Men are three times more likely to get liver cancer.

Types of liver cancer:

- **Hepatocellular carcinoma (HCC)**
  - Develops from hepatocytes, the primary cells in the liver.
  - Cases of HCC can have different growth patterns, sometimes beginning as a single tumour, and sometimes beginning as several small tumours which spread.

- **Cholangiocarcinoma or biliary tract cancer (BTC)**
  - BTC develops from cells in the biliary tract of the liver. The biliary tract is comprised of slender tubes that carry digestive fluid, or bile, to the small intestine.

- **Angiosarcoma**
  - Develops from the blood vessels of the liver and grows very quickly.

Common risk factors:

- **Hepatitis**
  - Hepatitis viruses infect the liver. Worldwide, the most common risk factor for liver cancer is chronic infection with hepatitis B or C virus.

- **Smoking**
  - Smoking increases the risk of liver cancer. Former smokers have a lower risk than current smokers, but both groups have a higher risk than those who have never smoked.

- **Overweight**
  - Being overweight can result in non-alcoholic fatty liver disease (NAFLD) and diabetes, both of which are linked to higher rates of liver cancer.

- **Cirrhosis**
  - Cirrhosis is a late stage of scarring of the liver frequently caused by hepatitis and chronic alcoholism. Each time the liver is injured it tries to repair itself – replacing healthy cells with scar tissue over time.

- **Alcohol use**
  - Drinking alcohol in excess over the long term can cause liver damage, which increases the risk of liver cancer.

- **Environmental factors**
  - Exposure to certain chemicals or aflatoxins can increase the risk of liver cancer. Aflatoxins are poisonous substances produced by naturally- found moulds that can contaminate food crops.
Understanding the four stages of liver cancer

People with liver cancer may not show any of these symptoms, or they may be caused by a different condition, particularly common in those with cirrhosis.

- Appetite or weight loss
- Nausea and vomiting
- Yellowing of the skin and whites of eyes
- Upper abdominal pain and swelling
- General weakness and fatigue
- White, chalky stools

Liver cancer is staged according to the severity of the disease using the Barcelona Clinic Liver Cancer (BCLC) system. Identifying the stage is important for doctors to determine a patient’s treatment options.

### Stages of liver cancer

- **Very early stage (Stage 0)**
  The tumour is smaller than 2cm, the liver is working normally and there are no symptoms.

- **Early stage (Stage A)**
  There are up to three tumours, all less than 3cm. Liver function is normal and there are no symptoms.

- **Intermediate stage (Stage B)**
  There are multiple tumours, but there are no symptoms and liver function is normal.

- **Advanced stage (Stage C)**
  Tumours have spread to blood vessels, lymph nodes or other organs. Symptoms are present, but liver function remains normal.

- **End stage (Stage D)**
  Significant damage to the liver causes severe symptoms and a decline in function. The focus of treatment is to alleviate symptoms.

### Treating liver cancer

#### Treatment approaches during Stages 0, A and B

- **Surgery** to remove the tumour is the main treatment in early stages, but 50-70% of patients may experience cancer recurrence and progression within five years.\(^{14}\)

- **Transarterial chemoembolisation (TACE)** is used in early and intermediate stages for tumours that cannot be treated with surgery or thermal ablation.\(^{14}\) During the procedure, chemotherapy is delivered directly into the artery. Then, the artery is blocked so the tumour is exposed to the medicine for longer.\(^{15}\)

- **Thermal ablation** uses heat to destroy cancer cells in very early-stage patients. It is also referred to as radiofrequency ablation or microwave therapy.\(^{14}\)

- **Liver transplant** may be a curative treatment option in early stages. Due to limited availability of donors, long wait times and the risks associated with transplantation, few patients with liver cancer receive a transplant. Other types of treatment may be used to delay progression while patients wait.\(^{14}\)

#### Treatment approaches during Stages B and C

- **Systemic therapy** is used in Stage C patients. It may also be used in Stage B patients who are not eligible for early-stage treatments, or those who have progressed during treatment.\(^{14}\) There is still a critical unmet need for patients in advanced stages of liver cancer, and new therapies are urgently needed. Ongoing research of Immuno-Oncology therapies has shown promise in this challenging setting.\(^{11-13}\)

### Survival rates quickly drop as the cancer advances*

<table>
<thead>
<tr>
<th>Survival rates</th>
<th>Localised liver only</th>
<th>Metastatic tumour has spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-year survival(^{10})</td>
<td>33%</td>
<td>2%</td>
</tr>
<tr>
<td>% at diagnosis</td>
<td>44%</td>
<td>18%</td>
</tr>
</tbody>
</table>

\(^*\)SEER Data is based on US population only
References

1. World Health Organization. IARC Globocan 2018. Cancer Today. Estimated age-standardized incidence rates (World) in 2018, liver, both sexes, all ages. Available at: https://gco.iarc.fr/today/online-analysis-map?v=2018&mode=population&mode_population=continents&population=900&key=asr&sex=0&cancer=11&type=0&statistic=5&prevalence=0&population_group=0&ages_group%5B%5D=0&ages_group%5B%5D=17&nb_items=5&group_cancer=1&include_nmsc=1&include_nmsc_other=1&projection=natural-earth&color_palette=default&map_scale=quantile&map_nb_colors=5&continent=0&rotate=%255B10%252C0%255D. Accessed May 2020.


