

# Cancer research in France

Cancer accounts for approximately 160,000 deaths every year in France (**number 1 cause of death in men, number 2 in women**). Today's research is the foundation for medical progress and improving the quality and safety of tomorrow's care.



FHF Cancer and the CNCR have joined forces to conduct a study on cancer research carried out in France over the last 10 years. Through this partnership, **FHF Cancer and the CNCR wish to evoke the commitment of Public Healthcare Establishments in the management of cancers and research.** The analysis performed aims to objectify research-related production generated by French Establishments.



## FIRST, A FEW DEFINITIONS

### ◆ Bibliometrics

Research activity is often measured by the number of articles produced by an institution or country. Bibliometrics is a quantitative method that analyzes scientific publications, in terms of volume but also in terms of their impact on the advancement of knowledge.

### ◆ Interventional research

This research focuses mainly on drugs, but also on other types of interventions such as surgical procedures, medical devices, or cell or gene therapies. These require "intervention" on the patient, as opposed to observational research.

### ◆ Indicators

Various bibliometric indicators are used to evaluate research:

- Number of publications: volume indicator
- CNCI, Top 1% and Top 10%: standardized performance indicators based on the number of times an article has been cited by other articles

## From 2010 to -2019, French research on oncology represented:



**Over 50,000** scientific publications  
7<sup>th</sup> rank worldwide

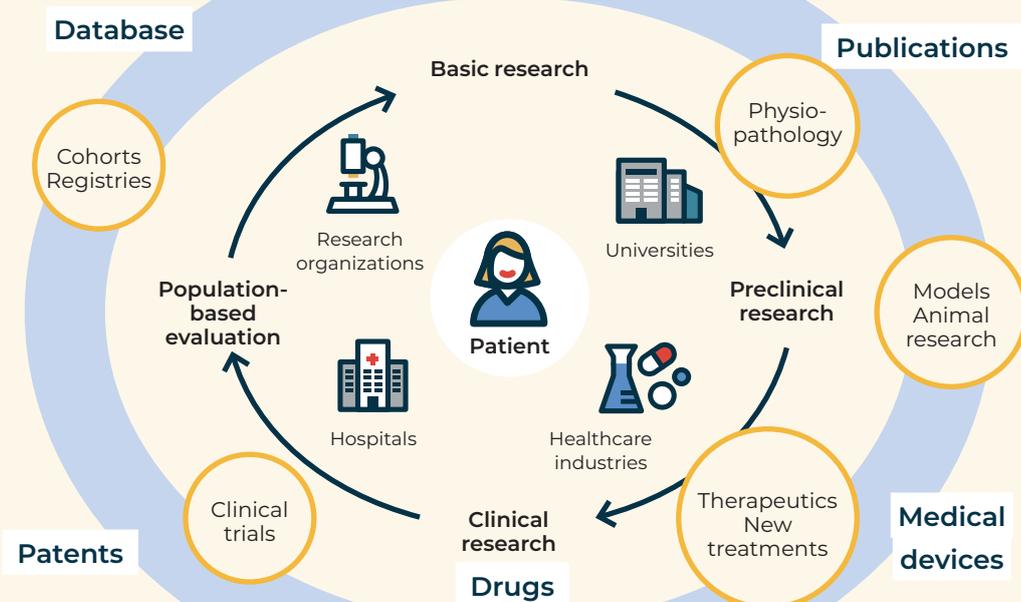


**Over 3,700** clinical trials  
3<sup>rd</sup> rank worldwide



**Over 300,000** patients enrolled in studies sponsored by CHU\* and CLCC\*\*

## Translational research: the bridge between basic and applied research



### Did you know?

Translational research is the link between basic and applied research: it allows for the transfer and rapid interpretation of knowledge, so it can be applied for the benefit of the patient.

\*University Hospital Centers

\*\*Cancer Treatment Centers



## Scientific publications

### French oncology-related articles are cited much more often than the global average.

The **Category Normalized Citation Index (CNCI)** increased from 1.58 over the first period (2010-2014) to 2.05 over the second period (2015-2019). Research excellence is also measured by the number of publications in the Top 6 major international generalist journals (The Lancet, Nature, Science, JAMA, NEJM, and BJM): France co-authored 13.8% of these articles over the first period (143 publications) and 19.2% over the second (211), i.e., a 48% increase.

ALL THESE DATA SERVE TO PROVE THE EXCELLENCE OF FRENCH RESEARCH ON ONCOLOGY

In terms of biomedical research, France accounts for **4% of global production.**

In oncology, all cancer sites combined, it comes in **7<sup>th</sup> place worldwide and 4<sup>th</sup> place in Europe.**

#### Did you know?

The scientific impact of a publication is usually measured by the number of times it is cited by others.



#### “Bench to Bedside” research: Who are the co-authors?

Bench to Bedside research covers fundamental, clinical, and epidemiological research.



± 70% Universities



56% CHU/CH



39% INSERM



34% CLCC



20% CNRS

**Strong collaboration between Universities, Research Organizations, and Healthcare Establishments.**

### Scientific publications around the world

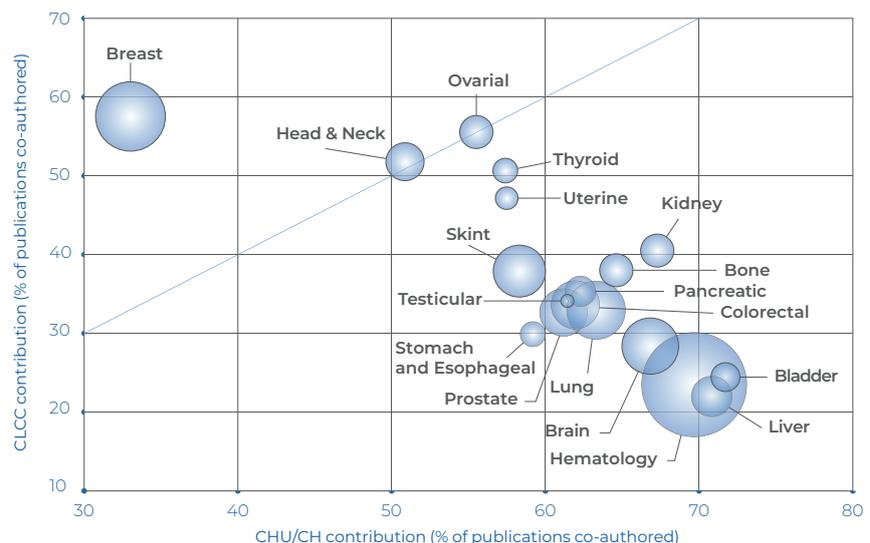
Ranking of the top 10 countries worldwide for oncology publications, from 2010 to 2019

Country	Number of publications	Rank
Worldwide	1,120,821	
United States	334,212	1
China	233,415	2
Japan	82,898	3
Germany	75,024	4
Italy	68,160	5
United Kingdom	67,289	6
<b>France</b>	<b>51,652</b>	<b>7</b>
South Korea	48,028	8
Canada	44,954	9
India	34,402	10



**Over 50,000** scientific publications co-authored by France from 2010 to 2019 in oncological research

### Public Establishments: leaders in cancer research.



The above figure, where the size of the bubbles corresponds to the number of publications relating to each cancer site, illustrates Healthcare Establishments' contributions to cancer research. CHU/CH are heavily involved in hematology, brain, bladder, liver, lung and prostate cancers. CLCC are very involved in breast cancer research.



## Clinical research

Clinical trials are essential if we are to test the effectiveness of new treatments, understand the mechanisms of a disease, and evaluate screening or management strategies.

### 2 ESSENTIAL PLAYERS IN CLINICAL RESEARCH:



#### Investigators

Healthcare institutions and/or professionals who wish to carry out a study.



#### Sponsors

Institutions that bear the legal and financial responsibility of the study, through industrial sponsorships (healthcare industries) or academic sponsorships (hospitals and EPST [Public Scientific and Technological Establishments]).

### France's positioning from 2010 to 2019

#### All categories combined



7% of global clinical trials have at least one center in France

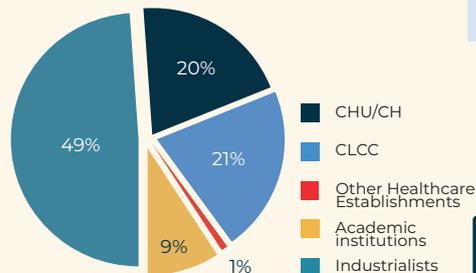
#### Oncology



10% of global clinical trials have at least one center in France

### Active studies

**3,730**  
open studies  
in France

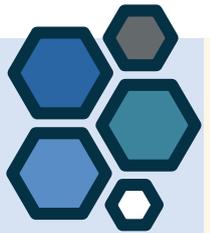


Every year, almost **200 studies** on cancer receive financial support totaling:



### Did you know?

The ClinicalTrials.gov database lists all open clinical trials, from all around the world.



**+50%**  
The number of active studies increased from 476 in 2010 to 717 in 2019.



#### CHU/CLCC

These studies are mainly sponsored by CHU and CLCC.

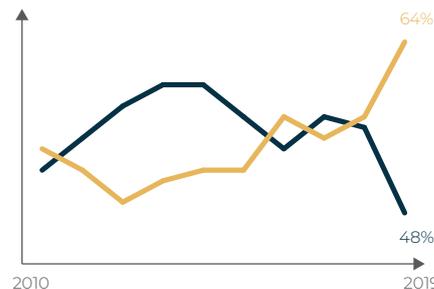


**36%** of studies focus on drugs. One quarter are Phase I/II\*\* studies.

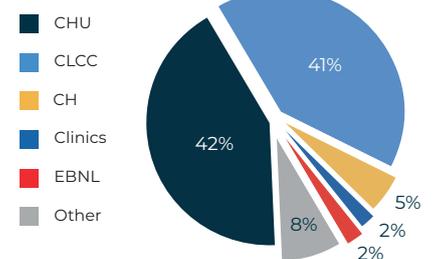
**1/6** France participates in 1 interventional study on pediatric cancer out of 6 opened worldwide.



Over 10 years, the share of **academically funded** studies has continued to rise, while the share of **industrial funding** has tended to fall.



**More than 300,000 patients** were included in these studies, which equates to almost **30,000 per year**. By comparing the number of inclusions in studies on cancer to the number of inhabitants, obvious disparities appear between regions.



\*French Directorate General of Healthcare Provision, French Ministry of Solidarity and Health

\*\*Phase I/II: drugs are developed over several phases:

- Evaluation of drug toxicity (Phase I);
- Definition of dosages and evaluation of side effects (Phase II);
- Evaluation of drug effectiveness and comparison with other treatments or placebo (Phases III and IV).

**Research that is not limited to interventional studies focusing on therapeutic developments**

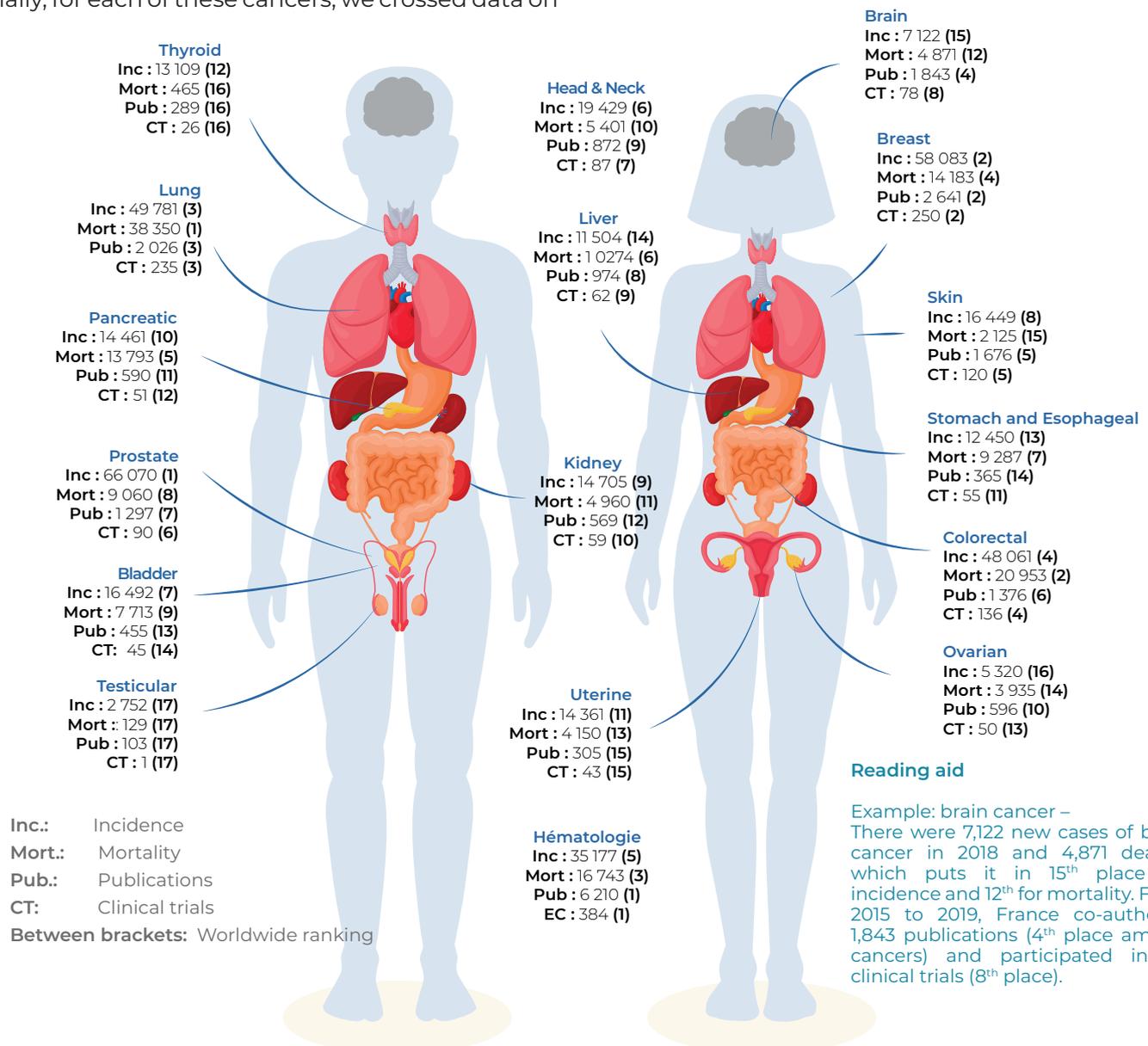
Observational studies (registries, cohorts, clinico-biological bases, etc.) are also growing significantly. They aim to better understand diseases, monitor patients' conditions, and prevent relapses. Mainly carried out by Healthcare Establishments and CHU in particular, these studies reflect their positioning, between basic research, clinical research, and patient care.

## Detailed analyses by cancer site

For 17 solid cancers and 6 hematological cancers, we carried out a specific analysis on France's global positioning, both in terms of publications and in terms of clinical trials. These analyses are the subject of fact sheets, and are available for download on the CNCR website.

Finally, for each of these cancers, we crossed data on

publications (2015-2019) and clinical trials (2015-2019) against incidence and mortality data (number of cases in 2020) provided by the WHO (*World Health Organization*).



### Reading aid

Example: brain cancer – There were 7,122 new cases of brain cancer in 2018 and 4,871 deaths, which puts it in 15<sup>th</sup> place for incidence and 12<sup>th</sup> for mortality. From 2015 to 2019, France co-authored 1,843 publications (4<sup>th</sup> place among cancers) and participated in 78 clinical trials (8<sup>th</sup> place).

## In summary

France further confirms its place in the world in terms of scientific production in the field of oncology and in terms of clinical trials. This assessment should make it possible to better prepare for the next 10 years, notably regarding the priorities defined in the 10-year cancer strategy: **improving prevention** (40% of cancers could be avoided if we adopt healthier lifestyles), **limiting the sequelae of the disease and improving patients' quality of life during and after treatment, and stepping up the fight against cancers with a poor prognosis.**

## Methodology

Scientific publications:  
 Web of Science data (Articles and Reviews)  
 Clinical trials: ClinicalTrials.gov and SIGREC data

Access all the sheets and the detailed report

