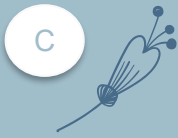




Lung Cancer

For Listuguj Community Health Service team



General objectives

- Learn more about lung cancer
- Acquire the knowledge needed to assist patients with lung cancer screening.
- Understand the stages of clinical investigation following a positive result.
- Work interprofessionally with physicians, respiratory therapists, technologists and coordinators.

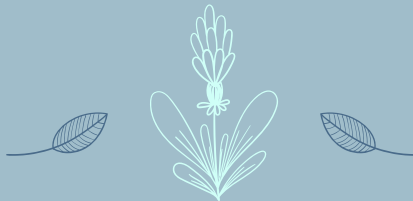




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causes and prevention



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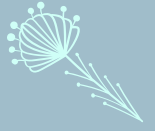
03

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Screening method : pilot
project and PQDCP



05

Lung cancer
investigation



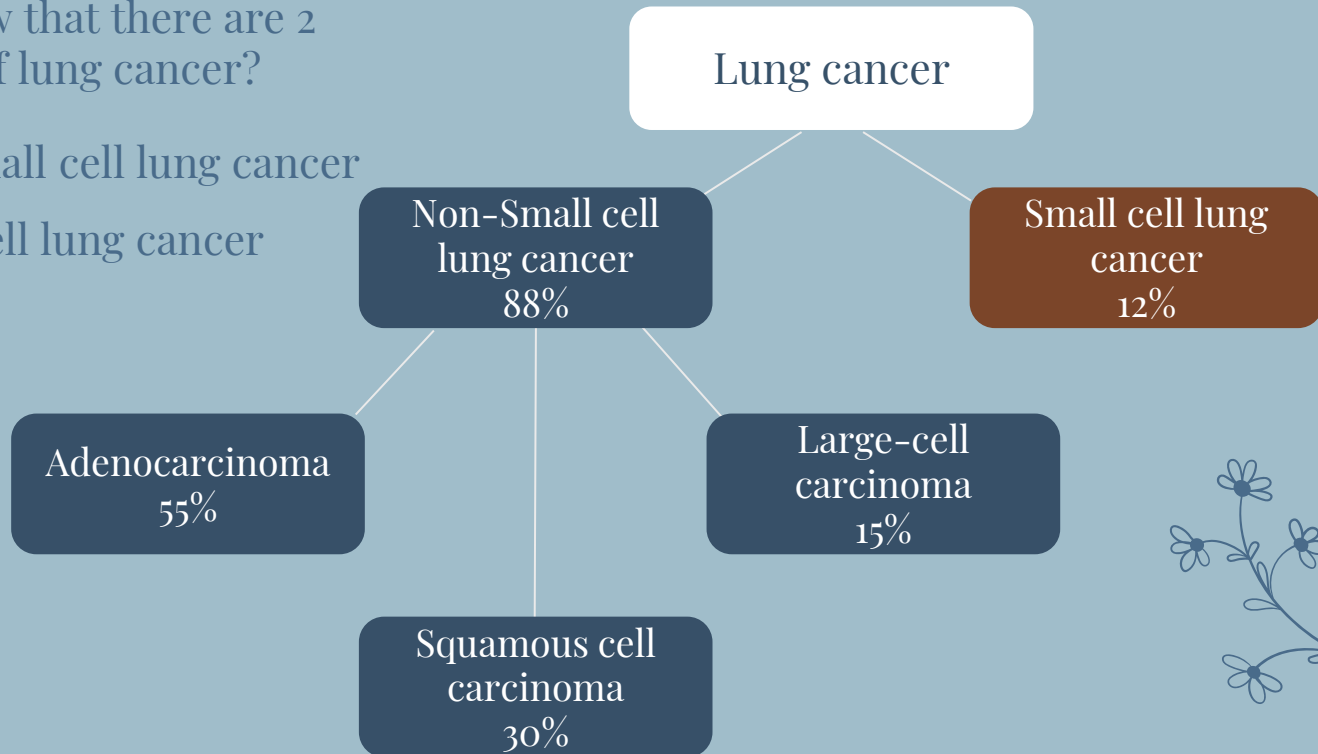
What is lung cancer?

C

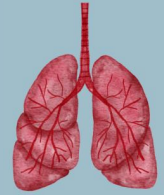


Did you know that there are 2 main types of lung cancer?

- Non-small cell lung cancer
- Small cell lung cancer



Non small-cells lung cancer



Adenocarcinoma

- often occurs in bronchial mucous gland cells in peripheral lung tissue.
- Is the most common form in women, and the most frequently diagnosed in non-smokers.
- More easily visible on chest X-ray

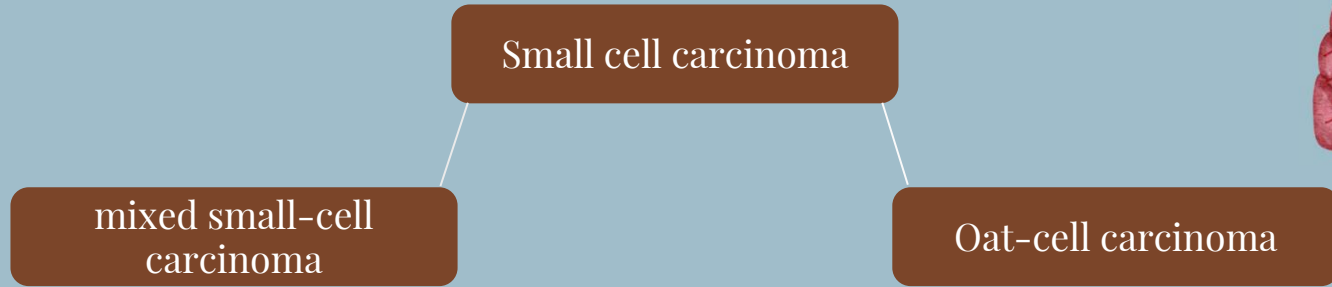
Squamous cell carcinoma

- Usually appears in bronchial cells
- Usually evolves in the more central parts of the lungs
- Closely related to smoking

Large-cell carcinoma

- This type of NSCLC can be found anywhere in the lung, and usually develops and spreads rapidly.

Small-cell lung cancer



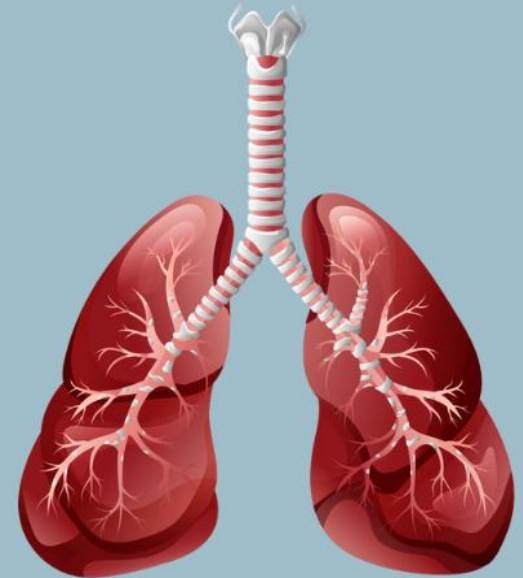
- Usually begins in the bronchi, the main airways in the center of the chest that carry air to the lungs.
- SCLC is rarer.
- It spreads more rapidly than non-small-cell lung cancer, and tends to metastasize more quickly.
- It gets its name from the size of the cancer cells, which are only visible under a microscope.

Société canadienne du cancer. (NA). Facteurs de risques du cancer du col de l'utérus. Récupéré le 6 mai 2024 sur le site

[Types de cancer du poumon | Association pulmonaire du Canada](#)

Frequent signs and symptoms

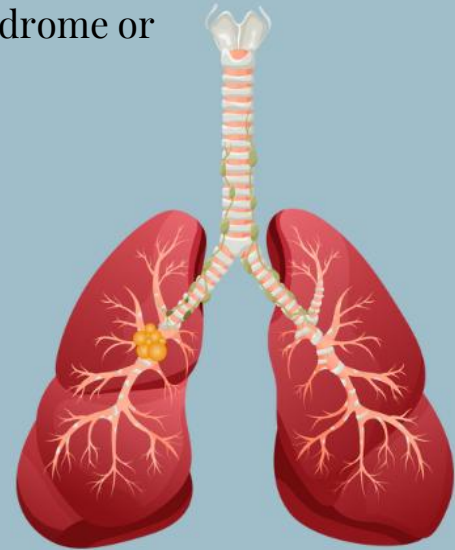
- A new cough or a cough that worsens over time
- Chest, shoulder, back or arm pain
- Dyspnea
- Hemoptysis
- Recurrent lung infections (pneumonia or bronchitis)
- Anorexia or unexplained weight loss
- Dysphonia
- Unexplained fatigue



Signs and symptoms of disease progression

People with lung cancer may also experience paraneoplastic syndromes such as :

- Syndrome of inappropriate antidiuretic hormone secretion (SIADH)
- Cushing's syndrome
- Paraneoplastic neurological syndromes such as Lambert-Eaton syndrome or cerebellar degeneration
- Disseminated intravascular coagulation (petechiae, ecchymosis)
- Hypercalcemia



What do you think
is the main cause of
lung cancer?



Smoking



C

- People who smoke are 25 times more likely to die of lung cancer than those who have never smoked
- This risk increases considerably with the number of cigarettes smoked, the number of years spent smoking and the age of the smoker.
- It is estimated that 72% of lung cancer cases in Canada are caused by smoking.
- Exposure to second-hand smoke at home can also increase the risk of lung cancer by 20-30% in people who have never smoked.

What causes lung cancer?

W

Main risk factors :

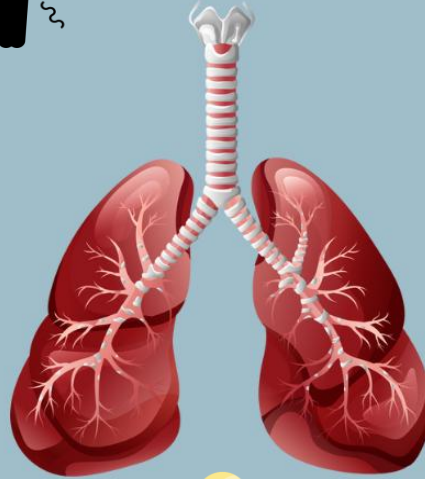


Radiation



Smoking

Personal or
family history
of lung cancer



Radon



Chemicals
at work



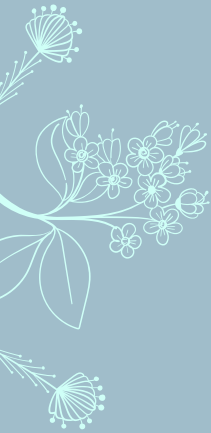
Asbestos



Air pollution

Prevention

- Smoking cessation ¹
 - Ten to fifteen years after quitting, an ex-smoker's risk of lung cancer is about half that of a person who continues to smoke.
 - Quitting smoking is the best ways to prevent the development of lung cancer and other smoking-related diseases.
- Check house for radon ²
 - Radon is a radioactive gas is produced naturally in the ground, has no colour, odour or taste, and can seep into homes through cracks and crevices.
 - Radon can cause lung cancer, and is the leading cause of lung cancer in non-smokers
- Avoid exposure to products of recognized toxicity without adequate protection, e.g. asbestos (old tiles and insulation), silica (sand-blasting) or second-hand smoke ³



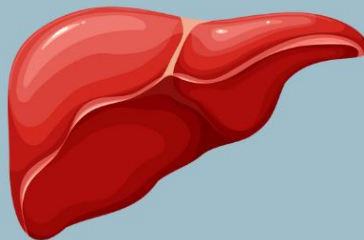
Main sites of lung cancer metastases



Bone



Brain



Liver



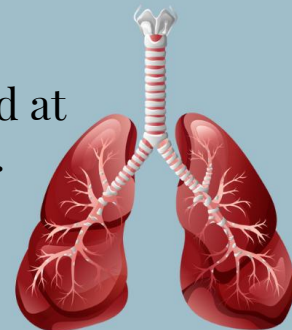
Adrenal glands

Five-years lung cancer survival rates by clinical stage



When the patient begins to show symptoms, the disease is often at an advanced stage.

That's why lung screening is so important, as most cancers are found at stage 1 (tumour <4cm, no nodes), with a better chance of survival.



Statistics



Cause of death in Listuguj

Nombre de décès selon la cause, Listuguj, 2018-2022p

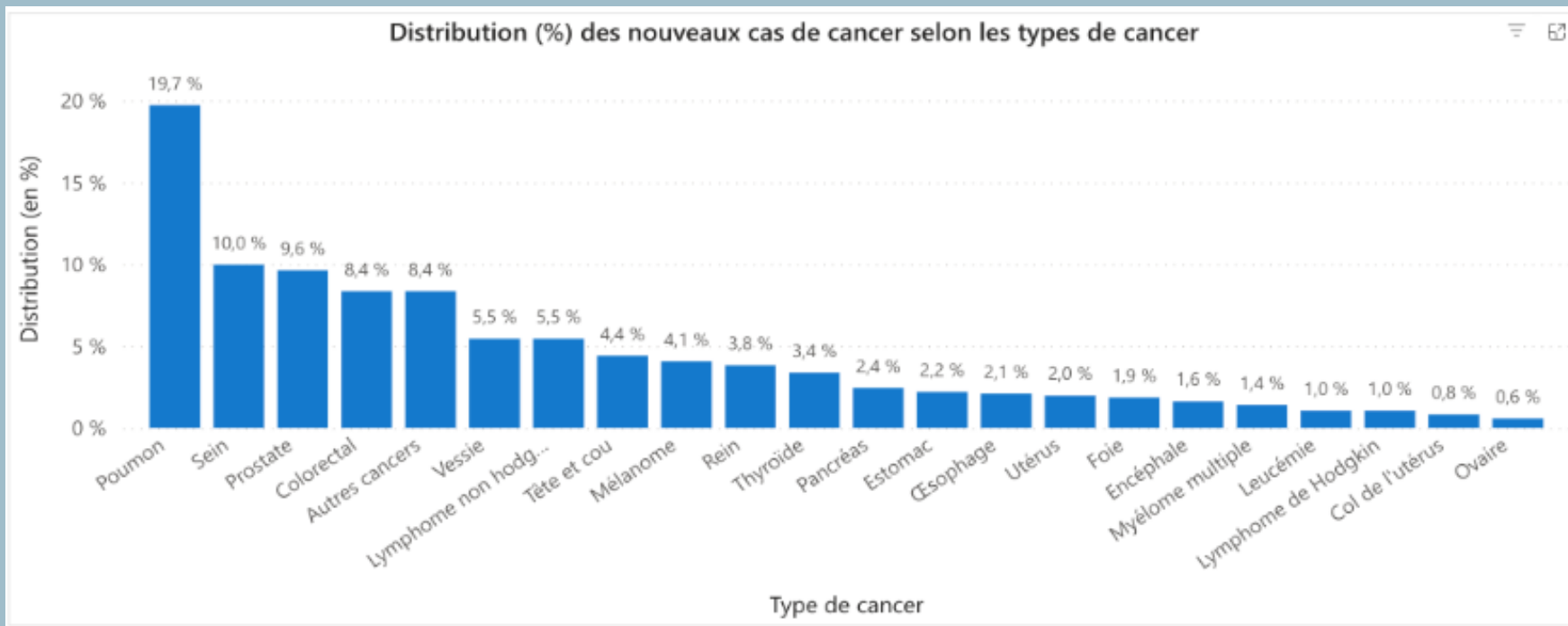
Causes de décès	Nombre de décès
Cancer (tous sièges)	20
poumon	7
prostate	2
sein	1
estomac	1
côlon, rectum et anus	4
autres cancers	5
Maladies cardio-vasculaires	23
Maladies de l'appareil digestif	8
Grippe et pneumopathie	1
COVID	2
Maladies de l'appareil génito-urinaire	4
Maladies endocriniennes, nutritionnelles et métaboliques	3
Suicide	2
Traumatismes non intentionnels	3
Événement d'intention indéterminée	2
Autres causes	10
Total	78

P : Les décès de 2022 sont provisoires.

Source : Les données sur les décès proviennent du Registre des événements démographiques du Québec (RED).

Lung cancer statistics, Gaspésie-Îles

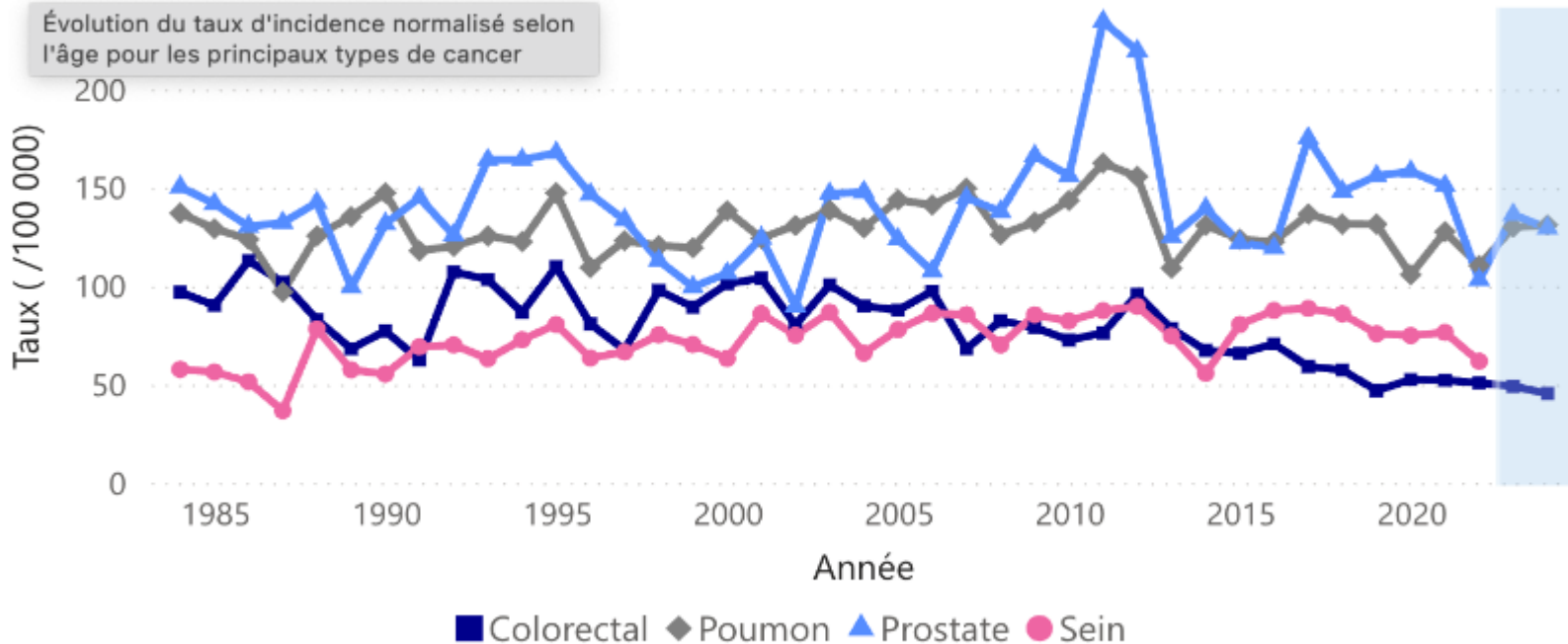
W



Cancer rate trends, 4 cancers that can be screened

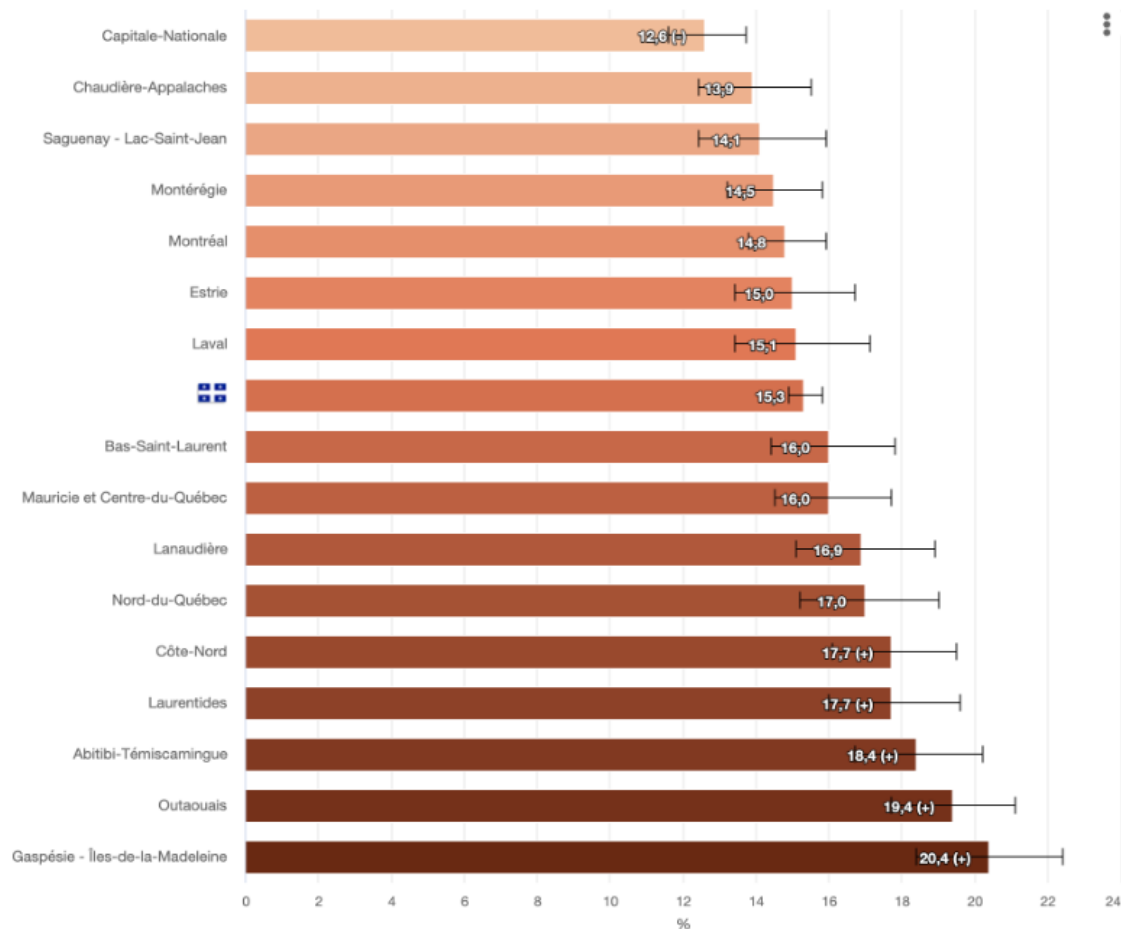
Gaspésie-Îles-de-la-Madelaine

Évolution du taux d'incidence normalisé selon l'âge pour les principaux types de cancer



Smoking rates by region, 2020-2021

Canada	11%	2022
Québec	11%	2023
Gaspésie-Îles-de-la-Madelaine	20%	2020-2021
Listuguj	?	



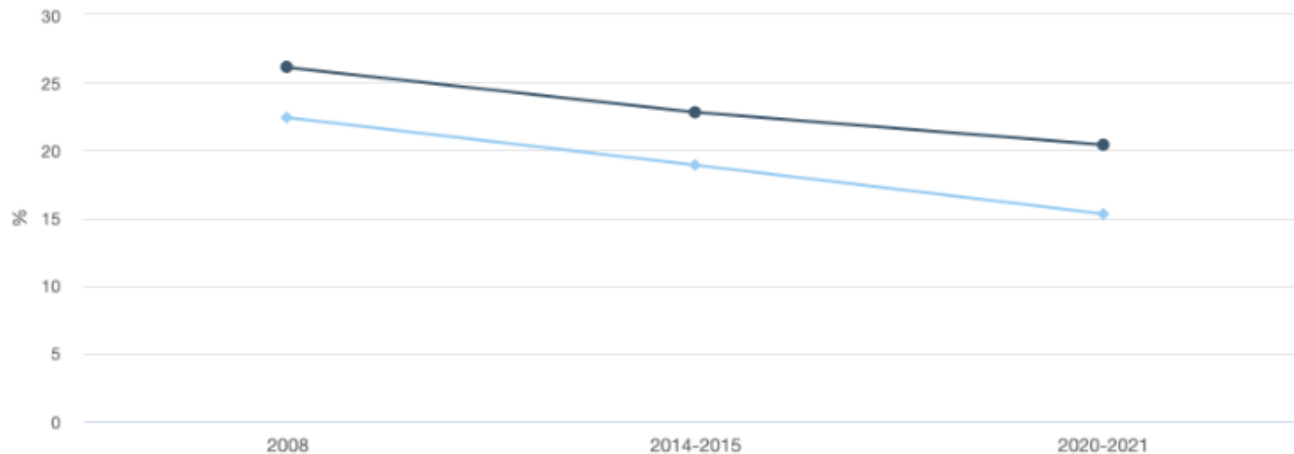
Percentage of smokers : Gaspésie-Îles-de-la-Madelaine vs all of Québec

Comparaison entre régions

Évolution

Maj. + Clic sur la carte pour comparer les régions

● Gaspésie – Îles-de-la-Madeleine ◆ Ensemble du Québec



Screening: improved distribution of lung cancer stages

	Stage 1	Stage 2	Stage 3	Stage 4	Unknown	Reference
Without screening	28%	8%	18%	42%	4%	1
With screening (Projet de démonstration de dépistage du cancer du poumon)	72%	14%	9%	5%	---	2

1. Vachani A, Carroll NM, Simoff MJ, et al. Stage Migration and Lung Cancer Incidence After Initiation of Low-Dose Computed Tomography Screening. J Thorac Oncol. 2022 Dec;17(12):1355-1364. <https://pmc.ncbi.nlm.nih.gov/articles/PMC9703625/#ABS1>
2. Évaluation du projet de démonstration de dépistage du cancer du poumon , 2024 <https://www.inspq.qc.ca/sites/default/files/publications/3534-Projet-demonstration-depistage-cancer-poumon.pdf>

(Old) statistics among First Nations in Ontario

49% of First Nations females living on-reserve and 41% living off-reserve used commercial tobacco from 1991 to 2010, compared to 18% of other females living in Ontario.

Among First Nations males, 50% living on-reserve and 44% living off-reserve used commercial tobacco, compared to 26% of other males living in Ontario

In Ontario, between 1991 and 2010, lung cancer was the most common cancer among First Nations people, affecting 1,059.



Demonstration project & PQDCP

Quebec lung cancer screening program

History of screening

- **2011:** NLST trial results, 20% reduction in lung cancer mortality with annual screening of smokers
- **2019:** INESSS recommends using low-dose axial computed tomography (LDCT) in pilot program in a real healthcare setting
- **2020:** BC first province with screening program, pilot programs in other provinces
- **2021:** Quebec ministry authorizes pilot program in 7 regions (not Gaspésie), run by Quebec City's IUCPQ
- **2024:** Gaspésie added to pilot program
- **2025 (?):** Provincial program expected to be launched in all Quebec regions

For every 1,000 people screened by CT every year for three years:



609 will receive a negative low-dose CT result



351 will receive a positive test result, but will discover through subsequent procedures that they do not have cancer (false positive)



40 lung cancer will be diagnosed



7 of the 40 lung cancers diagnosed would not have caused symptoms or death (over-diagnosis)



3 will suffer major complications from invasive complementary procedures

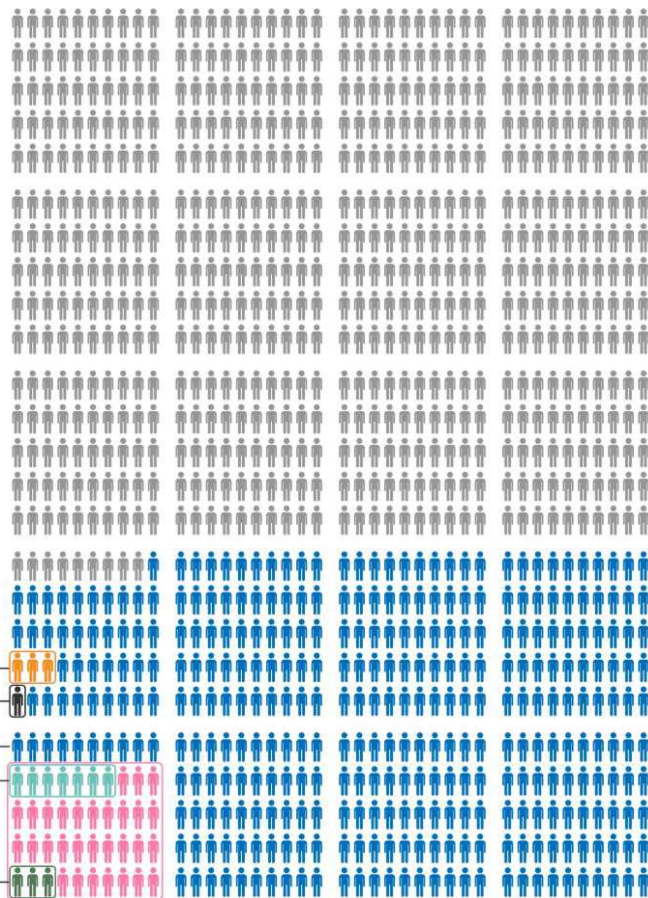


3 fewer people will die of lung cancer



1 will die as a result of invasive complementary procedures

Dépistage par TDM à faible dose chez 1000 personnes admissibles (une fois par an pendant 3 ans)



Benefits of screening

Reduced risk of dying from
lung cancer

Reduced risk of lung cancer
related health problems



Reduced smoking and the risk
of relapse

Possible discovery and
management of abnormalities
other than lung cancer

Disadvantages of screening

- High false-positive rate
- Overdiagnosis (leading to unnecessary investigations and treatments)
- Invasive investigation
- Incidental finding leading to unnecessary and potentially risky investigations
- Radiation exposure
- Potential anxiety of participants
- Possibility that clinical prognosis will be similar to that obtained in the absence of screening



Inclusion criteria



- Aged between 55 and 74 years old
- have smoked continuously or intermittently for at least 20 years
- have smoked continuously or discontinuously for at least 20 years and stopped less than 15 years ago
- Have a PLCO risk of more than 2%

Exclusion criteria



- Personal history of lung cancer
- Personal history of cancer (Less than 5 years ago)
- Symptoms suggestive of lung cancer
- Chest CT less than a year ago
- Refusal of treatment in the events of diagnosis
- Would not tolerate surgery in case of treatment

Patient pathway



1. Risk evaluation (PLCO) with Tanya to validate program eligibility (on phone)
 - If risk is more than 2% Tanya makes appointment with IUCPQ team (during the pilot project)
2. The patient comes to the LCHS for a meeting with IUCPQ team and LCHS nurses (on Teams)
3. PLCO & Medical evaluation are done with a IUCPQ nurse from the project
4. If eligible : Tanya makes appointment quickly for a CT scan in Maria hospital
5. Scan done at Maria hospital and read by Dre Thériault
 - If the scan is negative (**no nodule**) : IUCPQ team calls patient, offer appointment in a year
 - If the scan result is positive (**nodule**) : IUCPQ team calls patient to refer him or her to the investigation desk at Maria hospital for further investigation

PLCO

Consent must be free, informed and
culturally appropriate

Âge *

ans

Niveau de scolarité *

Sélectionner

IMC (Indice de masse corporelle) *

COMMENT CALCULER MON IMC 



30.5 kg/m²

Antécédent personnel de cancer

☐ Oui ☒ Non

Antécédent familial de cancer du poumon

☐ Oui ☒ Non

MPOC, emphysème ou bronchite chronique
(maladies pulmonaires obstructives chroniques)

☐ Oui ☒ Non

Statut tabagique

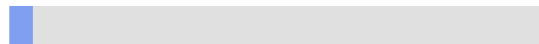
☐ Ex-fumeur ☒ Fumeur actuel

Intensité tabagique



0 cigarette(s) par jour

Durée de tabagisme



0 année(s)

Temps depuis la cessation tabagique

0 si fumeur actuel



0 année(s)

CALCULER VOTRE % DE RISQUE

Example 1 :

W

Calculateur PLCO_{m2012norace} - Pourcentage de risque de développer un cancer du poumon sur 6 ans¹

Âge * 55 ans

Niveau de scolarité * Diplôme d'études secondaires

IMC (Indice de masse corporelle) *

COMMENT CALCULER MON IMC ⓘ

30.2 kg/m²

Antécédent personnel de cancer ☐ Oui ☒ Non

Antécédent familial de cancer du poumon ☐ Oui ☒ Non

MPOC, emphysème ou bronchite chronique
(maladies pulmonaires obstructives chroniques) ☐ Oui ☒ Non

Statut tabagique ☐ Ex-fumeur ☒ Fumeur actuel

Intensité tabagique 25 cigarette(s) par jour

Durée de tabagisme 30 année(s)

Temps depuis la cessation tabagique 0 année(s)
0 si fumeur actuel

Votre pourcentage de risque -
1.3 %

CALCULER VOTRE % DE RISQUE

Exemple 2

W

Calculateur PLCO_{m2012norace} - Pourcentage de risque de développer un cancer du poumon sur 6 ans ¹

Âge * 55 ans

Niveau de scolarité * Diplôme d'études secondaires

IMC (Indice de masse corporelle) *

COMMENT CALCULER MON IMC ⓘ

30.2 kg/m²

Antécédent personnel de cancer ☐ Oui ☒ Non

Antécédent familial de cancer du poumon ☐ Oui ☒ Non

MPOC, emphysème ou bronchite chronique
(maladies pulmonaires obstructives chroniques) ☐ Oui ☒ Non

Statut tabagique ☐ Ex-fumeur ☒ Fumeur actuel

Intensité tabagique 60 cigarette(s) par jour

Durée de tabagisme 30 année(s)

Temps depuis la cessation tabagique 0 année(s)
0 si fumeur actuel

vosre pourcentage de risque =
2.0 %

CALCULER VOTRE % DE RISQUE



Investigation desk in Maria hospital



Abnormal result (CT scan) comes from the project or a doctor

Pneumology consultation in Rimouski

Lung investigation

Treatments

Remission or palliative care



No cancer : no investigation

Possible cancer : trajectory
continue

During the treatment phase,
the oncology nurse provides
support to the patient

Tests the pneumologist may order



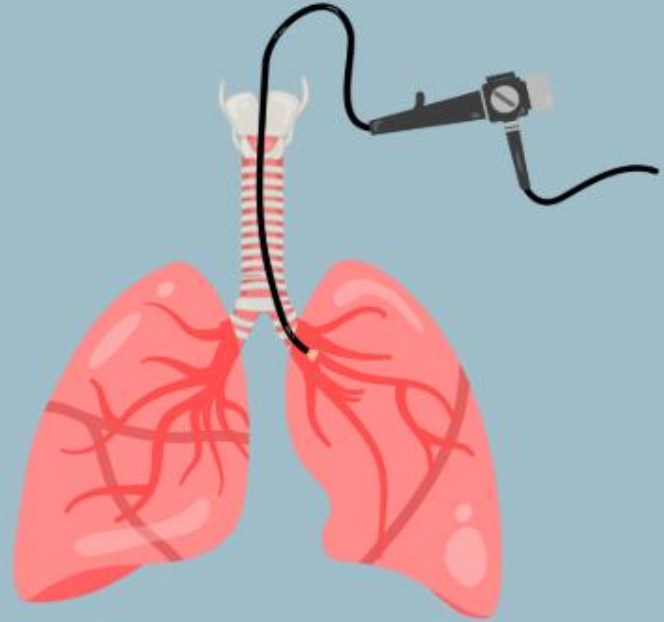
- Bronchoscopy (**Rimouski**)
- PET scan (**Rimouski**)
- Lung x-ray (**Maria**)
- Brain MRI (**Maria** or **Rimouski**)
- Bone Scintigraphy (**Chandler**)
- Blood test (**LCHS**)
- Electrocardiogram (**Maria** or **Elders home?**)
- Respiratory function test (**Maria**)
- Trans-thoracic biopsy (**Rimouski**)
- EBUS (Endobronchial ultrasound) (**Rimouski**)



Bronchoscopy

A bronchoscopy involves inserting a small flexible tube fitted with a camera through the nose, and sometimes the mouth, to observe the vocal cords and bronchi.

- Bronchial lavage : cytology
- Biopsy : Pathology on mass



The role of the investigation desk team :



- Provide the patient with information about the investigation
- Anxiety management
- Coordination of the exam
- Results follow-up
- Answering patient questions
- Liaison between the Rimouski hospital and Maria hospital

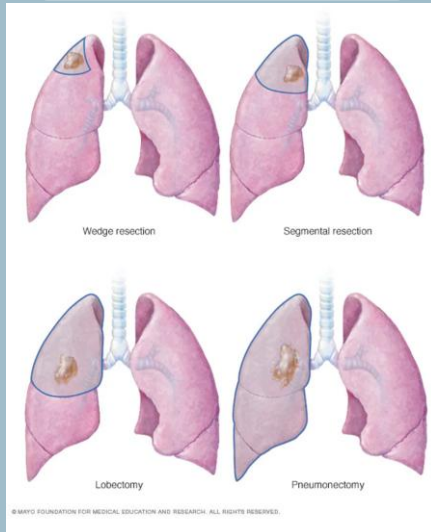


Treatment

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The choice of treatment depends on your type and stage of cancer

Surgery (Quebec City)



Radiotherapy (Rimouski)



Chemotherapy and immunotherapy (Maria)



Screening saves lives and can
provide years of smiles, memories
and shared moments, so let's
work together to make it happen.

