



# LIVER DISEASE

A RESOURCE GUIDE

## Liver Disease

### Liver disease in general.

- **Liver disease in the pediatric population** refers to a range of conditions that affect the liver's function in children. These conditions can be congenital (present at birth) or acquired and may affect the liver's ability to detoxify blood, produce essential proteins, and regulate metabolism.

### What are potential causes of liver disease in pediatrics?

- **Genetic Disorders:** Conditions such as Wilson's disease and alpha-1 antitrypsin deficiency.
- **Metabolic Disorders:** Glycogen storage diseases, galactosemia, and tyrosinemia.
- **Infections:** Hepatitis viruses (A, B, C), cytomegalovirus, and Epstein-Barr virus.
- **Biliary Atresia:** A condition where bile ducts are absent or damaged, leading to bile buildup and liver damage.
- **Autoimmune Conditions:** Autoimmune hepatitis, where the body's immune system attacks liver cells.
- **Drug Toxicity:** Adverse reactions to medications or accidental ingestion of toxic substances.
- **Fatty Liver Disease:** Non-alcoholic fatty liver disease (NAFLD), related to obesity and metabolic syndrome.

### What are some signs and symptoms that can present with liver disease in pediatrics?

- Jaundice (yellowing of the skin and eyes)
- Abdominal pain or swelling
- Nausea and vomiting
- Fatigue and weakness
- Poor appetite and weight loss
- Dark urine and pale stools
- Itchy skin
- Enlarged liver or spleen
- Easy bruising or bleeding
- Developmental delays or failure to thrive

### How can liver disease be diagnosed in pediatrics?

- **Medical History and Physical Examination:** Assessing symptoms and physical signs such as jaundice, liver enlargement, or ascites.
- **Laboratory Tests:** Blood tests to measure liver enzymes (ALT, AST), bilirubin levels, and liver function tests.
- **Imaging Studies:** Ultrasound, CT scan, or MRI to visualize the liver and detect structural abnormalities.
- **Liver Biopsy:** A sample of liver tissue is taken to examine under a microscope for signs of disease or damage.
- **Genetic Testing:** Identifying specific genetic mutations associated with inherited liver diseases.

### What questions in history can be explored?

- When did the symptoms first appear, and how have they progressed?
- Is there a family history of liver disease or genetic disorders?
- Has the child been exposed to any potential toxins or medications?
- Are there any associated symptoms, such as fatigue, abdominal pain, or changes in stool or urine color?
- Has the child experienced any growth or developmental delays?
- What is the child's diet and nutritional status?

### What investigations should be done?

- Blood Tests:** Liver function tests (ALT, AST, bilirubin), complete blood count (CBC), and tests for viral hepatitis and autoimmune markers.
- Imaging:** Abdominal ultrasound, CT scan, or MRI to assess liver size, structure, and detect any abnormalities.
- Liver Biopsy:** Obtaining a tissue sample to identify the extent of liver damage and specific histological features.
- Genetic Testing:** Screening for genetic mutations related to inherited liver conditions.
- Metabolic Screening:** Tests for metabolic disorders that can affect liver function.

### What therapies or treatments can support the patient and/or family?

- Medications:** To manage symptoms, treat underlying conditions, or prevent disease progression (e.g., antivirals for hepatitis, immunosuppressants for autoimmune hepatitis).
- Nutritional Support:** Specialized diets or supplements to ensure adequate nutrition and support liver function.
- Lifestyle Modifications:** For conditions like NAFLD, promoting healthy eating and physical activity.
- Surgical Interventions:** Procedures such as biliary surgery for biliary atresia or liver transplantation for severe cases.
- Support Services:** Providing emotional and practical support to families through counseling, support groups, and educational resources.
- Regular Monitoring:** Ongoing assessment of liver function and overall health to adjust treatment plans as needed.

## Resources

### American Liver Foundation

- Comprehensive information on liver diseases, treatments, and patient support resources.

### BCCH Liver Biopsy Pamphlet

- Pamphlet detailing the liver biopsy procedure, including preparation, what to expect during the procedure, and aftercare.

### Canadian Hemochromatosis Society

- Provides education, support, and advocacy for individuals affected by hemochromatosis, a genetic disorder causing iron overload.

### Canadian Liver Foundation

- Offers detailed information and resources about various liver diseases affecting children in Canada.

### Children's Liver Association for Support Services

- Support services and information for families of children with liver disease, including emotional and practical support.

### Children's Liver Disease Foundation

- UK-based resource providing information on childhood liver diseases, specific conditions, and liver transplant guidance for parents.

### KidsHealth

- Educational resource on liver function, liver diseases, and maintaining liver health, aimed at both children and parents.