This booklet is a short guide to help citizens learn about and prevent lung cancer. It does not pretend to be a scientific manual, but aims at providing some information on what this disease is and which the main risk factors are, followed by some advice on how to protect oneself.

This campaign has been developed by the Tribunal for Patients' Rights-Cittadinanzattiva, in collaboration with Antea, Assofarm, FIMMG (Italian Federation of General Practitioners), and under the sponsorship of AIOM (Italian Association for Medical Oncology).

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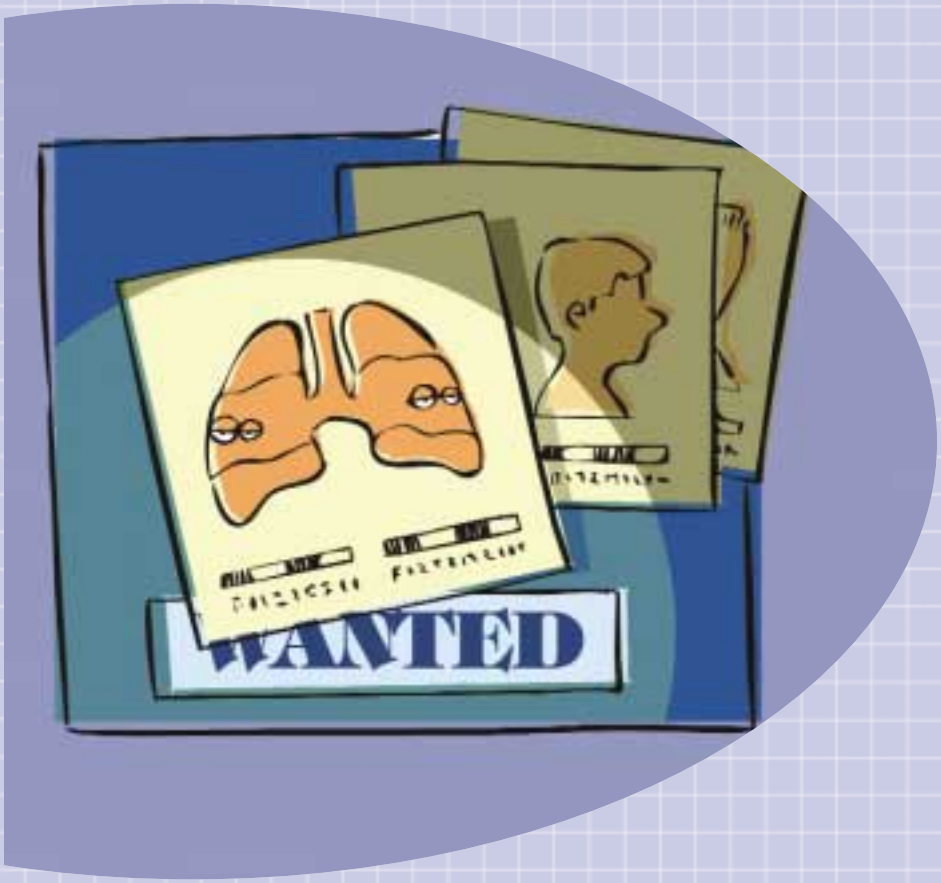
Tribunale per i diritti del malato

The Tribunal for patients' rights

Watch out for those two!

lung cancer prevention campaign



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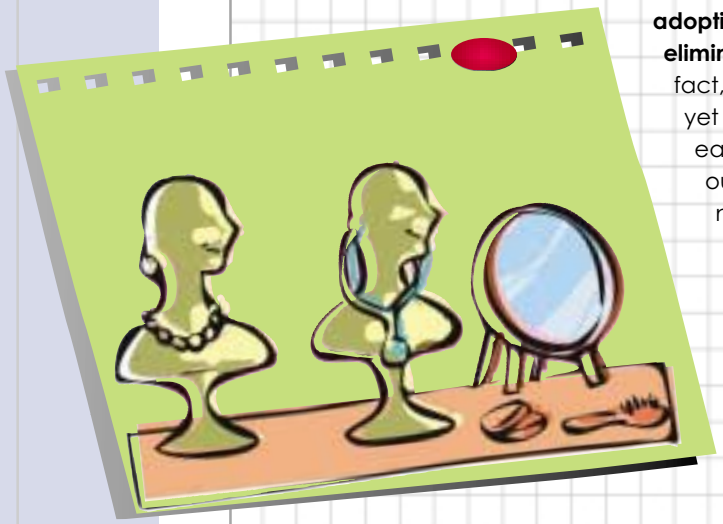
Rome 06 23 2005. Traslated by Luca Vangone

PREVENTION:
A RIGHT AND A DUTY

The focus of health policies is progressively shifting to prevention: **taking a responsible attitude towards one's health and environment can prevent the onset of many diseases.**

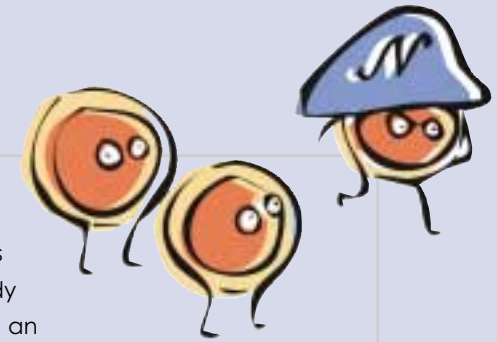
Prevention can be divided into:

1. ***primary prevention:*** consisting in eliminating harmful factors that can favour the onset of the disease.
2. ***secondary prevention:*** it consists in early diagnosis and treatment, which often allow a complete recovery;
3. ***tertiary prevention*:** it basically consists in treatment programmes aimed at avoiding aggravation or the appearance of more serious complications.



Lung cancer is a serious, often deadly disease, which can be prevented by adopting a healthy way of life and by eliminating possible risk factors. In fact, no screening programmes are yet available for this kind of disease, making it impossible to carry out surveys aimed at early diagnosis of the disease on potentially exposed subjects (it is already possible for other forms of cancer affecting such organs as the prostate and the breast). Nevertheless, promising results in this field have emerged from some recent research.

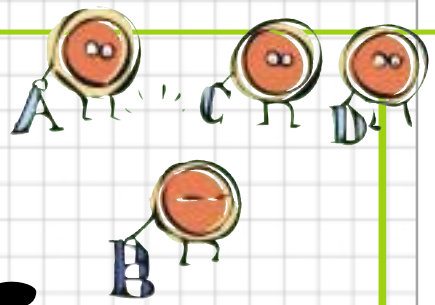
What is cancer?



In order to understand how an oncological problem can arise in any part of the body, some preliminary remarks must be made. Every cell in the body retains the genes which characterise an individual, inherited from his or her parents ("genetic inheritance"). Even after birth and growth, our body is subject to a continuous renewal through cell duplication and division, which speed varies depending on the organ. Sometimes, during these repeated divisions, the duplication of genes is not correct. In other words, some mistakes called "genetic mutations" occur, and are passed on to the following generations of cells.The main cause of mutations is the exposure of cells to factors called "carcinogenic", that is able to favour the onset of cancer. The cells which are born modified due to a genetic mutation are called "atypical", because they present characteristics of appearance and function different from those typical of a normal cell of the same organ.

Atypical cells continue duplicating, causing the so-called "neoplasia" of the affected organ. In other words, a **neoplasia** is *an uncontrolled growth of atypical cells in any part of the organism*.

These cells form a mass, called **tumour**, that invades healthy tissues and interferes with the normal functions of the body. The diffusion of a tumour in organs and sites different from the area where it originated is called **metastasis**. Tumours that have an invasive tendency and produce metastasis are the hardest to cure and often cause death. For these reasons, such tumours are called **malignant**. On the contrary, tumours that do not have an invasive capacity are called **benign**.



The research goes on ...

New hopes for early diagnosis have been raised by a most recent Italian research: thanks to the combined use of two advanced diagnosis technologies (CAT and PET), it is possible to precisely locate the formation of lung carcinoma, allowing to distinguish benign nodules from malign ones, and to treat them surgically, thus succeeding in curing about 80% of malignancies.

It can be reasonably assumed – according to the results of this study – that lung screening programmes will be commonly available in a few years. Such programmes are currently hardly feasible due to high costs (equipment, hospitalisation, qualified staff, etc.) and the experimental state of the research.

The research has been promoted by the Istituto nazionale tumori (Italian Cancer Institute), the European Institute of Oncology and the San Raffaele hospital, Milan. The results are published entirely in the influential international scientific review *"Lancet"*, vol. 362, no. 9384, pg. 593.

Do you need more in-depth information? Then call the AIMAC (Italian Association of Cancer Patients, Family and Friends) toll free number **840/503579 (Monday to Friday, 10.00am-4.00pm)**, or visit the website/www.aimac.it.

The website/www.pneumonet.it features an informative area for patients who are not familiar with technical terms.

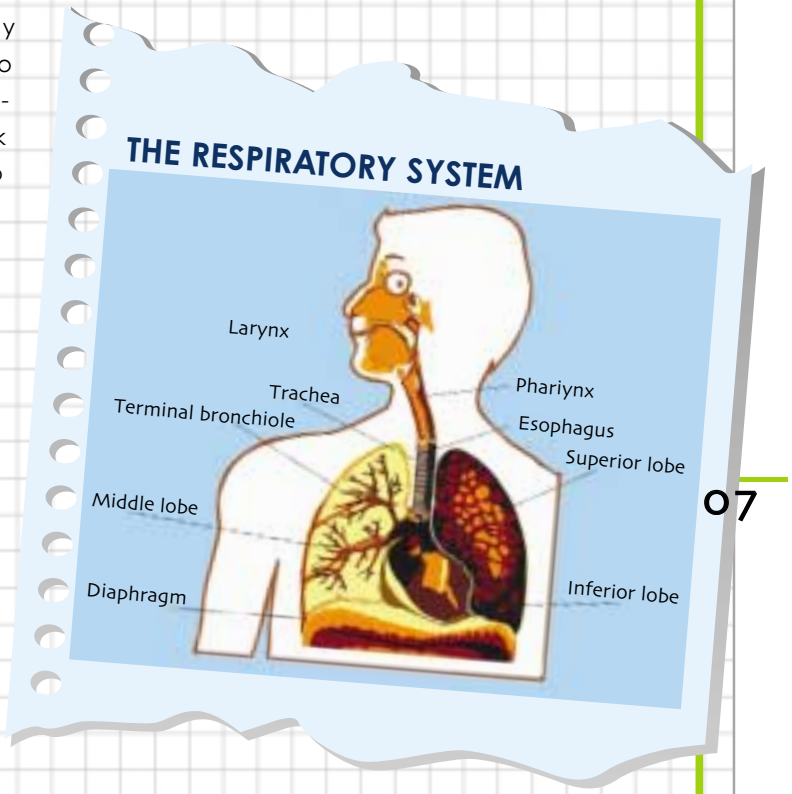
Among the many books available on the subject, we suggest the short and clear manual, only available in the Italian language, "*Il tumore del polmone- Appunti per i pazienti ed i loro familiari*", distributed by the Cuneo Lung Cancer Study Group (CuLCaSG- ALCASE Italia ONLUS). To receive the manual or to contact the association, you can write to:

ALCASE Italia – ONLUS
Gruppo di Ex- pazienti e Volontari del CuLCaSG
c/o Day Hospital della Pneumologia – Ospedale "A.Carle"
Frazione Confreria, 12100 CUNEO
Fax: 0171 441764; e-mail: info@culcasg.org;
website: www.culcasg.org

HOW DOES ONE DEVELOP LUNG CANCER?

ONSET OF LUNG CANCER

The lung is especially exposed to "carcinogenic" risk factors due to its extensive surface on contact with the air and, therefore, with environmental pollutants. A neoplasia can arise and develop in any part of the respiratory tract. **Extended exposure to cigarette smoke, radiation** (especially that coming from radon, a radioactive natural gas), **inhalation of dust from certain minerals** (asbestos, for instance), some viruses, some substances foreign to the human body (such as those produced by internal-combustion engine fumes and urban heating systems) **over**



time may cause genetic mutations, and result in a neoplasia.

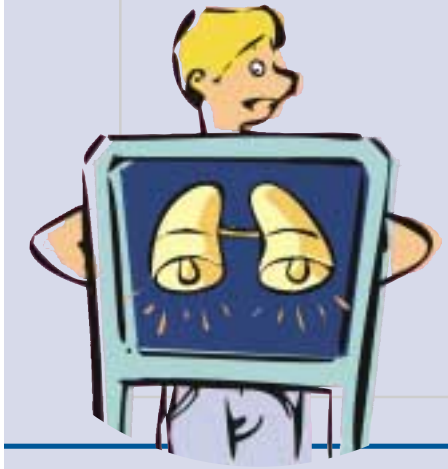
LUNG CANCER OCCURRENCE RATE

The number of new lung cancer cases is on the increase – in Italy as in many other countries of the world – especially among people aged 50 to 70 years. Between 1962 and 1992, a decrease in the mortality of men, typically more disease-prone, has been observed, as opposed to a 550% increase for women*. Such a trend can be explained with the changes in cigarette consumption, which has decreased in men and increased in women.

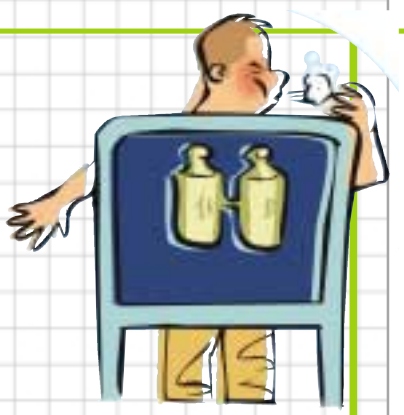
* *"The Lung Cancer Manual"*, ALCASE America.

Signs of danger

Lung cancer develops rather slowly and it may take 10 to 20 years or even longer before the disease becomes diagnosable. **During all this time symptomatology can be completely silent, that is without any symptoms**; on the contrary, slight symptoms can sometimes be observed: these must not be underestimated as they are real **signs of danger**.



Symptoms are divided into two types:



RESPIRATORY SYMPTOMS

- non-smoker's cough that persists for more than 2 weeks*;
- continuous, annoying smoker's cough;
- persistent chest and/or shoulders pain unrelated to pain from coughing*;
- increase in the volume of sputum with repeated presence of blood*;
- slow-resolution bronchitis o pneumonia.

NON-RESPIRATORY SYMPTOMS

- fatigue;
- fever with no apparent cause;
- loss of appetite;
- weight loss with no apparent cause;
- headache, bone pain and aching joints.

* *most frequent symptoms in case of disease onset.*

All these symptoms are not specific to lung cancer, but are often associated with it. Early diagnosis can only be achieved by constantly checking one's body and – should any of these symptoms appear – by promptly consulting with one's doctor, without any alarmism or carelessness.

TAKE EXTRA CARE IF

- **a case of cancer, no matter in which part of the body, exists in your family medical history** (cancer occurrence related to genetic transmission is now proven);
- **you are, or have been, a smoker;**
- **you are, or have been, exposed to risk factors at your workplace or elsewhere;**
- **you have noticed the occurrence of any of the above-mentioned symptoms.**

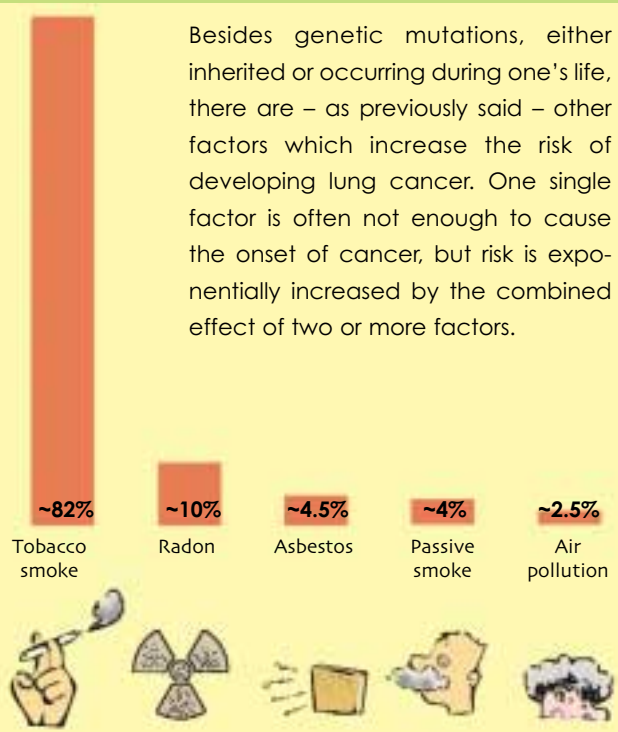
There are other symptoms which reveal that the disease is already at a quite advanced stage. However, it is worth mentioning them as the neoplasia is often detected through the appearance of one of them. The most common are:

- spontaneous bone fractures not related to accidental injury
- neurological symptoms: unsteady gait, episodic memory loss, drooping of one eyelid (ptosis)
- neck and facial swelling .

RISK FACTOR
AND HOW TO FIGHT THEM

Table 1 Risk factors

Weight of pollutants in relation to the onset of lung cancer.



Besides genetic mutations, either inherited or occurring during one's life, there are – as previously said – other factors which increase the risk of developing lung cancer. One single factor is often not enough to cause the onset of cancer, but risk is exponentially increased by the combined effect of two or more factors.

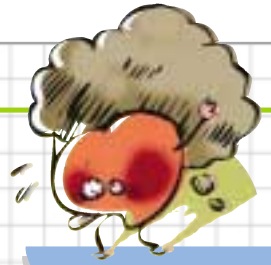
CIGARETTE SMOKE "KILLS" A TOWN EACH YEAR

This is certainly **the factor which is most responsible** for the onset of lung cancer. **It is estimated that one smoker out of 5 develops the disease**.

Cigarette smoke contains thousands of cancerogenous chemical substances including polycyclic aromatic hydrocarbons and nitrosamines. Other kinds of compounds, such as nicotine, are not directly cancerogenous, but have a strong irritant effect on the respiratory mucosa, thus favouring the cancerogenous action of the above-mentioned substances. Consuming low-nicotine cigarettes is therefore not a solution, because the fact that they are lighter often encourages a heavier consumption. **It is estimated that about 90,000 people die each year in Italy for smoking*. That means that as many people as those living in a town like La Spezia (91.391), Pesaro (91.086) or Brindisi (89.081) disappear each year****. One third of these deaths are due to non-tumoral respiratory diseases, one third to heart diseases, one third to cancer. More than one quarter of these deaths occurs prematurely between 35 and 65 years.

* source: *"IV Convegno nazionale su tabagismo e Servizio sanitario nazionale", Istituto Superiore di Sanit‡ (Italian National Institute of Health) , year 2002, vol. 15, no. 7/8*

** ISTAT *(Italy's National Statistical Institute) "14∞ Censimento generale della popolazione e delle abitazioni", data on the population included in the census of 21 October 2001, published in the Official Gazette no. 7, April 2003 no. 81.*



Smokers have a risk of heart attack that is twice that of non-smokers.
When one stops smoking, such risk quickly decreases to become comparable to that of non-smokers after four years.
Smoke is also the main cause of COBP (chronic obstructive bronchopneumopathy), a respiratory disease that includes chronic bronchitis and pulmonary emphysema. It is a progressive and often disabling chronic condition, involving high costs to families and the community and causing more than 18,000 deaths every year.

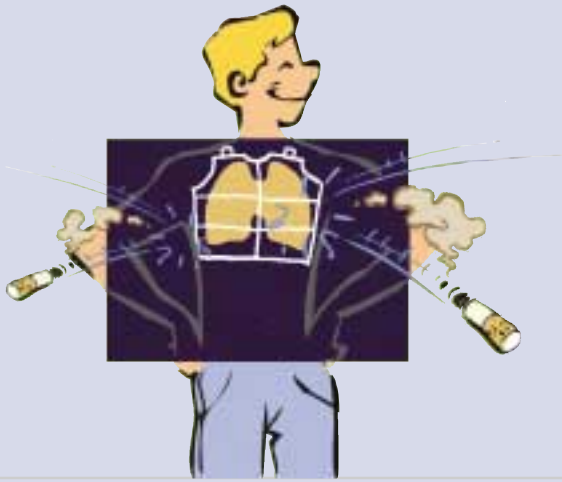
The Tribunal for patients' rights-Cittadinanzattva have already acted for the prevention of cardiovascular risk (with the ***Rincuorando*** campaign in 2002), and to inform citizens about COBP (with the ***Un respiro che vale*** campaign in 2002). Further information can be found on the Cittadinanzattiva website, www.cittadinanzattiva.it, in the section "**Le campagne**".

About 80-90% of the people who have been diagnosed with lung cancer are smokers or ex-smokers. Active smoke remains the main preventable cause of morbidity and mortality in Italy. The risk connected with it depends on how many cigarettes one smokes per day and on the number of years of addiction.

It has been proven, in fact, that **there is a direct connection between lung cancer risk, number of cigarettes smoked and number of years of addiction to smoke**. Therefore, differently from what people commonly believe, going on smoking a lower number of cigarettes per day does not significantly reduce the risk.

In ex-smokers, instead, the risk tends to decrease over time: after 10 years it their risk is one third to half the risk that smokers have.

Pipe and cigar smokers have a risk too, although it is two thirds less than that of cigarette smokers..



STOPPING SMOKING IS POSSIBLE

Today there are ways to help reduce the dependence from cigarettes: they mainly consist in patches and chewing-gums that gradually release nicotine. Results are encouraging if they are used under the guidance of a doctor and/or psychotherapist.

For information you can call:

- Lega Italiana per la Lotta contro i Tumori (Italian League against Cancer), toll free number: **800/998877 (Mon/Tue, 09:30am-6.00pm; Wen/Thurs/Fri, 09:30am-2.30pm)**
  website: www.legatumori.it
- Istituto Superiore di Sanità (Italian National Institute of Health), toll free number: **800/554088 (Mon-Fri, 10:00am-4:00pm)**;
  website: www.ossfad.iss.it

To find out which is the anti-smoke centre nearest you, visit the website .www.fumo.it.

Remember, anyway, that the first thing to do is to consult with your general practitioner.

PASSIVE SMOKE

Active smoke is toxic and noxious, but so is **passive smoke** (the smoke that people breathe when they are in the same place as smokers), especially that produced by cigarettes left burning in ashtrays or held in one's hand between one "puff" and another. **The concentration of some cancerogenous substances is higher in passive smoke than in active smoke.**

The non-smokers' rights

Article 32 of the Italian constitution protects health as "a fundamental right of the individual and an interest of the community". Moreover, there are a number of laws which directly or indirectly deal with the protection of non-smokers, both as regards assistance and prevention. Non-smokers' protection laws can be divided into:

a) laws prohibiting smoking in public places and means of transport;

b) laws protecting workers.

a) Prohibition of smoking in public places and means of transport.

- ***Royal Decree 2316 of 24 December 1934, art. 25*** "Consolidation act on protection and assistance for mothers and children"
- ***Law 584 of 11 November 1975*** "Prohibition of smoking in certain premises and on public means of transport"
- ***Prime Minister's Directive of 14 December 1995*** "Prohibition of smoking in certain government or public service facilities"
- ***Law 448 of 28 December 2001*** *(Financial act of 2002)*, ***art. 52***: increase of the fines for the violators of existing provisions and prohibitions and for who does not enforce them.
- ***Law 3 of 16 January 2003, art. 51*** "Protection of non-smokers' health"

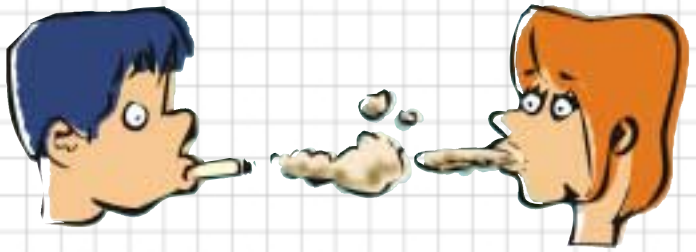
b) Prohibition of smoking in the workplace

- ***Art. 2087 of the Civil Code*** "Protection of working conditions"
- ***Presidential Decree no. 303 of 19 March 1956*** modified by the ***Legislative Decree no. 626 of 19 September 1994, art. 33, paragraphs 6 and 10,*** on ventilation of enclosed workplaces.

THE MAIN PLACES WHERE SMOKING IS BANNED

Smoking is not allowed:

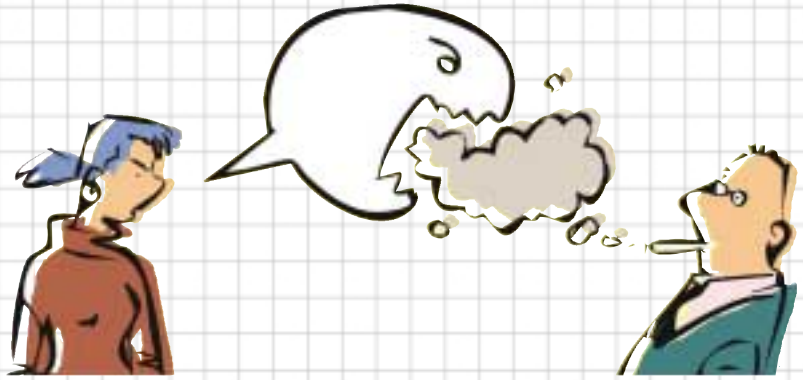
- **in all enclosed places,** with the exception of private areas not open to users or the general public and those reserved for smokers and marked as such;
- **in restaurants, bars, etc.,** where non-smokers must be provided with one or more areas with a surface greater than that of smoking areas.
- **In public administration offices:** in **hospitals and other medical facilities,** in **schools of any level including universities,** in **government and post offices**, police offices open to the public and courts, and in the areas of banks used for public services.



RESPONSIBILITIES OF DIRECTORS IN THE ENFORCEMENT OF NON-SMOKING LAWS

Directors of public administration and service facilities and managers of private establishments are required to formally locate the areas in the premises where **no-smoking notices** must be posted. Such notices **must include the following information:** smoking ban, reference to the law that prescribes the prohibition (law no. 584 of 1975), sanctions imposed, **name of the person appointed to supervise the observance of the law and to fine offenders and to whom one can apply to report any infractions**.

It is the directors' duty to formally appoint the officials who supervise the observance of the non-smoking law, fine offenders and record violations.



PROTECT YOUR RIGHTS

The only way to fight passive smoke is to make people respect the rules and prohibitions in force. In Italy, due to a general lack of awareness and health education, a certain degree of tolerance for violations is still widespread. In fact, about 50% of smokers admit to be accustomed to light a cigarette in public without asking other people if it causes nuisance to them, and yet only 4% of non-smokers ask them to put it out when this happens.

DON'T KEEP SILENT! Who breaks the rules harms you too.

ENVIRONMENTAL POLLUTION: radon, asbestos and other pollutants

The second cause of lung cancer after cigarette smoke is **radon**. This gas causes 10-15% of all deaths from lung cancer and is more dangerous than benzene, asbestos and exposure to electromagnetic fields. Since it is colourless and odourless, **the only way to detect it is to measure its radioactivity**.

Radon is a natural radioactive gas, continuously produced by some volcanic rocks of the earth's crust (especially lava, tuff, pozzolan, etc.). Due to its gaseous nature, radon is continuously given off by the earth and by some building materials. It disperses in the atmosphere, but accumulates in enclosed environments.

Radon diffuses through pores and cracks in the ground, conveyed by the air and by water (in which it is soluble). It usually reaches the interior of buildings through cracks and small holes in cellars and basements. Its presence can be detected by special devices, which can be purchased or hired from companies dealing with decontamination. The cost ranges from € 500 to € 2,500.

To find out more:

The law: Legislative Decree no. 241 of 26 May 2000; CEC Recommendation 90/143

An in-depth analysis: "*Il radon*" by M. Moroni, Il Sole 24 ORE, 2003, € 19.00

In your area: being mainly correlated with geological factors, the radon concentration varies considerably across Italy (for example, Latium and Campania are particularly at risk due to the volcanic origins of their soil, and so is the Karst region in Friuli). Unfortunately, a national radon risk map is not yet available; nevertheless, some Italian regions have launched campaigns to inform citizens and provide them with relevant advice and contacts.

What you can do:

Refer to the local ARPA (Regional Agency for Prevention and Environment) for further information. If you live in a high-risk area, check whether your house and workplace have been decontaminated. If no decontamination has been carried out yet, contact the Tribunal for Patients' Rights-Cittadinanzattiva office nearest you to take part in a campaign (petitions, letter mailing, etc.) to urge the government to implement a free intervention for the citizens living in high-risk areas.

THE RISK OF CANCER INCREASES if the exposure to radon is associated with the habit of smoking.

The following table shows the correlation between radon exposure levels and the onset of lung cancer (out of 1000 people exposed, both smokers and non-smokers).

Radon level (Bq/m_)	Non - smokers	Smokers
400	4 persons	71 persons
300	3 persons	57 persons
150	2 persons	29 persons
75	1 person	15 persons

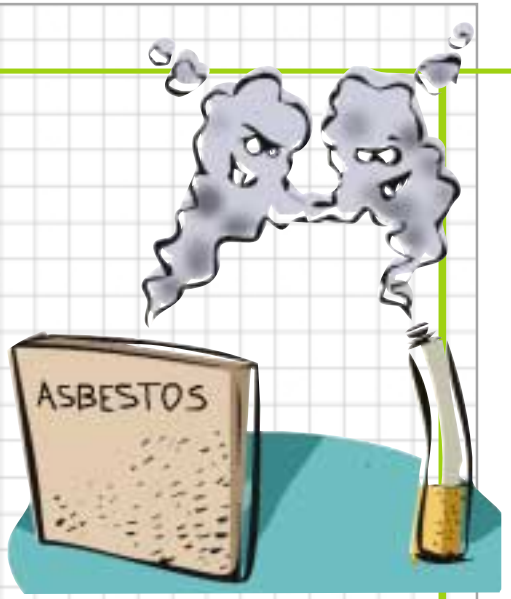
Table 2 *(source: "A citizen's guide to radon", EPA-Environmental Protection Agency, 1992).*

Other cancerogenous atmospheric pollutants result from industrial production processes, home heating systems and vehicular traffic. Lung cancer occurrence rates are higher in urban and highly industrialised area.

Another underestimated source of radiation consists in frequent, often unnecessary, radiological examinations.

Lastly, there are some **risk factors** closely connected with the working environment. The most well-known is **asbestos**, which causes lung cancer risk to increase fourfold in a non-smoker. **The risk is up to 40-fold greater** in a smoker exposed to asbestos.

Asbestos is directly responsible for the onset of a very serious malignancy called mesothelioma. Due to its dangerousness, the production of asbestos has been banned for years now. (Law no. 257 of 27 March 1992 "*Rules concerning the cessation of the use of asbestos*" and following amendments). However, the accomplishment of the disposal of existing asbestos-containing materials still needs



WHAT ONE SHOULD KNOW ABOUT ASBESTOS

Further information about asbestos can be found on the following websites:

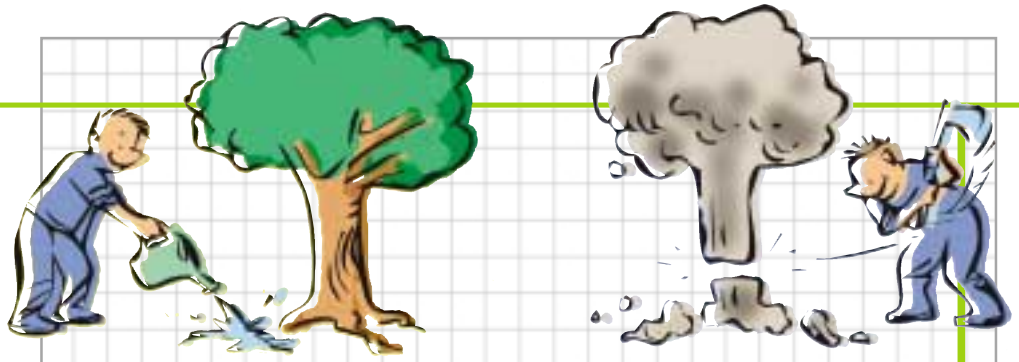
- www.inquinamento.com, suggested for law reference
- www.lanuovaecologia.it, the online daily of the Italian ecology association Legambiente.

You can also contact your Regional Agency for Prevention and Environment (ARPA).

Some suggestions for an in-depth analysis:

- "*Amianto dall'allarmismo alla difesa*", edited by E.G. Vai, Patron, 1998;
- "*La bonifica dell'amianto in edilizia*", by F. Celaschi and F. Fava, Maggioli, 2nd edition, 2001

supervision.



PROTECT YOUR ENVIRONMENT

As a citizen, you can claim your right to live in a healthy environment. By making yourself heard, you can lobby administrations for the implementation of clean public transport services, the creation of pedestrian precincts, cycle lanes, alternative transport systems, and so on. However, you can contribute to improve the quality of the air you breathe by taking some simple steps: use your car only when strictly necessary, use clean heating systems (natural gas, solar panels), respect your town's public parks and gardens.
For further information you can contact:
Legambiente-Operazione Mal'Aria; via Salaria 403, 00199 Roma (Ufficio Campagne)
tel. 06-86268388; e-mail: **legambiente.camp@tiscalinet.it**;
website: **www.legambiente.com**

Would you like to know how much your style of life and consumption weighs upon the environment and how to reduce that "weight"?
Then visit the website . www.bancadelclima.it

Other potentially dangerous compounds are **arsenic**, **cadmium**, **chromium** and **nickel**. Arsenic is a poisonous metal used for producing insecticides and rat-poison, as well as in the glass industry, in the production of photovoltaic cells (which transform solar energy into electricity) and in electronics. Cadmium is a by-product of the production

of zinc and, despite its extreme toxicity, its utilization is increasing due to its high ductility and malleability. It is present in many alloys, in phosphate fertilisers, in cigarette smoke and in the air – especially in urban areas. Chromium and nickel are also very commonly used metals, whose cancerogenicity is widely documented.

HELP US INFORM YOU BETTER

If you want to give us your feedback on the effectiveness of this campaign, you can do so by completing a simple questionnaire available on the Cittadinanzattiva website (www.cittadinanzattiva.it).