible.
  - This clinical care pathway helps to **identify people with NAFLD who are more likely to have advanced liver scarring**, and, therefore, may benefit from specialist care.

<sup>1</sup> Rinella, M. E., & Sanyal, A. J. (2016). Management of NAFLD: a stage-based approach. *Nature Reviews Gastroenterology & Hepatology*, 13(4), 196.

<sup>2</sup> Dulai, P. S., Singh, S., Patel, J., Soni, M., Prokop, L. J., Younossi, Z., ... & Stal, P. (2017). Increased risk of mortality by fibrosis stage in nonalcoholic fatty liver disease: systematic review and meta-analysis. *Hepatology*, 65(5), 1557-1565.



- This pathway employs blood tests to assess a patient’s risk of significant liver scarring, based on calculating their Fibrosis-4 score (FIB-4) using the following formula:

**FIB-4 score** = Age in Years x AST level (U/L) / Platelet Count (10<sup>9</sup>/L) x  $\sqrt{\text{ALT level (U/L)}}$

[Free FIB-4 calculator](#)

- A FIB-4 score of < 1.30 essentially rules out significant liver fibrosis. A FIB-4 score ≥ 1.30 could potentially indicate risk of liver fibrosis and warrants further evaluation.

<b>Checklist to guide in-clinic review of your patient with NAFLD</b>	
<input type="checkbox"/>	Finding of fatty liver on ultrasound or abnormal ALT
<input type="checkbox"/>	If ALT > 2x ULN for 6 months, order further investigations to rule out other causes of liver disease in addition to NAFLD (see algorithm Box 2). If other causes identified, treat or refer for specialist consultation
<input type="checkbox"/>	Identify and address medication and lifestyle factors that may cause or contribute to fatty liver or abnormal liver tests; excess alcohol consumption (> 2 drinks/day for males and > 1 drink/day for females) or medications (e.g. amiodarone, methotrexate, tamoxifen, corticosteroids, isotretinoin, antibiotics, antifungals, anticonvulsants).
<input type="checkbox"/>	Complete baseline investigations (see algorithm Box 4)
<input type="checkbox"/>	Assess risk of liver fibrosis using the FIB-4 Index <ul style="list-style-type: none"> <li>• If FIB-4 score &lt; 1.3, continue to provide care in the Patient Medical Home (see algorithm Box 6a)</li> <li>• If FIB-4 score ≥ 1.3, consider referral to a specialist trained in management of liver disease</li> </ul>

<sup>1</sup> Rinella, M. E., & Sanyal, A. J. (2016). Management of NAFLD: a stage-based approach. *Nature Reviews Gastroenterology & Hepatology*, 13(4), 196.

<sup>2</sup> Dulai, P. S., Singh, S., Patel, J., Soni, M., Prokop, L. J., Younossi, Z., ... & Stal, P. (2017). Increased risk of mortality by fibrosis stage in nonalcoholic fatty liver disease: systematic review and meta-analysis. *Hepatology*, 65(5), 1557-1565.



## EXPANDED DETAILS

### 1. Suspected NAFLD

- NAFLD should be considered for patients with one or more of the following:
  - Abnormal liver tests (persistent elevation of serum alanine aminotransferase (ALT); repeat > 6 months. In patients with NAFLD, ALT is usually < 200 U/L).
    - **Note:** Patients with NAFLD will not necessarily have elevated liver enzymes.
  - Ultrasound finding of fatty liver (current or past, if risk factors, such as obesity, have not changed significantly).
    - **Note:** Patients with NAFLD will not necessarily have fatty liver documented on an ultrasound report (> 30% fat infiltration is required to visualize fatty liver on ultrasound).
- Risk factors for NAFLD include obesity, type 2 diabetes, hyperlipidemia, metabolic syndrome, and hypertension.
- The pathway is not designed for use with patients with significant alcohol consumption (> 2 drinks/day for males, > 1 drink/day for females) because FIB-4 has not been validated in this population.
  - Counsel patients to reduce their alcohol consumption below these levels. After 6-8 weeks, retest ALT. If it remains abnormal, use of this pathway is appropriate.

### 2. (If ALT > 2x Upper Limit of Normal (ULN) for 6 months) Rule out other causes of liver disease in addition to NAFLD through the following stepwise testing

- **Medication review**
  - When assessing whether/how medications or other products may be contributing to abnormal liver tests, consider both the relationship between initiation of the medication and the time of onset of liver problems (if known), and any improvement in liver function tests after the medication is discontinued.
  - Any new or recently prescribed medication, over the counter, or herbal/natural product may be implicated. Some medications and other products may also cause liver damage over a longer term of use.
  - Potential culprits include medications (e.g. amiodarone, methotrexate, tamoxifen, corticosteroids, isotretinoin, antibiotics, antifungals, anticonvulsants), herbal products, health supplements (e.g. green tea extract), and illicit substances (e.g. cocaine).
    - Visit the [Poison & Drug Information Services for Health Professionals](#) page for useful resources.
  - Discontinue or change medication, reduce dosage, or consider dose frequency modifications. Always weigh risks and benefits of therapy changes. If changes are made, repeat liver tests after 3-6 months.
- **Liver ultrasound**
  - Order if not completed within one year.
- **Hepatitis B and C screening**
  - Hepatitis B surface antigen (HbsAg) – if positive, consider referral to hepatology.
  - Hepatitis C antibody (anti-HCV) – if positive, see [Hepatitis C pathway](#).



- **Other testing**

- Anti-nuclear antibody (ANA), anti-actin/anti-smooth muscle antibody, and immunoglobulins (IgG, IgM, IgA) to evaluate for possible autoimmune cause of liver injury.
  - Autoimmune hepatitis (AIH): ANA (> 1:80 titer) and/or anti-smooth muscle antibody (> 1:20 titer) and elevated serum immunoglobulin levels (especially IgG) may suggest AIH and warrant consideration for a referral to hepatology.
- Ferritin and iron/TIBC (done while fasting) to assess for hemochromatosis
  - **Note:** ferritin is often significantly elevated in NAFLD (as an acute phase reactant related to liver inflammation), but transferrin saturation is typically < 50%. These patients do not have iron overload.
  - If fasting ferritin elevated **and** percentage transferrin saturation is > 50% in females or > 60% in males, consider molecular genetic testing for hemochromatosis. If genetic testing suggests increased risk for hemochromatosis, assessment of liver fibrosis is recommended as patients with hemochromatosis and advanced liver fibrosis are at high risk of liver cancer. If genetic testing is negative, it is highly unlikely that the patient has hereditary hemochromatosis.
- Celiac disease screen – if positive, consider referral for gastroscopy to confirm diagnosis.
  - Once under control for 6 months, repeat liver function tests.
- Serum ceruloplasmin (if age < 30 years) – if positive, consider referral to hepatology.

**Note: In the evaluation of abnormal liver tests, abdominal MRI and/or CT are unlikely to add diagnostic benefit and should not be routinely ordered.**

If workup suggests a non-NAFLD diagnosis, treat or consider appropriate referral to specialist.

If workup is negative, NAFLD diagnosis is strongly suspected based on risk factors, elevated liver enzymes (ALT), and/or ultrasound findings.

### 3. Medication and lifestyle review

- Complete a medication review if not already done in Step 2. Stop or modify offending agent, if possible, then repeat liver function tests after 3-6 months.
- Review and address alcohol use
  - Excess alcohol consumption (> 2 drinks/day for males, > 1 drink/day for females) may contribute to abnormal liver tests.
  - Counsel patients to reduce their alcohol consumption below these levels. After 6-8 weeks, retest ALT. If it remains abnormal, elevated ALT is unlikely to be the result of alcohol consumption.

### 4. Baseline investigations

- ALT and AST (to assess for liver cell death or damage)
- ALP and GGT (to assess for impairment of bile flow)
  - If elevated, and extra-hepatic biliary obstruction ruled out by ultrasound, test anti-mitochondrial antibody. Any positive titer is significant and is highly specific for primary biliary cholangitis (which affects ~1:1000 women over the age of 40). If positive, consider referral to hepatology.
- CBC with platelets (to assess liver function and enable FIB-4 score calculation)
  - Platelets are included in the FIB-4 calculation as thrombocytopenia can be an initial sign of cirrhosis.
- HbA1C and lipid profiles (to assess for common comorbidities)
- **If cirrhosis is suspected**, also test INR, bilirubin, albumin (to assess liver function)



## 5. NAFLD diagnosed

- NAFLD is the diagnosis of exclusion if no other causes of fatty liver/elevated liver enzymes have been identified, even in the presence of normal ultrasound. Remember that 30% fat infiltration in the liver is required for it to be visualized on ultrasound.
- Further follow-up is dependent on the risk stratification by the FIB-4 score.

## 6. Assess risk of liver fibrosis risk using FIB-4 index

- The Fibrosis-4 (FIB-4) score is a non-invasive scoring system based on several laboratory tests that help to estimate the amount of scarring in the liver.
- [Free FIB-4 calculator](#)

### a) Low risk (FIB-4 < 1.30): Care within the Patient Medical Home

Care within the Patient Medical Home	
Lifestyle modifications are the cornerstone of NAFLD management.	
Physical activity	<ul style="list-style-type: none"> <li>• 20+ minutes of physical activity/day, aiming for 150 min/week.</li> <li>• See the <a href="#">Canadian 24-Hour Movement Guidelines</a>.</li> </ul>
Dietary modifications and weight loss	<ul style="list-style-type: none"> <li>• Aim to choose more high-fibre carbohydrates and less refined starches, added sugars, and saturated fats. Replace foods high in saturated fat with monounsaturated fat and omega-3 fats. Choose lean meats and plant-based proteins to preserve lean body mass while losing body fat.</li> <li>• Referral to a Registered Dietitian can be helpful to support dietary changes.</li> <li>• As needed, target weight loss of ~10% of body weight over 6 months.</li> <li>• Patients may benefit from handouts on <a href="#">Eating Well for Weight and Health</a> and <a href="#">Sample Meal Plans for Healthy Eating</a>.</li> </ul>
Cardiac risk factor modifications	<ul style="list-style-type: none"> <li>• Screen for Type 2 diabetes, hypertension, and hyperlipidemia. Treat and/or optimize therapy.</li> <li>• Statin therapy is strongly recommended in patients with increased LDL cholesterol to manage cardiac risk factors, not to specifically treat NASH. In general, statins are safe in patients with liver disease, however ALT monitoring can be considered in NASH patients. Tests should be done 3 months after starting therapy. If ALT doubles during this time, the statin should be stopped in favor of a different lipid lowering agent.</li> <li>• Encourage smoking cessation. Provide information, treatment, or referral, as appropriate. See <a href="#">Patient Resources</a>.</li> </ul>
Alcohol intake	<ul style="list-style-type: none"> <li>• Patients with NAFLD should not consume heavy amounts of alcohol. The risk of moderate alcohol consumption for patients with NAFLD is unknown.</li> <li>• An acceptable intake for NAFLD patients with low risk of significant liver fibrosis (i.e. “Low Risk” NAFLD; FIB-4 score &lt; 1.30), is up to 4-5 drinks/week for men and 3-4 drinks/week for women.</li> <li>• Abstinence is recommended for patients with cirrhosis.</li> </ul>
Immunizations	<ul style="list-style-type: none"> <li>• The National Advisory Committee on Immunization (NACI) recommends immunization with hepatitis A and hepatitis B vaccination series because patients with NAFLD are at risk of more severe disease if infection occurs. Vaccination should be completed early in the course of the disease, as the immune response to vaccine is suboptimal in advanced liver disease. <a href="#">Post-immunization serologic testing</a> may be used to confirm hepatitis B vaccine response. Serologic testing is not recommended after receiving the hepatitis A vaccine due to the test’s poor sensitivity.</li> </ul>



Other Considerations	
Vitamin E	<ul style="list-style-type: none"> <li>• <b>Evidence:</b> Vitamin E improves liver histology in patients with biopsy proven NASH and may be considered for NAFLD patients.</li> <li>• <b>Place in therapy:</b> Until further data supporting its effectiveness become available, vitamin E is not recommended to routinely treat NASH in diabetic patients, NAFLD without liver biopsy, NASH cirrhosis, or cryptogenic cirrhosis. If patients choose to trial Vitamin E, they should be counselled about weak epidemiological evidence suggesting increased cardiovascular and prostate cancer risk.</li> <li>• <b>Dose:</b> 800 IU/day</li> </ul>
Omega-3 fatty acids	<ul style="list-style-type: none"> <li>• This is not the same as OMEGA 3-6-9.</li> <li>• <b>Evidence:</b> May have an anti-inflammatory benefit for NASH patients with high serum triglycerides, but this has not been well proven in NAFLD on its own. In some studies, Omega-3 fatty acids have been shown to help decrease hepatic steatosis and triglyceride levels.</li> <li>• <b>Mechanism of action:</b> Reduces hepatic production of triglyceride-rich very-low density lipoproteins.</li> <li>• <b>Place in therapy:</b> Consider for treatment of hypertriglyceridemia in patients with NAFLD, however there is insufficient evidence to recommend their use for specific treatment of NAFLD or NASH.<sup>3</sup></li> <li>• <b>Therapeutic dose:</b> 2-4 g/day of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) combined.</li> <li>• Patients should be encouraged to eat a diet including fatty fish (salmon, trout, sardines), however a supplement is normally required to obtain sufficient daily EPA + DHA.</li> <li>• <b>NOTE:</b> Omega-3 fatty acids supplements have an anticoagulant effect in doses &gt; 3 g/day (equivalent to a baby aspirin). Consider other medications and disease states before recommending. Monitor, as appropriate.</li> </ul>
Coffee	<ul style="list-style-type: none"> <li>• There is inconclusive evidence that 2-3 cups of coffee per day (preferably filtered) may be beneficial for patients with fatty liver.</li> </ul>

#### Ongoing monitoring

- Re-calculate FIB-4 score every 2-3 years to reassess risk of significant liver fibrosis (order ALT, AST, and platelets). Continue management in the Patient Medical Home if FIB-4 score remains < 1.30.
- Refer to a specialist trained in the management of liver disease if FIB-4 score increases to > 1.30. Outline history and care provided to date.

#### b) Indeterminate/high risk (FIB-4 ≥ 1.30)

- Referral to a specialist trained in the management of liver disease.

<sup>3</sup> DynaMed. Nonalcoholic Fatty Liver Disease (NAFLD). EBSCO Information Services. Accessed June 14, 2021. <https://www-dynamed-com.ahs.idm.oclc.org/condition/nonalcoholic-fatty-liver-disease-nafld>



## BACKGROUND

### About this Pathway

- Digestive health primary care pathways were originally developed in 2015 as part of the Calgary Zone's Specialist LINK initiative. They were co-developed by the Department of Gastroenterology and the Calgary Zone's specialty integration group, which includes medical leadership and staff from Calgary and area Primary Care Networks, the Department of Family Medicine, and Alberta Health Services.
- The pathways were intended to provide evidence-based guidance to support primary care providers in caring for patients with common digestive health conditions within the patient medical home.
- Based on the successful adoption of the primary care pathways within the Calgary Zone, and their impact on timely access to quality care, in 2017 the Digestive Health Strategic Clinical Network (DHSCN) led an initiative to validate the applicability of the pathways for Alberta and to spread availability and foster adoption of the pathways across the province.

### Authors & Conflict of Interest Declaration

This pathway was reviewed and revised under the auspices of the DHSCN in 2020 by a multi-disciplinary team led by family physicians and gastroenterologists. For more information, contact the DHSCN at [Digestivehealth.SCN@ahs.ca](mailto:Digestivehealth.SCN@ahs.ca).

### Pathway Review Process

Primary care pathways undergo scheduled review every three years, or earlier, if there is a clinically significant change in knowledge or practice. The next scheduled review is June 2023. However, we welcome feedback at any time. Please email comments to [Digestivehealth.SCN@ahs.ca](mailto:Digestivehealth.SCN@ahs.ca).

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### Disclaimer

This pathway represents evidence-based best practice, but does not override the individual responsibility of healthcare professionals to make decisions appropriate to their patients using their own clinical judgment given their patients' specific clinical conditions, in consultation with patients/alternate decision makers. The pathway is not a substitute for clinical judgment or advice of a qualified healthcare professional. It is expected that all users will seek advice of other appropriately qualified and regulated healthcare providers with any issues transcending their specific knowledge, scope of regulated practice or professional competence.

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<sup>4</sup> Friedemann Smith, C., Drew, S., Ziebland, S., & Nicholson, B. D. (2020). Understanding the role of General Practitioners' gut feelings in diagnosing cancer in primary care: A systematic review and meta-analysis of existing evidence. *British Journal of General Practice*, 70(698), e612-e621.





## PROVIDER RESOURCES

### Still concerned about your patient?

The primary care physician is typically the provider who is most familiar with their patient's overall health and knows how they tend to present. Changes in normal patterns, or onset of new or worrisome symptoms, may raise suspicion for a potentially serious diagnosis, even when investigations are normal and typical alarm features are not present.

There is evidence to support the importance of the family physician's intuition or "gut feeling" about patient symptoms, especially when the family physician is worried about a sinister cause such as cancer. A meta-analysis examining the predictive value of gut feelings showed that the odds of a patient being diagnosed with cancer, if a GP recorded a gut feeling, were 4.24 times higher than when no gut feeling was recorded.<sup>4</sup>

When a "gut feeling" persists in spite of normal investigations, and you decide to refer your patient for specialist consultation, document your concerns on the referral with as much detail as possible. Another option is to seek specialist advice (see Advice Options below) to convey your concerns.

### Advice Options

Non-urgent advice is available to support family physicians.

- Gastroenterology advice is available across the province via Alberta Netcare eReferral (responses are received within five calendar days). View the [eReferral Quick Reference](#) page for more information.
- Non-urgent telephone advice connects family physicians and specialists in real time via a tele-advice line.
  - In the Calgary Zone, contact a hepatologist at [specialistlink.ca](#) or by calling 403-910-2551. This service is available from 8:00 a.m. to 5:00 p.m. Monday to Friday (excluding statutory holidays). Calls are returned within one (1) hour.
  - In the Edmonton and North Zones, contact a gastroenterologist by calling 1-844-633-2263 or visiting [pcnconnectmd.com](#). This service is available from 9:00 a.m. to 6:00 p.m. Monday to Thursday and from 9:00 a.m. to 4:00 p.m. Friday (excluding statutory holidays and Christmas break). Calls are returned within two (2) business days.

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European Association for The Study of The Liver, & European Association for the Study of Diabetes (EASD). (2016). EASL-EASD-EASO Clinical Practice Guidelines for the management of non-alcoholic fatty liver disease. <i>Obesity Facts</i> , 9(2), 65-90. <a href="#">easl.eu/publication/the-management-of-non-alcoholic-fatty-liver-disease-naflid/</a>	
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National institutes of health, office of dietary supplements. (2019, October 17). Omega-3 fatty acids – fact sheet for health professionals. <a href="#">ods.od.nih.gov/factsheets/Omega3FattyAcids-HealthProfessional/</a>	
Xiao, G., Zhu, S., Xiao, X., Yan, L., Yang, J., & Wu, G. (2017). Comparison of laboratory tests, ultrasound, or magnetic resonance elastography to detect fibrosis in patients with nonalcoholic fatty liver disease: a meta-analysis. <i>Hepatology</i> , 66(5), 1486-1501.	
Resources	
Poverty: A Clinical Tool for Primary Care Providers (AB)	<a href="#">cep.health/media/uploaded/Poverty_flowAB-2016-Oct-28.pdf</a>
Nutrition Guidelines: Household Food Insecurity	<a href="#">ahs.ca/assets/info/nutrition/if-nfs-ng-household-food-insecurity.pdf</a>



## PATIENT RESOURCES

### Information

Description	Website
General information on NAFLD (Canadian Liver Foundation)	<ul style="list-style-type: none"> <li><a href="http://liver.ca/patients-caregivers/liver-diseases/fatty-liver-disease/">liver.ca/patients-caregivers/liver-diseases/fatty-liver-disease/</a></li> <li><a href="http://liver.ca/liver-health-month-2018-checkyouengine/">liver.ca/liver-health-month-2018-checkyouengine/</a></li> </ul>
General information on weight management (MyHealth.Alberta.ca)	<a href="http://myhealth.alberta.ca/health/pages/conditions.aspx?Hwid=center1038">myhealth.alberta.ca/health/pages/conditions.aspx?Hwid=center1038</a>
Online learning module on weight management (MyHealth.Alberta.ca)	<a href="http://myhealth.alberta.ca/learning/modules/Weight-Management">myhealth.alberta.ca/learning/modules/Weight-Management</a>
Nutrition Education Material	<a href="http://ahs.ca/NutritionResources">ahs.ca/NutritionResources</a>
Patient handout - Eating Well for Weight and Health	<a href="http://ahs.ca/assets/info/nutrition/if-nfs-eating-well-for-weight-and-health.pdf">ahs.ca/assets/info/nutrition/if-nfs-eating-well-for-weight-and-health.pdf</a>
Patient handout - Sample Meal Plans for Healthy Eating	<a href="http://ahs.ca/assets/info/nutrition/if-nfs-sample-meal-plans-for-healthy-eating.pdf">ahs.ca/assets/info/nutrition/if-nfs-sample-meal-plans-for-healthy-eating.pdf</a>
Patient handout - Omega-3 Fats for Heart Health	<a href="http://ahs.ca/assets/info/nutrition/if-nfs-omega-3-fats-for-heart-health.pdf">ahs.ca/assets/info/nutrition/if-nfs-omega-3-fats-for-heart-health.pdf</a>
Canadian 24-Hour Movement Guidelines	<a href="http://csepguidelines.ca">csepguidelines.ca</a>

### Services Available

Description	Website
Services for patients with chronic conditions (Alberta Healthy Living Program - AHS)	<a href="http://ahs.ca/info/page13984.aspx">ahs.ca/info/page13984.aspx</a>
Supports for working towards healthy lifestyle goals and weight management (Weight Management – AHS)	<a href="http://ahs.ca/info/Page15163.aspx">ahs.ca/info/Page15163.aspx</a>
Services for people who are struggling with substance use, addiction, or a mental health problem (Addiction and Mental Health Services – AHS)	<a href="http://ahs.ca/amh/Page14063.aspx#details-panel14066">ahs.ca/amh/Page14063.aspx#details-panel14066</a>
Supports to quit smoking (Alberta Quits)	<a href="http://albertaquits.ca">albertaquits.ca</a>
Toll free confidential phone service which provides alcohol, tobacco, other drugs and problem gambling support, information and referral to services. The Addiction Helpline operates 24 hours a day, seven days a week (Addiction Helpline – AHS)	<p>1-866-332-2322</p> <p><a href="http://ahs.ca/findhealth/Service.aspx?id=1008399&amp;serviceAtFacilityID=1047128">ahs.ca/findhealth/Service.aspx?id=1008399&amp;serviceAtFacilityID=1047128</a></p>



# Your Pathway for Managing Non-Alcoholic Fatty Liver Disease (adults)

## What is NAFLD?

- A build-up of fat within the liver that can lead to liver damage.
- Often occurs with obesity, diabetes, high blood pressure, or high cholesterol.
- The most common liver disease in Canada and occurs in up to 25% of the population.
- Usually cared for by healthcare providers in your family doctor's office.

## What is the NAFLD patient pathway?

It is a map for you and your healthcare provider(s) to follow. It makes sure the care you are getting for NAFLD is safe and helpful in managing your symptoms.

You and your healthcare providers may modify the pathway to best suit your healthcare needs.

If your NAFLD cannot be managed over time, you and your healthcare providers may decide a referral to a specialist would be helpful.

### 1. Findings of possible liver problems suggesting NAFLD

- Abnormal bloodwork or liver test results
- Fatty liver seen on an ultrasound

### 2. Explore possible causes of liver problems other than NAFLD

- Review all medicines, herbals, and supplements you are taking
- Review your use of alcohol
- Make the changes recommended by your healthcare providers, then your liver tests will be repeated

### 3. Tests that may be done

- Blood tests to check for other causes of liver disease
- Blood tests to check for other conditions that can be associated with NAFLD (e.g. diabetes)

### 4. Assess risk of severe liver damage (scarring of the liver)

- Based on your blood test results
- If higher risk, you may be referred to a specialist for further assessment
- If lower risk, you and your healthcare providers will work together to reduce your risks of liver damage and other health problems

Most people with NAFLD do not develop severe liver damage.

Ongoing monitoring is important because NAFLD can cause serious health problems in some people.

If you are concerned about your liver health, ask your primary care provider.

Once you find something that works for you, stick with it.

You may need to keep trying other options to find what works best to manage your symptoms.



### 5. Reduce your health risks (see over for details)

- Exercise
- Make changes to your diet
- Lose weight, if you need to
- Limit alcohol use
- Complete screening for heart disease, high blood pressure, diabetes, and high cholesterol, and treat, as required
- Redo blood tests every 2-3 years to monitor risk for severe liver damage



# What do I need to know about Non-Alcoholic Fatty Liver Disease?

## Working through the NAFLD patient pathway can take several months or be ongoing for years:

- Your healthcare providers will ask you questions about your health, review medicines and other products you are taking, and ask about your alcohol use.
- They may suggest certain tests to look for other causes of liver disease and use blood tests to check your risk of having severe liver damage.
- If you are at higher risk, you may be referred to a specialist for further assessment.
- If you are at lower risk, you and your healthcare providers will make a plan to reduce your risk and improve your health.
- This plan will address your liver health and other health conditions like diabetes, high blood pressure, high cholesterol, and heart disease risk that may occur at the same time.
- Your healthcare providers will recheck your blood tests every 2-3 years to monitor your risk of severe liver damage.

## To manage your condition, try to:

- Get at least 20 minutes of physical activity daily. Aim for 150 minutes each week (e.g. walking, biking, gardening, stairs, your favourite sports).
- Improve your diet. Choose more high-fibre carbohydrates, less refined starches, and less added sugars. Avoid saturated fats. Choose lean meats and plant-based proteins.
- Lose weight, if you need to. Losing just 3-5 kg (7-11 lbs) can help.
- Limit alcohol use to no more than 4-5 drinks/week for men and 3-4 drinks/week for women.
- Drinking up to 2-3 cups of coffee/day may be helpful.

## Seeing a specialist is only recommended if:

- Your blood tests suggest you have a higher risk of severe liver damage.
- You and your healthcare providers identify concerning symptoms or test results.

## You can find more information in these great resources:


- Canadian Liver Foundation [liver.ca](http://liver.ca)
- Nutrition Education Materials [ahs.ca/NutritionResources](http://ahs.ca/NutritionResources)
- Alberta Healthy Living Program [ahs.ca/info/page13984.aspx](http://ahs.ca/info/page13984.aspx)
  - workshops on weight management

## Write any notes or questions you may have here:

Please provide feedback about this patient pathway by completing a short [survey](https://bit.ly/DHSCNsurvey) (bit.ly/DHSCNsurvey) or email us at [Digestivehealth.SCN@ahs.ca](mailto:Digestivehealth.SCN@ahs.ca)



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