



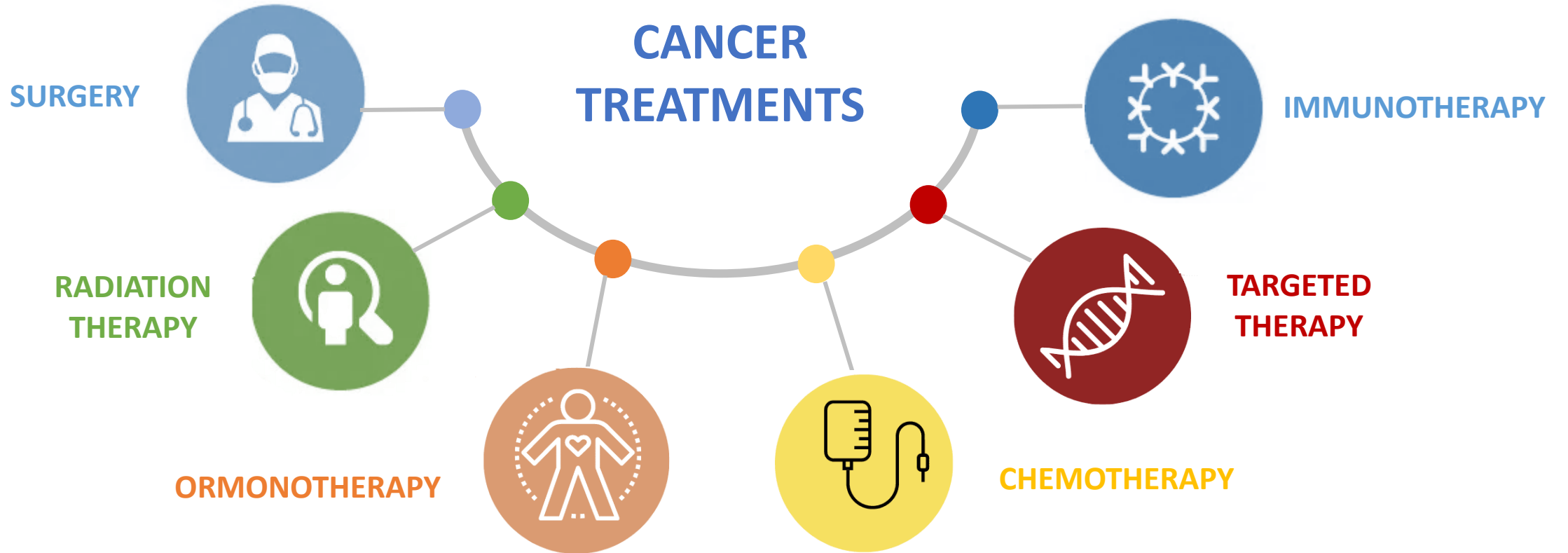
# CURARE IL TUMORE CON LA CHEMIOTERAPIA

Dott. Marco Russano

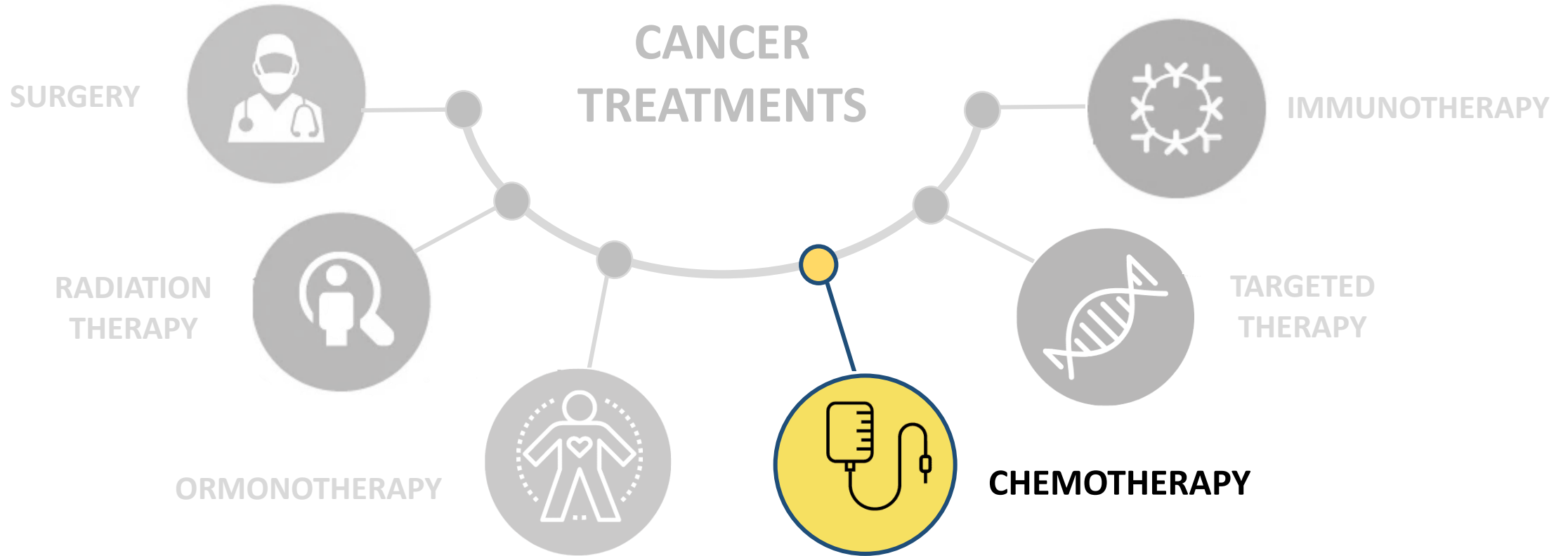
Oncologia Medica  
Fondazione Policlinico Universitario  
Campus Bio-Medico di Roma

9 Novembre 2023

# CANCER TREATMENT OPTIONS



# CANCER TREATMENT OPTIONS



# CHEMOTHERAPY

The term “chemotherapy” was coined by German chemist Paul Ehrlich who investigated the use of drugs to treat infectious diseases

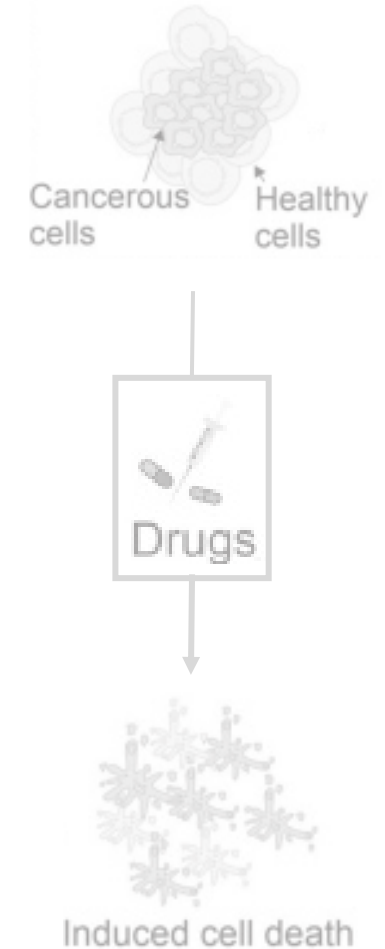
DeVita VT, Chu E. A history of cancer chemotherapy. *Cancer Res.* 2008

Cancer chemotherapy is a modality of cancer therapy that involves the administration of chemical agents to destroy cancer cells.

2019-ESMO-ESO-Course-Valencia-Chemotherapy-Nicholas-Pavlidis

The goal of chemotherapy is to inhibit cell proliferation and tumor multiplication, thus avoiding invasion and metastasis.

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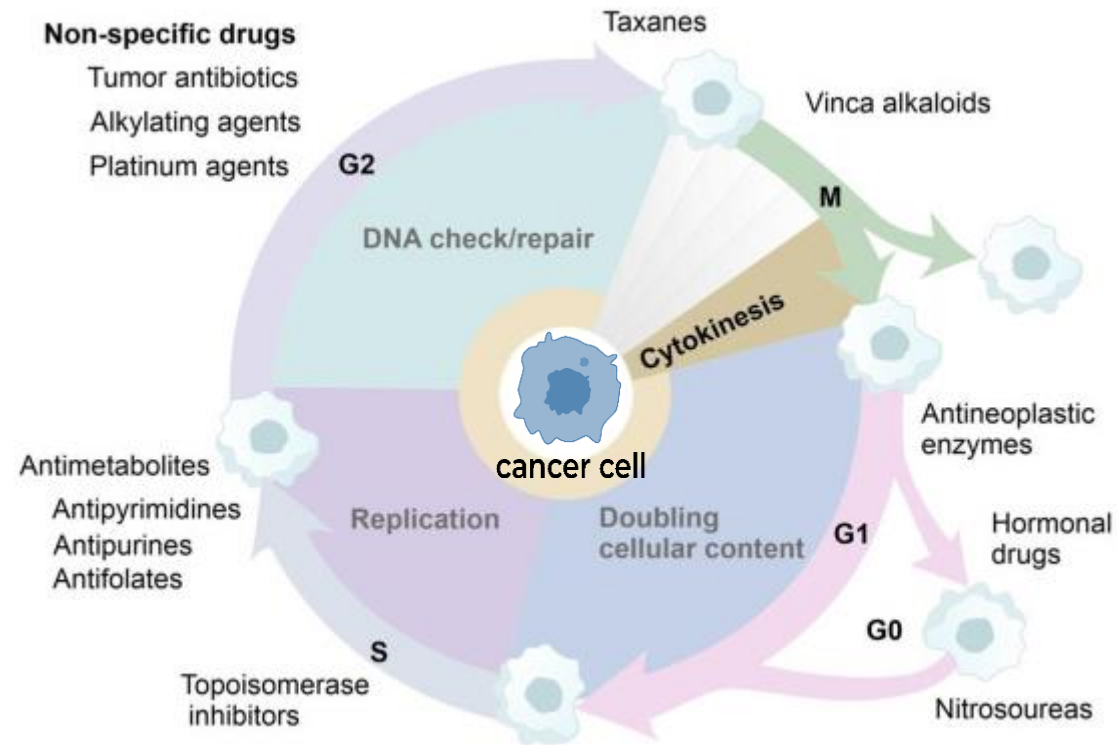
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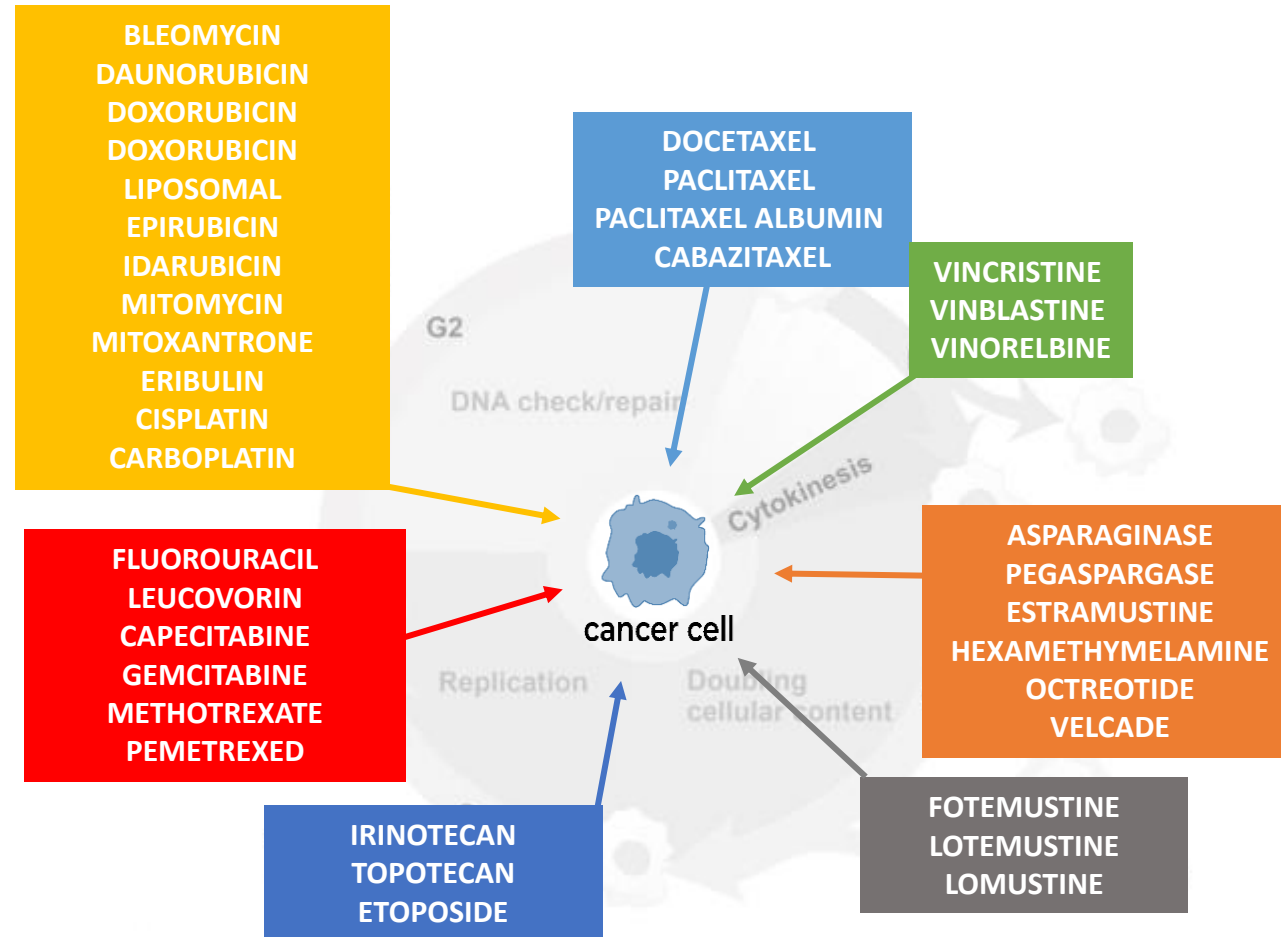
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# CHEMOTHERAPY



# CHEMOTHERAPY



# CHEMOTHERAPY

Routes of administration



Intravenous



Oral



Local Application



# CHEMOTHERAPY



PROSTATE



COLON



BREAST



LUNG



LIVER



PANCREAS



BRAIN



STOMACH



UTERUS



TESTICLE



OVARY



KIDNEY



BLADDER



SKIN

# CHEMOTHERAPY



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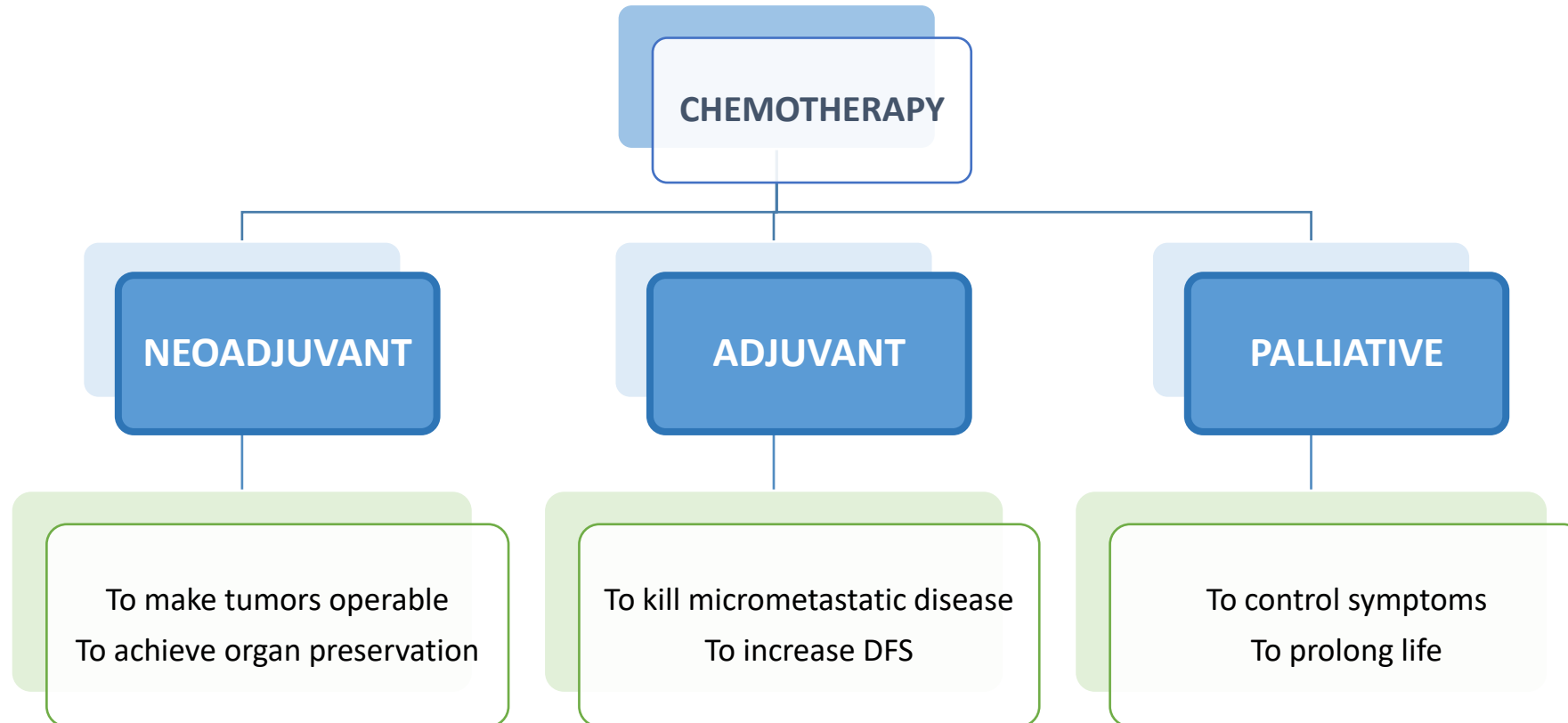


BLADDER

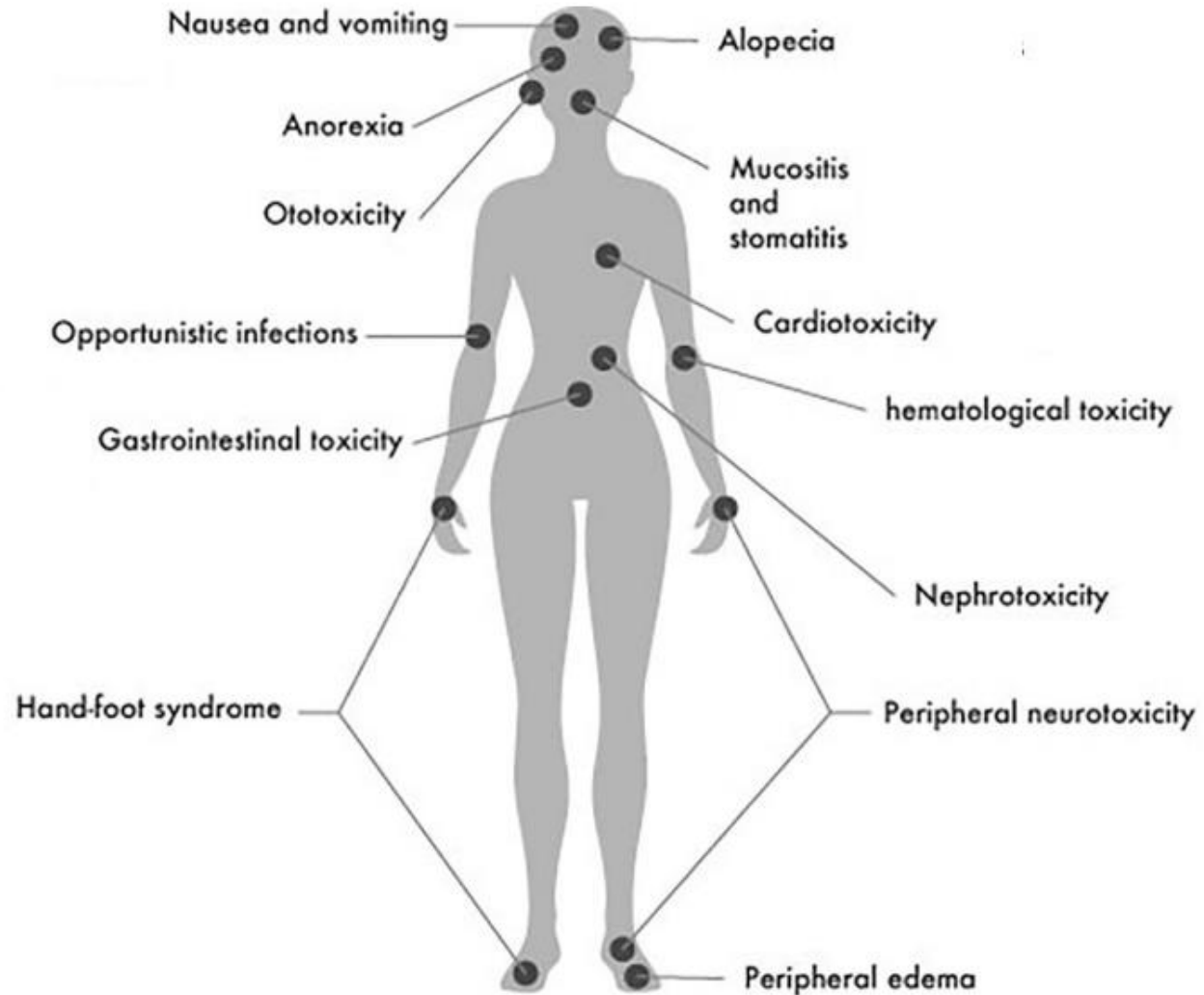


SKIN

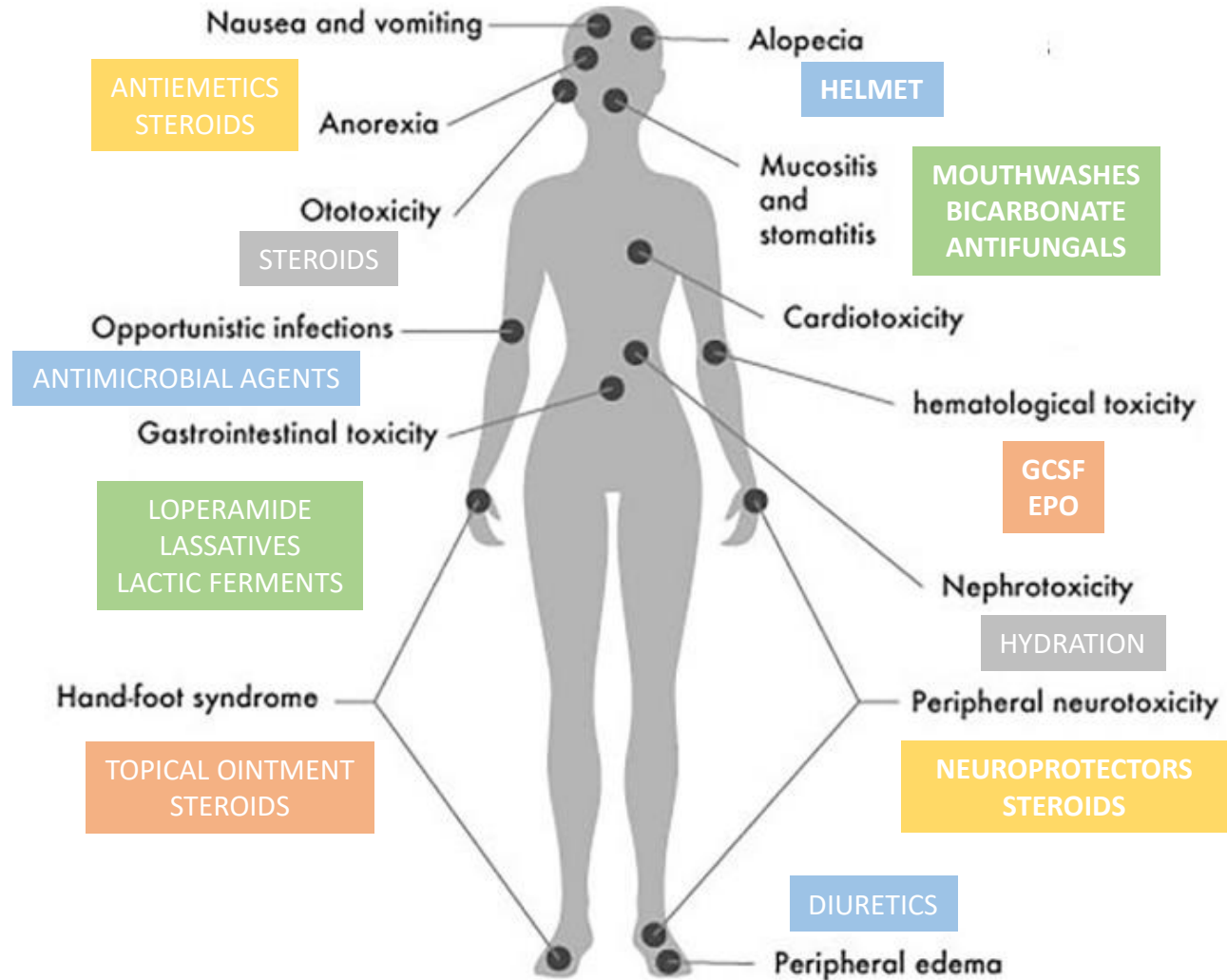
# CHEMOTHERAPY



# TOXICITY



# TOXICITY



# TOXICITY

Timing	Definition	Side effects
<b>Acute</b>	During or within hours	Hypersensitivity reaction, anaphylactic shock
<b>Subacute</b>	After days to weeks	Alopecia, vomiting, fatigue, diarrhea, constipation, mucositis, myelotoxicity
<b>Late</b>	After months to years	Neurotoxicity, Cardiotoxicity, alopecia, hand-foot syndrome, myelodysplasia

Grade	Definition
Grade 1	Mild; asymptomatic or mild symptoms; clinical or diagnostic observations only; intervention not indicated.
Grade 2	Moderate; minimal, local or noninvasive intervention indicated; limiting age-appropriate instrumental ADL.
Grade 3	Severe or medically significant but not immediately life-threatening; hospitalization or prolongation of hospitalization indicated; disabling; limiting self care ADL.
Grade 4	Life-threatening consequences; urgent intervention indicated.
Grade 5	Death related to AE.

# TOXICITY

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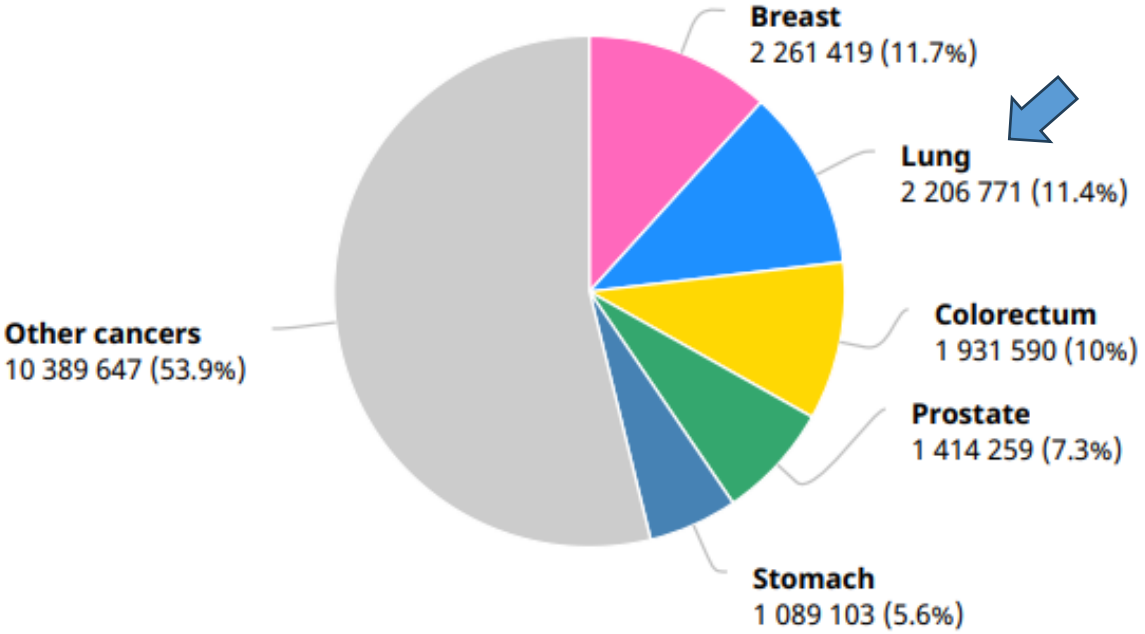
# TOXICITY



NO TOXICITY <sup>is</sup> POSSIBLE 

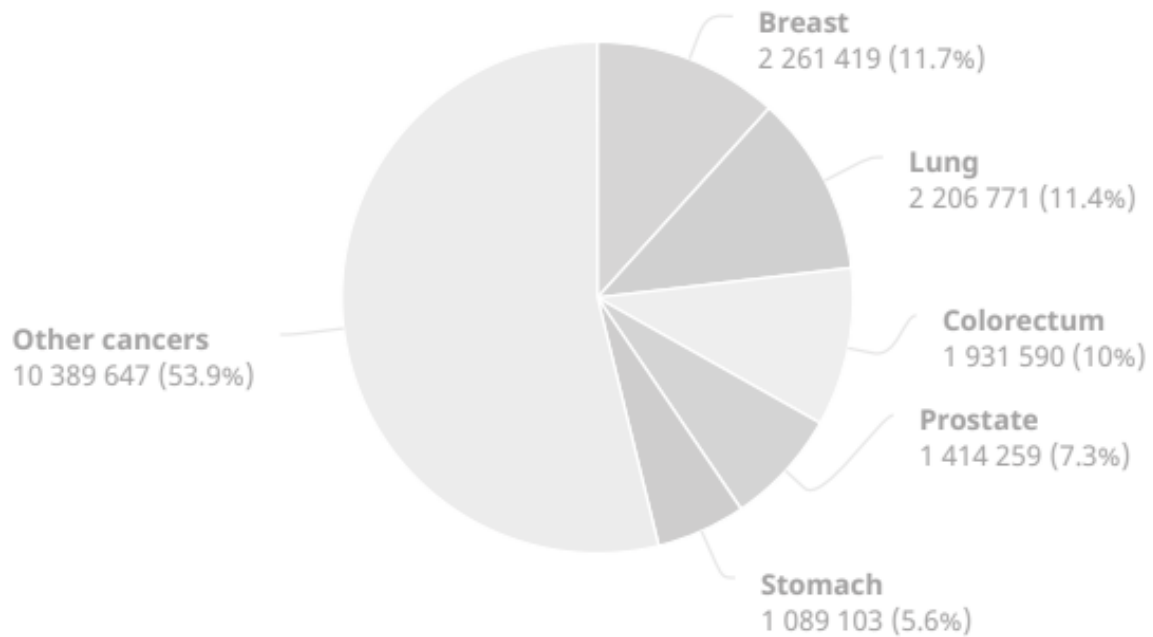
# LUNG CANCER

Number of new cases in 2020

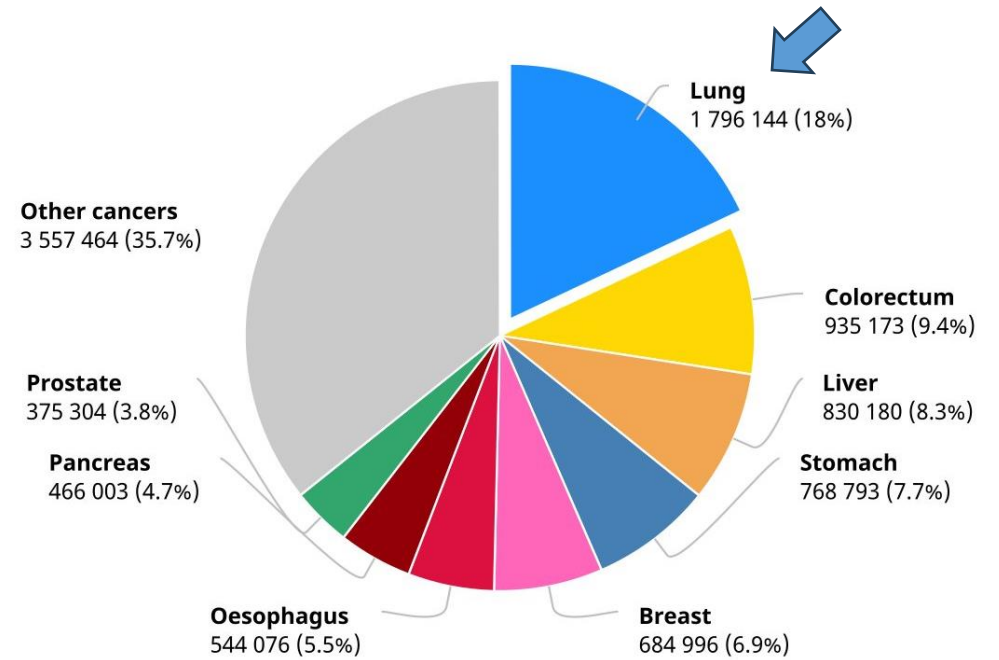


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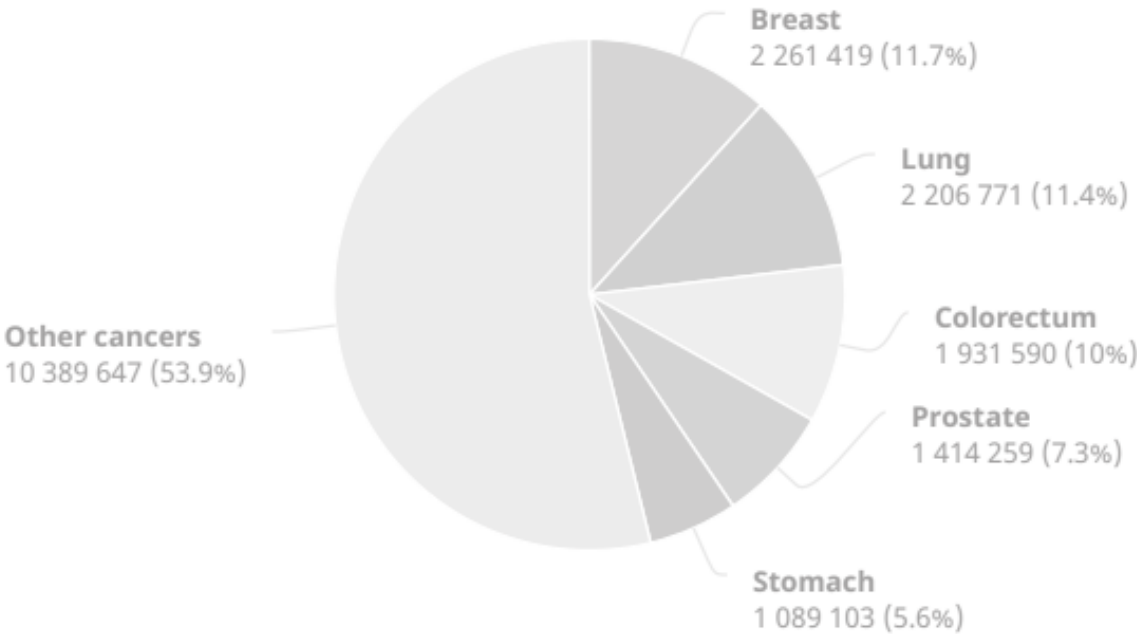


Number of deaths in 2020

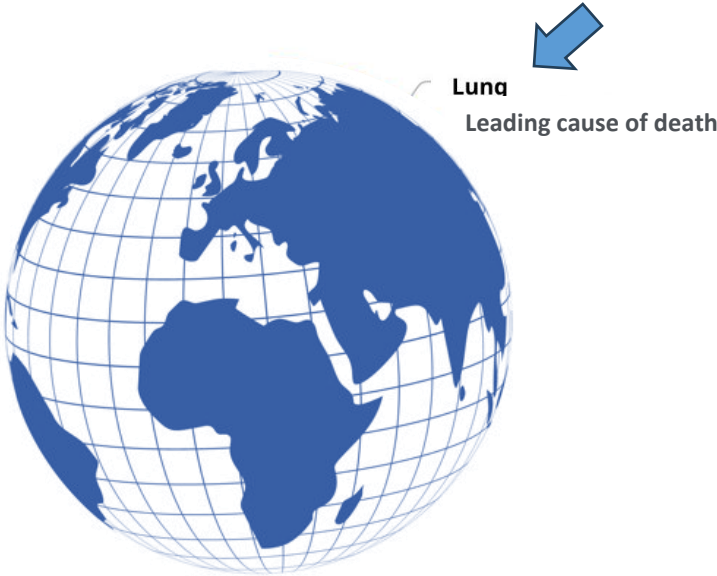


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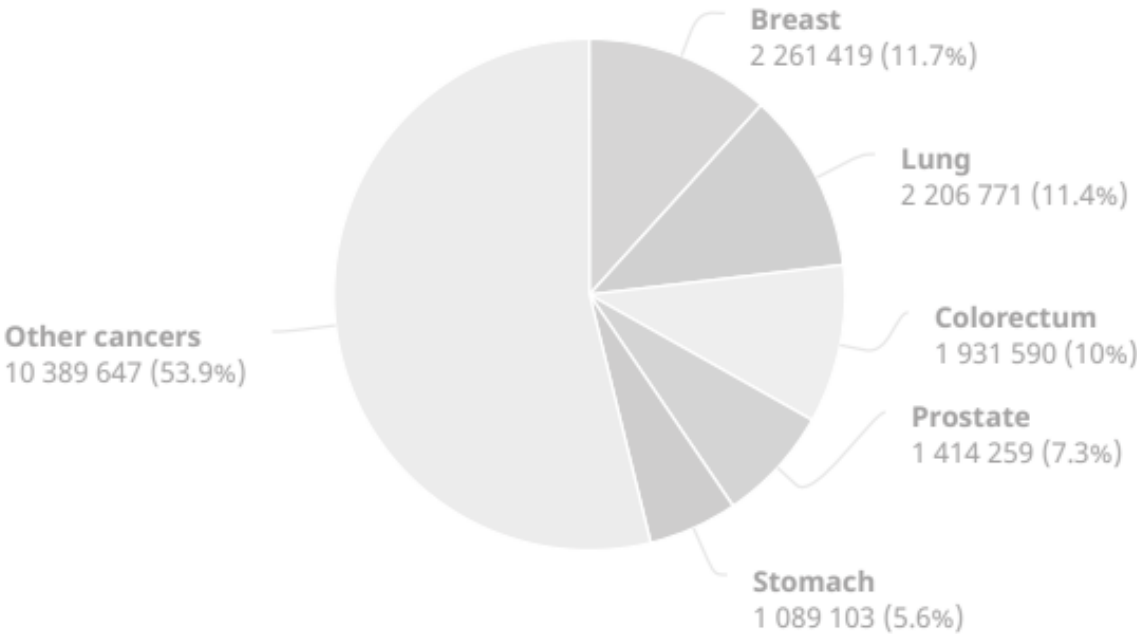


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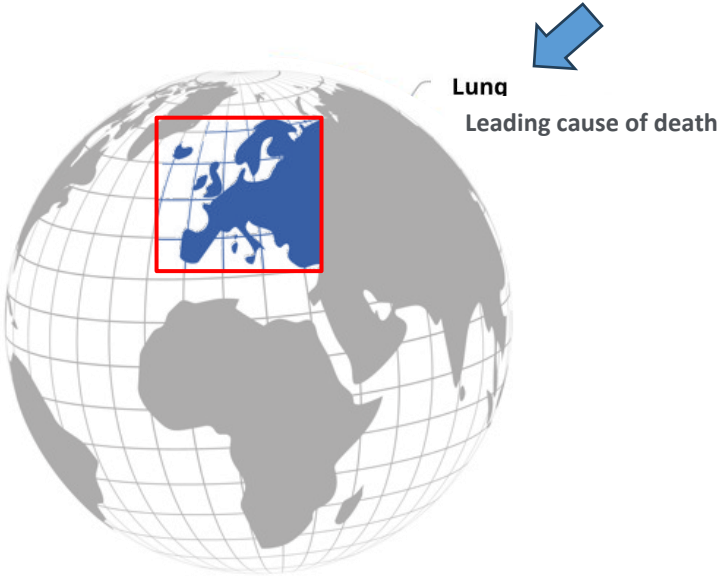


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Number of new cases in 2020

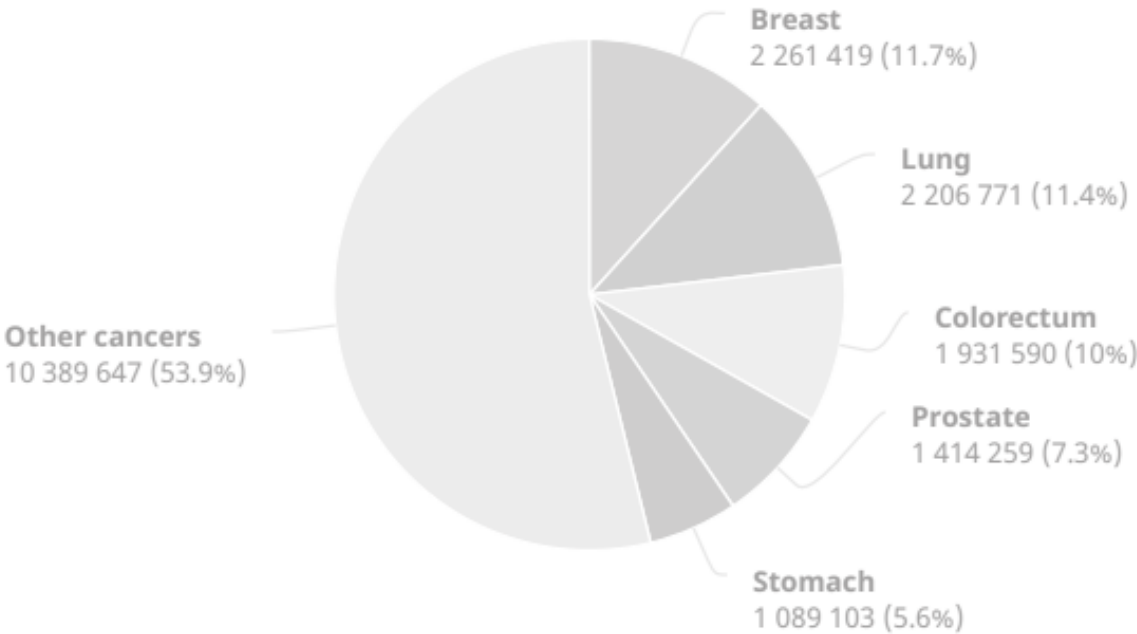


Number of deaths in 2020



# LUNG CANCER

Number of new cases in 2020

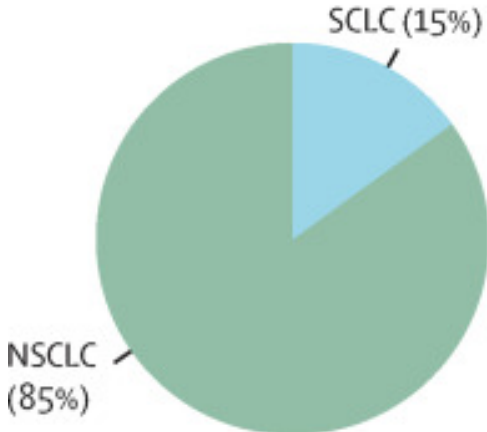


Number of deaths in 2020

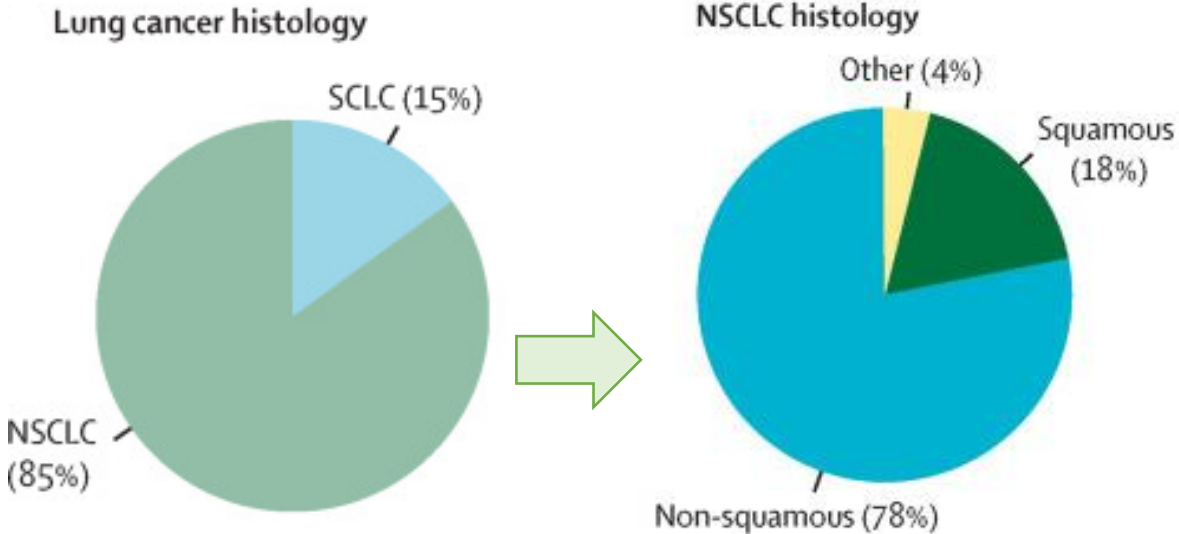


# LUNG CANCER

Lung cancer histology

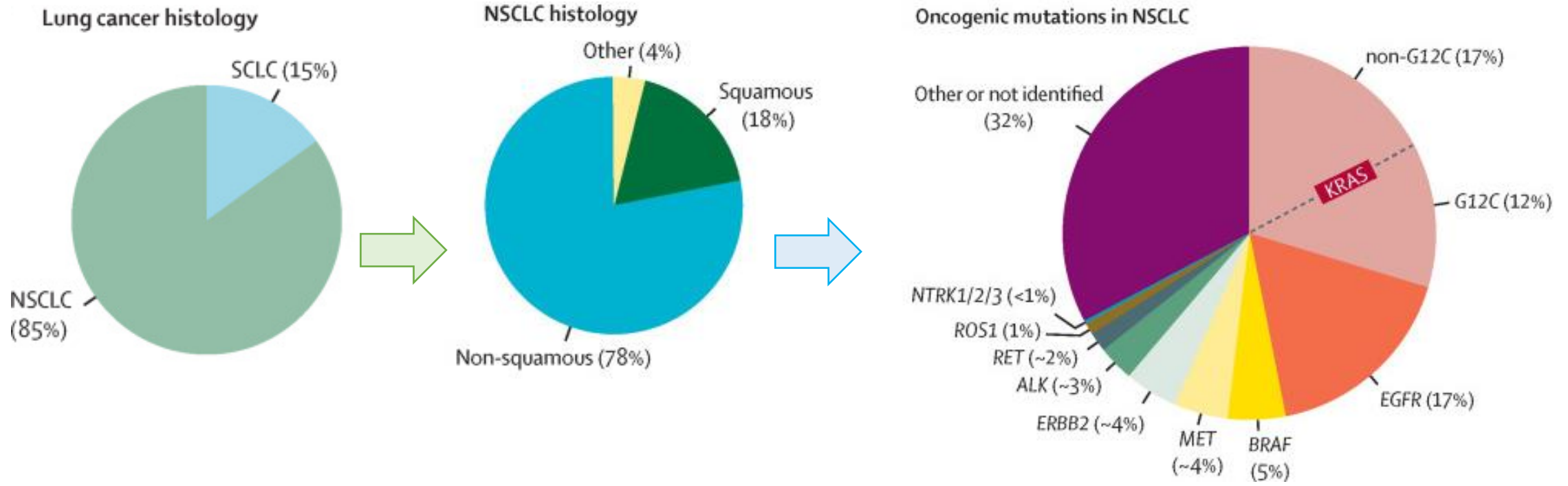


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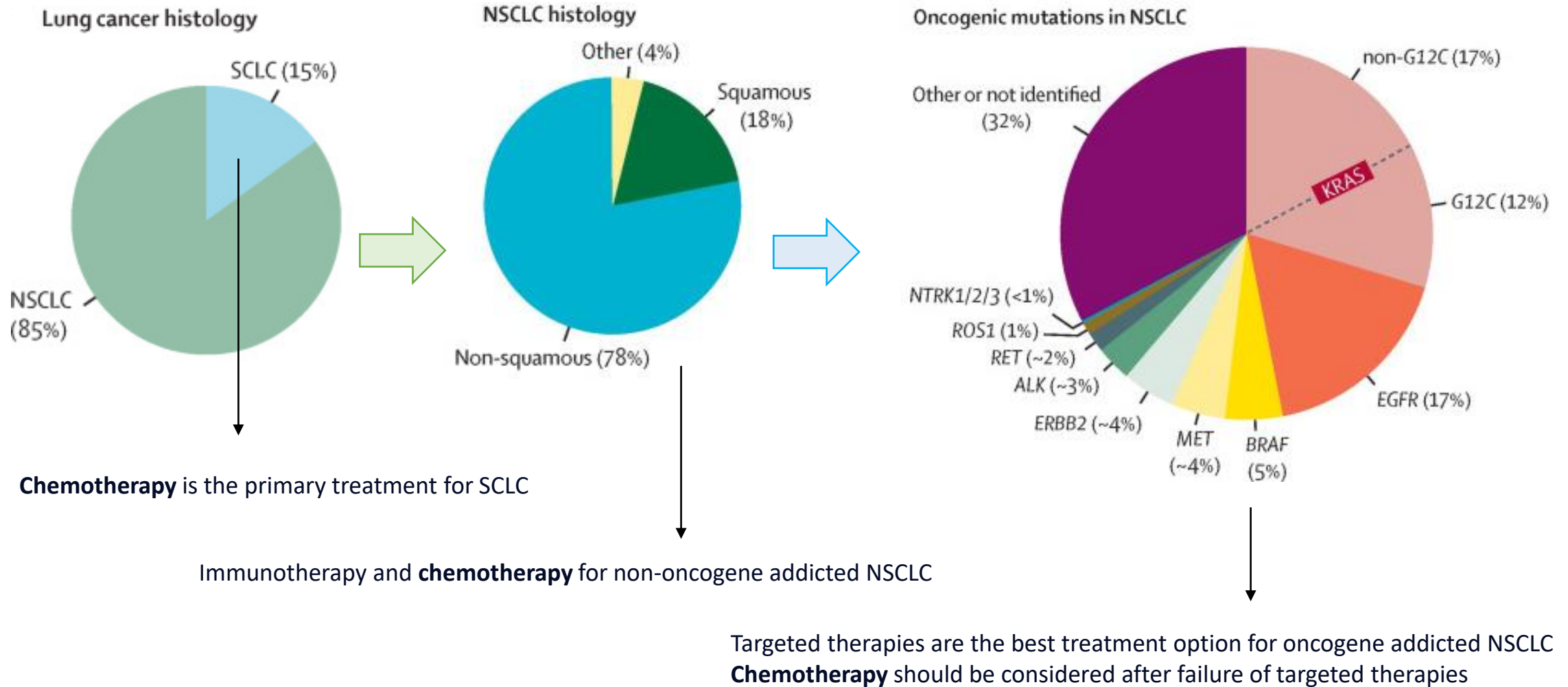




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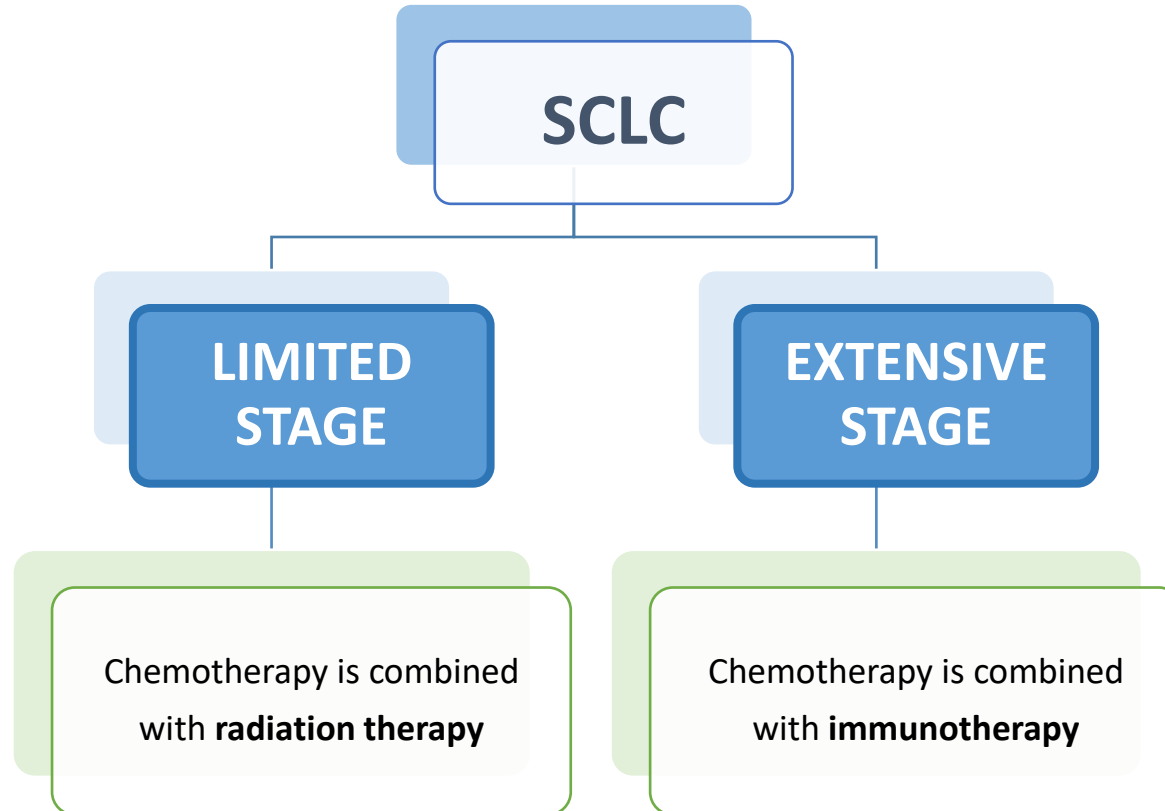


# LUNG CANCER



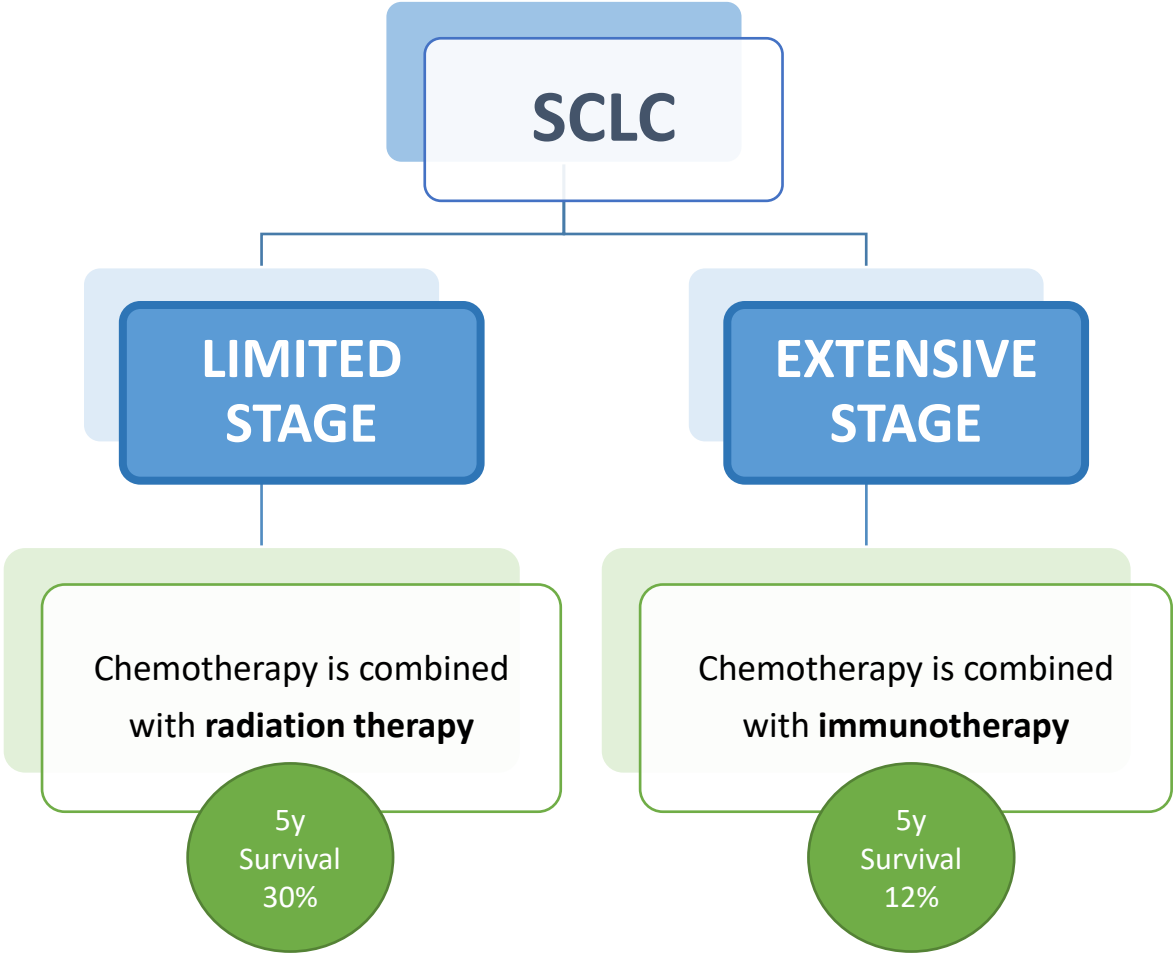
# LUNG CANCER

Chemotherapy with platinum-etoposide is the main treatment for small cell lung cancer



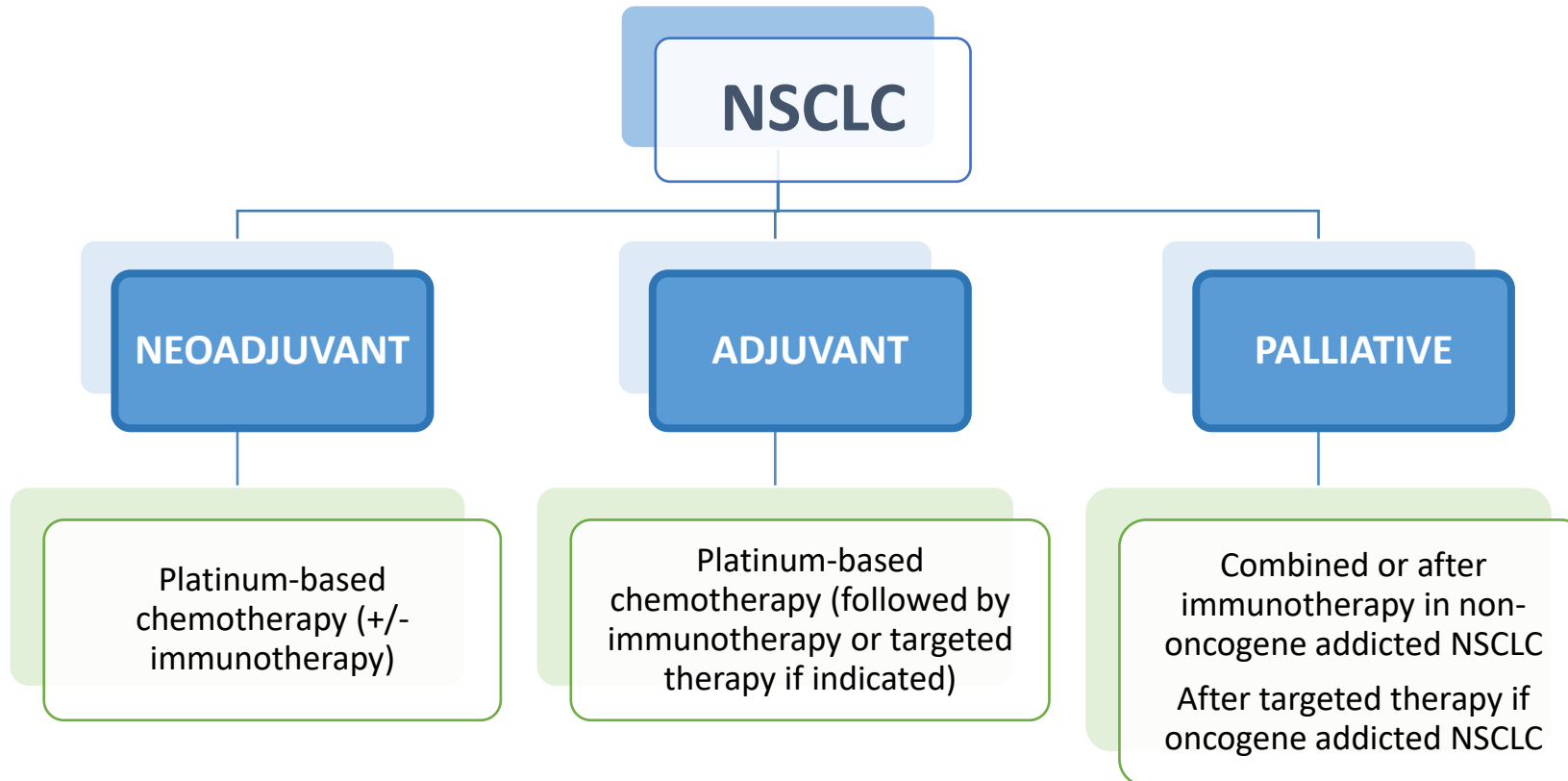
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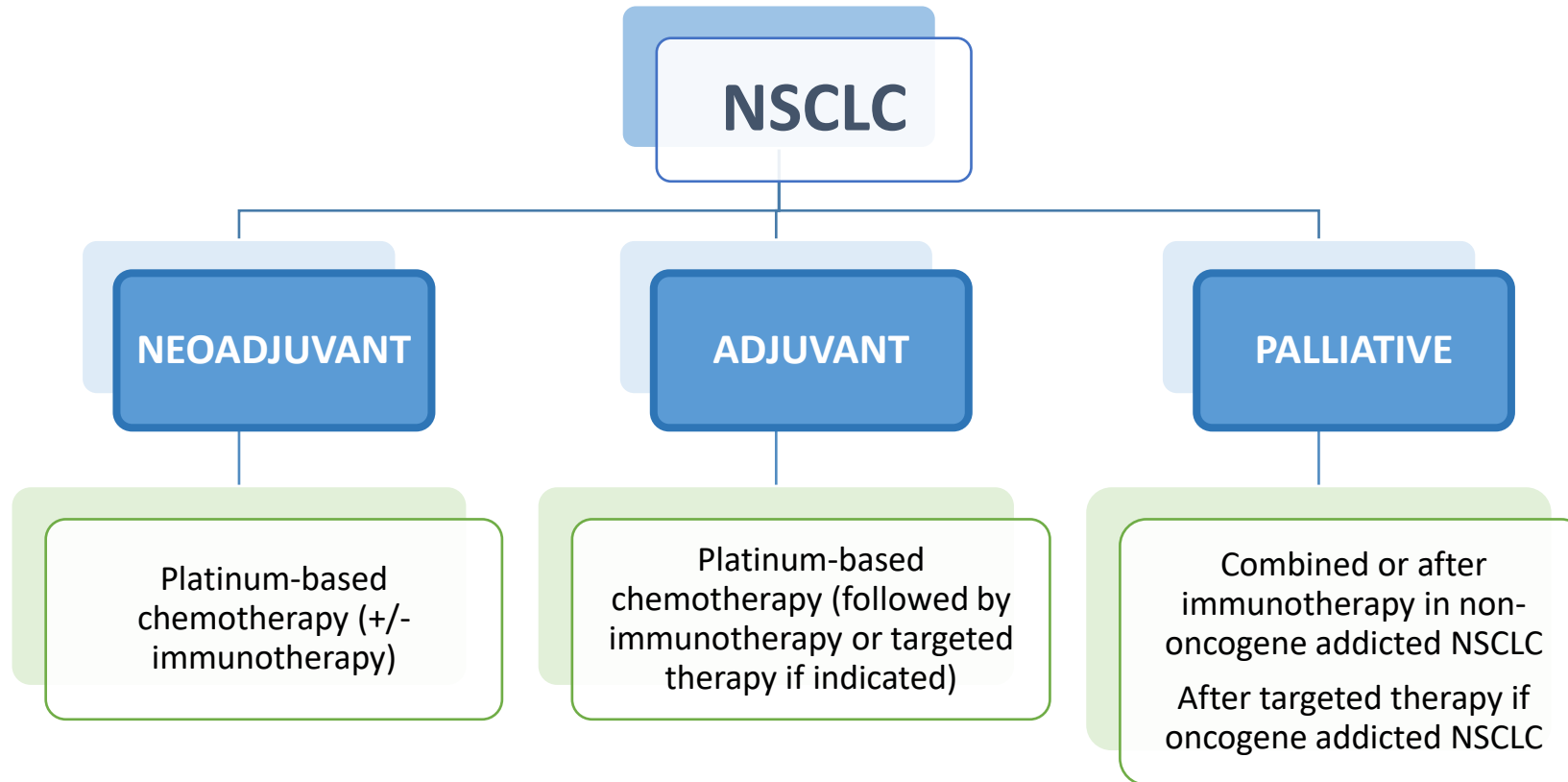
# LUNG CANCER

Chemotherapy maintains a significant role in the treatment of NSCLC



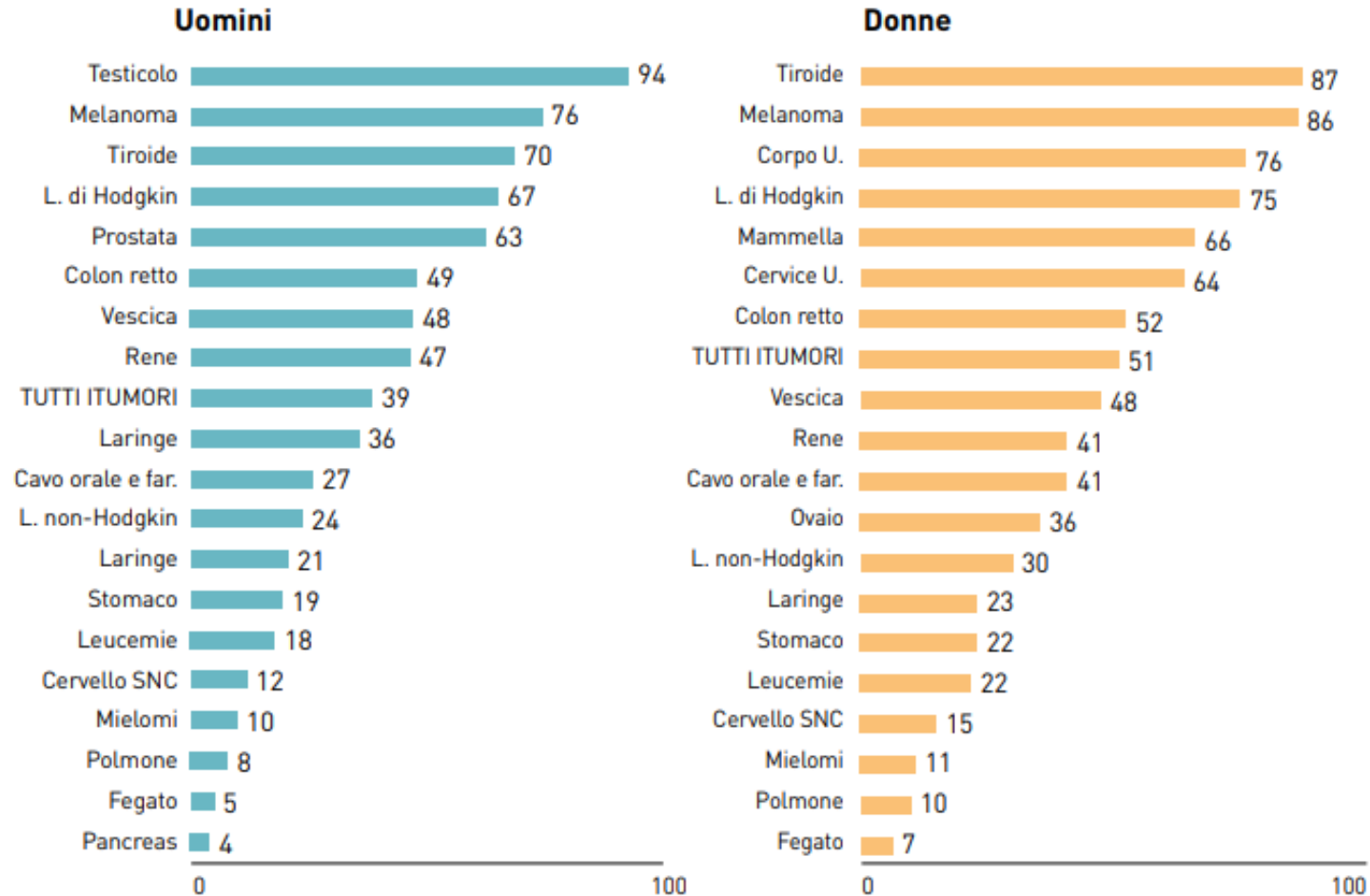
# LUNG CANCER

Chemotherapy maintains a significant role in the treatment of NSCLC



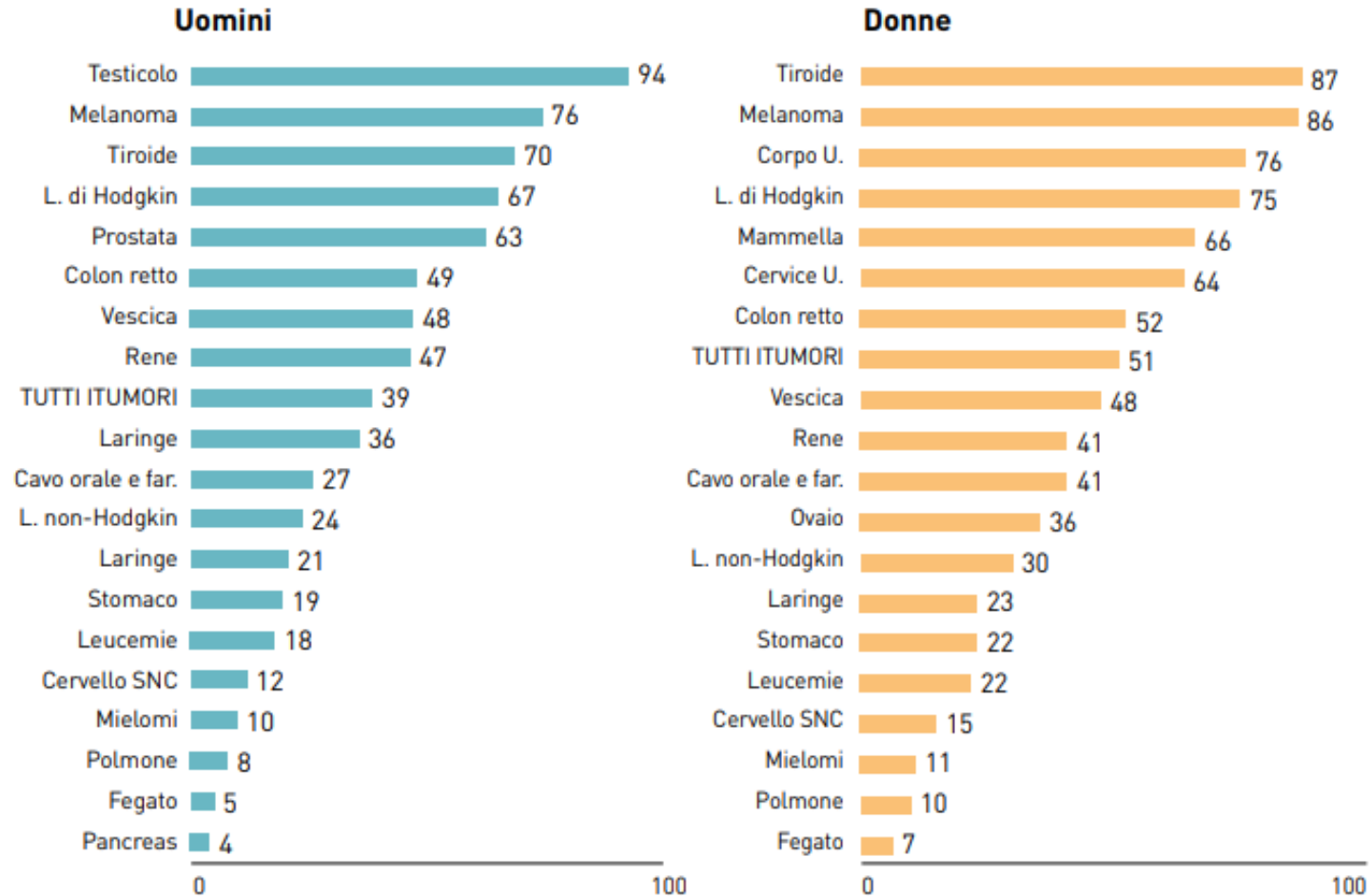
Chemotherapy can reduce the risk of recurrence in resected disease and can significantly prolong survival in advanced stages

# BREAST CANCER



# BREAST CANCER

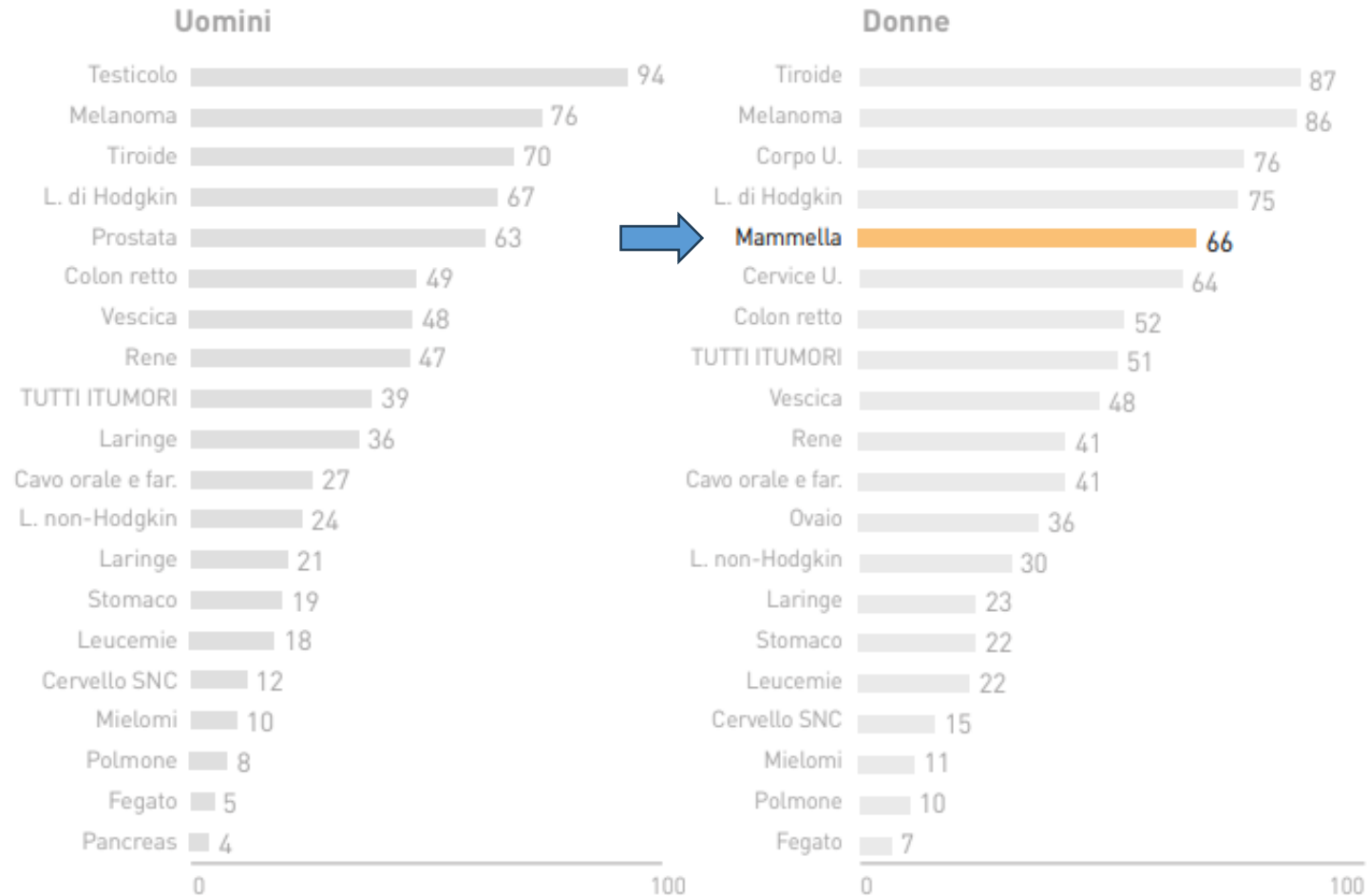
## Probabilità di guarire dopo una diagnosi di tumore in Italia



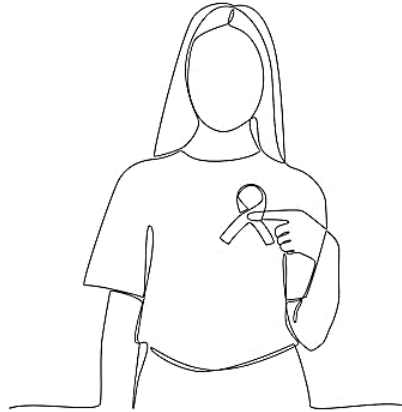


# BREAST CANCER

## Probabilità di guarire dopo una diagnosi di tumore in Italia



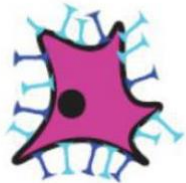
# BREAST CANCER



## MOLECULAR CLASSIFICATION

Luminal-A

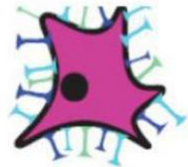
40%



ER+/PR+/HER2-

Luminal-B

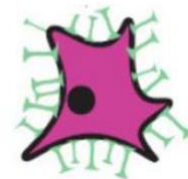
20%-30%



ER+/PR+ -/HER2+ -

HER2+

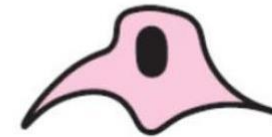
10-15%



ER-/PR-/HER2+

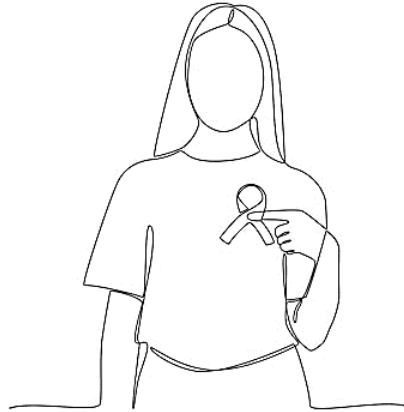
TN

10-20%



ER-/PR-/HER2-

# BREAST CANCER



## SYSTEMIC TREATMENTS

Luminal-A

Luminal-B

HER2+

TN

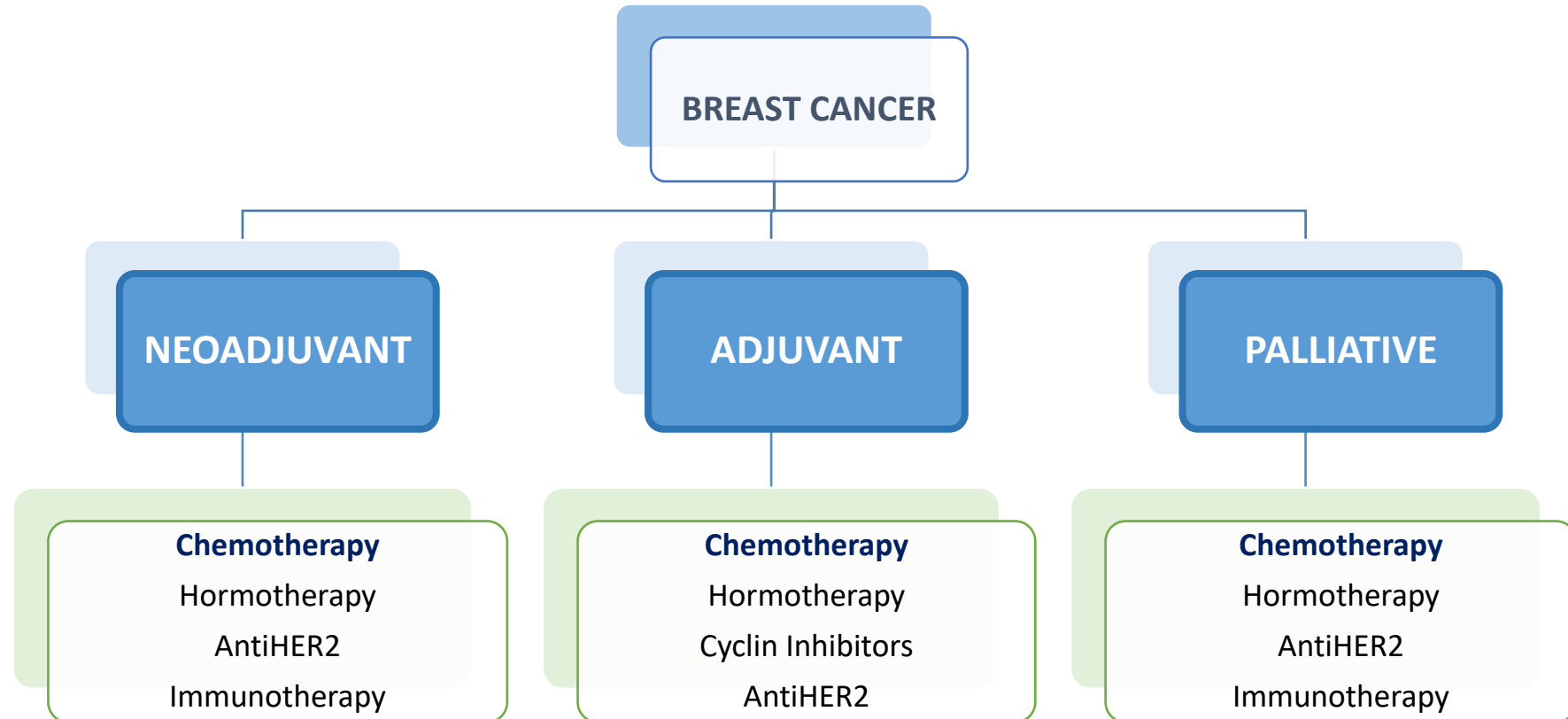
Hormotherapy  
Cyclin Inhibitors  
**Chemotherapy**

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Cyclin Inhibitors  
**Chemotherapy**

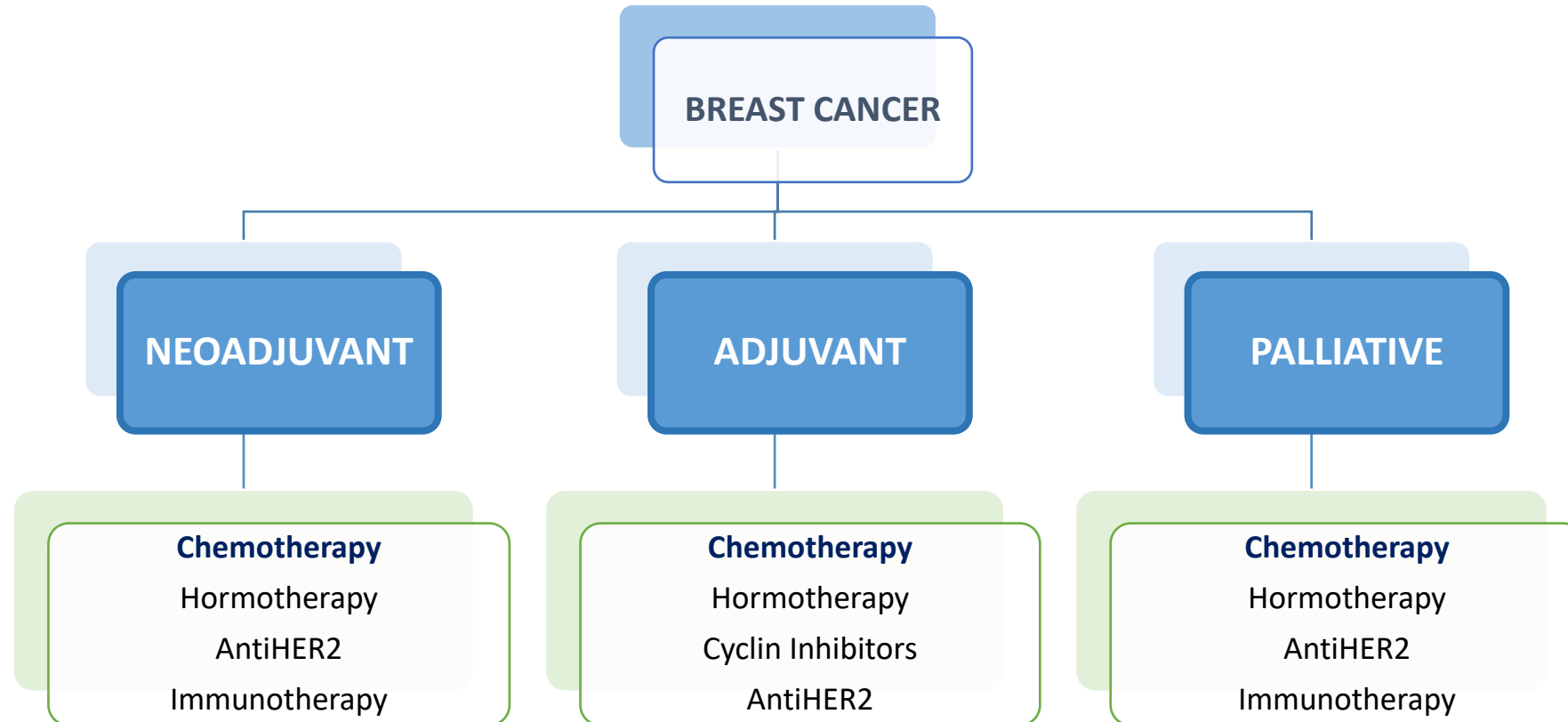
Anti-HER2  
**Chemotherapy**

Immunotherapy  
**Chemotherapy**

# BREAST CANCER



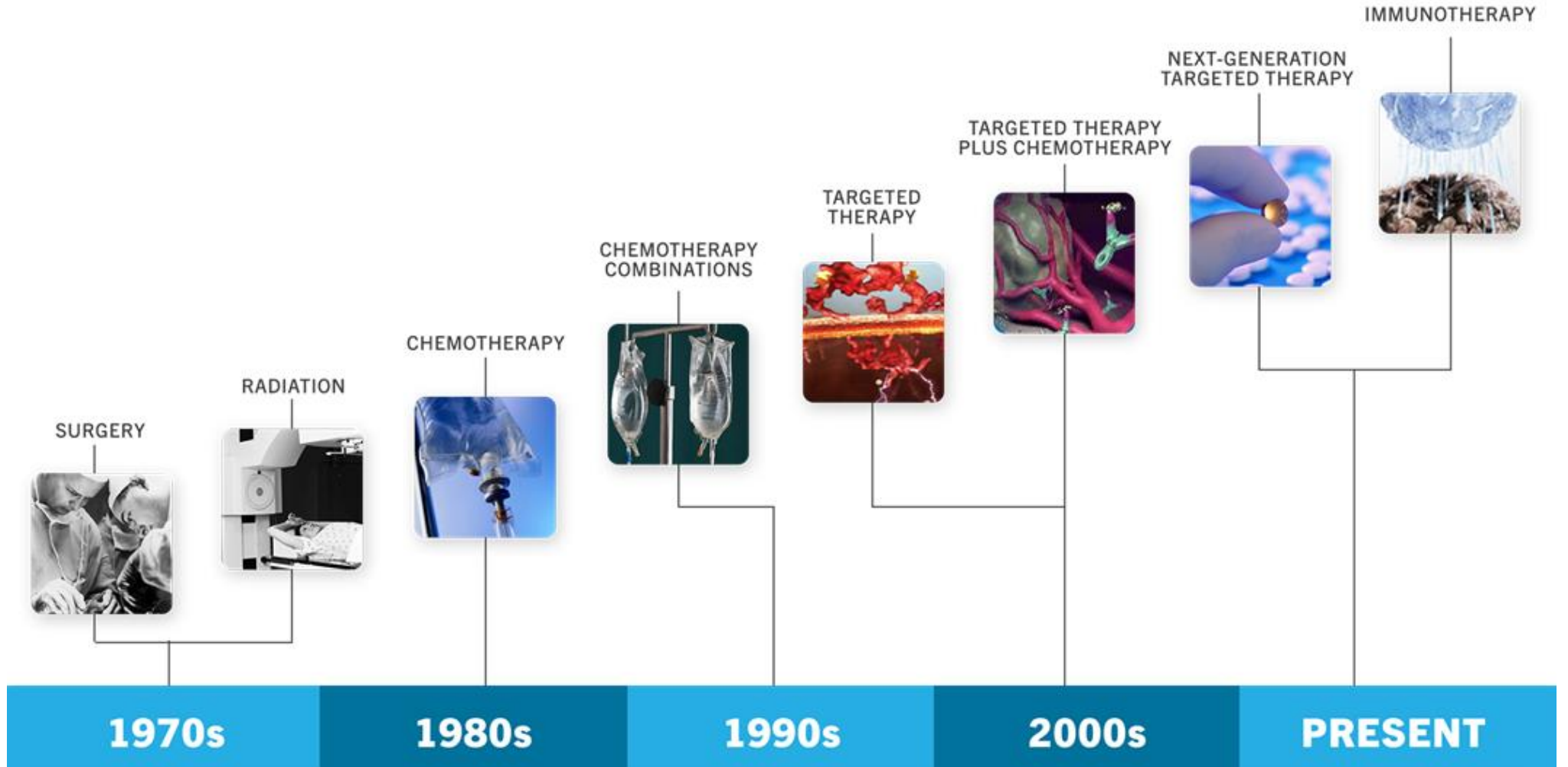
# BREAST CANCER



**Anthracyclines and taxanes** are the main chemotherapeutic agents in the NADJ/ADJ setting  
**Several agents** for metastatic disease and potentially multiple lines of treatment can prolong survival

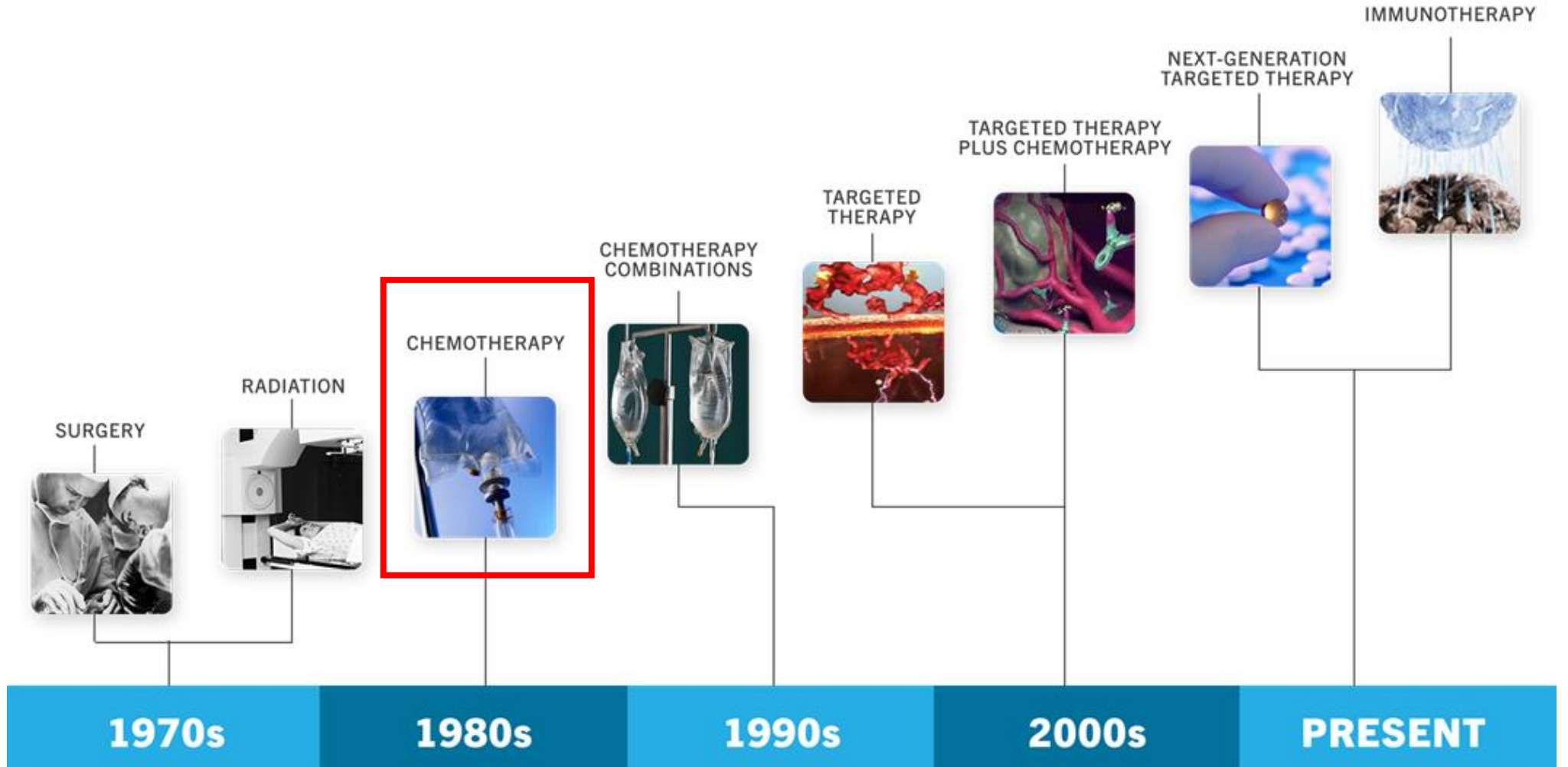
# PAST, PRESENT AND FUTURE

EVOLUTION



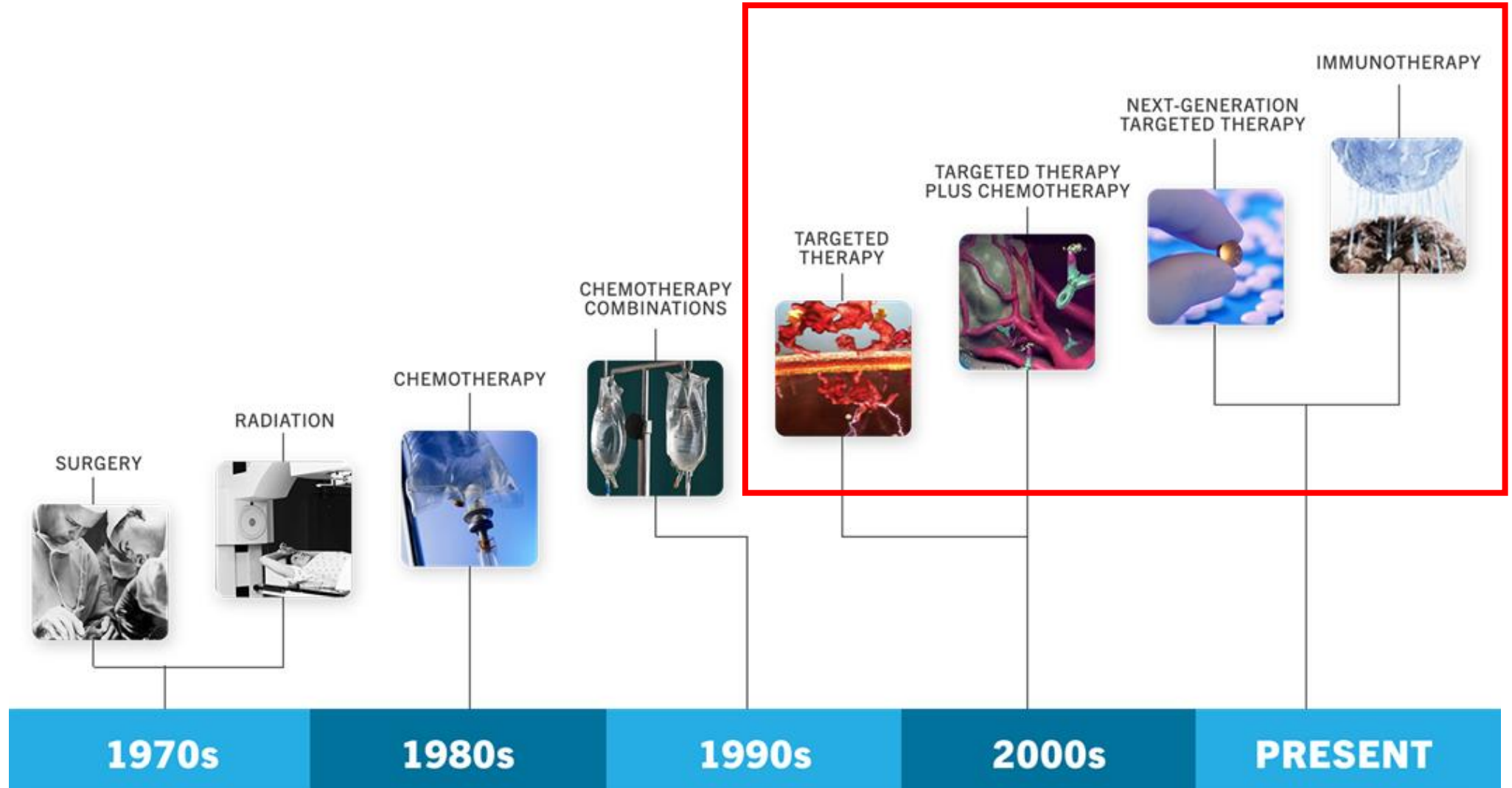
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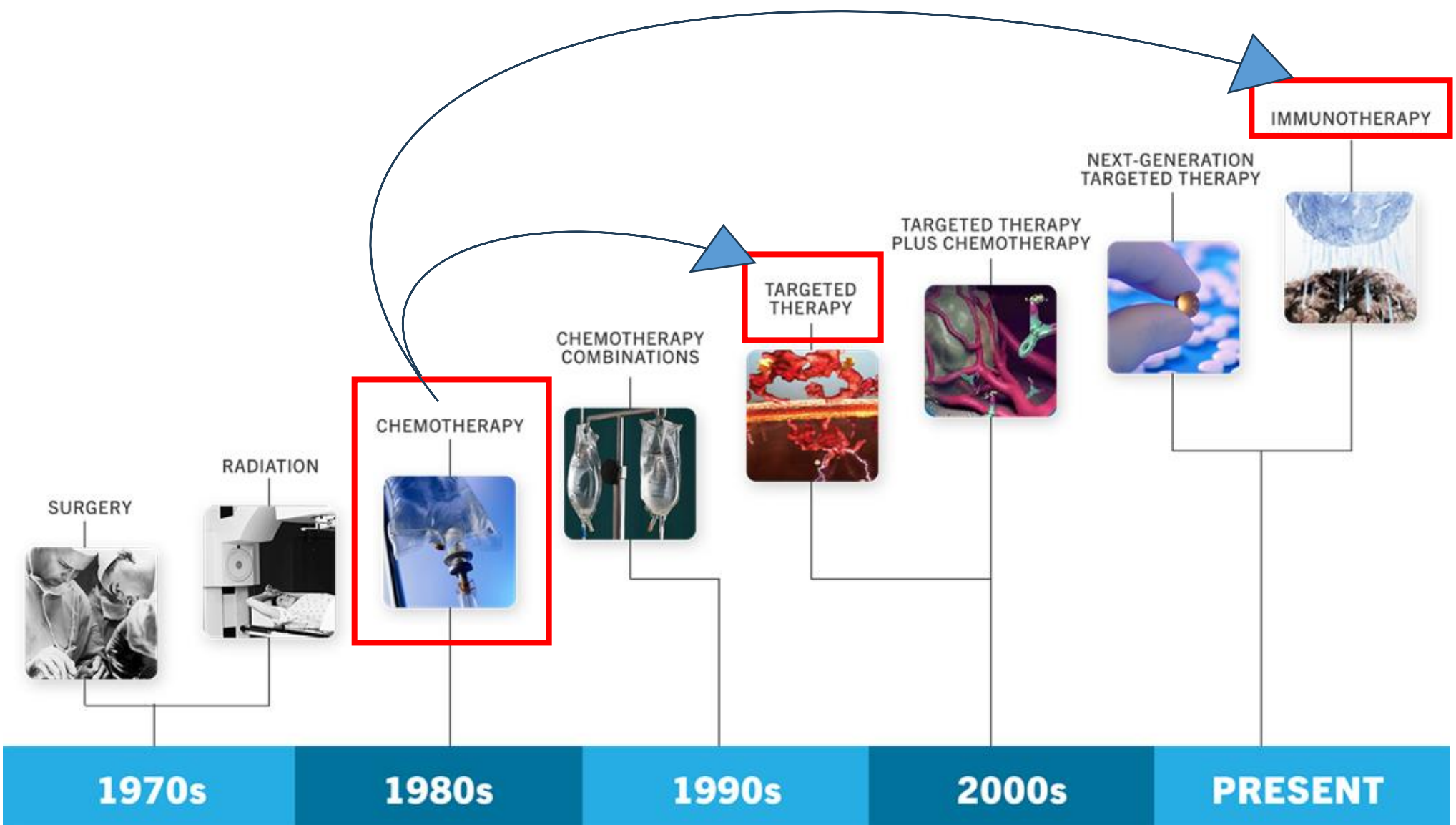
# PAST, PRESENT AND FUTURE

**R**EVOLUTION





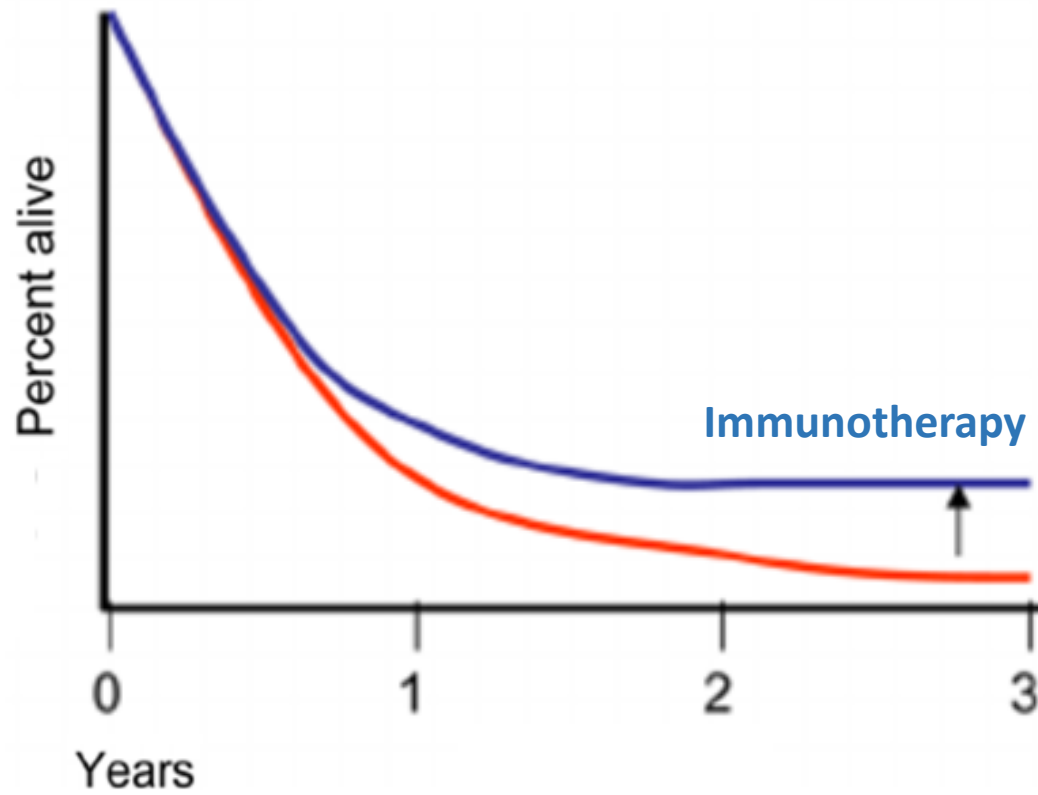
# PAST, PRESENT AND FUTURE



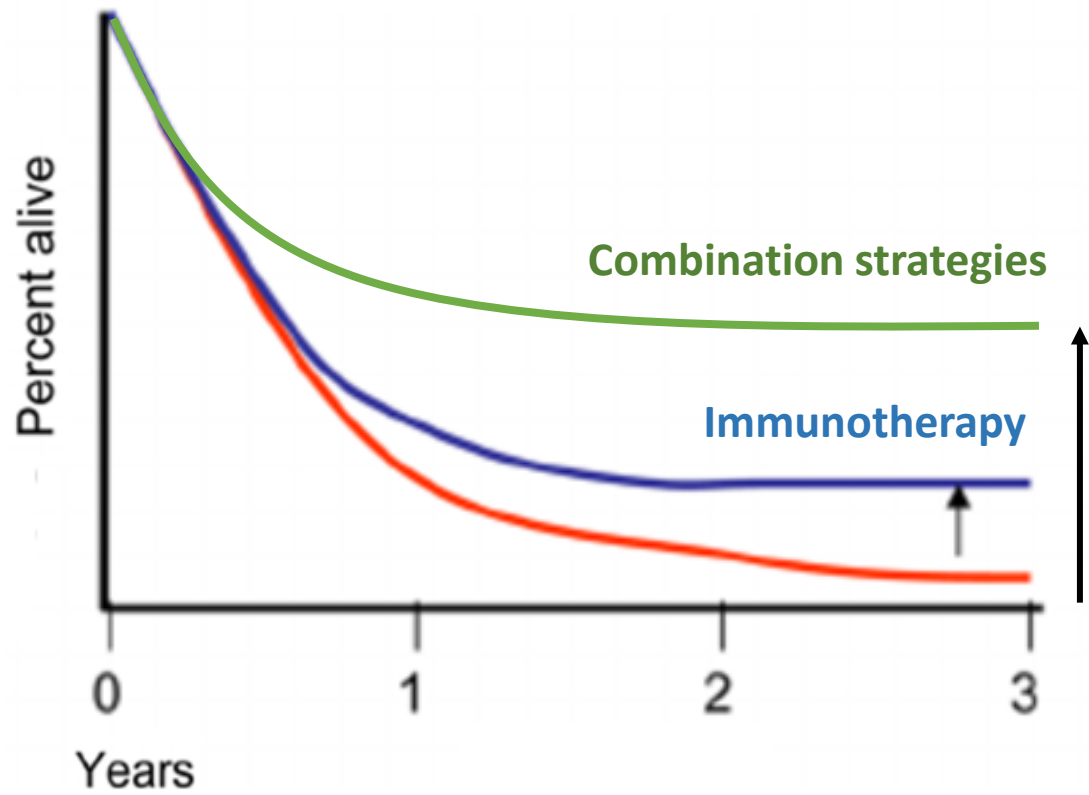
**R**EVOLUTION



# PAST, PRESENT AND FUTURE

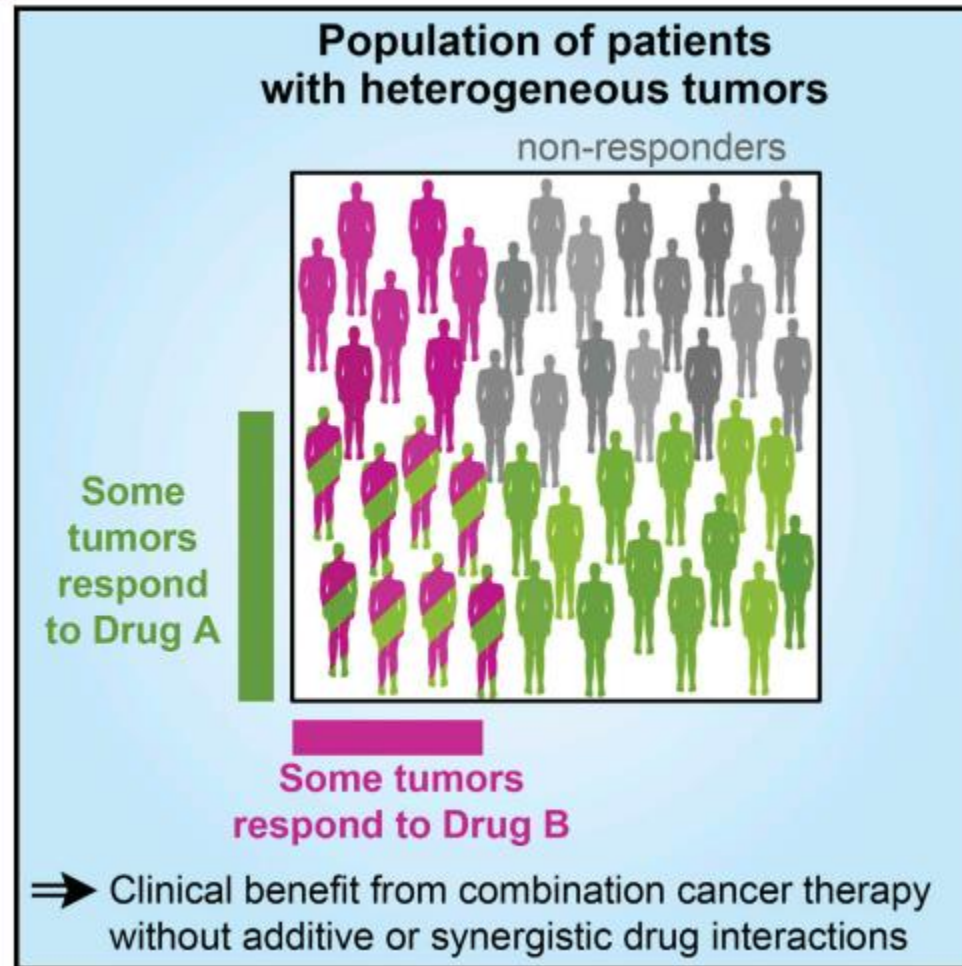


# PAST, PRESENT AND FUTURE



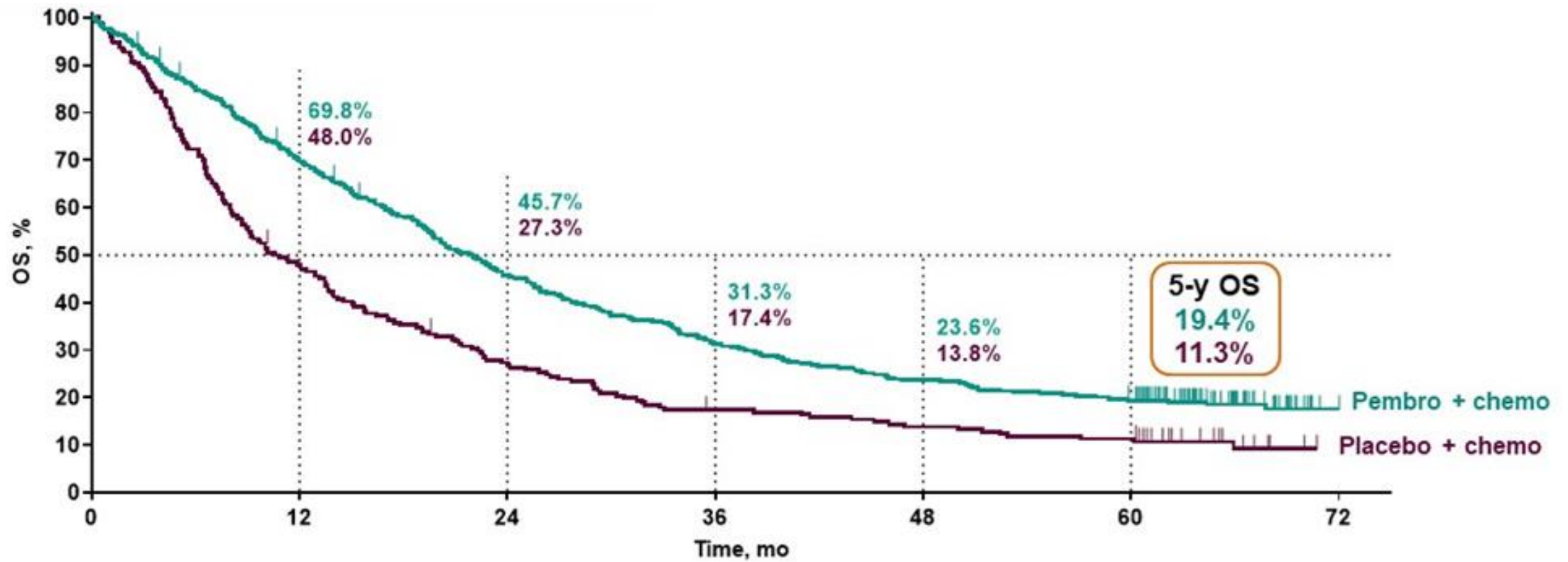
# PAST, PRESENT AND FUTURE

## Fighting resistance and tumor heterogeneity



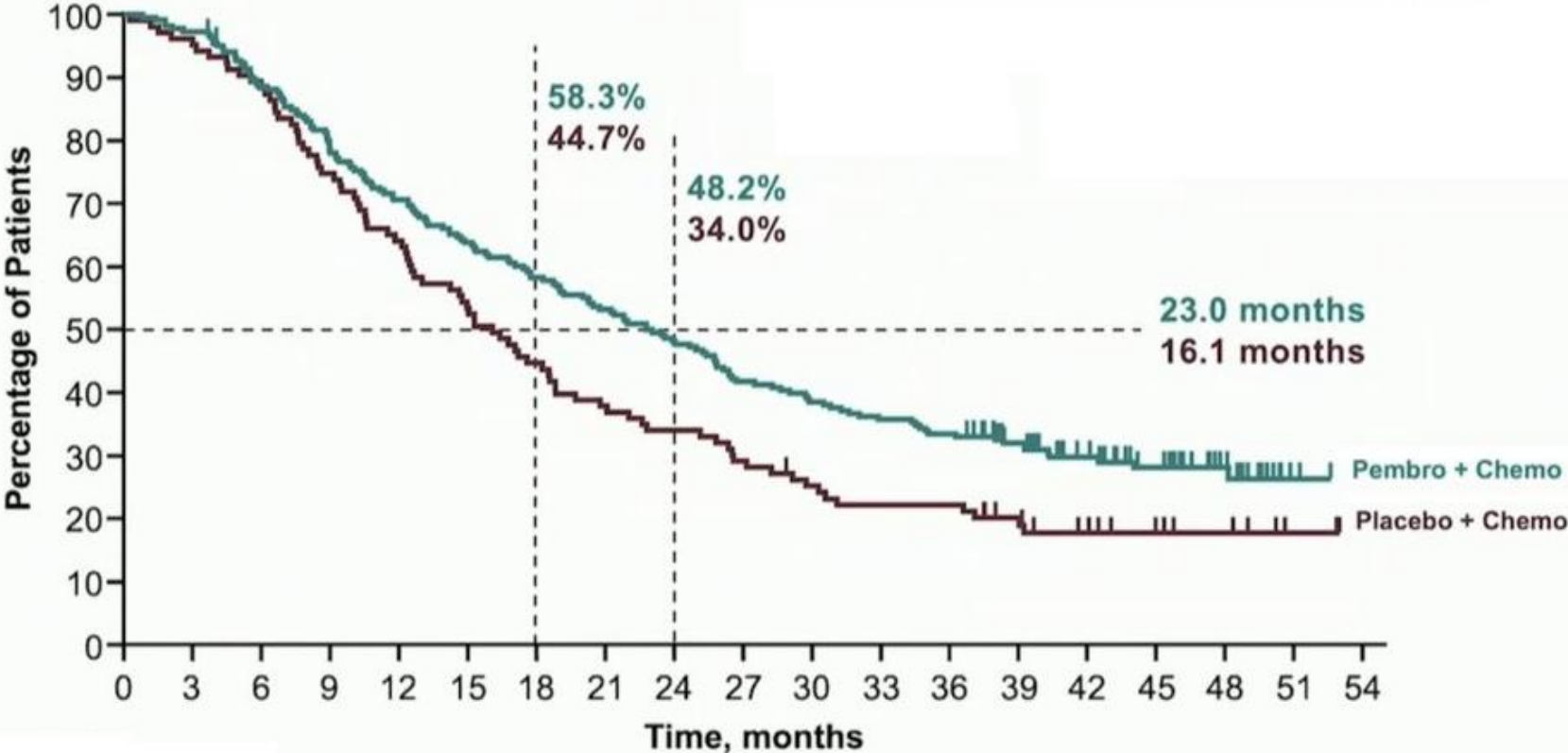
# PAST, PRESENT AND FUTURE

## COMBINATION STRATEGIES IN LUNG CANCER

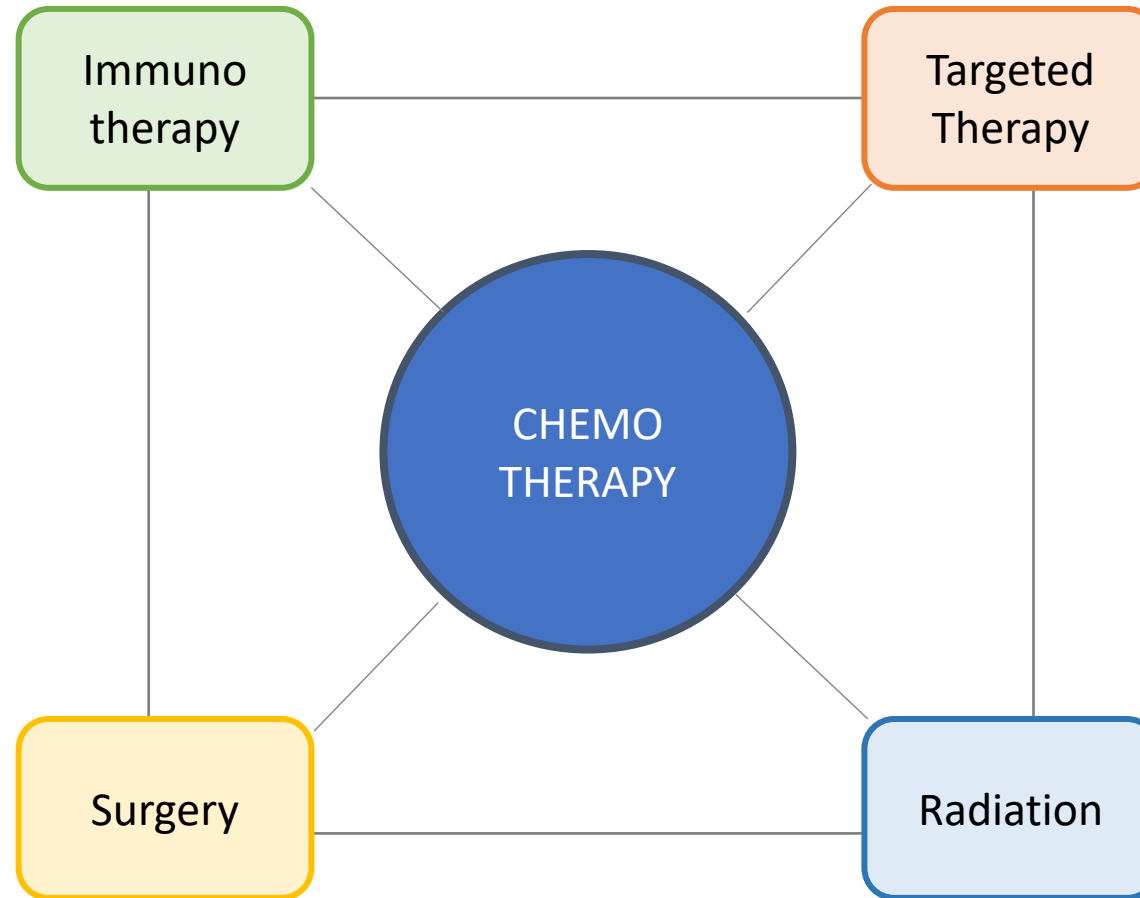


# PAST, PRESENT AND FUTURE

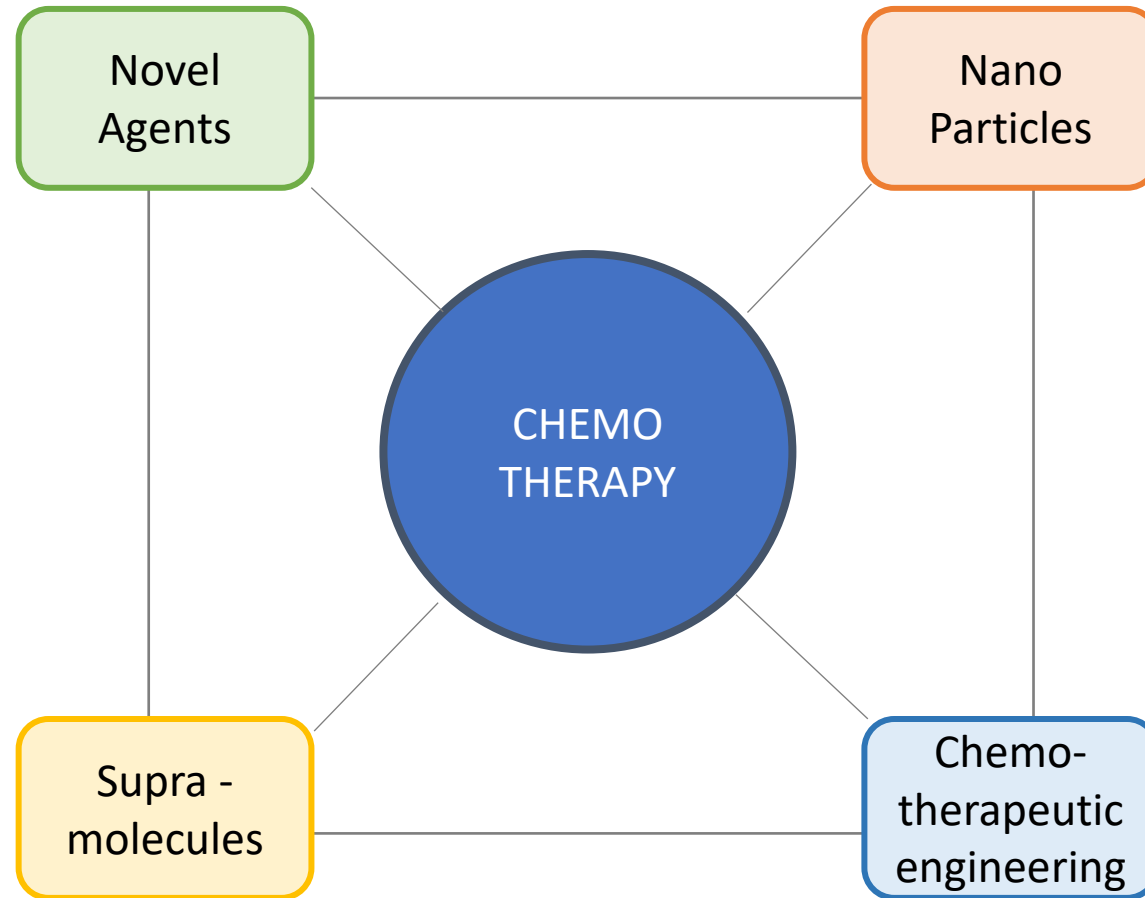
## COMBINATION STRATEGIES IN BREAST CANCER



# FUTURE PERSPECTIVES

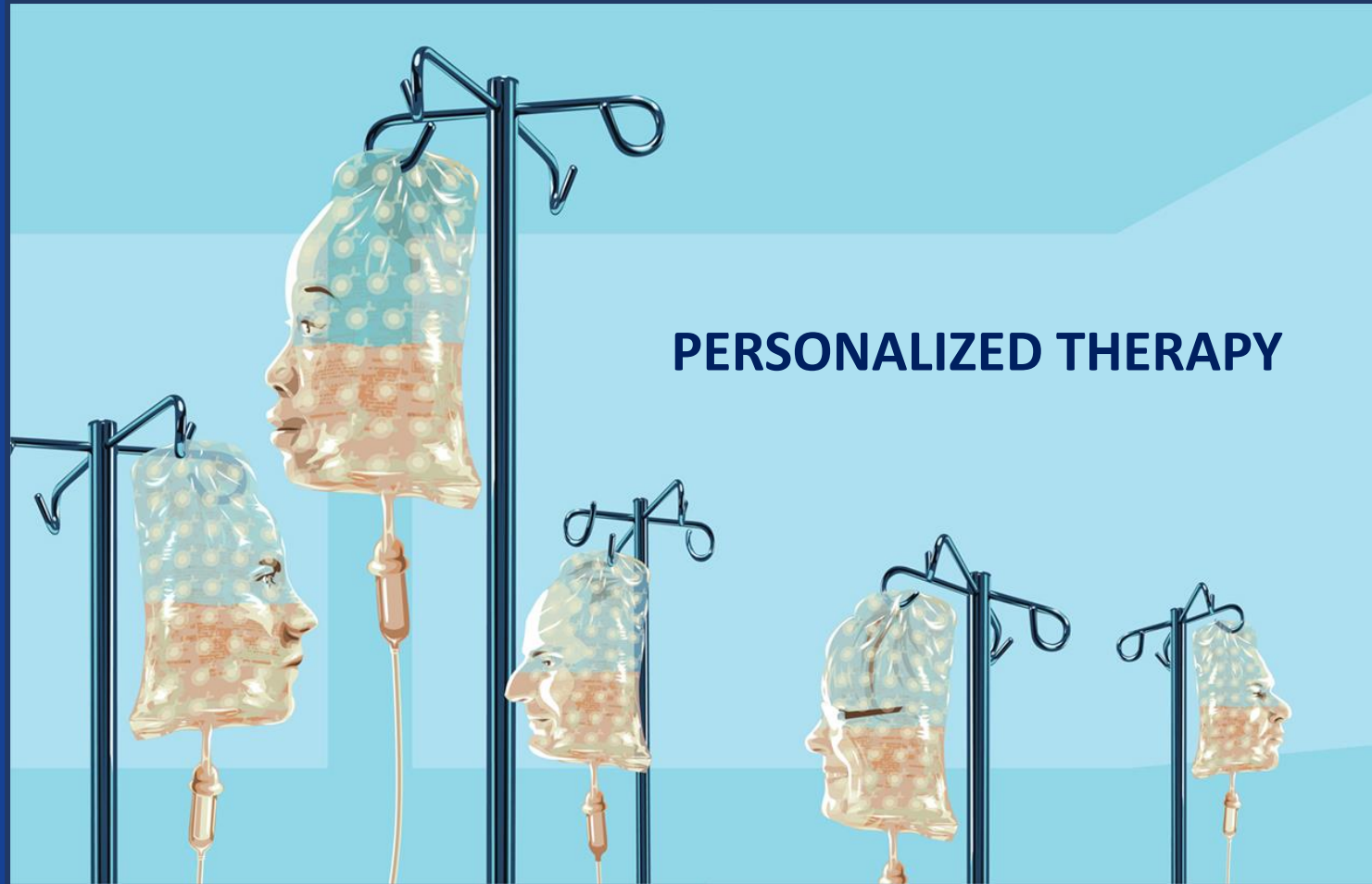


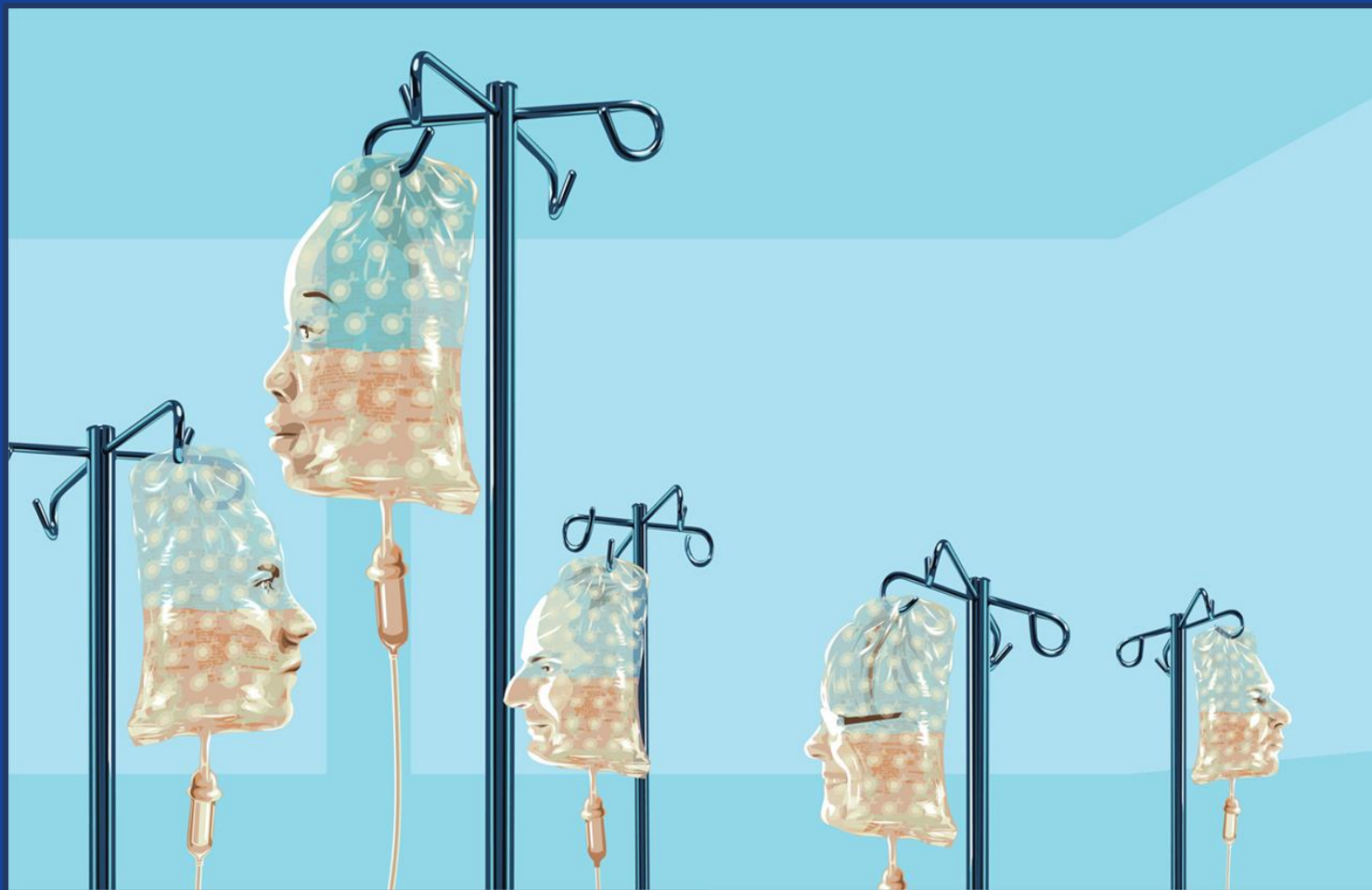
# FUTURE PERSPECTIVES





# PERSONALIZED THERAPY





Grazie