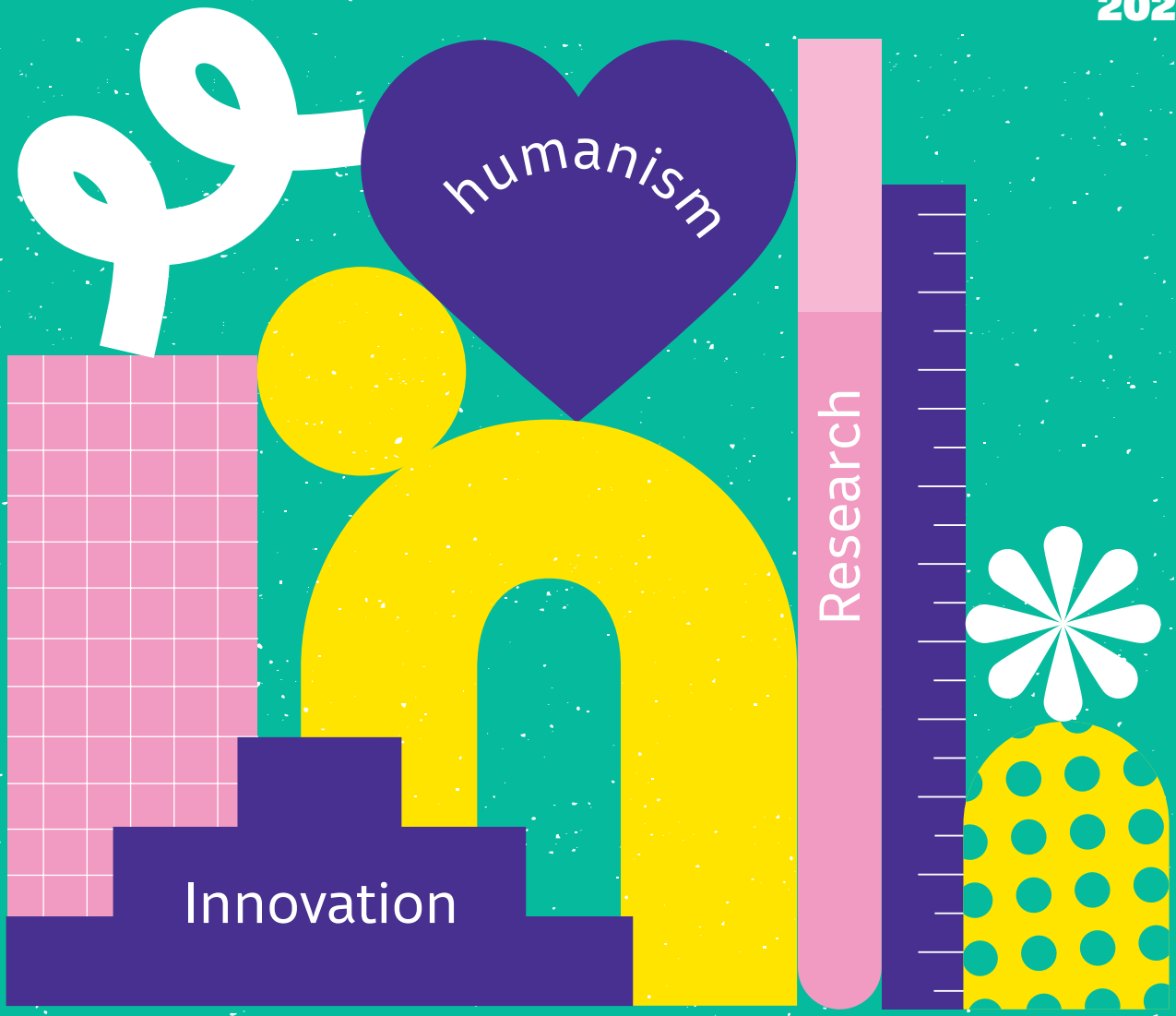
CENTRE DE LUTTE CONTRE LE CANCER LÉON BÉRARD

Activity Report 2024



At the heart of our actions against cancer

Editorial

Preventing, innovating, caring: the CLB's commitment in the years to come

Prof. Jean-Yves Blay
Executive Director of the Centre Léon Bérard

On December 1, 2024, I had the honor of being reappointed for a third consecutive term as Executive Director of the Centre Léon Bérard (CLB). It is with great enthusiasm that **I will serve my final five-year term in this position and support the CLB in implementing its new strategic plan for 2026-2030.** My goal, and that of all the teams at the institution, is to keep pace with the rapid scientific and technical innovations that are revolutionizing the field of oncology.

In cancer research and care, we have been experiencing constant therapeutic and diagnostic revolutions for the past 20 years or so, as you will discover in this document. Thanks to the efforts of everyone involved – doctors, researchers, and care staff – France continues to play a major role in patient care, due to the structure of our healthcare system, which is built around referral centers such as the Comprehensive Cancer Centers, of which the Centre Léon Bérard is one.

The development of digital technology in healthcare, with the use of data and artificial intelligence, also offers hope for improving diagnosis, treatment, and long-term follow-up, providing better support for patients and their families, and facilitating the work of healthcare professionals, whose professions are under pressure. These tools will enable care staff to refocus on their core tasks.

These innovations will also significantly improve patient outcomes. However, we will continue to face many challenges in the coming years. **We will have to deal with an expected increase in the number of cancers,** not only due to aging and exposure to risk factors, but also because of the cures achieved through these very diagnostic and therapeutic advances, which will ultimately result in an increase in the number of relapses and second cancers.

Because, paradoxically, over the past 30 years the incidence of cancer has continued to rise. **Between 1990 and 2023, the number of new cancer cases doubled,** with a 98% increase in cancers in men and a 104% increase in women, all sites combined. This sharp increase is due to population growth and aging, as well as improvements in diagnosis, screening, and treatment. In addition, according to the French National Cancer Institute, 47% of additional cancer cases in women and 20% in men could be explained by exposure to risk factors linked to our lifestyles: smoking, alcohol, an unbalanced diet, being overweight, a sedentary lifestyle, etc.

Therefore, **we believe it is essential to make information on prevention programs and risk factors more accessible.** This concern has been at the heart of our last three medical and scientific projects (MSPs). For the CLB, prevention is an essential mission, even if it does not strictly fall within the activities entrusted to hospitals. A building dedicated to this topic has been constructed on our site and will open its doors in the second half of 2025: a **Prevention Center,** open to the city and accessible to as many people as possible, offering traditional screening services as well as innovative programs for people at increased risk of cancer. This Center will disseminate information on risk factors and continue research into the environmental causes of cancer.

The opening of this center is just one aspect of our prevention strategy, a key focus of our next 2026-2030 MSP, discussions on which were initiated in our teams in late 2024.

At the same time, another aspect is particularly important to me: **taking care of our healthcare professionals.** It is thanks to their unwavering commitment that, since 2019, the Centre Léon Bérard has appeared in both hospital rankings published by *Newsweek* magazine: 'World's Best Hospitals' and 'Best Specialized Hospitals'. This ranking is a source of pride and an incentive to pursue our missions with confidence and boldness.

Taking care of our employees therefore means thinking about new solutions to mitigate an unfavorable demographic trend in nursing and medicine and a system that continues to face very fragile financing.

We must therefore be more imaginative and attentive than ever before. This is the meaning I wish to give to our 2026-2030 project. We owe it to our patients, to their loved ones, but also to our teams, doctors, care staff and researchers who put their heart into providing support, doing research and caring for patients every day. ●

Summary

Key elements of the Centre Léon Bérard in 2024

Management structure and organization

Executive board on April 30, 2025

Members with voting rights

- **President**
  Mrs. Fabienne Buccio (January 11, 2023)
  Prefect of the Auvergne-Rhône-Alpes region, Prefect of the Rhône department
- **Representative of the Medical Training and Research Unit (UFR) of Claude Bernard University Lyon 1**
  Prof. Carole Burillon (January 2021)
  President of the Medical Studies Coordinating Committee in Lyon
- **Representative of the Hospices Civils de Lyon**
  Mr. Raymond Le Moign (June 2020)
  Executive Director of the Hospices Civils de Lyon
- **Representative of the National Cancer Institute (INCa)**
  Prof. Alain Viari
  (renewed by INCa in October 2024)
  National Institute for Research in Digital Science and Technology (Inria), Grenoble Rhône-Alpes
- **Representative of the Regional Economic and Social Council**
  Mrs. Anne-Marie Robert (May 2024)
- **Expert Outside Consultants**
  Mrs. Laurence Fautra (September 2022/term renewed in March 2023)
  Vice-President of the Regional Council of Auvergne-Rhône-Alpes
  Mrs. Anne Brugnera (January 2020/ term renewed in March 2023)
  Municipal and Metropolitan Councilor of Lyon
  Prof. Frédérique Penault-Llorca (March 2023)
  Executive Director of the Centre Jean-Perrin, Clermont-Ferrand Comprehensive Cancer Center
  Dr. Pierre Biron (March 2023)
  Former Head of the Department of Medicine and former Director of Medical Affairs at CLB
- **User Group Representatives**
  Mrs. Jeanine Lesage (November 2020/ term renewed in March 2023)
  Vice-President of the National League Against Cancer, Rhône Committee
  Dr. Jean-Pierre Martin (December 2021)
  President of the National League Against Cancer, Rhône Committee
- **Representatives of the Medical Association Committee of the Centre Léon Bérard**
  Dr. Pierre-Éric Roux (December 2022)
  Dr. Virginie Avrillon (December 2022)
- **Representatives of the Social and Economic Committee**
  Mrs. Martine Beruzon (November 2022)
  Mrs. Mélanie Labbé (November 2022)

Members with an advisory capacity

- **Auvergne-Rhône-Alpes Regional Health Authority (ARS-ARA)**
  Mrs. Cécile Courrèges
  (May 2023) - Executive Director of the ARS – Auvergne Rhône-Alpes
- **Unicancer**
  Mrs. Sophie Beaupère
  (October 2021) - General Delegate of Unicancer
- **Executive Director of the Centre Léon Bérard**
  Prof. Jean-Yves Blay
- **Employees of the Centre Léon Bérard**
  Mr. Damien Sebileau
  Deputy Executive Director
  Mrs. Anne-Sophie Nicoloso
  Director of Human Resources
  Mrs. Sandrine Mounier
  Administrative and Financial Director
  Mr. Patrick Mehlen
  Director of Fundamental/ Translational Research and of the Cancer Research Center of Lyon (CRLC)
  Mrs. Anne Miermont
  General Secretary
- **Auditors**
  Mrs. Valérie Malnoy
  Cabinet Advolis Orfis

Management structure

Dr. Pierre-Éric Roux
Medical committee of the establishment

Prof. Jean-Yves Blay
Executive director

Dr. Philippe Zrounba
Special Adviser to the Director

Executive board

Dr. Line Claude
Director of Medical Affairs

- **Martine Simon**, Head of Nursing
- **Dr. Patrice Peyrat**, Operating Rooms Director

Dr. Pierre Heudel
Director of Care Pathways

- **Christelle Galvez**, Director of Pathway Assessment and Performance
- **Prof. Michel Rivoire**, Director of Training
- **Dr. Helen Boyle**, Risk Management Coordinator
- **Agathe Amadei**, Head of Fundraising and Development

Patrick Mehlen
Director of basic/ translational research & CRCL

David Pérol
Director of Clinical Research & Innovation

Damien Sebileau
Deputy executive director

Thierry Durand
Data Protection Officer (DPO)

Anne Miermont
General Secretary

- **Sandrine Mounier**, Chief Financial and Administrative Officer
- **Bérénice Camhi**, Head of Legal Affairs
- **Anne Miermont**, International Relations and Partnerships Officer

Abdel Achache
Director of Operations, Quality and Patient Safety

Anne-Sophie Nicoloso
Director of Human Resources

Hugo Crochet
Head of Operations

Nathalie Blanc
Director of Communication

Medical departments

> The corporate bodies

Executive board
Fabienne Buccio

Social and Economic Committee
Martine Maritan

Scientific Council
Prof. Éric Solary

Users' Committee
Dr. Amine Belhabri

Risk Committee
Dr. Helen Boyle

Medical departments

Department of Pathobiology
Dr. Catherine Chassagne-Clément

Department of Anesthesiology
Dr. Sabine De Lamer

Department of Surgery
Dr. Pierre Meeus

Department of Medical Oncology
Dr. Olivier Trédan

- **Dr. Thomas Bachelot**, Co-head of the Department of Medical Oncology
- **Dr. Anne-Sophie Michallet**, Co-head responsible for hematological tumors

Department of Radiotherapy
Prof. Vincent Grégoire

Department of Nuclear Medicine LUMEN Center
Dr. Thomas Mognetti

Department of Oncology Supportive Care
Prof. Gisèle Chvetzoff

Department of Radiology
Prof. Frank Pilleul

Department for Coordination of External Care and Interfacing
(home hospitalization and home based care)
Dr. Bruno Russias

Department of Pharmacy
Dr. Bertrand Favier
Managing pharmacist

Department of Medical Physics
Dr. Marie-Claude Biston

Department of Pediatric Oncology Institute of Pediatric Hematology and Oncology (IHOPe)
Dr. Perrine Marec-Bérard

Department of Prevention and Public Health
Prof. Christine Lasset

Department of Cancer Prevention and the Environment
Prof. Béatrice Fervers

Technical platforms

3 operating rooms

Interventional operating unit
a 3-room unit dedicated to interventional radiology, endoscopy and central venous line insertion.

State-of-the-art operating unit
an 11-room unit, one of which is dedicated to screening and interventional endoscopy.

A brachytherapy unit

Radiotherapy center

One of the largest radiotherapy centers
in France, with 8 accelerators comprising 1 CyberKnife©, 2 tomotherapy machines and 5 accelerators, on 2 sites in Lyon and Villefranche-sur-Saône, as part of a cooperative healthcare consortium with the Hôpital Nord-Ouest (Hospital of the North-West). With expertise in pediatric radiotherapy.

A pathobiology platform

A pathobiology platform
combining anatomical and cytopathology analyses, as well as molecular biology procedures.

A nuclear medicine platform
equipped with two fully digital PET scanners and 3 gamma cameras, 1 of which is a Veriton-CT, as part of the LUMEN Center, a mission of a cooperative healthcare consortium comprising the Hospices Civils de Lyon and the Centre Léon Bérard.

A nuclear medicine platform

An imaging platform

An imaging platform
equipped with 2 MRI scanners, 2 scanners, radiography units, ultrasound equipment, 2 mammography units, one of which is reserved for stereotaxis for guided biopsies, and a women's center.

The Centre Léon Bérard in 2024

Healthcare and research

43,527
patients cared for (+3%)

of whom **11,874** new patients (+3%)

326
beds and outpatient places in surgery and medical oncology

217
home hospitalization places

113,004
consultations

and **9,084**
video consultations

10,468
conventional hospitalizations

38,038
day hospital stays (medical oncology excluding Unplanned Admission Management Unit - UAMU)

2,410
patients included in a clinical trial (all types of trials), representing 18% of the active list

399
scientific publications

Figures as at December 31, 2024

CLB employees

79.2% women (1,815)

20.8% men (478)

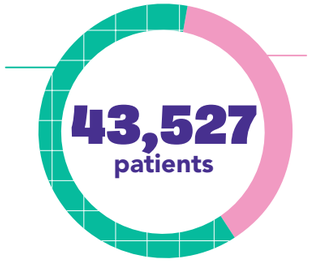
36 professions spread over the following sectors

- 701 Healthcare
- 491 Research
- 306 Medical
- 263 Medical-administrative
- 219 Medical-technical
- 197 Administrative
- 116 Logistics and technical

Profile of the CLB's patients

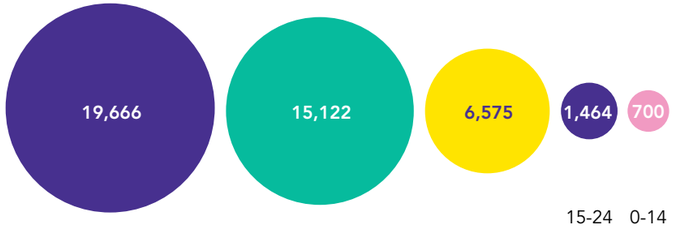
(data from the complete active list)

62% women (27,066)



38% men (16,461)

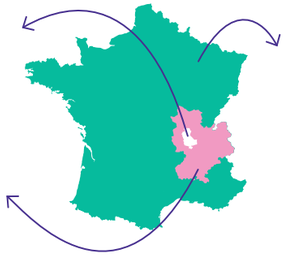
Breakdown by age



Geographical breakdown of patients

20,041
Rhône department

20,392
Rhône-Alpes excluding Rhône and including Saône-et-Loire



3,006
France excluding Saône-et-Loire and Rhône-Alpes

88
From abroad

Focus on IHOPe*

(based on data for hospital stays)

116 new patients IHOPe CLB

108 new patients IHOPe HCL

* Institute of Pediatric Hematology and Oncology, Cooperative Healthcare Consortium of the Hospices Civils de Lyon and the Centre Léon Bérard

Patient satisfaction

	Score out of 100
Overall score from hospitalized patients Response rate: 32.4% (1,065 respondents out of 3,292 e-mails sent)	**80**
Reception	81
Care provision	
Care by doctors/surgeons	86
Care by nurses/nursing assistants	87
Meals	67
Room	77
Organization of discharge	71

82.5%
of hospitalized patients would recommend our facility

	Score out of 100
Overall score of patients admitted for outpatient surgery Response rate: 39.23% (1,790 respondents out of 4,562 e-mails sent)	**83**
Satisfaction prior to hospitalization	87
Satisfaction with reception on the day of surgery	88
Care provision	89
Room and refreshments	76
Organization of discharge and return home	77

At the end of 2024, the National Health Authority published the results of a patient satisfaction survey following their hospital stays. The e-satis survey in 2024 included nearly 926 healthcare facilities for stays of more than 48 hours and 863 facilities for outpatient surgery. Patient responses provide a satisfaction score out of 100 and **in 2024, the Centre Léon Bérard obtained a score of 80/100 for stays of at least 48 hours and 83/100 for outpatient surgery.**

The CLB is therefore among the 25.4% of healthcare facilities in France (235 facilities) to obtain the grade A for stays of more than 48 hours and among the 55.9% of facilities graded A (482 facilities) for outpatient surgery. ●

88.5%
of patients would recommend this facility

Highlights of 2024

January

The first community of practice in oncology

The Centre Léon Bérard and the Centre Henri Becquerel, a comprehensive cancer center in Rouen, have been working with private nurses in their respective areas to trial an innovative and unique initiative: the first community of practice in oncology. The aim of this digital platform, supported by Unicancer, the network of comprehensive cancer centers, is to improve coordination between city and hospital for the benefit of cancer patients. In 2024, more than 300 nurses tested the platform, which was opened in fall 2024 to professionals in the Provence-Alpes-Côte-d'Azur and Occitanie regions. In cancer research and care, there are constant therapeutic and organizational innovations and, outside of centers of expertise, which include comprehensive cancer centers, it is a major challenge to keep healthcare professionals' knowledge up to date. This first community is one of the responses to this challenge. ●

February

Monitoring young people treated for cancer during childhood

Every year in France, 2,400 children and adolescents are diagnosed with cancer. Of these, 85% recover and resume a normal life. However, 40% of them do not receive general long-term health monitoring that would enable better detection and management of any after-effects or relapses. Five years after its implementation, the Centre Léon Bérard has made SALT (Suivi Après Cancer chez les Jeunes, or Post-Cancer Monitoring for Young People) consultations widely available to support these young people for five years after the end of their treatment. The program, led by pediatric oncologist Dr. Amandine Bertrand, is in line with one of the objectives of the French National Cancer Institute's 2021-2030 10-year strategy, 'Limiting after-effects and improving quality of life' for cancer patients. Once they are in remission from their cancer, the young patients continue to be monitored by their oncologist for at least five years to track the progression of their disease and diagnose any relapses or side effects of treatment. Beyond this five-year period, SALT consultations now provide a more comprehensive view of all the difficulties that may affect patients (late side effects, psychological problems, sleep disorders, anxiety, problems related to sexuality or fertility, and possible relapses). ●

Sarcomas: the strength of networks

A study conducted at the CLB and published in the scientific journal *Annals of Oncology* in 2024 shows an improvement in the survival of sarcoma patients at national level if they are followed up at a NETSARC network referral center. This network, funded by the French National Cancer Institute and the Directorate General of Healthcare Provision, is coordinated by Prof. Jean-Yves Blay, Executive Director of the CLB and a world specialist in these rare tumors.

The NETSARC+ study aimed to compare patient survival over three periods: 2010-2012, 2013-2015 and 2016-2020. A total of 43,975 patients with sarcomas, gastrointestinal stromal tumors (GISTs) or intermediate-grade connective tissue tumors were included. The median age was 56 years, 50.5% were women, and in 13.2% of cases the disease was metastatic at diagnosis. Over the three periods, a significant improvement in compliance with national clinical guidelines was observed:

— the proportion of patients who underwent a biopsy before surgery rose from 62.9% to 72.6%;

— the percentage of patients whose cases were presented at Multidisciplinary consultation meetings (MCM) of the network before the first surgical procedure increased from 31.7% to 44.5%;

— the proportion of patients who underwent complete resection of the tumor during the first surgical procedure increased (from 36.1% to 46.6%), while the rate of surgical procedures that did not remove the entire tumor decreased (from 10.9% to 7.9%). ●

April

Adapted physical activity: 15 years of service to cancer patients

The first position for an adapted physical activity (APA) instructor was created at the Centre Léon Bérard in 2009. Our institution was one of the pioneering hospitals in this field, offering a free APA program to patients undergoing cancer treatment. Numerous scientific studies now demonstrate the benefits of physical activity during and after cancer. Indeed, regular physical activity reduces the risk of developing cancer. In addition, multiple scientific studies conclude that regular physical activity, started after a cancer diagnosis, significantly reduces mortality and the risk of recurrence.

During treatment, APA also improves patients' quality of life, psychological well-being, and physical condition, and reduces fatigue.

Fifteen years after being established at the CLB, APA has a dedicated space, La Pyramide, with eight instructors offering 15 different activities, including gymnastics, strength training, cardio, and yoga. ●

June

The first Prevention Olympics

To coincide with the 2024 Olympic and Paralympic Games in Paris, the Centre Léon Bérard wanted to respond to the national momentum by hosting the first 'Prevention Olympics'. Some 20 stands, run by health professionals from the CLB and partners, enabled visitors to reflect and learn about the various risk factors in a fun and interactive way, and to discover methods for changing their behavior to reduce the risk of developing cancer.

This day, aimed at the general public, patients, their families, and healthcare professionals, is part of the cancer prevention program run by the CLB since 2009. This event was organized again in 2025.

The main themes developed in 2024 were:

— Nutrition: cooking workshop 'create your own muesli' and aperitif-themed activities to get ready for summer.
— Physical Activity: inflatable game with precision shooting activities.
— Alcohol: 'just the right amount' game, alcohol-free cocktail tasting, and driving simulator.
— Tobacco: the wheel of savings, breath tester.
— UV: UV paper, quiz.
— Pollution: trail around the Centre Léon Bérard with air pollution sensors and personalized suggestions for routes (home/work, for example) with the least pollution.
— Infections: quiz and information about HPV (human papillomavirus). ●

September

Fifth edition of La Scintillante and a new record

The 5th edition of La Scintillante, a sporting and fundraising event in aid of cancer research, was held on Sunday September 29, 2024. For the second year running, we had the privilege of welcoming runners and walkers to one of Lyon's most iconic locations, the Tête d'Or park. The program included two untimed routes accessible to all, which enabled participants to discover the city of Lyon while fighting cancer. In 2024, over €341,000 in donations were collected thanks to the efforts of the 5,700 participants – a new record. ●

October

Preventing and treating neuropathic pain associated with cancer treatments

During Pink October, the Centre Léon Bérard focused on peripheral neuropathic pain, in particular the pain caused by cancer treatments (surgery and chemotherapy). Although this pain is difficult to prevent, the Centre Léon Bérard has a dedicated program to start managing it as quickly as possible. Peripheral neuropathy is damage to a peripheral nerve. Symptoms can include pain, loss of sensation, which can affect balance, or, conversely, hypersensitivity in certain zones, and loss of strength in a neurological area. Neuropathic pain can be difficult to detect because it is often felt far from the damaged area. It is characterized by sensations of electric shocks, tingling, burning, prickling, or itching. The proportion of patients treated for cancer who suffer from neuropathic pain is 35.3%. ●

November

‘Let’s protect ourselves from pesticides!’: an awareness campaign to provide information on pesticides in Lyon

At the end of 2024, the Centre Léon Bérard and the Cancer Research Cluster Lyon Auvergne Rhône-Alpes (CLARA) launched a public awareness campaign on pesticides, targeting citizens with messages and visuals tailored to young audiences. The aim of this public campaign is to enable different target groups to identify pesticides in their daily lives and find solutions to reduce their exposure. The links between pesticide exposure and health are addressed in a thematic file available on the portal www.cancer-environnement.fr. This communication campaign, rolled out in the heart of Metropolitan Lyon, is aimed at middle school students, the educational community, pregnant women and young parents, and the general public.

This initiative is part of the SIGEXPOMETRO-INFO project, a CLARA project funded by the Lyon metropolitan area. It follows on from several research projects on pesticide exposure conducted by the Centre Léon Bérard, the International Agency for Research on Cancer (IARC), and other partners. ●

December

ESPACE and PARTAGES: the CLB gets involved in two new projects using AI

At the end of 2024, ESPACE was selected as part of the third wave of Alternative Spaces for Experimentation in digital health. Funded by the France 2030 Plan for the acceleration of digital health, this project, led by the Centre Léon Bérard in partnership with the François Baclesse (Caen) and Oscar Lambret (Lille) centers, with the CREATIS laboratory as an associated ‘expert’ partner, will receive at least €1.4 million in funding over three years. ESPACE aims to speed up the deployment of 5P medicine in oncology (personalized, predictive, preventive, participatory and population-based) with the help of artificial intelligence (AI).

The first two projects funded under ESPACE aim to improve the accuracy of radiotherapy treatments (partnership with TheraPanacea) and to predict the risk of rehospitalization due to the adverse effects of chemotherapy based on textual patient records (partnership with OSPI).

In 2024, the CLB also became involved in another AI project supported by France 2030: PARTAGES, which explores the use of generative AI to structure medical data and reduce administrative tasks for care staff. This technology, capable of producing content such as texts or summaries, could lighten the administrative load of care staff and facilitate the reuse of medical data for research purposes. These innovations would allow healthcare professionals to focus more on their patients. ●

First Léon Market

To celebrate the holiday season, the Centre Léon Bérard hosted a unique event designed for healthcare professionals, patients, and their families: the Léon Market, a festive Christmas market held on December 10 in the covered area outside the main entrance to the institution. Around 20 stalls, various activities, and a cookie contest attracted more than 300 people during the day. The festive atmosphere in the run-up to the holiday season was enjoyed by everyone, healthcare professionals and patients alike. The event will be repeated near the end of 2025. ●

Care and support for each patient

1. Prevention

At the Centre Léon Bérard, we are studying the impact of PFAS on testicular and kidney cancer, as well as the presence of PFAS in the air.

A community to improve prevention of colorectal cancers

The results of the PRECÔTION pilot study were published in 2024. This study aimed to strengthen colorectal cancer prevention through motivational, informative, and community-based approaches focused on physical activity and diet, with personalized intervention based on individual modifiable risk factors in people undergoing a colonoscopy at the CLB. As part of this study, 90 patients were given access to videos, podcasts, health education sessions, physical activity sessions, and individual motivational interviews, and were equipped with a smartwatch. The results are conclusive, with participants complying strongly with the proposed intervention (73%) and interesting preliminary data on improved habits in relation to physical activity. The study will be continued and will include more patients. ●

ASTEROPA: a research project on PFAS

The ASTEROPA study, conducted by research teams at the Centre Léon Bérard, aims to understand and demonstrate the links between PFAS and cancer development.
This large-scale research project has three main components:
— an epidemiological component for testicular and kidney cancers, which are among the cancers for which PFAS have been suspected of having an etiological effect, but on which few studies have been conducted. The aim is to assess the levels of exposure required and the type and combinations of these molecules that may increase the risk of developing these tumors;
— an environmental component to model PFAS in the air, which is a first;
— a participatory component involving citizens from the Rhône region in this research work to understand their real concerns and develop communication actions for everyone, including healthcare professionals. ●

In figures

113,004 consultations
and 9,084 video consultations in 2024

2,992 in oncogenetics
1,436 in tobacco addiction
790 in medical gynecology
161 in metabolism
94 in risk of occupational cancers

2. Screening and diagnosis

Interception: a program for people with an increased risk of cancer

In 2024, the Centre Léon Bérard tested a new personalized prevention and screening pathway for women with a family history of breast cancer and no known genetic abnormalities (FAR F pathway). This pathway is part of a broader program called Interception. Launched in 2021 by Gustave Roussy (Dr. Suzette Delaloge), Interception targets people at increased risk of cancer and is being rolled out across the Unicancer network of comprehensive cancer centers, in particular at the CLB.

People identified by their attending physician as having an increased risk of cancer are offered a day of information and consultations. Various healthcare professionals (oncologist, oncogeneticist, gynecologist, general practitioner, nurse, psychologist, dietitian, adapted physical activity instructor) are involved during this day. After this day, participants receive personalized follow-up care provided by local doctors in collaboration with the attending physician and in a partnership between the city and the hospital. Fifteen women have taken part in this pilot program. ●

Liquid biopsy: a personalized CLB application for diagnosis

As part of routine practice, molecular alterations are investigated using a biopsy or surgical resection when there are contributing tissues (usable results). However, it is sometimes impossible to obtain these types of tissue; in other cases, they are too degraded to enable reliable molecular analysis.

To overcome this problem, the Centre Léon Bérard is increasingly using an approach based on a blood sample that allows the analysis of circulating tumor DNA (approximately 600 analyses per year at the CLB), known as liquid biopsy. The strategy guided by the circulating tumor DNA is a coherent alternative to the tumor-guided strategy, particularly in situations where tissue biopsies are not optimal or when time is limited. It consists of analyzing 'non-solid tissue', mainly blood. Like the biopsy, its purpose is to detect and monitor cancers, with the advantage of being a non-invasive technique.

The Centre Léon Bérard collaborated with the company SOPHiA GENETICS to design and create a personalized multi-cancer liquid biopsy application.

It commissioned a personalized and targeted panel of 21 genes, designed to include circulating tumor DNA biomarkers recommended by clinical guidelines and emerging biomarkers of interest. The selected genetic content is of great clinical utility for profiling and monitoring many types of cancer, including lung, breast, prostate, colorectal, and pancreatic cancers. With this tailor-made tool, professionals obtain the expected results in an average of 10 days. ●

Pathobiology

92,731 slides

21,856 anatomical pathology procedures

7,199 molecular biology procedures

Biological Sample Management platform

Institutional trials or collections:

- **Frozen tumors:** **1,557** procedures (total 1,793 tubes)
- **Blood samples:**

3,086 procedures (blood, serum, plasma, cells; 3 aliquots on average with a total of 8,376 tubes)

- **Derived products:**

2,887 procedures (DNA RNA extracts; 3 aliquots on average with a total of 6,360 tubes)

Clinical trials designed and implemented externally:

5,297 patients, **20,712** samples to be prepared after the procedure, nearly **36,955** (stored temporarily until return to those conducting the trials)

Collections preserved:

- **Institutional collection:**

nearly **17,000** **tumor samples** and **46,000** **blood samples** can be made available to the medical and scientific community.

- **External collections:** UNICANCER, MESOBANK

A total of nearly **625,927** **tubes** stored at the CLB.

> In 2024, the Centre Léon Bérard's Biological Sample Management platform obtained ISO 20387 certification, an internationally recognized standard that rewards a high level of quality of the resources and data made available for research.

Radiology

Breast cancer radiology

6,470 breast ultrasound scans

6,298 mammograms

1,502 localizations

1,241 ultrasound-guided breast biopsies

204 stereotactic biopsies

Non-breast cancer radiology

14,805 scanner procedures

11,173 standard X-rays

10,813 MRI scans

3,748 ultrasound scans

Interventional radiology

3,513 procedures

Interventional radiology is offered for cancer treatment and supportive care (e.g., pain management, nutrition), and is also used in diagnostics.

Endoscopy

3,003 endoscopies performed

2,247 patients involved

Nuclear medicine

14,172
diagnostic procedures

- **PET scan:**
10,217 procedures
- **Gamma camera:** **3,955** diagnostic procedures

Breakdown of cancers treated at the CLB

13,464* **patients**

were hospitalized or had treatment as outpatients (chemotherapy, surgery and radiotherapy)

2,973
(22.2%)
Breast

1,457
(10.8%)
Digestive system
Stomach, colon, rectum, gallbladder, pancreas, etc.

1,306
(9.7%)
Respiratory system
Lungs, bronchi, trachea, heart, pleura, etc.

1,269
(9.4%)
Soft tissues, bone and cartilage
Soft tissues, fibrosarcomas, neurofibromatosis, Ewing sarcomas, osteosarcomas, etc.

1,224
(9.1%)
Hematology
Myelomas, plasmocytomas, Burkitt's lymphomas, MNHL, ALL, etc.

1,172
(8.7%)
Non-tumoral conditions

851
(6.3%)
Female reproductive system
Gonadal germ cell tumors, extra-gonadal germ cell tumors, cervix, uterus, vagina, etc.

796
(5.9%)
Male reproductive system
Testicles, germ cell tumors, extra-gonadal germ cell tumors, testicles excluding germ cell tumors, prostate, penis, etc.

772
(5.7%)
Upper aerodigestive tract
Lips, tongue, salivary glands, gum, floor of the mouth

678
(5%)
Skin
Melanomas, nevus, skin (other histology)

468
(3.5%)
Urinary tract
Wilms tumors, bladder, dome, kidney, renal pelvis, etc.

229
(1.7%)
Central nervous system
Gliomas, oligo, nerves, meninges, spinal cord, etc.

162
(1.2%)
Endocrine glands
Thyroid, parathyroid, pineal, adrenal

67
(0.5%)
Other locations
Lymph nodes, primary location unknown or poorly defined

30
(0.2%)
Neuroblastoma

10
(0.1%)
Eye
Retinoblastomas, eye, body, chamber, globe, etc.

* *Active patient list*

3. Treatments

Better characterizing and understanding ovarian cancer to improve treatment

Medical oncologist Dr. Olivia Le Saux won one of five prizes in the 2024 In'CaRe call for projects launched by AstraZeneca to promote innovation in oncology in France. Her project, which will help to better characterize and understand the stages of development of high-grade serous ovarian cancer (from pre-cancerous to invasive stages of ovarian cancer), has received €160,000 in funding. One of the major components of characterization is to better understand the role of the immune system in the early stages of tumor development. It is necessary to identify how the tumor evades the immune system's control in order to then propose treatments that can circumvent this escape. According to Dr. Olivia Le Saux: "The majority of scientific and medical studies concentrate on tumors at the time of diagnosis, but few look at the genesis of the tumor. However, earlier treatment of cancers is the key to recovery." ●

Robot-assisted surgery

In December 2024, the Centre Léon Bérard acquired one of the latest Da Vinci systems for assisted surgery, a major advance in minimally invasive care for major cancer surgery on visceral and digestive, thoracic, gynecological, and ENT tumors. Thanks to optimized precision and increased visibility of the surgical site, the equipment enables complex procedures to be performed with a less invasive approach, fewer complications, faster recovery, and greater comfort for patients. This innovation, Da Vinci Xi, also improves working conditions for surgeons and the operating unit team. Operating remotely and in a seated position reduces fatigue and postural constraints, allowing for greater concentration and precision throughout the procedure. ●

Identifying the biological characteristics of survivors of incurable cancers

The Centre Léon Bérard is partnering with start-up Cure51, which aims to understand the unique genetic and molecular characteristics of exceptional survivors of cancers with poor prognoses. The ultimate goal is to develop new treatments that replicate the protective mechanisms identified in these survivors, thereby offering new hope to patients with incurable cancers. And this is to be done on a global scale, as such outliers are extremely rare, numbering only around 10,000 individuals worldwide. It is therefore essential to expand collaboration at national and global levels.

Founded in 2023, the French biotech company is associated with several world-renowned oncology centers, including the Centre Léon Bérard. It is currently creating a global clinical and molecular database of exceptional survivors. To achieve its objectives, Cure51 is facilitating the international ROSALIND study, which enrolls these patients with exceptional outcomes. Open for enrollment at the CLB, it involves patients who have survived more than five years with the most aggressive cancers: metastatic pancreatic adenocarcinoma, glioblastoma, and extensive small cell lung cancer. The ROSALIND study is based on a collaborative digital platform that collects clinical, epidemiological and imaging data, and multi-omics (genomic, transcriptomic, proteomic, epigenomic) from patients with cancers with poor prognoses. ●

In figures

Anesthesia

8,918
consultations

6,223
patients

8,270
anesthetic procedures

3,617
insertions of venous catheters

Radiology

3,513
interventional radiology procedures

Interventional radiology is offered for cancer treatment and supportive care (pain management, nutrition, etc.), and is also used in diagnostics.

Brachytherapy

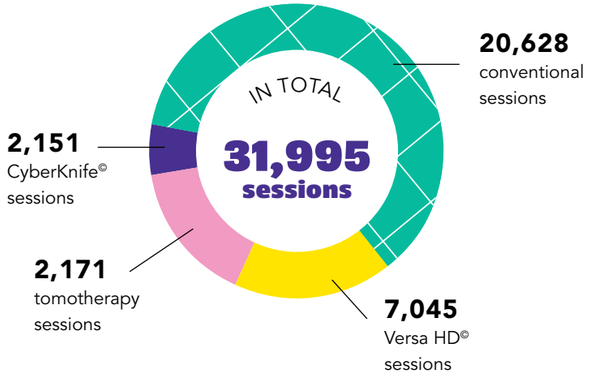
905
brachytherapy sessions

Radiotherapy

3,821 patients | **3,745** treatments started

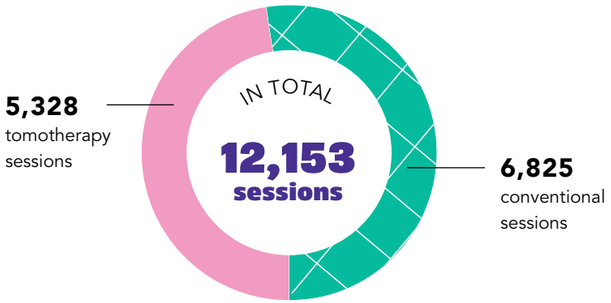
At the Centre Léon Bérard

3,065 patients



In Villefranche-sur-Saône

756 patients



Medicine

70,842
consultations

2,084
medical procedures performed during consultations

Nuclear medicine

Gamma caméra

353
therapeutic procedures

Pharmacy

99,900
chemotherapy formulations

12,452
formulations prepared as part of a clinical trial

€70 mln
of expenditure on cancer drugs

Surgery

33,120
consultations

5,302
procedures under general anesthetic

4,771
patients operated on except endoscopy and except insertion of venous catheters

916
procedures under local anesthetic

6,218
surgical procedures, excluding endoscopy and excluding venous catheters

Cell therapy

Peripheral hematopoietic stem cells

For the Centre Léon Bérard

55 patients
91 cytapheresis sessions

For l'IHOPe*

17 patients
28 cytapheresis sessions

Lymphocytes for Car-T Cells

For the Centre Léon Bérard

39 patients

For l'IHOPe

1 patient
41 leukapheresis sessions

**Institute of Pediatric Hematology and Oncology, Cooperative Healthcare Consortium of the Hospices Civils de Lyon and the Centre Léon Bérard*

Multidisciplinary Consultation Meetings (MCM)

Cancer care is multidisciplinary and involves all the medical specialists of the CLB. **Multidisciplinary Consultation Meetings (MCM) are organized on a weekly basis for every type of cancer pathology and all stages of the disease.** During these meetings, surgeons, radiotherapists, medical oncologists, diagnosticians, and supportive care professionals review the records of each patient being treated at the Centre Léon Bérard or at one of the external medical centers to determine the most appropriate treatment protocol. ●

Total	Cases discussed	New patients	External cases
MCM sarcoma diagnosis	3,008	1,107	699
MCM lymphoid and myeloid hematology	2,122	994	1,159
MCM oncogynecology and rare tumors	1,933	590	843
MCM pre-treatment sarcomas, bone and soft tissues	1,897	1,329	612
MCM breast tumors	1,870	1,010	197
MCM thoracic tumors	1,780	733	196
MCM tumors of the digestive system	1,704	681	196
MCM skin tumors	1,292	688	340
MCM molecular diagnostics	951	782	458
MCM ENT tumors	901	346	82
MCM urology + MCM kidney cancers	729	438	115
MCM malignant bone lesion	394	261	54
MCM Adolescents and young adults	339	151	247
TOTAL	**18,920**	**9,110**	**5,198**

4. Types of hospitalization and organization

The CLB makes its expertise available through the 2nd opinion platform

Since the end of August, the Centre Léon Bérard, a regional referral center for cancer treatment, has been facilitating and accelerating access to its medical expertise through a partnership with the deuxiemeavis.fr platform. This service is intended for patients and their doctors, allowing them to download the complete medical records, including images, in complete security. Based on the complete records transferred, the CLB doctor provides an additional medical opinion within seven days. In accordance with medical confidentiality, access to this platform is strictly confidential and medical or personal data is protected. This second review of the records is covered by most supplementary health insurance providers. ●

Care pathways: an electronic signature tool to facilitate exchanges

Care pathways rely increasingly on digital tools to streamline relations between healthcare professionals and patients. The security of these tools is a major challenge for healthcare facilities. To facilitate the exchange of medical and administrative documents in a secure environment, the Centre Léon Bérard launched a new digital document management system with an electronic signature tool in 2024. The development of this tool, carried out by the institution's IT department, was made possible through the support of the Daiichi-Sankyo/AstraZeneca alliance. The CLB's new electronic signature tool provides a secure and intuitive platform that enables medical teams to manage, sign, and track all their medical and administrative documents related to patients in a centralized and efficient manner. This tool integrates seamlessly with existing systems, ensuring smooth transmission between the CLB's various departments and professionals, as well as improved traceability in a secure environment. ●

Trial of telemonitoring

Telemonitoring is a new digital solution that improves the remote monitoring of cancer patients by eliminating the need for travel. Increasingly used to facilitate the patient care pathway, it was the subject of several presentations at the 2024 conference of the American Society of Clinical Oncology (ASCO).

Since June 2024, telemonitoring has been tested at the CLB for certain patients undergoing breast cancer or ENT treatment. Offered by the company Cureety, this medical telemonitoring solution is intended for cancer patients undergoing systemic treatment and/or radiotherapy.

This tool makes it possible to send questionnaires to patients to measure the side effects of treatments, analyze the data transmitted (which can be linked to alerts), and give them access to a document database. The patients being monitored can also send photos securely, whereas they currently do so by e-mail, which poses a confidentiality issue. In addition, the telemonitoring app is accessible on smartphones and computers. Following this test phase, an assessment will be carried out with a view to using the tool on a larger scale at the CLB. Patients who do not have digital tools will continue to be monitored during follow-up consultations and by telephone. ●

Intercultural care at the hospital

Listening to patients and their family members, regardless of their culture, religion, or social background, to ensure the same quality of care for all is a priority at the Centre Léon Bérard. Since 2017, the institution has developed a program focused on interculturality through various flagship initiatives. In 2024, the institution took action for the first time on the World Day for Cultural Diversity and Dialogue. As an institution of international prestige, the Centre Léon Bérard welcomes patients from all walks of life, from French Guiana, from abroad, and patients from our region with different cultures, religions, and social backgrounds. Of the patients admitted to the Centre Léon Bérard each year, 10% do not speak or do not understand French. This can sometimes lead to misunderstandings with healthcare professionals. For this reason, the institution has launched a process of reflection as well as initiatives to support these patients, their families and family members, whose culture, language, or origins lead to different perceptions and interpretations of care. "If we consider the care relationship as a desire to help others, then interculturality is a dimension of care," says a nurse at the CLB. ●

> In 2024

20 Coordination nurses (IDEC) for the following pathways:

'Adolescents and young adults', 'Skin tumors', 'Digestive and Stoma therapy', 'Gynecology', 'Hematology and transplants', 'Pulmonology', 'Oncogeriatrics', 'ENT', 'Senology,' and 'Urology'.

provided daily follow-up care to

2,615 patients (+39%)

and responded to:

19,614 calls and e-mails from patients (+13%),

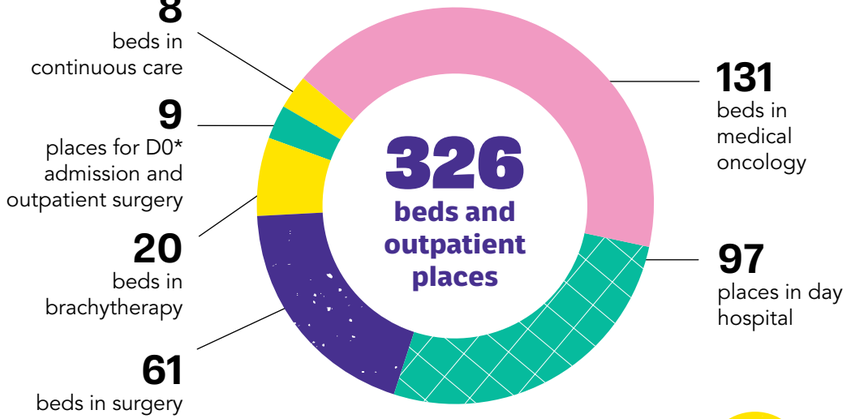
1,907 calls, e-mails and secure messages from healthcare professionals (+19%),

6,624 calls and e-mails from informal carers or family members of patients (+15%),

22% of new patients monitored at the CLB in 2024 are monitored by an IDEC

In figures

Hospitalization capacity



* Admission on the same day as the surgical procedure

In addition

217 home hospitalization places

51 beds in pediatrics

Conventional hospital stays and outpatients

10,468 conventional hospital stays

38,038 medical oncology day hospital stays (excluding UMUA*)

6,313 outpatient surgery stays

5.84 days Average length of stay (ALOS)

** Unplanned Admission Management Unit

Continuous care

705 patients

702 stays with transfers

2,713 administrative days

3.9 days ALOS in the continuous care unit

92.7% occupancy rate

Home-based care

Home hospitalization (HAD)

2,068 patients

8,453 stays

Home-based care (soins à domicile – SAD)

1,363 patients

1,580 stays

5. Supportive and complementary care

To support patients and their families during the illness and treatments, the Centre Léon Bérard has put in place various complementary care and support activities. Some of these activities are financed by CLB fundraising campaigns and support from the voluntary sector.

In figures

2,951
patients cared for by the dietetics team

2,829
patients seen regularly by the social service

2,116
patients seen regularly by the physiotherapy team

1,837
patients cared for by the psychology team

969
patients seen in analgesia consultations

819
patients seen by the mobile analgesia nursing team

4,647 patients
given care by the DISSPO*, representing **34.1%** of the active list

772
patients seen regularly by the mobile palliative care team

179
patients treated for chronic wounds

56
patient records examined as part of the MCM for complementary care

28
patients treated with photobiomodulation

* Interdisciplinary Department for Patient Supportive Care in Oncology

Certification

The Pain Unit of the Interdisciplinary Department for Patient Supportive Care in Oncology was certified in 2024 as a Pain Assessment and Study Center (Centre d'évaluation et d'étude de la douleur, CETD). ●

Photobiomodulation to relieve the side effects of treatment

Since 2024, the Centre Léon Bérard has been offering low-energy laser/LED therapy or photobiomodulation to manage the side effects of chemotherapy and radiotherapy. This is an innovative technique based on red and infrared light. Non-invasive and painless, this method is used to promote healing by reactivating collagen production. It also has analgesic and anti-inflammatory properties. ●

In figures

Meeting and Information Space (MIS)

1,528 visitors

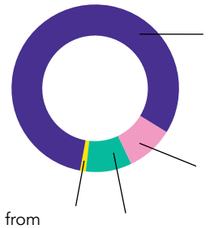
8% men

92% women

49% seeking information

41% listening/ socializing

Who visits the MIS?



81% patients

9% professionals (wigmakers, pharmaceutical laboratories, professionals for various therapies)

9% relatives

1% other
Volunteers from associations, students

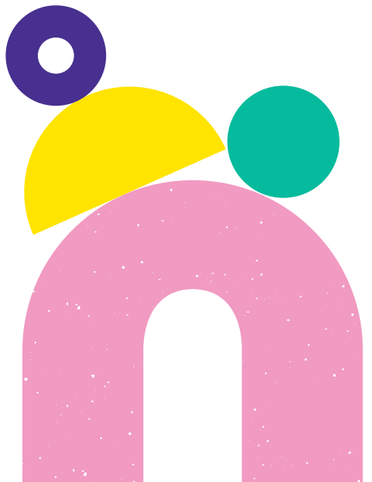
Well-being Space

- The Well-being Space at the Centre Léon Bérard offers a range of socio-esthetic services and socially beneficial hair care.

1,082 patients
received socio-esthetic care

Adapted physical activity

2,034 patients supported



ERICA study receives Unicancer award

The Unicancer Innovation Awards celebrated their 10th anniversary in 2024. Thanks to the work of Manon Gouez, a postdoctoral researcher in APA in the Department of Cancer Prevention and the Environment, the CLB was recognized in the new Adapted Physical Activity category. Gouez received €10,000 for her ERICA study, which suggests to patients that they perform an acute physical exercise just before receiving immunochemotherapy for metastatic non-small-cell lung cancer (NSCLC). ●

Alliance: how to encourage young people to take part in adapted physical activity

Launched in 2024, the Alliance project aims to assess the factors that determine whether young patients aged 15 to 25 years will take part in physical activity, as well as in the care and management of the disease.

This is a collective and collaborative effort involving seven adolescents and young adults with cancer, a doctor, two APA instructors, and three researchers. This group is working together to develop tools and actions tailored to the specific needs of young people with cancer. Its goal is to encourage young people to participate in adapted physical activity and, more broadly, to improve their quality of life during and after treatment. ●

APA joins PASCA

Parcours de Santé au Cours du Cancer (Healthcare Pathway throughout Cancer) – PASCA – is the first clinical study based on real-life data that looks at a large number of post-treatment complications. Its objective is to quantify the occurrence of complications in adult patients over a five-year period following treatment. Launched in 2021, the study enrolled 530 patients between 2021 and 2024.

APA has now been integrated into this study program. A one-hour consultation is organized with an APA instructor, during which the patient is given an assessment of their physical condition and has a motivational interview. The instructor then works with the patient to develop a personalized physical activity plan. ●

Therapeutic Education for Patients and their Families (TEPF)

Restructuring the diagnosis consultation for Care Pathway Coordination Nurses (IDEC)

In 2024, the TEPF team and the team of coordination nurses (IDEC) worked together to combine the consultation to announce a diagnosis with a shared educational assessment, the first step in a therapeutic education pathway. Thanks to their training in therapeutic education (40 hours), IDECs can now refer patients directly to workshops in therapeutic education for patients (TEP). For patients who are not enrolled in a program monitored by an IDEC, the TEPF team always conducts this initial assessment. ●

> Good to know:

The TEPF team can be called upon at any time during the patient's care, regardless of the disease involved. Using the module integrated into the Electronic Health Record, all CLB professionals can request assistance.

In figures

790
patients
had an educational diagnosis carried out at the start of their care (shared educational assessments)

649
patients
had an educational assessment carried out at the end of the workshop (final shared educational assessments)

Individual and group educational workshops:

1,250 people attended the workshops, of whom **219** at home-based workshops:

631 attended workshops related to their **treatments,** of whom **192** at home-based workshops

203
attended workshops related to **nutrition**

149
people attended workshops related to **stomas**

123
attended workshops related to **fatigue,** of whom **22** at home-based workshops

89
people attended workshops related to **Adapted Physical Activity**

39
people attended workshops related to **socio-esthetics**

16
attended workshops related to **pain,** of whom **5** at home-based workshops

Addiction Treatment Liaison Team

The January 2024 Challenge: A Winning Mocktail Contest

In collaboration with ELSA France and as part of the Centre Léon Bérard's 'Healthcare Facility that Promotes Health' (Lieu de Santé et Promoteur de Santé) initiative, the Addiction Treatment Liaison Team (French abbreviation ELSA) organized the January Challenge for healthcare professionals and patients, for the second consecutive year. On January 16, 210 people participated in the event, including 199 employees and 11 patients. The program included an alcohol-simulation goggles course, quizzes and various games about alcohol consumption, and, for the second consecutive year, a mocktail contest (non-alcoholic cocktails). About ten teams from the hospital and research departments shared their creative ideas. The caregivers from the Day Hospital won with their "Ginger MC," a mix of pineapple, ginger, and lemon. ●

In figures

596
patients seen during the year, of whom **482** new patients

1,745
interviews conducted

Innovation for all

6. Clinical research

IMADGIST: continuing treatment for 6 years is effective

The multi-center, randomized Phase III study evaluated continued treatment (imatinib) for an additional three years (6 years in arm 1) compared to discontinuation (3 years in arm 2) in patients with localized GIST who had undergone surgery and were at high risk of relapse. The primary endpoint was disease-free survival. Secondary endpoints included overall survival, time to imatinib resistance, response after reintroduction of imatinib in the event of a relapse, and the safety of the treatment.

From December 24, 2014, to April 4, 2023, 136 patients aged ≥18 years with a localized GIST who had undergone surgery, were at high risk of relapse, and had been treated with imatinib for 3 years, were randomized. Fourteen centers participated in this trial. With a median follow-up of 55 months after randomization, it was found that disease-free survival, or progression-free survival (PFS), was significantly higher in the 6-year arm. The time to imatinib resistance, survival, adverse events, and quality of life did not differ between the two groups.

The benefits of six years of adjuvant treatment should therefore be considered from a long-term perspective. The median PFS with imatinib in patients with metastatic relapse after three years of adjuvant treatment is 36 months. These patients will experience subsequent progression requiring second-, third-, or fourth-line treatments over the long term; at this stage, GISTs are a potentially fatal disease. These findings underscore the importance of prolonged maintenance of adjuvant imatinib for up to six years. ●

In figures

2,410
patients enrolled in a clinical trial

representing 18% of the active list

512
studies open for enrollment (309 active)

Clinical trials designed and implemented by the CLB

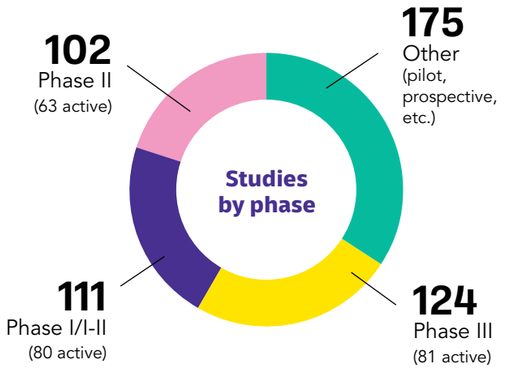
- **All types of research:**
  75 (51 active)
- **Trials:**
  57 (45 active)

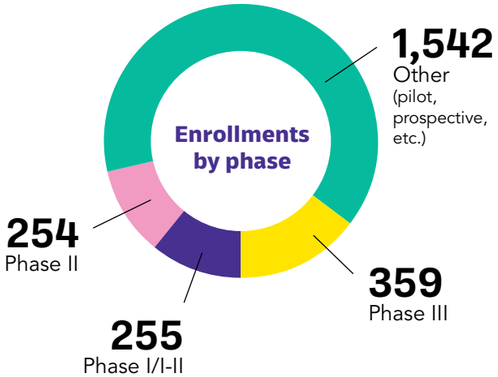
417
interventional research studies (270 active)

1,751
patients enrolled in interventional research

509
patients enrolled in early phase I and II trials of whom **143** in phase I

213
early phase I and II trials (143 active) including **63** phase I trials (45 active)





ELEGANT: a paramedical study for the management of peripheral neuropathies

The ELEGANT digestive cohort, a paucicentric, prospective, comparative study, evaluated the efficacy of compression with surgical gloves on peripheral neuropathies induced by chemotherapies based on platinum derivatives. The primary endpoint was the rate of grade ≥ 2 neuropathies observed with and without a glove, with each patient serving as their own control. Secondary endpoints included the rate of neuropathies of all grades, the duration of sensory neuropathies, overall satisfaction with wearing surgical gloves, comfort, pain, and ease of putting on the gloves. Patients were required to wear two surgical gloves of a size smaller than their own on their dominant hand during oxaliplatin treatment.

Between October 2019 and May 2022, 81 patients aged ≥ 18 years with gastrointestinal cancer (mainly colon, pancreas, and rectum) and scheduled to receive oxaliplatin treatment were enrolled in the study.
The results, presented as a poster at ESMO 2024, showed that wearing surgical gloves during oxaliplatin treatment significantly reduced the risk of developing grade ≥ 2 neuropathies. The reduction was not significant for neuropathies of all grades. Pain, sensitivity, and duration of neuropathies were also reduced by wearing surgical gloves. Finally, patients also reported good levels of comfort, pain, satisfaction, and ease of putting on the gloves.

In conclusion, compression with surgical gloves is effective in reducing oxaliplatin-induced neuropathy. It satisfies patients and is an easily implemented preventive measure. These results contribute to better prevention of peripheral neuropathy and improve quality of life for patients during and after chemotherapy. ●

7. Translational research

The Center organized the first national conference on IVR in Lyon in June 2024

Under the leadership of Dr. Anne-Laure Giraudet, head of the working group on internal vectoring radiotherapy (IVR) of the French Society of Nuclear Medicine (SFMN), and building on recent advances in clinical and fundamental research, the first conference dedicated to IVR was held in Lyon on June 17 and 18, 2024, bringing together more than 300 people from France, Belgium, Switzerland, and North Africa.

This first conference was held at the Institut Lumière, with the support of several partners (Operandi, Iron, the CLARA Cancer Research Cluster, and three Integrated Cancer Research Sites (SIRICs): LYriCAN+, the Montpellier SIRIC, and ILIAD). This conference offered a rich and varied program, bringing together different areas of expertise and all the professions and stakeholders involved in IVR, from pre-clinical to clinical routine, including the ASNR (French Authority for Nuclear Safety and Radiation Protection) and patient associations. These two days showed that the field of IVR, the research associated with it, as well as patient care, are expanding rapidly. They also made it possible to initiate collaborative ventures that will lead to the drafting of SFMN guidelines on IVR. ●

International Scientific Advisory Board of LYriCAN+, the SIRIC of Lyon

LYriCAN+, an Integrated Cancer Research Site (SIRIC) in Lyon, is a translational research program of excellence that was certified in 2023 for a period of five years. This project, led by Prof. Jean-Yves Blay, is supported by the Cooperative Healthcare Consortium Lyon University Oncology (CHC LUC). It is based on two hospital structures, the Centre Léon Bérard and the Hospices Civils de Lyon, and has six partners: the International Agency for Research on Cancer (IARC), the National Institute of Health and Medical Research (Inserm), the National Center for Scientific Research (CNRS), Claude Bernard University Lyon 1, the Synergie Lyon Cancer Foundation, and the National Institute for Research in Digital Science and Technology (INRIA).

On October 18, 2024, the first international Scientific Advisory Board meeting of LYriCAN+ was held at the IARC.

The event brought together the 11 members of the Scientific Advisory Board and the LYriCAN+ community for a day of presentations and discussions. At the end of the day and after deliberation, the committee highlighted the quality of the research conducted within the Lyon SIRIC. It also fulfilled its advisory role by putting forward some points for attention and improvement. Over the five-year duration of the project, LYriCAN+ is expected to reconvene its Scientific Advisory Board before the end of the project. ●

Creation of a computational biology department

In biology, and in cancer research in particular, data production is growing exponentially. Mathematical and computer modeling skills combined with biology have become essential. The arrival in recent years of new experimental technologies, such as single-cell techniques and spatial omics, has enabled researchers to generate large volumes of data. Faced with this challenge, the directorate of research of the CLB and the CRCL decided to develop a new research area dedicated to computational biology. For this purpose, it created a new department at the CLB, led by Arnaud Bonnaffoux. The department is tasked with developing and applying methods of data analysis, mathematical modeling, and simulation techniques in order to study biological systems. Access to this data, combined with the use of artificial intelligence, promises to greatly accelerate the identification of biomarkers of interest and the design of new treatments. ●

A European project to improve the prevention of ENT cancers

Prof. Pierre Saintigny is leading the European INTERCEPTOR (Intercept Oral Cancer) program funded by the COST Association European Cooperation in Science and Technology, in partnership with the International Agency for Research on Cancer.

This project aims to improve understanding of oral lesions with potential for malignant transformation. Its objectives are to build a network of clinicians and researchers in Europe interested in preventing oral cancers and devising prevention strategies for the future. The main focus is on personalized prevention tailored to each patient, for example by using biological information collected from oral mucosal samples or visible precancerous lesions. Coordination of the network was finalized in 2024 with the organization of a workshop on the prevention of oral cancers held on January 11. The workshop provided an opportunity to discuss various European programs implemented to reduce mortality and improve patients' quality of life through the early detection of oral lesions that can precede the onset of cancer. The discussions led to the identification of two strategic actions: on the one hand, raising awareness among the general public and political decision-makers, and on the other hand, working on how to structure and share the data generated, using existing or developing European initiatives (e.g., UnCAN.eu, SPECTA-EORTC, and EURACAN). ●

> *See also SNIPE page 53.*

In figures

6 patents filed

4 start-ups accommodated

2 start-ups created

70 new collaboration agreements signed

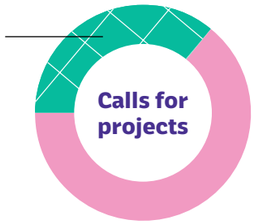
22 participations in European projects

37 agreements for the transfer of biological sampless

19 confidentiality agreements signed

158 responses
to calls for projects

39% success rate



8. Fundamental research

The care-research continuum is a strength

The Centre Léon Bérard owes its strength and uniqueness to the proximity of researchers and doctors on a single site. Our facility encourages this close contact, with the aim of cutting the time between scientific discoveries and the development of new treatments. This policy is based on the care-research continuum, which combines clinical research conducted at the patient's bedside, fundamental research focusing on the mechanisms of tumor biology, and translational research that enables us to translate discoveries into applications.

At the Centre Léon Bérard, this continuum relies for fundamental and translational research on the Cancer Research Center of Lyon (a cancer research facility accredited by the University of Lyon 1, Inserm, CNRS, the Centre Léon Bérard and, as hospital partner, the Hospices Civils de Lyon), and for clinical research on the Directorate of Clinical Research and Innovation (DCRI). ●

In figures

399
CLB + CRCL scientific publications

289
CRCL scientific publications
including **29** in journals with an IF>10

591
members of the CRCL
of whom **212** are researchers
and teacher-researchers

42
different nationalities at the CRCL

The CRCL is developing its scientific organization

Structured into two departments, TERI (tumor escape, resistance, and immunity) and CITI (cancer initiation and tumor cell identity) since 2019, the CRCL developed its scientific organization in 2024. The two departments are being replaced by five thematic areas:

— Tumor initiation/prevention;

— Tumor progression/oncogenesis;

— Microenvironment/tumor heterogeneity;

— Immunology, inflammation/immunotherapy;

— Resistance/therapy.

Each CRCL research team is affiliated with one or more of these areas depending on the focus of its scientific project.

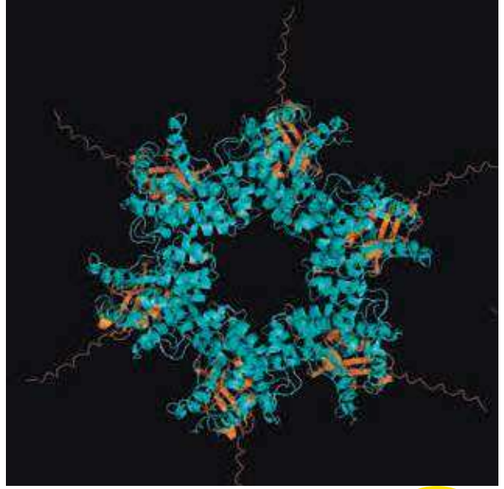
This new scientific organization aims to make the CRCL's scientific potential clearer to its external audiences: collaborators, funding bodies, etc. ●

Two new research teams at the CRCL

Two new research teams were officially created at the Cancer Research Center of Lyon (CRCL) on January 1, 2024. Each team is led by two CRCL employees. The creation of these teams is part of a strategy to support internal scientific projects with great potential.

The first team, entitled 'Unconventional tumor epitopes, antigen presentation and T-cell engineering', is led by Prof. Stéphane Depil, an oncologist and researcher at the Centre Léon Bérard, and Dr. Jenny Valladeau-Guilemond, research director at Inserm. The team's scientific project focuses on identifying new families of antigens that are both tumor-specific and shared between patients, with a view to developing new vaccine strategies or immunotherapies using tumor antigen-specific T lymphocytes.

The second team, 'Gastroenterology and health technologies', is led by Dr. Benjamin Gibert, a researcher at the CNRS, and Prof. Thomas Walter, University Professor and Hospital Practitioner at the Hospices Civils de Lyon (HCL). Their scientific project centers on gaining a detailed understanding of the development of digestive cancers in humans and on developing new dedicated therapies, particularly for neuroendocrine tumors. ●



Research on display !

In the fall of 2024, the Cancer Research Center of Lyon unveiled an exhibition along Boulevard Jean XXIII, which gave the people of Lyon a unique perspective on the research conducted in its laboratories.

Comprising 13 panels, this open-air exhibition offered passers-by a visual and informative experience, allowing them to observe the fascinating world of laboratories as they walked along the street – a world full of unusual objects and with a unique atmosphere. Scientific imagery, often esthetically pleasing and striking, reveals another facet of research work. This exhibition is also a means of highlighting the efforts of research teams in the daily fight against cancer. ●

Scientific breakthrough: CRCL researchers identify immune cells responsible for certain cancers

Nearly one in three cancers develops as a result of chronic inflammation, the origin of which remains unknown. In a study published in the journal *Nature Immunology,* the CRCL's 'TGF-beta and immune response' team, led by Dr. Julien Marie, has identified lymphocytes involved in inflammatory processes that may be responsible for the development of these cancers. This work opens up new prospects for treatment and prevention.

The researchers focused in particular on a population of immune cells called TH17 lymphocytes, which are already known to be implicated in numerous inflammatory diseases, such as multiple sclerosis and Crohn's disease.

They were able to show, for the first time, that there are in fact eight subtypes of TH17 lymphocytes with distinct roles. One of these has a tumorigenic role, meaning that when certain activation brakes are released, this lymphocyte will contribute to the development of cancer. When they come into contact with these TH17 cells, intestinal cells that were previously healthy become cancerous.

The scientists then showed that this tumorigenic population is increased in patients at high risk of cancer. Finally, they also determined that a protein, the cytokine TGF-β, is capable of inhibiting the formation of tumorigenic TH17 cells.

"This study may raise questions for clinicians about the long-term use of immunotherapies in cancer patients, a treatment that aims to stimulate lymphocytes," emphasizes Julien Marie.

While immunotherapies have transformed cancer care, they are also known to cause chronic intestinal inflammation. It is therefore important to consider, for a given patient, the risks that immunotherapy may be accompanied by the emergence of tumorigenic TH17 lymphocytes, which could eventually lead to the development of another cancer. Furthermore, this study lays the foundations for developing new preventive cancer therapies by blocking the emergence of the TH17 subtype implicated by the scientists in this work. ●

Cutting-edge technologies for increasingly ambitious research

Scientific advances often go hand-in-hand with the use of new technologies that enable researchers to obtain previously inaccessible information or carry out experiments in a short time that might otherwise have taken weeks or even months. This is why the CRCL is constantly on the lookout for emerging disruptive technologies, so as to enable its researchers to carry out ambitious projects. In this context, in 2024, the center acquired Xenium, one of the very first spatial transcriptomics devices to be deployed in France. The arrival of this equipment opens up new prospects, making it possible for the first time to locate precisely, within tissue, cells with genetic mutations that could lead to cancer. This technology will enable us to improve prognoses and provide a better understanding of the mechanisms of resistance to treatment, and could ultimately influence the personalized care provided to patients.

CRCL researchers have also seen new possibilities appearing in the field of cytometry with the acquisition of the FACSDiscover S8. The first to be installed in France, this latest-generation cytometer is the first instrument to combine spectral flow cytometry with real-time spatial and morphological information, enabling better characterization of the different types of cell populations present within tumors.

It is important to emphasize that the acquisition of these very expensive technologies is strongly supported by the generosity of donors and corporate sponsors of the Centre Léon Bérard. ●

Joining forces against cancer

9. Education and training

A nationally and internationally recognized center of expertise and referral center in cancer research and treatment, the Centre Léon Bérard's mission is to transfer its knowledge to the professionals of today and of the future.

It also maintains the competences of its staff through an ambitious training program.

Teaching and training are structured along three main lines:

- the Training Institute;
- university teaching;
- the internal training program.

The Training Institute

As part of its 2021-2025 project, which is integrated into the Centre Léon Bérard's Strategic Initiative, the Institute has the aim of consolidating its current range of courses by enriching it with new topics, developing new forms of learning, such as e-learning, and creating a new basic training course for medical secretaries, which will eventually be submitted to the National Register of Professional Certifications. ●

Highlights

In 2024, the Training Institute used the administrative management platform set up in 2023 on a daily basis, saving considerable time and facilitating communication with participants. This platform enables us to manage the various training courses, registrations, and shared documents.

The CLB's Training Institute also obtained the renewal of its national certification for the quality of training bodies, Qualiopi, in June 2024. ●

Focus on the ‘Sarcoma’ training course

Aimed at doctors working in oncology, whether exclusively or not exclusively (oncologists, radiotherapists, surgeons, anatomopathologists, organ specialists, industrial physicians), this training course provides an understanding of the different types of sarcomas and connective tissue tumors, their diagnosis and treatment. It also addresses the concept of comprehensive and multidisciplinary care (patient information, continuity of care, and supportive care) as part of a quality approach. The Centre Léon Bérard is one of France’s referral centers for the treatment of sarcomas. Dr. Armelle Dufresne and Dr. Mehdi Bramhi, medical oncologists at the CLB, are the new coordinators of this training program. Ten physicians were trained in 2024.

In figures

306 persons trained

of whom

- **60** doctors
- **25** radiotherapists
- **12** oncologists
- **9** pharmacists
- **4** hospital practitioners
- **2** surgeons
- **1** CLCC specialist assistant
- **1** head of clinic in oncology
- **1** general practitioner
- **1** anesthetist

35 training courses offered

69 training sessions

Higher education

University and inter-university degrees managed in conjunction with Claude Bernard University Lyon 1, open in 2024

- **UD* in senology:**
  5 sessions of 2 days each per academic year, open in September 2024 for 2024-2025
- **IUD** in Oncogeriatrics:**
  5 sessions of 2 days each per academic year, open in September 2024 for 2024-2025
- **IUD in pediatric pain and palliative care:**
  5 sessions of 2 days each per academic year, open in September 2024 for 2024-2025
- **IUD in supportive care in oncology:**
  3 sessions of 5 days each per academic year, open in September 2024 for 2024-2025
- **European IUD in surgical practices in oncology:**
  7 sessions of 2 to 3 days of teaching per academic year, of which 2 organized by the CLB, open in September 2024 for 2024-2025
- **IUD Respite and Support for Informal Carers :**
  4 sessions of 2 days each per academic year, open in September 2024 for 2024-2025
- **IUD Cancer in Adolescents and Young Adults (AYA):**
  2 modules of 2 days out of 6 organized at the CLB, open in September 2024 for 2024-2025

* UD: university degree
**IUD: inter-university degree

In figures

15 university teachers, of whom
— **5** assistant clinical directors
— **10** university lecturers – hospital practitioners (PUPH)

83 non-university doctors and nurses participating in university teaching

24 medical forums organized

4 meetings of clinicians/ researchers organized

92 courses and clinical cases/ teaching sessions in the 2nd cycle of medical studies

153 courses/teaching sessions in the 3rd cycle of medical studies

Doctoral School and Master's Degree in Cancer

Since 2023, Lyon has offered a comprehensive range of higher education programs in the fight against cancer:

— a CanBioS doctoral school (Oncology, Biology, Health), created in 2023,

— a Master's Degree in Cancer.

Precision Oncology International Summer School

The *Graduate Initiative InnovInOnco* (Claude Bernard University Lyon 1) offers, among other things, an international summer school on Precision Oncology, co-sponsored by the Master's in Cancer program, the Centre Léon Bérard, the International Agency for Research on Cancer (IARC), Grenoble Alpes University, and CERN. In 2024-2025, InnovInOnco also funded six outgoing mobility programs for the Master's in Cancer, set up four *Excellence Scholarships* (USA, Vietnam, Pakistan), and funded nine participants in the *Precision Oncology* summer school, including five international students. ●

CanBioS Doctoral School

Administratively part of Claude Bernard University Lyon 1, this is the 18th doctoral school of the University of Lyon. The Cancer Research Center of Lyon (CRCL), the departments of Cancer Prevention and the Environment; Translational Medicine; and Human and Social Sciences of the CLB, as well as LUMEN (Department of Nuclear Medicine HCL-CLB), are affiliated to CanBioS.

This new doctoral school, which is already welcoming students in the first year of their PhD program, is managed by Director Prof. Caroline Moyret-Lalle and Deputy Director Prof. Agnès Bernet.

In 2024, there were **84** students enrolled, **38** in the first year, **47** in the second year, and **163** HDR students (Habilitation à Diriger des Recherches – French post-doctoral degree allowing its holder to supervise PhD students). ●

Master's in Cancer program in 2024-2025

Created in 2013 as part of the Cancer Research Center of Lyon (CRCL) and the Excellence Laboratory (LabEx) DEVweCAN, the Master's in Cancer degree course is the only one in France to offer a complete study program in oncology in years 1 and 2 (M1 and M2).

In 2024, the M2 'Personalized Medicine in Oncology' program was being restructured, and an M2 'Cancer Bioengineering' program was created.
— M1 Cancer: 52 students, including 3 dual (work + study) students, one of whom is at the CRCL
— M2 Biology of Cancer: 30 students
— M2 Therapeutic Innovation in Cancer Research and Treatment: 24 students, including one dual (work + study) student at the CLB in Clinical Research
— M2 Cancer Bioengineering (new): 20 students ●

Stratification and interception of pre-neoplastic mechanisms: the objectives of the SNIPE project

The SNIPE* project, funded by the MSDAvenir foundation for a period of four years and led by Patrick Mehlen and Pierre Saintigny, aims to train doctoral students in 10 CRCL teams to study various biological mechanisms involved in the progression of pre-neoplastic lesions.

The project's goal is to improve our understanding of the biological mechanisms involved in early transformation and their spatial and temporal dynamics, in order to develop future interception strategies aimed at reducing the incidence of cancer.

The objective of SNIPE is to reduce the burden of cancer by:

— improving our understanding of the biological mechanisms underlying transitions from normal to invasive malignancy

— improving risk stratification in patients with pre-neoplasia

— developing interception strategies to prevent malignant transformation.

It will thus make a significant contribution to defining new approaches to personalized preventive medicine, and enable a group of students to be trained in this area, to develop real expertise. These students will be attached to the new doctoral school, CanBioS, which opened its doors in September 2023 (director Caroline Moyret-Lalle). ●

** Stratification and Interception of Preneoplasia*

Continuing education

1,643 employees attended at least **1** training course

3,608 employees taking study leave (one or more training courses)

2.74% of gross payroll devoted to continuing professional education

34,877 hours of training

10. Social and environmental policy

The CLB takes action for Sustainable Development Week

For the first time, the Environmental Committee of the Centre Léon Bérard took action for European Sustainable Development Week, from September 18 to October 8, 2024. There were two major events with information stands for employees, and a 'Bring in your old phone' campaign was organized. These two days were an opportunity to disseminate information on the various actions carried out at the CLB to protect our environment, such as waste management and energy consumption. To promote a plant-based diet to limit meat consumption and, consequently, reduce greenhouse gas emissions, a self-service challenge was organized. Participants were asked to choose a vegetarian dish served by the chefs of the CLB's catering provider, SHCB, every day in order to win two meals at a vegetarian restaurant. ●

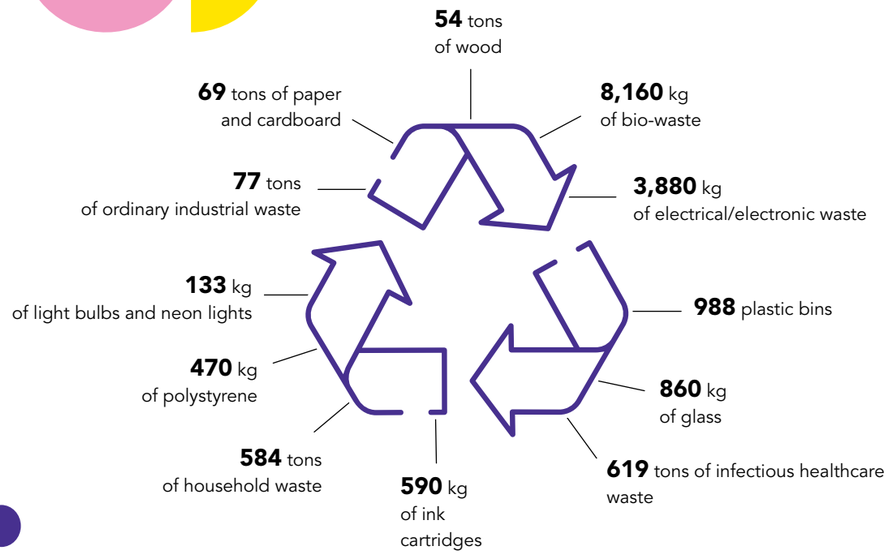
Climate Fresk: Centre Léon Bérard staff get involved

Since 2023, the Centre Léon Bérard has offered its employees the opportunity to participate in the Climate Fresk, a three-hour workshop that uses a visual tool to explain the causes and effects of climate change based on the IPCC reports. Seventeen employees from all departments of the CLB have agreed to become facilitators for the Fresk and to train other employees in turn. This initiative is part of the Center's environmental policy, which was initiated in 2005. Nearly 200 employees were trained in 2024 ! ●

Installation of new recycling trash cans for biodegradable waste

During 2024, new trash cans were installed to facilitate the sorting of biodegradable waste. They were placed near catering areas to collect bio-waste (food, kitchen waste, etc.). In 2024, 8,160 kg of bio-waste were recycled at the CLB. ●

In figures



CLB JOBS: first recruitment event for nursing professions

The first CLB JOBS, a recruitment event for the nursing professions at the Centre Léon Bérard, was held in September 2024. This evening event, which will continue to be provided on a long-term basis, is a unique opportunity to discover the hospital's various departments (operating unit, day hospital, pediatrics) and talk directly with care staff at stands designed to be attractive and informative.

This immersive experience is offered to recent graduates, students, and experienced professionals who may be interested in applying to the CLB. The goal is to encourage discussion and frank dialogue with peers by taking the drama out of cancer care and, ultimately, to recruit care staff.

> At the CLB, our teaching mission is illustrated, for example, by the integration **of more than 600 trainees each year** (work experience, retraining, diploma courses, etc.). ●

The management values guide is now available!

In March 2023, the Centre Léon Bérard initiated a reflection process* to identify the managerial values shared by all managers at the institution. Following participatory workshops organized in 2023, a guide entitled *Manager au CLB, partageons nos valeurs* (Manager at CLB, sharing our values) was produced and distributed in 2024.

It presents the seven core values recognized by all managers at the institution: responsibility, trust, fairness, humanism, unity, respect, and transmission. Its purpose is to create consistency and harmony in the day-to-day conduct, actions, and attitudes of managers within the management community. This management guide is intended to be a living, useful and usable tool, regularly updated to reflect changes in society, the institution and management practices. It is based on a set of values that reflect the spirit and ethics of this community. Through the guide, CLB managers commit to complying with it and using it to deal with managerial situations in their daily work. To bring these values to life, quarterly meetings are offered to managers in the form of gatherings, workshops, or coffee breaks. These group sessions provide an opportunity to share experiences from day-to-day management in the context of the managerial values upheld by the institution.

A management training pathway was also implemented in 2024 with three programs tailored to the managerial profiles of our institution: employees who become managers through internal promotion, experienced managers already working at the CLB, and managers who have just been recruited by CLB. The new training courses offered to managers in 2024, which respond to the societal changes we can observe, include 'Managing atypical personalities', 'Remote management', and 'Developing a mediation approach'. ●

** From the 2021-2025 Social and Managerial Project*

11. National and international partnerships

New collaborations to guarantee local care in the Auvergne-Rhône-Alpes region

As part of its role as a regional reference and referral center, the Centre Léon Bérard is developing advanced oncology consultations to ensure local patient care. The aim is to support local teams facing pressure in terms of medical staffing. Around 20 doctors from the CLB therefore regularly visit various regional hospitals to consolidate existing networks and improve equality of access to high-quality cancer care. These consultations are in addition to the Center's Multidisciplinary Consultation Meetings (MCM), which are open to institutions in the region and enable them to refer complex cases to the CLB for expert assessment.

Following on from the collaborative ventures established in recent years with the Valence Medical Center for hematology and the hospital complex Groupement Hospitalier Portes de Provence (Montélimar) for oncology, new partnerships were formed in 2024 with the Drôme-Nord Hospitals (Romans-sur-Isère), Bourg-en-Bresse Hospital, and Roanne Hospital. These collaborative ventures both strengthen local networks and, where necessary, facilitate access for patients from these institutions to referral care and clinical trials open at the CLB. The Center thus contributes to maintaining and developing local, high-quality care in the region. ●

Development of programs of educational Multidisciplinary Consultation Meetings for Egyptian and Moroccan healthcare professionals

Sharing the expertise of its internationally renowned specialists to promote access to therapeutic innovation abroad is also one of the CLB's key ambitions.

In 2024, the BRIDGE program, organized in partnership with AstraZeneca Morocco, brought together teams from the Casablanca University Medical Center - Mohammed VI Center for Cancer Treatment and specialists in ovarian cancer care from the Centre Léon Bérard led by Prof. Isabelle Ray-Coquard. The doctors had the opportunity to discuss innovative therapeutic strategies for the treatment of ovarian cancer, based on real clinical cases, for which treatment methods have evolved significantly in recent years.

As part of the Presidential Campaign for Women's Health, organized by the Egyptian Ministry of Health in collaboration with AstraZeneca Egypt, educational MCMs were also used to promote access to innovative treatments for Egyptian women with breast cancer. Online meetings were organized between Egyptian institutes and universities (Sohag Cancer Center, Nasr City Cancer Center, National Cancer Institute, Ain Shams University) and the CLB's breast cancer team led by Dr. Thomas Bachelot to discuss the best treatment strategies for different clinical situations. ●

In figures

International patients
(excluding International Agreements, European Health System, State Medical Assistance - AME)

506 requests

135 quotes sent

79 quotes accepted:

— **26** Second Medical Opinions and Multidisciplinary Consultation Meeting Submissions

— **22** Follow-up Consultations or Video Consultations

— **8** Pathology Review

46 patients

came to the Centre Léon Bérard:

— **23** for follow-up consultations

— **9** for radiological examinations

— **7** for surgery

— **4** for chemotherapy treatments

— **2** for radiotherapy

— **1** for a hematological assessment

Improving patient access to clinical trials and innovation is a key focus of our research

Clinical trials in oncology contribute greatly to advances in cancer treatment and represent important therapeutic options for patients. At the Centre Léon Bérard, 18% of patients being cared for are enrolled in a clinical trial. In France and worldwide, fewer than 8% of adult cancer patients participate in a clinical trial. This low proportion can be partly explained by the complexity of trial selection criteria, the difficulty of informing the medical community and patients about all existing trials, and the methods of access.

To improve access for patients, Dr. Loïc Verlingue conducted a study comparing several trial matching tools, the results of which were published in the journal *Precision Oncology*, part of *Nature*. The research team is now looking at evaluating the addition of Large Language Models (LLMs), such as OpenAI, to existing trial matching tools for other types of reports, which could enable more patients to access clinical trials that more precisely target their type of cancer.

The issue of patient access to clinical trials also arises for patients located in cross-border areas. This is the central question of the 'Trial Match 2' project, coordinated by Loïc Verlingue. This is a Franco-Swiss Interreg project carried out in collaboration with Geneva University Hospitals (HUG) and two industrial partners, Coexya and Qim Info. This project addresses the technical issues that need to be resolved in order to facilitate access to clinical trials in a geographical area that is more suitable for patients. On November 12, 2024, a scientific conference was held in Annecy on improving access to clinical trials in oncology through the use of artificial intelligence techniques. The opening address was by Virginie Duby-Muller, Member of Parliament for the 4th constituency of Haute-Savoie, who spoke about the challenges facing this cross-border region. There are many challenges to be tackled – technical, political, regulatory, and administrative. A round table discussion, moderated by Dr. Loïc Verlingue, provided an opportunity to share the views and experiences of doctors, CIOs, and experts on data in the context of patient referral in cross-border areas. This work is part of larger-scale initiatives at European level, in which CLB physicians are heavily involved. ●

12. Communication

Media relations

The Centre Léon Bérard was mentioned in:

1,453 articles published in the print and digital media and in radio and television reports

90 requests from journalists dealt with

38 press releases sents

2 press events organized (press visit during the Prevention Olympics, 5 years of partnership with chef Têtedoie)

Events

The Centre Léon Bérard organized

20 events in 2024 for patients/family members

12 webinars and conferences

Website

206,000 individual visitors (+13%)

727,000 page views (+12%)

110 news items or events published on our website

90 news items published and 86 additional pages created on the website

887 requests for information from patients, family members, healthcare professionals, students, companies, and the general public were handled by the communication service, in conjunction with the Meeting and Information Space (MIS).

Internal communication

6 in-house magazines published

116 institutional newsletters and e-mails sent to employees at the site

4 meetings of new recruits

Christmas market

Social media

25,107 followers (+44.3% or 7,714 new followers)

156 posts

24,861 followers (+47.9% or 8,061 new followers)

26 posts

14,364 followers (+5.4% or 736 new followers)

179 posts without stories

5,794 followers (+20.7% or 994 new followers)

486 posts with stories

CLB institutional channel:

5,697 subscribers (+1,197), **250,441** views

38 videos posted

Healthcare channel:

836 subscribers (+317), **36,601** views (+94%)

4 videos posted

13. Fundraising

Donations and bequests received in 2024

Donations and bequests received totaled €12,480,678.

These are all the donations and bequests made over the course of the year by our donors (individuals, associations, companies, etc.) to support innovation in cancer research and support for all patients – adults, adolescents and children.

The figures detailed below are from the 'Annual statement of use of resources collected from the public' shown on pages 66-67 and certified by the auditors. ●

Donations received in 2024

€8,420,249

(+4.6% compared with 2023)

Thanks to the dedication of close to 43,000 donors (individuals, companies, associations, foundations, etc.), donations received in 2024 totaled €8,420,249.

The generosity of our donors enabled us to set a new record and increase our donations by nearly 5% compared to 2023, which was an exceptional year due to the 100th anniversary of our institution. ●

Bequests in 2024

€4,060,429

(+3% compared with 2023)

This amount corresponds to the sum of sales made during the year of assets bequeathed to the Centre Léon Bérard (movable property, real estate) or financial products (life insurance, etc.). The amount may vary significantly from one year to the next, according to sales made or cash available through life insurance policies, for example. ●

Fundraising and operating expenses

These expenses represent only 10% of the total amount of funds raised from the general public.

— **€770,000** corresponds to the amount needed to make appeals for donations from the public (telephone appeals for donations, mail shots, e-mails, events, websites), as well as donor management software, sending tax receipts, etc.

— **€437,000** of which €87,000 of expenses linked to the management of bequests (co-ownership charges for bequeathed real estate assets, bills for repairs and maintenance of these assets, disposal costs, local taxes, grave maintenance, etc.). The remaining portion corresponds to the salary expenses of the entire donor relations department. ●

In figures

43,000 donors

supported the CLB teams with one or more donations during the year,

of whom **more than 42,000 donors** through income tax or property wealth tax. Nearly 10% of them donate by direct debit.

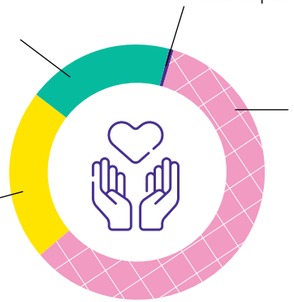
Overview of donors to the CLB

€24,500

from close to 154 municipalities in the region that voted in favor of a grant to support the Center and its public interest missions.

€1,571,000

thanks to more than 260 associations, large and small, which support our actions by making donations or organizing events to help the Center's research and care teams*.



€4,985,000

generously provided by more than 42,000 individual donors who supported the Centre Léon Bérard teams with one or more donations during the year.

€1,839,000

in corporate sponsorship from more than 370 companies, foundations or endowments.

**This amount does not include funds received through calls for projects.*

What was achieved with the donations

In 2024, €7,297,835 were spent on supporting the research conducted at the Centre Léon Bérard and €367,937 on projects to support patients – children, adolescents and adults.

Below are a few examples of ways in which donations were used during 2024.

€3,083,677

40 positions funded in connection with research and patient support programs

More specifically, these were 40 full-time-equivalent positions, mainly in research: post-docs, laboratory technicians, clinical research associates, etc. These positions involve fundamental, translational and clinical research, PASCA (Healthcare Pathway throughout Cancer), etc. Donations and bequests enable us to recruit new staff members to strengthen teams or launch new projects, while we wait for longer-term funding to be secured. Positions related to patient support, such as the work of a socio-esthetician or of adapted physical activity instructors, are also funded through donations. ●

€1,274,000

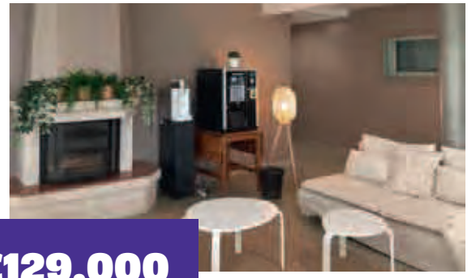
Continuation of work on the Christophe and Rodolphe Mérieux auditorium

Begun in 2023, work on the Christophe and Rodolphe Mérieux auditorium continued throughout 2024. Designed as a place for scientific exchange as well as for socializing, located at the heart of the research buildings, this auditorium will be open to all employees of the CLB and CRCL. With a capacity of nearly 200 seats and new workspaces, it will enable us to organize a variety of events, such as internal seminars for research and care staff, scientific conferences for the Center's researchers and doctors, and international seminars to share global scientific innovations and advances. The new building is scheduled to open in fall 2025. ●

€187,132

Improving the daily lives of the patients we care for

Every year, donations to the Centre Léon Bérard enable us to fund care procedures and activities aimed at improving patient comfort and care, such as socio-esthetic workshops, hairdressing, foot reflexology, and psychomotor therapy. Musical, artistic, and recreational activities for children being treated at the Institute of Pediatric Hematology and Oncology (IHOPe) have also been made possible, not to mention the purchase of gift cards during the holiday season. All of these activities are offered to patients free of charge. ●



€129,000

Renovation of the Maison Léon Bérard continues

Opened at the end of 2021, the 'Maison Léon Bérard' is one of France's very first hospital hotels. Located just 600 meters from the Centre Léon Bérard, this facility offers accommodation to patients who live a long way from Lyon and are receiving regular treatment at the Center without the need for conventional hospitalization. With 30 rooms, communal areas and a garden, the Maison Léon Bérard provides pleasant accommodation outside the hospital, while remaining in close proximity to the healthcare teams. Renovation work has been undertaken with the support of corporate sponsors to modernize the rooms and communal areas. The cost of accommodation is covered in full by the Caisse primaire d'assurance maladie (French national health insurance fund), with no charges to patients. ●

New high-precision research equipment

Funded entirely by donations, the Discovery Ultra is a high-precision automated system for staining tissue prior to analysis under a microscope. This technique makes it possible to visually identify the presence and location of proteins or RNA sequences in tumor samples. A real accelerator of innovation that directly benefits patients, this equipment enables us to specifically mark tumor biomarkers, evaluate the response to treatment and also validate therapeutic targets. Capable of processing several samples in parallel and automating complex protocols, this tool is a major asset, particularly in research on immunotherapy and targeted therapies. It contributes to a better understanding of tumor heterogeneity and the development of personalized treatments. ●

€213,000

Those who support us

The general public, associations and regional companies rally round the Centre Léon Bérard throughout the year, notably by taking part in the events organized by our institution in aid of cancer research or support for patients.

‘À vos Baskets’ (Put on Your Sneakers) challenge

From June 3 to 26, 2024, the Centre Léon Bérard organized the intercompany challenge ‘À vos baskets’ (Put on Your Sneakers’), a sporting and digital challenge focusing on the benefits of physical exercise.

Using an app that collects data from phone pedometers, ‘À vos baskets’ aims to encourage employees of participating companies to be as active as possible on a daily basis, regardless of their physical condition or sporting activities.

This challenge is an opportunity for participating companies to bring their teams together, promote prevention, and raise awareness of the health benefits of physical activity.

At the end of the challenge, the steps taken by participating employees are counted using the app, and the points earned through the steps and entertainments are added up and converted into a donation that each company makes to the Centre Léon Bérard.

Twenty-five companies and more than 6,200 employees rallied together to take as many steps as possible against cancer. Their efforts raised a record €214,000 !

These donations will help continue the development of adapted physical activity and support research at the Centre Léon Bérard. ●

La Scintillante

New participation and fundraising records for the 5th edition of La Scintillante in 2024!

For the second year in a row, the Centre Léon Bérard’s fundraising sports event was held in Tête d’Or Park in Lyon.

The morning’s program included two untimed urban courses, open to all, of 5 and 9 km, to be completed at each person’s own pace, whether walking, power walking, or running.

Musical entertainment, group warm-ups, a refreshment stand, and a charity store were also on hand to make this a festive and sociable morning.

Nearly 5,700 participants, including family, friends, and colleagues of all ages, gathered on Sunday, September 29, for a common cause: the fight against cancer.

Donations totaling more than €341,000 were collected during this event to support cancer research, bringing the total amount donated to research since the first La Scintillante in 2020 to over €1.2 million.

This is a wonderful message of hope for patients, researchers and caregivers !

We wish to thank all the participants, partners, companies and volunteers who contributed to the success of this fifth La Scintillante! ●

Associations

Every year, the Centre Léon Bérard can count on the support of more than 260 associations in the region, of all sizes and with a variety of social missions. These associations work hard to support our cancer research activities and contribute to improving the comfort of patients, both adults and children.

They support the Center in various ways, including through events they organize themselves, such as sales, concerts, sports tournaments, races, and hikes. Their support may also take the form of spontaneous donations or donations in memory of a member who has died.

Their presence at our side is invaluable to us and actively contributes to funding our missions. Our thanks go out to them and to their volunteers for their energy and commitment. ●

Table showing the supply and use accounts

Annual account of the use of resources raised from the public

This table has been certified by our auditors, Advolis Orfis. The Donor Relations team is also happy to make the Statement of Sources and Uses of Income available to anyone wishing to consult it.

2024

USE OF FUNDS BY DESTINATION (in euros)	OF WHICH DONATIONS FROM THE PUBLIC
USE OF FUNDS DURING FINANCIAL YEAR	
1. Social programs	**5,879,299**
1.1 Carried out in France	5,879,299
Actions carried out by the institution	5,879,299
• *Fundamental/translational/clinical research*	*5,648,247*
• *Patient care & quality of life*	*231,052*
Payments to a central institution or to other institutions operating in France	-
1.2 Carried out abroad	-
Actions carried out by the institution	-
Payments to a central body or to other bodies operating abroad	-
2. Fundraising expenses	**770,192**
2.1 Costs of appeals for donations from the public	770,192
2.2 Search costs for other resources	-
3. Operating expenses	**437,017**
TOTAL USE OF FUNDS	**7,086,508**
4. Allocation to provisions and depreciation	**-**
5. Dedicated funds carried forward for the year	**-**
Surplus from donations from the public in the financial year	5,394,170
TOTAL	**12,480,678**

2024

RESOURCES BY ORIGIN (in euros)	TOTAL
RESOURCES IN THE FINANCIAL YEAR	
1. Resources linked to donations from the public	**12,480,678**
1.1 Contributions without consideration	-
1.2 Donations, legacies and sponsorships	12,480,678
• *Manual donations*	*8,420,249*
• *Bequests, donations and life insurance*	*4,060,429*
1.3 Other resources linked to donations from the public	-
TOTAL RESOURCES	**12,480,678**
2. Reversal of provisions and depreciation	**13,684**
3. Use of previous dedicated funds	
Deficit from donations from the public in the financial year	
TOTAL	**13,684**
Deferred resources linked to donations from the public at the start of the financial year (excluding dedicated funds)	**35,762,964**
(+) Surplus or (-) shortfall of donations from the public	5,394,170
Net (-) investments and (+) divestments linked to donations from the public in the financial year	- 1,786,473
Deferred resources linked to donations from the public at the end of the financial year (excluding dedicated funds)	**39,384,345**

Thank you to our 43,000 donors

List of associations and foundations that supported the Centre Léon Bérard in 2024

- ACDS Bénévoles Saint Didier
- A Cloche Pierres
- AVHC
- AAEPL
- ACCA de Saint Pierre Saint Jean
- ACCA La Chapelle de Surieu
- ACCA Saint Amour
- Accueil des Villes Françaises
- AGLM Basket Ball
- Altitude 723 Section Yoga
- Amicale Champenoise des volontaires du sang
- Amicale Classe 1968 de Saint Victor sur Rhins
- Amicale Classe en 5 de Cercié
- Amicale des anciens de Moras
- Amicale des anciens sapeurs-pompiers de Challex
- Amicale des classes en 4 d'Odenas
- Amicale des classes en 5 de Quincieux
- Amicale des classes en 8 de Quincieux
- Amicale des retraites de Solaize
- Amicale des sapeurs-pompiers de Chaponost
- Amicale du Lycée l'Oiselet
- Amicale du personnel municipal de Sathonay Camp
- Amicale groupement classe en 1 de Givors
- Amicale laïque de Brignais
- Amicale laïque de Tarare
- Amicale Loisirs et Rencontres
- Amicale Lycée Béjuit
- Amicale Lycée Wittmer
- Amicale Pétanque Breuglienne
- Amicale sportive Chaleyssinoise
- Amicale sportive Toussieu
- Association des Médecins et Pharmaciens du Cœur
- Apel Immac
- Artisans Commerçants Quincieux
- AS Pompiers de Gerland
- ASS Ansoise Aide Milieu Rural Person Âgé
- Association 111 Des Arts
- Association A Cœur Joie Agglo Grenoble
- Association A Cœur Joie Nord Isère
- Association A Tout Cœur
- Association Amitié et Chansons
- Association Anciens élèves Lycées AELC
- Association Anim'Montbernier
- Association Appel
- Association Arcade
- Association Benjamin Guillard
- Association Bougetavie !
- Association Cancer Agir Tous Ensemble
- Association Cassandra
- Association Centre Cynophile du Val de Saône
- Association Classes en 2 de Chazay d'Azergues
- Association Co Chandieu Cyclo
- Association Cœur Commerçant
- Association Coup de Cœur 07
- Association de défense des victimes de l'amiante
- Association Decla Lab Fabrique
- Association Degom'Crab
- Association des Commerçants et Artisans de Taninges
- Association des Riverains Tarentaise Val d'Isère
- Association Entraide Toutes Manifs
- Association Eurydice
- Association Familles de Julienas
- Association Fnaca Comité
- Association Gérard Philipe
- Association GO-AJA
- Association Gymnastique Volontaire Le Donjon
- Association Hommage Piano
- Association Jet
- Association La Galerie d'Art du Quai
- Association La Randonnée Saint Génoise
- Association La Troupe du Coteau
- Association Le Chœur basien
- Association Le Fil d'Azergues
- Association Le RESE
- Association Les Aïeules de La Route
- Association Les Amis de La Boule
- Association Les Amis de La Tour
- Association Les Amis de Louis
- Association Les Arts à Genay
- Association Les Cop'1 d'abord
- Association Les Jeunes de Saint Germain
- Association Les Roses de La Dombes
- Association Les Voix de l'Amitié
- Association Les Voix du Vallon
- Association Locale d'urgence médicale du Nyonsais
- Association Loire Avec Elles
- Association Loisirs et Sports Joyeuse Savasse
- Association Lou Patois Revin
- Association Lyon Côté Croix Rousse
- Association Marché de la Poire et du Terroir
- Association Moirans Solidarité
- Association Montmerle Classe 94
- Association OGEC École François Gondin
- Association olympique Chandieu
- Association Pédalons Pour Eux
- Association Pérouges Gym Loisirs
- Association Pilates Attitudes 2520
- Association Randonnée Rose du Val d'Abondance
- Association Renaissance de Revel
- Association Roc' N Rose
- Association Rotaract Club Carhaix
- Association Saint Pierre Sport Attitude
- Association Salon des K Fighteuses
- Association Sath O Champ
- Association SFCE
- Association Ski et Montagne de Mions
- Association Solea Tignesf
- Association Soleil d'Automne
- Association Sport et Nature
- Association sportive Caluire Volley Ball
- Association sportive de pétanque et de jeu provençal du secteur de La Voulte
- Association sportive Natation
- Association Saint Marcel Bel
- Association Saint Marcellin Sports
- Association Stantards du Soleil
- Association Svetasangha
- Association syndicale du Lotissement
- Association Tarot des 3 rivières
- Association Tout en souplesse
- Association Un Horizon d'Espoir
- Association Valloires Loisirs
- Association Vers un nouvel horizon
- Association Yes Brest
- Associations des Brancardiers et Hospitalières de Lourdes
- Association Sasha Petit Guerrier
- AVF Charbonnières
- AVF Écully
- AVF Tassin La Demi-Lune
- Bella Italia de Sathonay
- Bridge Club Beaujolais
- Bridge Club du Grand Annecy
- Bron Handball
- Centre Inter Club Lyon Bron
- Chamonix Hockey Club
- Chant D'yeux en Cœur
- Chaponnay contre le cancer
- Charité Bellecour Chez Cuisine et Dépendance
- Chasse Brenthonne
- Chemins Faisant
- Chorale La Villanelle
- Chori Al
- Classe en 3 Les Sauvages
- Classes de Larnage
- Club Cyclotouristes Bisserains
- Club de Bridge de Vienne
- Club de l'Eau Vive
- Club de l'amitié
- Club des Iconiens
- Club du 45ème Parallèle
- Club Porsche Rhône Alpes
- Club sportif Vienne Rugby
- Collectif Triplettes Roses
- Com En Beaujolais
- Comité Aide Prévention Encourage
- Comité Bron Grimma
- Comité d'action Social de la Forteresse
- Comité du Rhône de la Ligue contre le Cancer
- Comité de Haute Savoie de la Ligue contre le Cancer
- Comité de la Drôme de la Ligue contre le Cancer
- Comité de la Saône et Loire de la Ligue contre le Cancer
- Comité de l'Ain de la Ligue contre le Cancer
- Comité de l'Ardèche de la Ligue contre le Cancer
- Comité des fêtes de Massieux
- Comité des fêtes de Saint Romain au Mont d'Or
- Comité des fêtes de Saint Romain au Bourg
- Comité des fêtes de Villeneuve
- Comité des fêtes Malvinois
- Comité Féminin
- Comité Féminin des Savoie
- Comité Interclasse En 7 de Ronno
- Comité Jumelage de Pont De L'Isère
- Comité Place De La Liberté
- Comité régional olympique et sportif
- Communauté Emmaüs de Tarare
- Confédération nationale des Avocats Section
- Confrérie des chevaliers des Minimes
- COST Association
- Courir POUR ELLES
- Courtenay Rugby XV
- Des fourmis dans les pattes
- Domalteri
- Ensemble Vocal Alauda
- Envie d'un Sourire
- Espoir Cancer
- FC Lyon
- Fédération départementale des Foyers Ruraux 71
- Fédération Enfants Cancer Santé
- Fédération Leucémie Espoir
- FFB Centre Val de Loire
- Fondation Alberici Octalfa
- Fondation Arc
- Fondation BMS
- Fondation de France
- Fondation de la Cité Rambaud
- Fondation d'entreprise Fareva
- Fondation des Lions de France David Tafani
- Fondation Flavien
- Fondation Innovation et Transitions
- Fondation pour l'université de Lyon
- Fondation Recherche Médicale
- Fondation Université de Lyon
- Fonds pour la santé des Femmes
- Foyer Les Remparts
- Foyer rural de grand secteur Maconnais Nord
- Foyer socio-éducatif Collège Alain Borne
- French Innovative Leukemia Organization
- FSF
- Fundacio Institut de Recerca Biom. CGI Clinics Barcelona
- Fundación Jimenez Diaz
- GASC
- Hand Ball Club de la Fillière
- Harmonie de Saint Cyr
- Horizons
- Immacgestion
- Institut 26 d'harmonisation énergétique
- Instituts Sœurs Saint Joseph
- Kop Virage Nord
- La Boule en Verne
- La Source de Levigny
- Le Bistro de Tatina
- Le Grenier Solidaire Valserhône
- Les Amis de Rome
- Les Amis des Sentiers
- Les Amis du Courant lyonnais
- Les Bonnes Fées
- Les Copains des 7 de Chuzelles
- Les Cyclotes chaleyssinoises
- Les Emplaques
- Les Étoiles Filantes
- Les Lions de Lyon Sport et Amitié
- Les Montmerlos Brothers
- Les Randonneurs de Milotte
- Les Rencontres Arts Culturels
- Ligue nationale contre le cancer
- Lions Club Brou Bourg en Bresse
- Lions Club Grenoble Porte France - Lisa
- Lions Club Lyon Avenir
- Lions Club Lyon Bellecour et Sud
- Lions Club Lyon Confluences
- Lions Club Monts Beaujolais
- Lions Club Pérouges
- Lions Club Villages Beaujolais
- Live For Christian
- Moelle Partage et Vie
- MSD Avenir
- Nguyen Parachutisme
- Nos Instants Cousettes
- Objectif Jeunes
- OGEC Saint-Pierre
- OL Fondation
- Olympique Saint Denis
- Paroisse Saint Maurice en Haute Tarentaise
- Philadelphia 1422
- Rando Club de Francheville
- Rester Jeune
- Restons Jeunes
- Rhône Crussol Foot 07
- Rugby Club de La Sevenne
- SNC Le Clike
- SAS Millenium Patrimoine
- Sathonay Loisirs
- Saveurs et Terroirs
- Seynod Yoga Club
- SII du Rhône Association
- SOS Familles Emmaüs
- Sou des Écoles de Julienas
- Sou des Écoles de La Sauvagère
- Team Jan
- Tellement Proches
- Tennis Club de Saint Pierre de Chandieu
- Tennis Club de Villette de Vienne
- Tennis Club Saint Jean La Bussière
- Tous Unis Sur Le Green
- Triplettes Roses
- UMACC de pont de l'Isère
- Une Nuit Pour 2500 Voix
- Union de transporteurs routier Bourgogne
- Union des quartiers du Coteau
- Union laïque de Miribel
- Union sportive Filerin
- Union sportive Villette d'Anthon – Janneyrias
- UNRPA
- Upetrus
- Urphe
- Voler Avec Lui

Self-help associations

- 20 Ans 1 Projet
- À Chacun son Everest
- À Chacun son Cap
- APPEL
- ALK+ROS1
- ANAMACaP
- Association Syndrome de Lynch France
- Cancer Vessie France
- CERHOM
- Cheer Up
- Corasso
- Docteur Clown
- ELLyE
- Europa Donna France
- France Côlon
- Geneticancer
- IAS Stomisés
- Imagyn
- Info Sarcomes
- JALMALV
- Jeune et Rose
- Laurette Fugain
- L'École à l'hôpital
- Les Blouses Roses
- Les Mutilés de la voix
- Ligue contre le Cancer comité du Rhône
- Lymphœdème Rhône-Alpes
- On est là
- Patients en réseau
- Petits Princes
- Princesse Margot
- Tout le monde contre le cancer
- Vivre comme avant

CONCEPTION
Alteriade

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