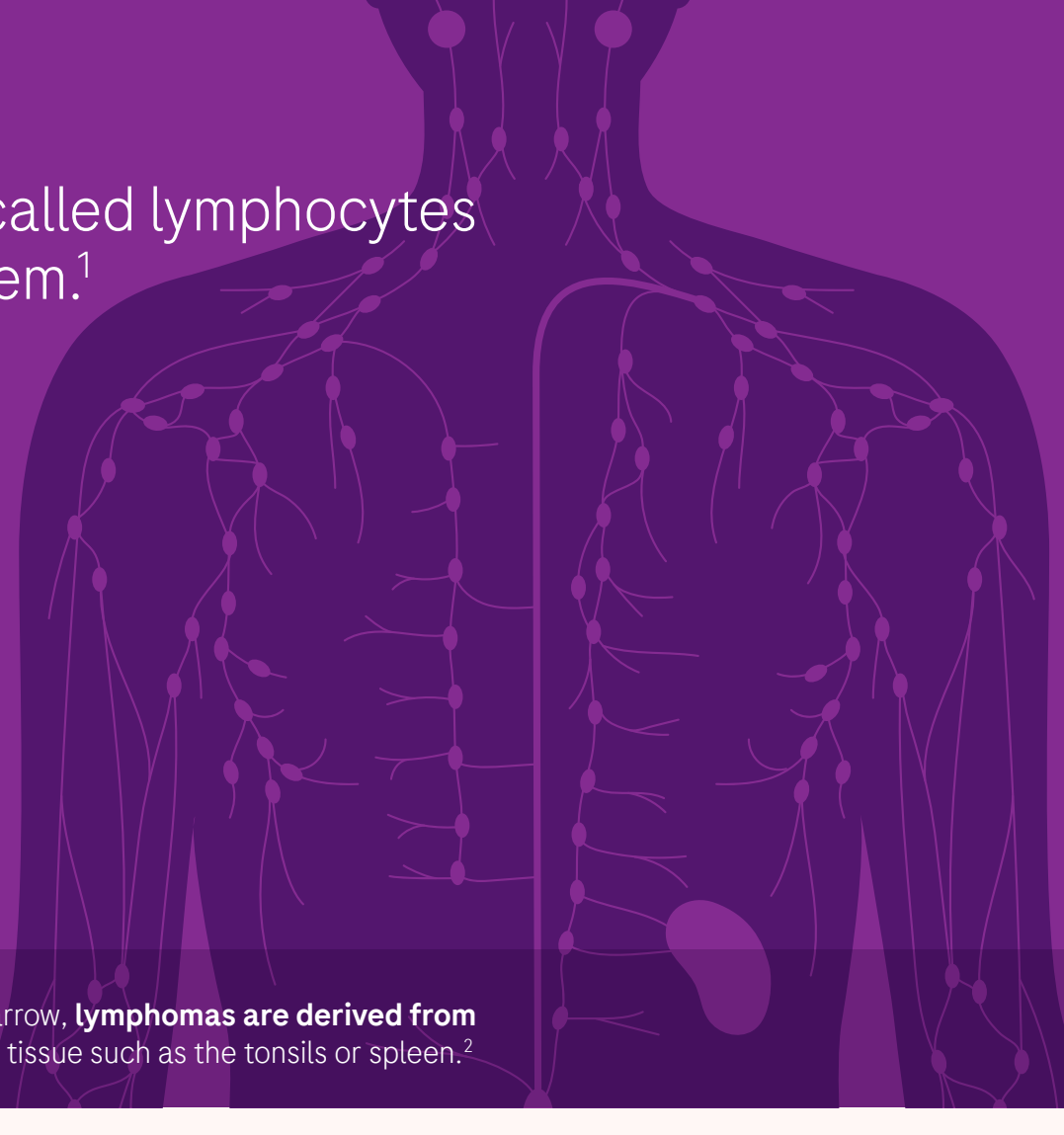


# Lymphoma facts

## What is lymphoma?

Lymphoma is a cancer of white blood cells called lymphocytes that are important to a healthy immune system.<sup>1</sup>



Unlike leukemia, another cancer of the white blood cells that originates in the bone marrow, **lymphomas are derived from the lymphatic system**, which commonly encompasses lymph nodes or other lymphatic tissue such as the tonsils or spleen.<sup>2</sup>

## What are the two major types of lymphomas?

Hodgkin lymphoma and non-Hodgkin lymphoma

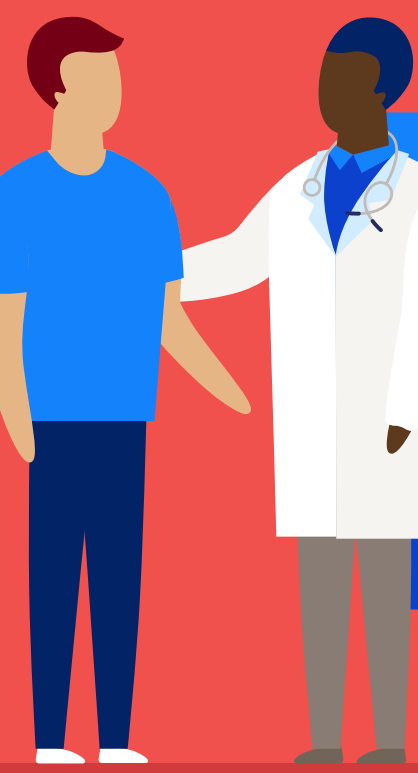
The two are distinguished by how the cells appear under a microscope (morphology), and each is further divided into multiple subtypes.<sup>3</sup>

In fact, there are **over 60**<sup>4</sup> recognized subtypes of non-Hodgkin lymphoma



It is **important to distinguish the various subtypes** to determine the **right treatment** and **prognosis** for each patient.

## How common is lymphoma and how dangerous is it?



**Non-Hodgkin lymphoma**  
3/4 of patients will survive beyond five years<sup>5</sup>

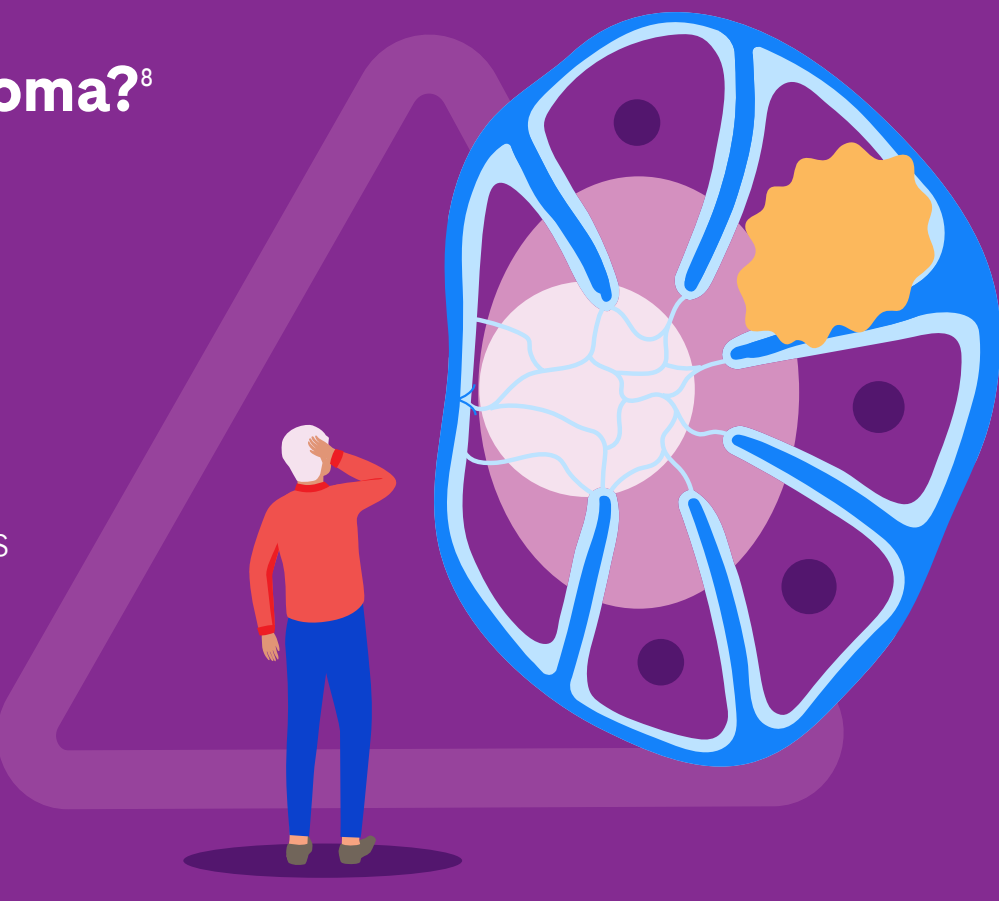
**Hodgkin lymphoma**  
9 of 10 patients will survive beyond five years<sup>5</sup>

**Non-Hodgkin lymphoma is the 8th most common cancer worldwide.**<sup>6, 13</sup>

A **44% increase** in the global incidence of lymphoma is expected (2020 to 2040)<sup>7</sup>

## What puts a person at risk for lymphoma?<sup>8</sup>

- Aging
- Bacterial (H. pylori) or viral (Epstein barr virus) infections
- Immunodeficiency (HIV/AIDS)
- Active autoimmune disease
- Organ transplantation necessitating immunosuppressive drugs
- Exposure to certain chemicals
- Previous cancer treatment



## How is lymphoma diagnosed?

A biopsy of the tissue involved by lymphoma is required.<sup>9</sup>

A broad range of tests are needed to identify the lymphoma subtype and deliver a confident diagnosis. Tests include morphology, immunophenotyping with antibodies, and genetic testing.



## Is there any good news?

**Yes!**



Newer targeted treatments and advanced diagnostics have shown to improve patient outcomes. Examples include the VENTANA® Kappa and Lambda Dual ISH mRNA Probe Cocktail assay, monoclonal antibody therapy, CAR-T treatments (gene editing), as well as stem cell transplants?<sup>10</sup>

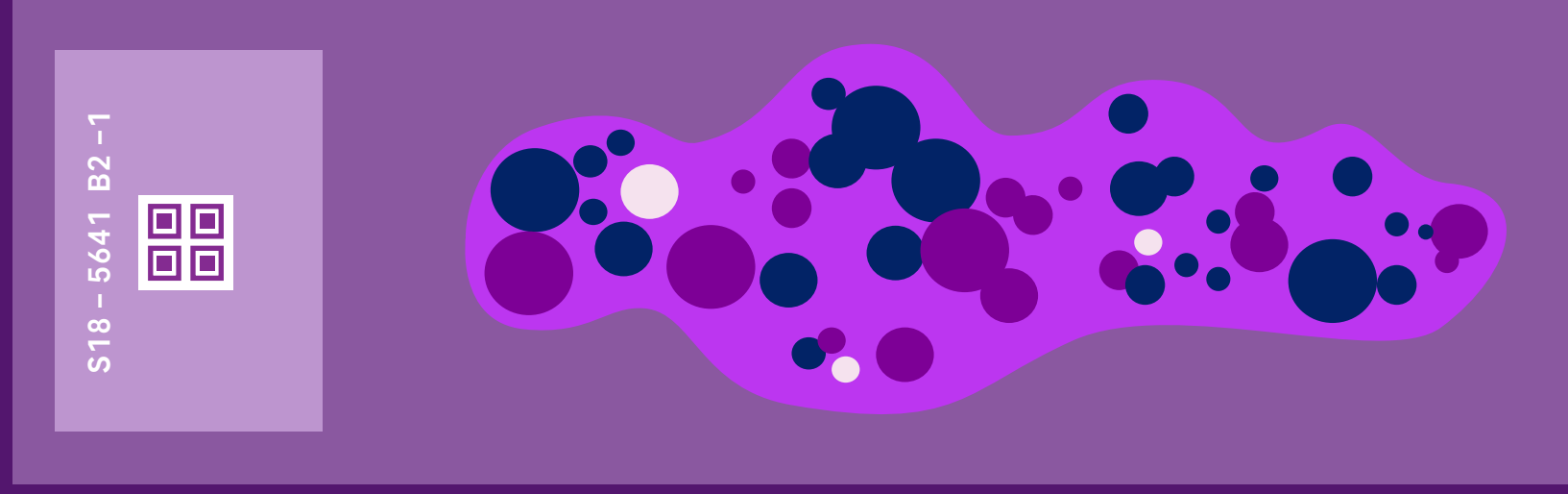
Traditional therapies like chemotherapy and radiation may be options as well.

## What is Roche doing to help clinicians improve the lives of lymphoma patients?

Roche Diagnostics brings many highly effective technologies together to diagnose and manage lymphoma including the new VENTANA Kappa and Lambda Dual ISH mRNA Probe Cocktail.

## Kappa and Lambda Dual ISH mRNA Probe Cocktail

- Exceptional sensitivity to assess clonality in all B-cell lymphomas and plasmocytomas.
- Two color Kappa and Lambda multiplex on a single slide.



## Tissue testing



Our **comprehensive portfolio of antibodies and probes** are widely used to diagnose lymphoma.<sup>10</sup>

## Molecular testing



We offer **cobas® EZH2 Mutation Test, a companion diagnostic test that can inform treatment** for follicular lymphoma, the second most common type of non-Hodgkin lymphoma.<sup>11</sup>

## Sequencing



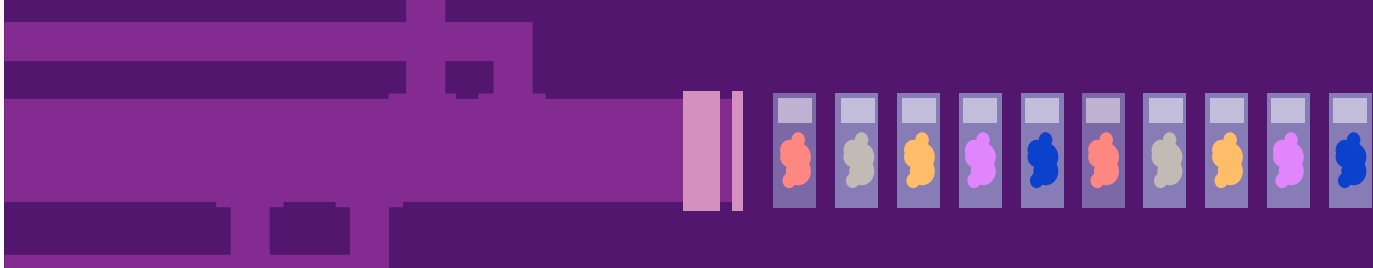
We recently launched a **Research Use Only sequencing panel** that includes targets that can help enable researchers to find further breakthroughs for B-cell lymphomas.<sup>12</sup>

## Clinical Trials



Our in-house CAP/CLIA labs are working closely with pharmaceutical companies to monitor ongoing treatments in **clinical trials**.

## Pipeline



A number of exciting products are in development now, including **artificial intelligence** algorithms to help in the diagnosis and risk stratification of B-Cell lymphomas.

<sup>1</sup> American Society of Hematology. Lymphoma [Internet]. Accessed 7 September 2023. Available from: <https://www.hematology.org/education/patients/blood-cancers/lymphoma>

<sup>2</sup> Blippo et al. Cold Spring Harbor Perspect Med. 2020 Jun; 10(6):a034819.

<sup>3</sup> Ailagovic et al. Leukemia. 2022;36:1729-1748.

<sup>4</sup> Cancer.Net. Lymphoma - Non-Hodgkin: Subtypes [Internet]. Accessed 24 August 2023. Available from: <https://www.cancer.net/cancer-types/lymphoma-non-hodgkin/subtypes#cell-types-NHL>

<sup>5</sup> American Cancer Society. Non-Hodgkin Lymphoma: Detection, Diagnosis, Staging, Factors Prognosis [Internet]. Accessed 7 September 2023. Available from: <https://www.cancer.org/cancer/types/non-hodgkin-lymphoma/detection-diagnosis-staging/factors-prognosis.html>

<sup>6</sup> International Agency for Research on Cancer. Global Cancer Observatory: Cancer Today [Internet]. Accessed 7 September 2023. Available from: [https://gco.iarc.who.int/today/en/datasets/bars?mode=cancer&key=cta&group=population+1&type=0&sort=by+value+1&populations=900&multiple-populations=0&values\\_position=outside&bars\\_n=34+Replace+with+SEER+https://seer.cancer.gov/statfacts/html/nhl.html](https://gco.iarc.who.int/today/en/datasets/bars?mode=cancer&key=cta&group=population+1&type=0&sort=by+value+1&populations=900&multiple-populations=0&values_position=outside&bars_n=34+Replace+with+SEER+https://seer.cancer.gov/statfacts/html/nhl.html) Accessed on January 9, 2025.

<sup>7</sup> Chui et al. Front Oncol. 2023;13:1059914.

<sup>8</sup> Cancer.Net. Lymphoma - Non-Hodgkin: Risk Factors [Internet]. Accessed 7 September 2023. Available from: <https://www.cancer.net/cancer-types/lymphoma-non-hodgkin/risk-factors>

<sup>9</sup> National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology: B-Cell Lymphomas [Internet]. Accessed 7 September 2023. Available from: [https://www.nccn.org/professionals/physician\\_gls/pdf/b-cell.pdf](https://www.nccn.org/professionals/physician_gls/pdf/b-cell.pdf)

<sup>10</sup> Roche Diagnostics. Hematopathology IHC & ISH Portfolio [Internet]. Accessed 7 September 2023. Available from: <https://diagnostics.roche.com/global/en/products/test/hematopathology-ihc-ish-portfolio.html>

<sup>11</sup> Hoffmann-La Roche Ltd. cobas EZH2 Mutation Test. [Package Insert; cited 2024 April 16]. Data on file.

<sup>12</sup> Roche Sequencing. KAPA HyperCap DS NHI Panel [Internet]. Accessed 7 September 2023. Available from: <https://sequencing.roche.com/global/en/products/group/kapa-hypercap-ds-nhi-panel.html>

<sup>13</sup> SEER. <https://seer.cancer.gov/statfacts/html/nhl.html> Accessed on January 9, 2025.