FRECCIAROSA

HEALTH GUIDE

edited by:

FONDAZIONE Incontra donna
OCCUPIAMOCI DI SALUTE

Gruppo FS
The Mobility Leader

Ministero della Salute

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FRECCIAROSA

DA 15 ANNI LA PREVENZIONE VIAGGIA CON NOI

HEALTH GUIDE

October 2025 Edition

FONDAZIONE Incontra donna

OCCUPIAMOCI DI SALUTE

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CIPOMO Collegio Italiano dei Primari Oncologi Medici Ospedalieri

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SIAPEC - IAP

SOCIETA' ITALIANA DI CANCEROLOGIA

SICPCV Società Italiana di Colposcopia e Patologia Cervico Vaginale

sie Società Italiana Endocrinologia

Società Italiana di Gerontologia e Geriatria

SIMeN Società Italiana di Medicina Narrativa

Società Italiana di Pediatria

Società Italiana di Psico-Oncologia

SIPS Società Italiana per la Promozione della Salute

SItI Società Italiana di Igiene Medicina Preventiva e Sanità Pubblica

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LETTER FROM THE MINISTER OF HEALTH

Dear travellers,

It is once again my pleasure to contribute to the latest edition of the Health Guide, a valuable guide produced each year as part of the FrecciaRosa project, promoted by the IncontraDonna Foundation with the Italian State Railways Group and endorsed by the Ministry of Health and the Presidency of the Council of Ministers. For fifteen years, this exemplary initiative, together with the doctors and volunteers involved, has been travelling across Italy by train, offering free medical examinations and sharing vital information to improve breast cancer prevention.

Adopting healthy lifestyles and participating in the screening programmes provided free of charge by the National Health Service are essential steps towards living well and reducing the risk of chronic illnesses, including cancer.

There is no medicine more powerful than prevention when it comes to improving quality of life. With this in mind, we are working to place prevention at the heart of a new paradigm, built through a strong and collective commitment.

We continue to follow this path with vision and determination, adopting a proactive and collaborative approach to engage with citizens and raise their awareness of the importance of taking care of their health, even when they are feeling well.

This is the goal of the FrecciaRosa campaign, which, step by step, guides Italians on the most important journey of all: taking charge of their own health.

Enjoy your journey, and happy reading.

Orazio Schillaci
The Minister of Health

ITS TIME TO LAUNCH FRECCIAROSA 2025!

The 15th edition of FrecciaRosa is now underway, this year under the title "FrecciaRosa – prevention has been travelling with us for 15 years," celebrating fifteen years of shared commitment to promoting health and fostering a culture of prevention.

The month of October is once again dedicated to the prevention of breast cancer and other major cancers, as well as to healthy lifestyles and environmental awareness. The One Health approach continues to guide our efforts: individual health is closely linked to the health of the environment and the communities in which we live. Our future and that of the next generations depend on it

With a profound commitment to promoting health, prevention and treatment nationwide, the **IncontraDonna Foundation** will offer free consultations to women and men aboard FS Italiane Group trains throughout October. For certain age groups, and based on the on-board doctor's assessment, it will also be possible to perform breast examinations and any necessary ultrasound scans to ensure patients are appropriately referred to the **National Health Service** (NHS) for further investigation. FrecciaRosa travels across the entire country, including the major islands, spreading health messages and reinforcing the value of our NHS, which remains our reference point.

The **Health Guide** continues to be a key tool for raising awareness about prevention: distributed free of charge on trains, in selected Freccia Lounges, and available for download at www.incontradonna.it, it is designed to be read, shared, and circulated in workplaces, families and communities. Just a few minutes are enough to gain useful, up-to-date information, the result of collaboration with leading professionals.

Among this year's new features is tangible support for a breast cancer research project: a concrete step towards the future, demonstrating the Foundation's dedication to **scientific research**.

Special thanks go out to the tireless volunteers of IncontraDonna, the doctors on board the train who will offer free consultations with professionalism and empathy throughout this month, all the professionals who contributed to the handbook, and the Foundation's staff.

Sincere thanks are also extended to the FS Italiane Group, a longstanding partner of the project, and to the Ministry of Health for its constant institutional support.

Adriana Bonifacino
Founder of the IncontraDonna Foundation

Antonella Campana
IncontraDonna Foundation President

1.

BEHAVIOURAL FACTORS AND HEALTH

One Health

GIOVANNI LEONARDI, ALESSIO NARDINI, DENISE GIACOMINI

Public health can no longer be regarded as an isolated goal but must be seen as the outcome of coordinated action involving every aspect of daily life, from education to nutrition, from environmental stewardship to the management of natural resources.

The One Health Department of the Ministry of Health has embarked on an important journey to raise public awareness of the importance of living healthily, sustainably, and in harmony with the ecosystem. This objective is pursued through a series of **targeted, integrated strategies** combining educational, scientific and socio-health approaches.

In particular, with the newly established focus on healthy lifestyles and relationships with the ecosystem, key issues such as addiction (alcohol, tobacco and drugs), physical activity, mental health, eating disorders, environmental health, and disability are addressed, with the goal of encouraging responsible and integrated behaviours from a public health perspective.

Particular attention will be given to fostering an **ecological and sustainable *vision*** that **encourages citizens to make daily choices** with a positive impact on planetary health, such as recycling and adopting environmentally respectful behaviours.

Mental health is of great importance, and specific measures are being adopted in this regard, including collaboration with the education sector, in order to plan integrated interventions for overall psychological well-being.

A key concept of the One Health approach is the **exposome**, the totality of environmental factors that affect our health throughout our lifetime. Raising public awareness about reducing exposure to environmental risk factors is a vital step **in promoting more responsible and sustainable behaviour, including cancer prevention**. Within this framework, the One Health Department seeks to create **awareness campaigns on air quality, pesticide use, and waste management**, encouraging citizens' active participation in actions that improve environmental quality, such as the use of increasingly eco-friendly products. The Department will also be responsible, including through the EFSA National Focal Point, for providing clear and accessible information on food risks, enabling citizens to make informed choices and adopt safe food-handling practices. The **active participation of citizens and the adoption of new behaviours are essential to building a healthier, safer, more resilient society in harmony with the ecosystem.**

Promoting outdoor education

ROBERTO FARNÉ

Outdoor education is a pedagogical approach that treats the outdoor environment as a genuine "learning space". Its goal is to promote both formal and informal educational activities, both inside and outside school, with a particular focus on enhancing local and natural environments.

Today, **children are increasingly confined indoors** — at home, at school, and in highly controlled settings — limiting access to the essential experiences that foster psychophysical development during a crucial age, from childhood to pre-adolescence, when the body, movement, exploration, sensitivity, and playful

socialisation need time and space to flourish. The outdoor environment provides the best opportunities for this growth to occur.

Outdoor education, therefore, is not simply a pedagogical requirement but a fundamental condition for individual health and well-being. In the school context, ensuring pupils' well-being is the foundation for improving the quality of education; however, research widely documents that schools today often generate discomfort. Educational and health research agree that losing direct contact with outdoor environments during developmental years leads to diminished psychomotor skills, reduced attention spans, and heightened insecurity and emotional fragility. This has given rise to unfounded prejudices: that being outdoors makes children ill, that freedom to play leads to more accidents, and so forth. In reality, the opposite is true — **children's health improves the more time they spend outdoors**, especially in natural settings, with appropriate precautions. **They learn to assess risks, test their abilities, and develop curiosity and focus.** In other words, they become intellectually and emotionally engaged through the "natural psychomotor skills" that underpin so many spontaneous games.

The necessary and rightful protection of children has been replaced by overprotection, which is counterproductive because it deprives them of essential developmental experiences. Education means guiding children to have experiences, not depriving them of them.

Epigenetics: a new vision of medicine for true primary prevention

PRISCO PISCITELLI

In the 1955 Treccani encyclopaedic dictionary, the entry for "tumour" was defined as "an occupational disease of chemical industry workers", clearly recognising a causal link.

This clear reference to cancer aetiology as linked to chemical exposure gradually faded over the following decades, replaced by generic explanations of "multifactorial" pathogenesis. Today, cancer is **generally associated with population ageing, seen as a consequence of random mutations caused by oxidative genetic damage**. Many experts also attribute the rising number of cancer cases to better diagnostic capabilities, which allow for more frequent detection of tumours (e.g. breast or cervical screenings).

However, this does not explain why the highest and fastest rises in cancer incidence are observed among younger age groups (for example, the sharpest increase in mastectomies occurs between the ages of 25 and 39: +23% in seven years), including infants (+3.2% for all cancers under one year of age), who are not exposed to traditional risk factors such as smoking, occupational hazards, or long-term "unhealthy lifestyles".

The rise in cancers in infancy and youth has been linked to exposure at the transplacental (maternal-foetal) level or during childhood to carcinogenic agents, as well as to the **transgenerational transmission of epigenetic changes** already present in gametes due to parental exposure to environmental contaminants during the "first thousand days of life" or during the adult's reproductive years. This represents a shift in perspective compared to the classic aetiological paradigm of carcinogenesis. Unlike adults, in very young individuals it is implausible to attribute cancer solely to the progressive accumulation of random (stochastic) DNA mutations,

as assumed by the classic pathogenetic model (the "somatic mutation theory", or SMT).

For example, while a young person might once have argued that smoking was a personal choice harming only themselves (aside from second-hand smoke), we now know that substances from cigarette combustion, like other environmental exposures, can cause epigenetic changes in germ cells, directly affecting future generations.

Identifying the most accurate aetiological model for carcinogenesis would allow for the implementation of effective primary prevention measures, including eliminating individual exposure to chemicals and environmental carcinogens (IARC Class 1 and 2). This is the challenge of a new vision of medicine and epidemiology capable of transforming the world.

The statistics we are generating – often limited to simply "counting" the "dead", the "observed", and the "expected" cases – must be turned into preventive actions, quickly identifying emerging threats to public health, particularly for children and young people, in order to offer timely solutions. To achieve this, **epidemiological observations – which represent the "facts" – must guide the creation of coherent aetiological theories of carcinogenesis**, as well as those addressing other conditions that are dramatically increasing even among children, including congenital malformations, autoimmune and metabolic diseases (including type 1 diabetes), and neurodevelopmental disorders such as autism, taking into account the interactions between the epigenome, lifestyle, and the environment.

This will create unexpected opportunities for both pharmacological and non-pharmacological primary prevention and help reduce the impact of the new epidemics of the 21st century.

Nutrition

NUNZIA LIGUORI

The World Health Organisation defines health as "a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity", with nutrition playing a crucial role in lowering the risk of numerous chronic diseases such as diabetes, hypertension, obesity, and cardiovascular conditions.

Healthy eating relies on variety, moderation, and careful attention to nutritional quality. Fruit, vegetables, whole grains, legumes, lean proteins, and unsaturated fats – such as those found in olive oil and fish – are beneficial for health.

By contrast, excessive intake of foods high in sugar, saturated fats, and salt can trigger inflammation, metabolic imbalances, and increase the risk of disease.

One **dietary model renowned for its balance and benefits is the Mediterranean diet**. It is based on a predominantly **complex carbohydrate** intake (bread, pasta, cereals), which provides 50-65% of daily energy. **Simple sugars**, found mostly in fruit, **are kept to a minimum**.

Fats make up about 25% of the total calories, and mainly come from extra virgin olive oil, which is rich in "good" fats. **Proteins** account for up to 15% of requirements and come from both **plant sources** (such as legumes) and animal sources, particularly fish, white meat, eggs, and dairy products, with red meat consumed in moderation.

Fibre from fruit, vegetables, and whole grains is also vital. It is

recommended to consume at least 3 portions of fruit and 2 portions of vegetables daily, as well as legumes 3 times a week.

To complete a healthy lifestyle, **regular physical activity is essential**: it helps maintain a healthy weight, improves mood, and fosters social connections, particularly among young people.

Eating habits are established at a young age and strongly influence quality of life, becoming a powerful tool for prevention. Teaching children the principles of good nutrition from an early age is crucial. **Daily choices become habits, and habits eventually form a lifestyle**.

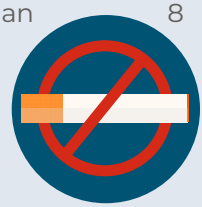
Promoting food education in schools, families, and across social media can help build a healthier, longer-living society.

Smoking

MARIA ASSUNTA GIANNINI, PIERLUIGI ROSI

Consumption of tobacco and nicotine products

Why is smoking bad for our health? According to the World Health Organisation (WHO), more than 8 million people die each year from tobacco use. In Italy, the estimated avoidable deaths amount to more than 94,000 per year. One cigarette contains about 600 ingredients, and it creates more than 7,000 chemical substances when it burns. At least 69 of these chemicals are known to cause cancer, and many are toxic. 20 cigarettes a day reduces the average life span of a young person who starts smoking at the age of 25 by about 4.6 years, which is equivalent to losing one day of life for every week of consumption. The nicotine contained in tobacco is the neuro-psychotropic substance responsible for addiction, and causes behavioural changes related to memory and emotions.



What are the most common risks?

Smoking increases the risk of many types of cancer: lung and respiratory tract, oesophagus, stomach, liver, colon/rectum, pancreas, kidney, ureter, bladder, ovary, cervix, and myeloid leukaemia. In addition, second-hand smoke is a recognised risk factor for breast cancer. Smoking is also **the main risk factor for non-neoplastic respiratory diseases**, including chronic obstructive pulmonary disease (COPD), and is one of the most significant **cardiovascular risk** factors: nicotine (also contained in heated tobacco products, many e-cigarettes and “nicotine pouches) causes an increase in heart rate and contractility, increases blood pressure, can promote the formation of atheromas; it also reduces insulin sensitivity and can aggravate diabetes. Smoking **adversely affects the female reproductive system** by altering hormone production, causes menopause about 2 years earlier than in non-smokers, and affects fertility. Pregnant women who smoke has an increased risk of miscarriages, stillbirths, and underweight babies. In addition, smoking also has undesirable

aesthetic effects, such as white gums, yellow teeth, older-looking skin, and increased facial hirsutism.

Why quit smoking?

Quitting smoking is an investment in health, as it reduces the risk of developing many diseases, and protects others against the risks associated with second-hand smoke, thus reducing the risk of many diseases in children caused by exposure to smoke, such as respiratory diseases, like asthma, and ear infections (otitis). When quitting smoking: within a short time blood circulation and lung function improve, and within 1 year the risk of heart attack becomes half that of a smoker; after 10 years the risk of lung cancer decreases to half, and within 15 years the risk of chronic disease becomes equal to that of a non-smoker. **Quitting smoking is also good for those who have already developed smoking-related diseases.**

How to quit?

It is possible to quit independently, but with the support of a doctor or specialists in smoking cessation at local anti-smoking centres (https://smettodifumare.iss.it/it/centri-antifumo/), the likelihood of success increases significantly. If necessary, the doctor may recommend drug therapy with pharmaceutical nicotine substitutes (NRT), Bupropion, or Citisin, which alleviate withdrawal symptoms and help you quit.

Are there other products to watch out for?

In addition to cigarettes and other conventional tobacco products, new products have also been on the market for several years, such as **heated tobacco** products, or **electronic cigarettes with or without nicotine** and, more recently, oral pouches containing nicotine salts. An electronic cigarette (e-cig) is a device for inhaling vapour, usually flavoured, most frequently containing nicotine in varying amounts (usually between 6 and 20 mg), in a mixture made up of water, propylene glycol, glycerol, and other substances, mainly flavourings. Unlike e-cigarettes, Heated Tobacco Products (HTPs) are devices that actually contain tobacco sticks, which are heated to a high temperature (around 350°), creating a smoke-like emission.

These products contain nicotine and other chemicals, and **there is currently no evidence to show that they are less harmful** than traditional cigarettes. And while it is known that they may expose users to lower levels of certain toxic substances contained in cigarettes, they also expose consumers to higher levels of other potentially toxic and harmful chemicals not contained in traditional cigarettes. Due to their attractive designs and flavourings, these products encourage experimentation, especially among of young people.

For more information see:
https://www.salute.gov.it/new/it/tema/fumo-prodotti-del-tabacco-sigarette-elettroniche/ https://smettodifumare.iss.it/it

Alcohol

MARIA ASSUNTA GIANNINI, MARIA MIGLIORE

Women's vulnerability to alcohol

Women, along with the **elderly and young people, are among the most vulnerable to the harmful effects of alcohol**. Women's heightened sensitivity to alcohol compared to men is linked to their decreased ability to metabolise it, resulting from lower body mass and reduced body water concentration. This means that, for the same amount consumed, women reach higher blood alcohol levels than men.

The World Health Organisation reports that women who drink alcoholic beverages face a higher risk of numerous diseases, including several types of cancer (especially breast cancer), osteoporosis, reduced fertility, and pregnancy-related complications, such as miscarriage and the risk of giving birth to infants with foetal alcohol syndrome (FAS/FASD).

The less your consume, the lower the risk

In order to avoid health problems, the guidelines of the Council for Research in Agriculture and Analysis of Agricultural Economics (CREA) advise women not to consume a daily amount of alcohol exceeding 12 grams (equivalent to 1 Alcoholic Unit, approximately 330 mL of beer, 125 mL of wine or 40 mL of a spirits), regardless of the type of drink consumed.

Over the past decade, the proportion of women who consume alcohol outside of meals has steadily increased, with the trend continuing particularly among younger age groups.

Drinking alcohol outside meals, an extremely common behaviour

among women, even in combination with other types of risky behaviour such as smoking, increases the risk and exposes you to a greater likelihood of developing diseases, namely cancer.

Zero alcohol during pregnancy

Drinking alcohol during pregnancy **harms the foetus and newborn**, causing miscarriage, stillbirth, sudden infant death syndrome, preterm birth, certain congenital malformations, low birth weight, and intrauterine growth restriction. However, the most characteristic condition linked to alcohol use in pregnancy is Foetal Alcohol Spectrum Disorders (FASD), which entails a series of physical and developmental problems.

Its **most severe form is Foetal Alcohol Syndrome (FAS)**, marked by structural and neurological abnormalities leading to serious behavioural and neurocognitive impairments.

It is essential to keep in mind that every drop of alcohol consumed by the mother passes into the foetus's bloodstream, so even minimal intake can cause harm. In addition, all stages of embryonic development are vulnerable to the teratogenic effects of alcohol, which is why alcohol consumption during pregnancy is contraindicated according to clinical guidelines in most countries of the world, and the public health message is **"don't drink during pregnancy (zero alcohol) and don't drink when you decide to have a child."** Foetal alcohol disorders are 100% preventable by completely avoiding alcohol during pregnancy.

A brief guide:

1. drinking alcoholic during pregnancy increases the risk of harming your child's health
2. there is no amount of alcohol that can be considered safe or risk-free for the foetus during pregnancy
3. consuming any alcoholic beverage during pregnancy harms the foetus, regardless of the type or strength
4. alcohol is a toxic substance capable of passing through the placenta and reaching the foetus at the same concentrations present in the mother
5. the foetus does not have the ability to metabolise the alcohol, which therefore directly harms the brain cells and the tissues of the organs being formed
6. alcohol is especially harmful to the foetus during the first few weeks and the last trimester of pregnancy
7. if you are planning to become pregnant, you should avoid drinking alcohol. If already pregnant, it is better to stop drinking until the child has been born. Damage caused to the child by prenatal exposure to alcohol is irreversible and cannot be cured
8. It is also recommended to avoid consuming alcoholic beverages while breastfeeding
9. all damage and defects caused by alcohol consumption during pregnancy can be prevented by avoiding alcoholic beverages
10. stopping alcohol consumption is a gesture of responsibility and love towards your unborn child.

Cancer rates among women in relation to alcohol intake

The International Agency for Research on Cancer (IARC) has estimated more than 3,200 new cases of cancer among women in Italy, including 2,300 new cases of breast cancer. One of the ways in which alcohol (ethanol) causes cancer is through damage caused to cellular DNA.

Alcohol can cause at least 7 types of cancer. The most common types of cancer caused by alcohol are breast cancer in women and colon cancer in men. People who smoke tobacco and drink alcohol have a 5 times greater risk of developing cancer of the oral cavity, oropharynx, larynx, and oesophagus compared to people who only use alcohol or tobacco. The International Scientific Community (IARC) has clearly expressed the notion that there is no safe level of alcohol consumption with respect to cancer risk, so the WHO has intended to urge caution, supporting the statement “Less is better”.

Useful numbers: Alcohol Toll-Free Number (NHS) 800632000
Reference websites: www.salute.gov.it
www.epicentro.iss.it/alcol/osservatorio-nazionale-alcol

Physical activity

FLAVIO SINISCALCHI

What is physical activity?

Physical activity is considered one of the most effective behaviours for leading a healthy life. The World Health Organisation (WHO) defines it as “any bodily movement produced by skeletal muscles that involves energy expenditure”. Therefore, this definition includes **athletic activity, as well as activities performed daily during work, leisure**, housework, and moving from one place to another, including walking and cycling.

Why is it important?

Numerous scientific studies have shown that regular physical activity has multiple **mental and physical benefits**: it improves cardiovascular health, combats obesity and sedentariness, improves cognitive function, and reduces anxiety and depression. Moreover, regular physical activity has been shown to be associated with a reduced risk of developing several types of cancer, including breast cancer. And let’s not forget that. after surgery, **adapted physical activity** (AFA) and structured exercise play a key role in patient rehabilitation, especially when performed under the supervision of qualified professionals, even in non-health facilities, such as health gyms. In summary, engaging in sports and regular physical activity – as the Minister for Sport and Youth Andrea Abodi often emphasises – serves as a true "social and individual immune defence".

How much physical activity should you actually do?

Aware of the importance of physical exercise in promoting health, the WHO has issued specific guidelines to provide detailed recommendations broken down by age group, with the aim of preserving and improving the general health of the population.

They suggest that children and adolescents should engage in an average of 60 minutes of moderate- to vigorous-intensity, predominantly aerobic, physical activity per day during the week, combined

with musculoskeletal strengthening exercises at least 3 times per week. Adults and elderly people, on the other hand, are advised to engage in 150 to 300 minutes of moderate-intensity physical activity per week or 75 to 150 minutes if vigorous-intensity, accompanied by muscle-strengthening exercises at least two days per week, and balance training to increase functional capacity and reduce the risk of accidental falls.

No matter which type of physical activity one chooses, the important thing is to maintain a constant and active approach. Incorporating these practices into everyday life contributes significantly to the prevention of chronic disease and definitely improves quality of life.

Physical activity also enhances well-being and quality of life, even during rehabilitation from serious illnesses such as cancer.

One major example of an initiative supporting women after breast cancer surgery is the **RE-START Cancer Care project – A new beginning after a cancer diagnosis** – promoted by the IncontraDonna Foundation. Launched in 2024, the project offers a free, multidisciplinary rehabilitation programme including activities such as rowing.

This discipline not only supports physical recovery but also builds camaraderie among participants and fosters renewed body awareness. The RE-START rowing team will also compete in the 2025 regatta held as part of Roma Breast Days.

Physical activity – and sports in particular, now recognised under Article 33 of our Constitution for its educational and social value and its contribution to mental and physical well-being – has extraordinarily positive effects on the health of all citizens in terms of both prevention and treatment. In fact, when combined with a healthy diet and good daily habits, it decisively improves quality of life.

2.

INTRODUCTION TO CANCER PREVENTION AND CARE

Foreword

Cancer is not a single disease that only affects certain people who are considered to be at risk. It is a heterogeneous group of over 200 different diseases, each of which has its own particular characteristics.

In Italy, there are over **3.6 million** people living with cancer, or 5.7% of the population. **In 2006 that number was "just" 2 and half million**. The most common cancers in 2024 were breast, colorectal, lung, prostate, bladder, endometrial, thyroid, pancreatic, liver, kidney, stomach, non-Hodgkin's lymphoma, melanoma, leukaemia and cancers of the central nervous system. According to forecasts, the total annual number of new cancer diagnoses in Italy is expected to rise in the coming decades. An average annual increase of 1.3% for men and 0.6% for women has been estimated. *The main reason for this increase is the increase in the average age of the population* on the "Old Continent". **Although it can affect adults, young people, and even children, cancer is a disease that's most typically associated with old age**.

Healthy lifestyles are a very powerful weapon against cancer. Just think that 40% of cancer cases could be avoided by eliminating or modifying so-called risk factors.

Various cancers can also be treated nowadays with extremely effective therapeutic weapons. In fact, we are seeing very encouraging results, and this is also due to the early diagnoses that we're often able to obtain. However, there are still some very harmful cancers for which survival rates remain low. Primary prevention (healthy lifestyle) and secondary prevention are therefore both essential.

In Italy, the total observed number of deaths in both men and women caused by cancer from 2007 to 2019 was lower than expected: 268,000 fewer deaths. On the following pages you will find information on the most common forms of cancer in Italy and, above all, **the importance of contacting your doctor and having appropriate checks carried out for early diagnosis**.

Public health models: cancer screening

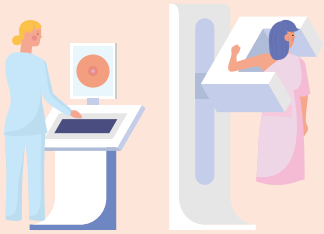
MARIA ROSARIA CAMPITIELLO, GIUSEPPE GAMBALE, ROSARIO ANDREA COCCHIARA, EMANUELE CAREDDA, ELENA FRANCESCHETTI

Secondary cancer prevention aims to detect tumours at an early stage, before they cause any obvious symptoms. Detecting a tumour early on allows for timely intervention with more effective treatments, greatly increasing recovery rates, improving disease progression and reducing mortality.

Because of its major impact on public health, secondary cancer prevention is included in the **Essential Levels of Care** (ELC), meaning these services are guaranteed free of charge.

In Italy, three nationwide cancer screening programmes are available for the early diagnosis of:

- breast cancer;
- cervical cancer;
- colorectal cancer.



These programmes are now well established, but participation remains uneven across different Regions, underscoring the need for better information and local organisation.

Future prospects for secondary cancer prevention are focused on enhancing the effectiveness and personalisation of screening through:

- the extension of the age range covered nationwide (up to 74 years for colorectal cancer, and from 45 to 74 years for breast cancer);
- the extension of screenings to include new cancers, such as lung and prostate cancer, especially for high-risk individuals;
- the use of innovative technologies, such as low-dose CT scans for lung cancer screening;

- the adoption of screening models based on individual risk, using predictive algorithms to calculate a person's likelihood of developing the disease, moving beyond the traditional age-only approach.

These advancements promise more targeted, sustainable and accessible screening programmes, improving cancer prevention and care nationwide.

Protect your health in just a few free, safe and simple steps. For more information, contact your local health authority or visit the Regional Health Service website.

Free colorectal cancer screening

Who can take part?

Men and women aged 50 to 69 (in some regions up to 74). You will receive an invitation letter from your local health authority at home.

What is the test?

The test checks for occult blood in the stool, meaning traces of blood invisible to the naked eye. It is done every 2 years and can help detect polyps or tumours early.

How is the test done?

- Pick up the kit free of charge from your pharmacy, bringing your health card and invitation letter.
- Collect the sample at home by following the instructions provided.
- Return the test tube to the pharmacy or specified facility, with no need for an appointment.

What if the test is positive?

You will be contacted by your local health authority for a follow-up colonoscopy, a test that can diagnose and remove polyps.

Free cervical cancer screening

Who can take part?

All women aged 25 to 64, following an invitation from their local health authority.

What type of test is performed?

It depends on your age:

- Pap test: every 3 years for women aged 25 to 29 (in some regions up to 34).
- HPV-DNA test: every 5 years for women aged 30 to 64.
- Women vaccinated against HPV undergo the HPV-DNA test directly at age 30 (in some regions).
- Women aged 25 who have not been vaccinated may receive the vaccine free of charge at their first screening appointment (in some regions).

These tests identify cell changes or the presence of HPV, which can cause cancer over time.

How does screening work?

- You will receive an invitation letter with details of where and when to have the test.
- The test is simple, quick and free, and is performed by qualified healthcare professionals.

What if the test is positive?

You may be referred for:

- a colposcopy, for a closer look at your cervix
- a biopsy, if necessary

Based on the results, your doctor may:

- begin early treatment, or
- continue monitoring according to the screening programme guidelines

Why is it important to take part?

Screening enables early detection of lesions before they progress to cancer.

Free breast cancer screening

Who can take part?

Women aged 50 to 69, invited directly by their local health authority. In some regions, screening is offered starting at age 45 and/or up to 74.

What is the mammogram screening?

It is a prevention programme involving a mammogram every two years. A mammogram is an X-ray examination of the breast that can detect abnormalities or tumours before symptoms appear.

How do you get a screening?

- You will receive an invitation letter from your local health authority (ASL) with the date, time and location of your examination.
- The mammogram is free and does not require a referral from your GP.
- The examination is performed at a specialised clinic by experienced professionals.

What if the result is positive or inconclusive?

If the result is suspicious, you will be contacted for further tests (such as an ultrasound scan or biopsy) promptly and at no cost. If necessary, you will be placed under care for early treatment, with a personalised treatment plan.

Why is it important to take part?

Screening enables early breast cancer detection, increasing the likelihood of recovery and reducing the need for invasive treatments.

Hereditary and familial cancer risk

MARIA PIANE AND SIMONA PETRUCCI

Genetics is the study of how hereditary traits are passed down from one generation to the next, and the alterations in individual genes that can cause or predispose individuals to genetic diseases. This is done by studying genomic DNA, usually obtained from venous blood samples.

Genomics, on the other hand, deals with groups of genes expressed in a specific tissue, their functions, and **how they interact with each other**. Both play a role in the development and treatment of numerous forms of cancer. Cancer is a disease with a multifactorial aetiology, which is influenced by hormonal, metabolic, environmental, immune, and genetic factors.

Where can cancers originate?

Cancers can be **sporadic**, familial, and hereditary. Sporadic cancers occur with only one case being present within a family, and are generally caused by genetic variants, called “somatic” variants, which originate in one or more cells of the body. These acquired variants are not passed on to offspring.

Familial cancers involve more than two collaterals (relatives) in the same family line, and may result from several genetic factors or shared environmental exposures. Hereditary cancers, on the other hand, are associated with a specific genetic predisposition, related to the presence of so-called “constitutional” or “germline” variants, present in all cells of the body, and transmissible to offspring. These are variants that give the carrier an increased risk of cancer with respect to the general population. In other words, **one does not inherit the cancer itself, but rather the risk of potentially developing it.** It is important to note that both sexes can inherit deleterious variants, and in turn pass them on to their offspring.

According to the latest data (source: AIOM 2023), it is estimated that at least 31,000 patients in Italy who carry a pathogenic variant fall ill with cancer every year. The most frequent cases include breast cancer (5,514), colorectal cancer (2,886), lung cancer (2,200), prostate cancer (2,118) and pancreatic cancer (2,045). Over the past 30 years, over 150 genes have been identified whose pathogenic variants give their carriers a moderate to high risk of cancer (2 to 20 times greater). The most common include deleterious variants in the BRCA1/BRCA2 genes, which increase the risk of developing breast and ovarian cancer. However, mutations in these genes do not exclusively affect women. Me can also inherit deleterious variants, and in turn pass them on to their offspring. Male carriers are more prone to male breast cancer or prostate cancer. The risk that a pathogenic variant in BRCA1 or BRCA2 will be transmitted from the carrier parent to their offspring is 50%.

What should be done if there have been certain types of cancer in one's family?

Members of families in which there have been one or more cases of the aforementioned types of cancer **should consider seeking cancer genetic counselling (especially if the cancers arose at a young age)**. Within the family unit, there is the possibility of identifying healthy persons with genetic alterations that predispose them to certain types of cancer.

Family members at risk can be assessed during genetic counselling (usually first-degree relatives at risk of having inherited or transmitted the deleterious variant) **in order to discuss their likelihood of being carriers, illustrate the advantages and limitations of genetic testing**, and, finally, sign a dedicated informed consent.

This makes it possible to identify prevention strategies, or else active surveillance with frequent examinations for early cancer detection.

Syndrome	genes	Inheritance	Related cancer (% risk of falling ill)	Surgical primary prevention strategies
Hereditary breast and ovarian carcinoma/ Fanconi anaemia	*BRCA1*	AD/AR	breast (women): 60%–72% breast (men): 0.2%-1.2% ovarian: 39%-58% pancreas: ≤5% prostate: 7%-26%	bilateral mastectomy, optional; salpingo-oophorectomy recommended at 35-40 years of age
Hereditary breast and ovarian carcinoma/ Fanconi anaemia	*BRCA2*	AD/AR	breast (women): 55%-69% breast men: 1.8%-7.1% ovary: 13%-29% pancreas 5%-10% prostate: 19%-61%	bilateral mastectomy, optional; salpingo-oophorectomy recommended at 40-45 years of age
Li-Fraumeni Syndrome	*TP53*	AD	breast: >60% pancreas: 5% brain: 10% sarcomas: 6.6%	bilateral mastectomy, optional
Peutz-Jeghers syndrome	*STK11*	AD	breast: 32% -54% ovary (non-epithelial): ≥20% uterus: 9% cervix: 10% pancreas: > 15% colon: 39% stomach: 29% lung: 7%-17% testicle: 9%	hysterectomy, optional
Cowden syndrome	*PTEN*	AD	breast: 40-60% endometrial: 5-22% thyroid: 3-16.5% colon: 9-16% kidney: 34% Melanomas: 6%	bilateral mastectomy, case-specific; hysterectomy, optional
Hereditary diffuse gastric cancer	*CDH1*	AD	breast: 37%–55% diffuse gastric: 13.6-42%	bilateral mastectomy, optional; gastrectomy recommended at 18-40 years of age
Susceptibility to breast cancer and pancreas	*PALB2*	AD	breast (women): 32%–53% breast (men): 0.9% in men; ovary: 3%-5% pancreas: 2%-5%	bilateral mastectomy, optional; salpingo-oophorectomy optional after 45 years of age
Breast cancer/ Fanconi anaemia susceptibility	*RAD51C*	AD/AR	breast: 20% ovary: 10%-15%	Salpingo-oophorectomy at 45-50 years, recommended
Susceptibility to breast cancer	*RAD51D*	AD	breast: 20% ovary: 10%-20%	Salpingo-oophorectomy at 45-50 years, recommended
Susceptibility to breast cancer / Ataxia Telangiectasia/	*ATM*	AD/AR	breast: 21%–24% ovary: 2%-3% pancreas: 5%-10% prostate: > compared to gen. pop. Colon: 5%-10% stomach: 2%-3%	-
Familial ovarian cancer	*BRIP1*	AD	Ovaries: 10%-15%	Salpingo-oophorectomy recommended

Syndrome	genes	Inheritance	Related cancer (% risk of falling ill)	Surgical primary prevention strategies
Susceptibility to breast cancer	*BARD1*	AD	breast: 17%-30%	-
Susceptibility to breast and prostate cancer	*CHEK2*	AD	breast: 20%-27% prostate: up to 24%	-
Lynch syndrome	*MLH1, MSH2, MSH6, PMS2, EPCAM*	AD	breast: <15% ovary: <38% pancreas: <10%–15%; bile ducts <3.7% prostate: <24% endometrium: ≤57% colon: ≤61% stomach: ≤9% small intestine: ≤11% kidney, pelvis, ureter: ≤28% bladder: ≤12.8% brain: ≤7.7%	hystero-adnexectomy, optional
Familial Adenomatous Polyposis	*APC*	AD	colon: 100% duodenum/periampullary: <1%-10% intra-abdominal desmoids: 10%-24% thyroid: 1.2%-12% stomach: 0.1%-7.1% small intestine: <1% hepatoblastoma: 0.4%–2.5% brain: 1%	colectomy, only if the excessive number of polyposis does not allow for sufficient endoscopic control
attenuated Familial Adenomatous Polyposis	*MUTYH (biallelic variants)*	AR	colon: 70%-90% duodenum: 4% ovary: 6-14% bladder/urinary tract: 6%-8% (♀), 6%-24% (♂)	colectomy, only if the excessive number of polyposis does not allow for sufficient endoscopic control
Juvenile gastrointestinal polyposis	*SMAD4*	AD	colon: ≤50% stomach: ≤21%	-
MEN1/MEN4	*Menin/ CDKN2B*	AD	pituitary gland (adenomas): 50% parathyroid glands (adenomas): 95% pancreas/duodenum (NET): 30%-70% NET in other locations: >3%	-
MEN2	*RET*	AD	thyroid (medullary carcinoma): 90% phaeochromocytoma: 57% parathyroid glands (adenomas): 20-30%	thyroidectomy, recommended
Syndrome hereditary melanoma	*CDKN2A/ CDK4*	AD	melanoma: 28-76% pancreas: >15%	-

Sources: NCCN (National Comprehensive Cancer Network) Guidelines 2025 and 2024. PMID: 20301710; PMID: 20301434

Legend: AD: autosomal dominant; AR autosomal recessive; gen. pop.: general population; NET: neuroendocrine tumour. Cancers for which primary surgical prevention is envisioned are shown in bold.

Caption: Table. Major cancer susceptibility syndromes and their causative genes. Some cancer susceptibility genes that increase the risk of cancer under heterozygous conditions (only one copy of the mutated gene) cause rare childhood autosomal recessive disorders if two copies of the mutated gene are inherited. Therefore, the identification of a pathogenic gene variant that predisposes an individual to develop cancer is an indicator that their family members should also be tested, not only to assess their susceptibility to develop cancer, but also to assess the reproductive risk of each individual/couple.

Cervix, endometrium, and ovaries

DOMENICA LORUSSO, MARIACHIARA PADERNO, ILARIA SABATUCCI, MARGHERITA TURINETTO

In recent years, gynaecological cancers have seen major advances in both diagnosis and treatment, with new therapeutic approaches going beyond "traditional" surgery and chemotherapy. Prevention, through regular check-ups and a healthy lifestyle, remains essential for reducing risk and promoting early detection.

CERVIX

Cervical cancer is a form of cancer that develops in the cervix, the lower part of the uterus that connects to the vagina. It is one of the most common gynaecological cancers in developing countries and the fourth most common cancer among women worldwide.

EPIDEMIOLOGICAL DATA

Each year, around 570,000 new cases are diagnosed, leading to over 300,000 deaths. In developed countries, widespread vaccination and screening have significantly lowered incidence and mortality, while in developing nations, rates remain high due to limited access to prevention programmes.

What is the main risk factor?

The main risk factor is persistent infection with human **papillomavirus (HPV)**, particularly high-risk strains such as HPV-16 and HPV-18. Transmission occurs primarily through sexual contact. HPV can also cause other cancers (vulva, vagina, penis, anus, mouth and pharynx), affecting **men as well**.

Prevention: HPV vaccination and regular screening

In Italy, HPV vaccination is recommended and offered free of charge to girls and boys starting at age 11. It is given in two doses,

6 months apart; if started after the age of 15, three doses are required. Vaccination is recommended before becoming sexually active. Free catch-up vaccinations are available up to age 26 for women and up to age 18 for men who are unvaccinated or have not completed the series, with some regional variations. **The vaccine remains effective up to age 45 and is also recommended for those who are sexually active.** Current vaccines protect against the 9 most dangerous HPV strains, preventing over 90% of HPV-related cancers.

The **Pap test** detects cervical cell changes that could become cancerous and is recommended **every 3 years for women aged 25 to 65.** The **HPV test** identifies the virus's DNA in the cervix and is more sensitive in detecting **infections with high-risk strains that may cause cervical cancer**. It can be performed alone or combined with a Pap test every 5 years, starting at age 30.

How is cervical cancer treated?

Treatment depends on the disease stage and the patient's overall condition. Options include:

- **Surgery**: which may involve *conisation* (removal of part of the cervix), *trachelectomy* (removal of the cervix while preserving the uterus) or *hysterectomy* (total or radical removal of the uterus).
- **Radiotherapy**: which may be *external* or internal (*brachytherapy*), used alone or with chemotherapy.
- **Chemotherapy**: used for advanced-stage cancers, sometimes combined with immunotherapy.

What are the future prospects for cervical cancer?

The combination of vaccination, screening and targeted treatments has already significantly reduced mortality. **Raising awareness, ensuring access to prevention programmes and providing appropriate treatments are crucial to further combating this disease and improving outcomes for those affected by cervical cancer.**

ENDOMETRIUM

Endometrial cancer is a malignant cancer that develops in the lining of the uterus. It is the most common form of uterine cancer, occurring mostly after menopause, and is the most frequent gynaecological cancer in developed countries.

EPIDEMIOLOGICAL DATA

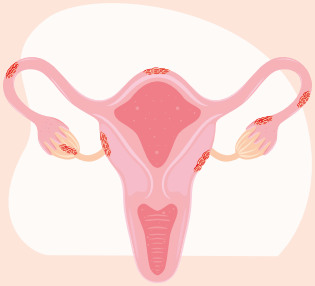
There are approximately 382,000 new cases worldwide each year, with the highest incidence found in developed nations. Survival rates are good when diagnosed early, but decline sharply in advanced stages.

What are the main risk factors for endometrial cancer?

The risk of developing endometrial cancer increases with **age**, particularly after **50**. The main risk factors include **obesity**, which raises **oestrogen** levels, and a **reproductive history** marked by **early menarche**, **late menopause** or **no pregnancies**.
Using oestrogen-only **hormone replacement therapy** after menopause also increases risk. Other contributing factors include **polycystic ovary syndrome (PCOS)** and **genetic predisposition**, such as **Lynch syndrome**, which raises the risk of several cancers, including endometrial cancer.

Are there any preventive measures that can be taken for endometrial cancer?

Although there is no guaranteed way to prevent endometrial cancer, several measures can lower the risk. Maintaining a **healthy lifestyle** is crucial: a balanced diet, regular exercise and maintaining a healthy weight help regulate hormone levels.
Prolonged use of **combined oral contraceptives** may offer protection. Women on



hormone replacement therapy after menopause should combine **progesterone with oestrogen** under medical supervision.
Those with **genetic or family risk factors**, such as Lynch syndrome, should have regular specialist check-ups. **Avoiding smoking** and **limiting alcohol consumption** also contribute to overall cancer prevention.

What are the most common symptoms and how is it diagnosed?

The most common symptom is **abnormal vaginal bleeding**, particularly **after menopause**. In advanced stages, **pelvic pain**, **unusual vaginal discharge** and **unintentional weight loss** may occur. Diagnosis involves a **pelvic examination**, **transvaginal ultrasound** and **endometrial biopsy**. In some cases, **hysteroscopy** and imaging tests such as **MRI or CT** scans are used to determine the spread of the cancer.

How is endometrial cancer treated?

Treatment depends on the stage of the disease. **Surgery** is often the first step and involves **removing the uterus**, with possible removal of the ovaries and lymph nodes. Depending on the case, **radiotherapy**, **chemotherapy** or **hormone therapy** may also be used, with the latter recommended for patients wishing to **preserve fertility**.

What role does immunotherapy play in the treatment of endometrial cancer?

Immunotherapy is a more recent option in clinical practice for treating advanced or recurrent endometrial cancer, used either in combination with chemotherapy or alone as second-line therapy. Immunotherapy drugs, such as immune checkpoint inhibitors (anti-PD-1 and anti-PD-L1), help the immune system recognise and attack cancer cells. They are particularly effective against cancers with specific genetic alterations (dMMR or MSI-H).

OVARIES

Ovarian cancer is a malignancy that develops in the ovaries, the reproductive organs responsible for producing eggs and hormones such as oestrogen and progesterone. It can originate from epithelial (surface) cells, germ cells (which produce oocytes) or stromal tissue (which produces hormones).

EPIDEMIOLOGICAL DATA

It is the fifth most common cancer among women and the leading cause of death from gynaecological malignancies. Each year, there are over 310,000 new cases and more than 207,000 deaths worldwide, with higher incidence rates in developed countries.

What are the risk factors associated with ovarian cancer?

The risk of ovarian cancer increases with age, particularly after 50. **Family history** plays a key role: having close relatives with ovarian or breast cancer may indicate a genetic predisposition, especially in the presence of **BRCA1 and BRCA2 mutations** or **Lynch syndrome**. Other risk factors include **endometriosis**, certain **hormone therapies** during menopause (with oestrogen alone), **nulliparity** and a **personal history of other gynaecological or intestinal cancers**. An **unhealthy lifestyle**, including **obesity** and a **diet rich in saturated fats**, may also increase risk.

How is ovarian cancer diagnosed?

Early detection of ovarian cancer is difficult, as symptoms are often vague and non-specific. The most common signs are abdominal bloating, pelvic pain, early satiety and frequent urination. If these symptoms occur, a doctor will carry out a **gynaecological examination** and may request a **transvaginal ultrasound** to evaluate the ovaries and uterus. Further imaging tests, such as **CT or MRI scans**, can help determine whether the cancer has spread.

The **CA-125 blood marker** can be a helpful indicator, though it is not specific. A definitive diagnosis is confirmed by **biopsy**, which involves analysing a tissue sample.

What treatments are available for ovarian cancer?

Treatment for ovarian cancer depends on the stage of the disease and the patient's general condition, but typically involves **a combination of surgery and chemotherapy**.

- **Surgery** aims to remove all visible tumour tissue, often including the ovaries, fallopian tubes, uterus and lymph nodes.
- **Chemotherapy** is usually given after surgery, but can also be administered beforehand to shrink the tumour.
- Targeted **therapies**: these treatments use drugs designed to act specifically against a "target" in the cancer cells. Examples include PARP inhibitors, used as maintenance therapy after chemotherapy, or antibody-drug conjugates approved for platinum-resistant cases.
- **Immunotherapy,** still under investigation, represents a potential future treatment, working by stimulating the immune system to target cancer cells.

It is crucial to rely on **specialised centres** for optimal care.

Are there genetic mutations that increase the risk of ovarian cancer?

Hereditary BRCA1 and BRCA2 mutations are responsible for about 15-20% of epithelial ovarian cancers. Individuals with BRCA1 mutations have a **39% to 46%** risk of developing ovarian cancer, while those with BRCA2 mutations face a **10% to 27%** risk. **Lynch syndrome**, caused by mutations in DNA repair genes, also increases the risk (up to 12%). **Genetic testing** is an essential tool for identifying high-risk individuals and implementing targeted surveillance or prevention strategies.

Is there any way to prevent ovarian cancer?

There are currently no effective screening programmes for preventing ovarian cancer in the general population. For those at high genetic risk, such as carriers of BRCA mutations or Lynch syndrome, preventive removal of the fallopian tubes and ovaries can reduce the risk. Regular gynaecological check-ups and transvaginal ultrasounds may also be beneficial. Protective factors include long-term use of oral contraceptives and maintaining a healthy lifestyle with a balanced diet, physical exercise and weight control.

What have been the latest developments in the field of ovarian cancer treatment?

Research continues to advance, with studies focusing on combination therapies, personalised medicine and immunotherapy. New **biological markers** are also being investigated to support early diagnosis and monitor treatment response. These developments aim to improve survival rates and enhance patients' quality of life.

Colon/rectum

EMILIO DI GIULIO

Most colorectal cancers are caused by the malignant transformation of polyps. These consist of small benign growths caused by the uncontrolled reproduction of cells within the intestinal mucosa.

EPIDEMIOLOGICAL DATA

In 2024, there were around 48,700 new diagnoses of colorectal cancer, including 27,500 in men and 21,200 in women. The five-year survival rate after diagnosis is estimated at approximately 65% for men and 66% for women. In total, about 442,600 people in our country have currently been diagnosed with this type of cancer.

What are the risk factors?

The recognised risk factors are the following: **environmental, behavioural (smoking, sedentary lifestyle, obesity), and dietary**. One so-called "generic" risk associated with **age**: starting at age 50, the risk for both men and women increases. The risk also increases in the presence of certain conditions (such as diabetes or metabolic syndrome), chronic inflammatory bowel diseases (such as Crohn's disease, ulcerative recto-colitis), or genetic syndromes (such as familial adenomatous polyposis or Lynch syndrome). **Physical activity, regular consumption of fruit and vegetables, and healthy lifestyles, on the other hand, play a preventive role.**

The main red flags that should be reported to a doctor are:

The presence of blood in the stool, even if mixed with mucus, changes in bowel behaviour due to the appearance of

diarrhoea or constipation, anaemia, fever, feeling of exhaustion, incomplete evacuation or rectal pain, unexplained weight. All of these symptoms are non-specific, but should be reported to a doctor.

What tests can be used to diagnose the disease?

The most accurate and widely used diagnosis method is **colonoscopy**, which also allows for histological confirmation through tissue samples (biopsies). In some special cases, a so-called "virtual colonoscopy" can be used as an alternative. Colorectal cancer has a high incidence, especially from the age of 50, which is why regional screening is required. **Men and women receive invitations from their local health offices to undergo regular faecal occult blood tests** (or in some regions rectosigmoidoscopy). In fact, the early diagnosis of this type of cancer is crucial to the survival and quality of life of patients. Occult blood testing is not a diagnostic test, as it does not provide sure proof of cancer, but is rather a **screening tool used to identify the subjects most at risk, to who should subsequently undergo a complete colonoscopy.**

Skin

MIRELLA D'ANDREA AND PAOLO ANTONIO ASCIERTO

Skin cancers are traditionally divided into melanomas and non-melanoma skin cancers.

Melanoma

a malignant tumour that originates from melanocytes, cells that contain the *pigment melanin* responsible for skin colouration. It can **develop in the skin anywhere on the body**, although in rare cases it can also develop in the mucous membranes (e.g. mouth, genital intestinal tract, or eyes), or may even have unknown origins.

Cutaneous melanomas originate from either undamaged skin or pre-existing nevi, or rather those which have been present since birth (congenital) or early childhood, or else from nevi that appear during the course of one's lifetime (acquired). The risk of melanoma developing from a congenital nevus is very low, with the exception of giant congenital nevi (greater than 20 cm), for which the risk is greater.

Clinically, there are **4 types** of skin melanoma: **superficial spreading melanoma**, the most common, accounting for about 70% of cases, appearing as a flat or slightly raised lesion with irregular edges and colour variations, **often on the trunk in men**, the **legs in women** and the **upper back in both sexes; lentigo maligna melanoma; acral lentiginous melanoma; and nodular melanoma,** the most aggressive, which accounts for about 10–15% of cases. Unlike the first 3 types, which initially grow superficially, nodular melanoma invades the underlying tissue from the outset.

EPIDEMIOLOGICAL DATA

The incidence of this tumour is constantly increasing. Approximately 85% of skin melanomas that arise annually worldwide affect the populations of North America, Europe, and Oceania. It is one of the main cancers that can develop at a young age, and is currently the third most common cancer in Italy in both sexes under the age of 50. Despite the increase in the incidence rate, the mortality rate has remained more or less stable in recent years.

Who is at risk

The main risk factor for cutaneous melanoma is **excessive and repeated exposure to ultraviolet (UV) light**, which reaches us in the form of **UVA and UVB** rays, and is mainly carried by the sun's rays. Excessive sun exposure, especially at a young age, is dangerous as it can damage skin cell DNA and trigger tumour formation, sometimes leading to melanoma years later. It is important to note that **sunbeds and tanning lamps** also emit ultraviolet rays and should therefore be avoided. Suffice it to say that, years ago, the IARC (the World Health Organisation's cancer research agency) conducted a study that showed that exposure to even one tanning lamp under the age of 30 increases the risk of developing melanoma by 75%. The risk is greater among Caucasian (white) individuals, and increases among people with **freckles** or many **moles**, with **light-coloured eyes, hair**, and **skin**, and those who have suffered numerous sunburns, especially during childhood. Other major risk factors include: having a **close relative who has had this type of cancer** or having had a **previous cutaneous melanoma** or a different type of **skin cancer**, such as squamous cell carcinoma and basal cell carcinoma.

Non-melanoma epithelial skin cancers

Basal cell carcinoma is the most common form of non-melanoma skin cancer. It arises from the basal cells in the deepest layer of the epidermis, adjacent to the dermis, and affects the superficial skin layers, particularly in sun-exposed areas. It is frequently caused by excessive exposure to UV radiation. Symptoms may include pinkish papules, translucent or red nodules, persistent ulcers or erosions that do not heal, reddish plaques or inflamed scar-like lesions.
Squamous cell carcinoma is another frequent type of non-melanoma skin cancer. It arises in the squamous cells of the epidermis and is often caused by UV exposure, though genetic and environmental factors may also contribute. Symptoms include scaly, nodular skin lesions prone to bleeding.
Merkel cell carcinoma is a rare but highly aggressive skin cancer with a strong tendency to recur and metastasise. It appears as a hard, shiny, flesh-coloured or bluish-red swelling that grows quickly without causing pain or tenderness. It most often affects sun-exposed areas of the skin, such as the face and arms.

Prevention

Certain behaviours can reduce the risk of developing skin cancer. It is essential to practise **moderate sun exposure** from childhood, **avoiding** sunburn **and limiting time outdoors during peak hours between 10 a.m. and 4 p.m.** Protective measures include wearing suitable clothing, hats and sunglasses, and applying sunscreen with a high SPF against UVA and UVB rays, reapplying it regularly and after swimming to maintain protection. The use of tanning lamps should be avoided. **These precautions are important for everyone, but especially for children, who are** highly vulnerable to sunburn: tumour development is a slow process that can often be triggered by damage occurring in childhood. Finally, it is also crucial **to monitor the appearance of moles regularly**, either personally or with the assistance of a dermatologist or a family member for hard-to-see areas. **A specialist screening every 12 months is recommended.**

How to recognise a suspicious mole

The main warning sign is a **change in an existing mole or the appearance of a new one**. The characteristics of a mole that may indicate melanoma are summarised with the **acronym ABCDE.** If even just two of these letters apply the mole under observation, it is recommended to seek an urgent visit with a specialist:

- **A** for **Asimmetric** in shape (a benign mole is generally circular or otherwise roundish, while a melanoma is more irregular);
- **B** for irregular and indistinct **Borders**;
- **C** for variable **Colour** (i.e. different shades within the mole itself);
- **D** for increasing **Dimensions**, both in width and thickness, although melanomas may also be just a few millimetres wide;
- **E** for **Evolution** of the mole, which will tend to undergo changes in appearance (size, shape, colour) in a rather short time frame.

Other red flags that should be assessed by a doctor include any **mole that bleeds (even minimally)**, that **itches**, or that is totally different from the others (ugly duckling sign).

Diagnosis

Regular **self-examination** of the skin therefore makes it possible, in many cases, to detect mole changes early and consult a dermatologist promptly.
For the **early detection** of skin cancer, it is advisable to see a specialist every 12 months.
The specialist will initially carry out a **comprehensive examination**, in which he or she will assess the patient's family history and the presence of any typical signs and symptoms of melanoma. A more thorough visual examination of the skin is carried out using a special technique for magnifying and illuminating the skin, called **epiluminescence**. However, a final diagnosis of cutaneous melanoma requires a **biopsy**, in which the suspected lesion is removed and analysed under a microscope.

How it is treated

The treatment of choice for melanoma is **surgery**, which often succeeds in eliminating the disease definitively at an early stage. The introduction of new immunotherapies and targeted molecular treatments has transformed the management of advanced melanoma, moving beyond traditional **chemotherapy**. Treatment choice depends on the extent of the disease, the desired response, the patient's condition and any coexisting illnesses. Radiotherapy is used in some specific cases (for example when symptomatic bone or brain **metastases** are present), as well as for therapeutic purposes, combined with other treatments, or as palliative care.

Skin side effects of treatments in cancer patients

Skin side effects of cancer treatments **are common and may vary according to the type of therapy** (chemotherapy, immunotherapy, radiotherapy, targeted treatments, etc.). They may include **dryness, rashes, itching, hair loss, photosensitivity, nail or skin pigmentation changes**, and, in some cases, more severe lesions with radiotherapy or immunotherapy. In fact, immunotherapy has revolutionised cancer treatment, offering improved survival prospects, particularly in advanced disease. However, it can cause side effects, including skin reactions such as rashes, itching, vitiligo, psoriasis and, more rarely, bullous dermatitis, due to its effects on the immune system. These reactions can significantly affect patients' quality of life**, impacting both mental and physical well-being, and may interfere with treatment continuity and effectiveness.**

It is therefore vital that cancer patients **report any skin changes to their oncologist or dermatologist** to receive appropriate care and guidance.

Liver and bile ducts

LORENZA RIMASSA

Hepatocellular carcinoma is the most common type of liver cancer in adults, arising from hepatocytes, the main liver cells. It may present as a single nodule or as multiple nodules in a multifocal pattern. A smaller but increasing number of cases are cholangiocarcinomas, or bile duct cancers, which affect the small tubes that carry bile.

EPIDEMIOLOGICAL DATA

In 2024, 12,600 new cases of hepatocellular carcinoma were recorded in our country, with men affected twice as often as women. The 5-year survival rate is 22% for both sexes. In total, there 30,200 diagnosed patients currently living with this type of cancer. There are 5,400 diagnoses of bile duct cancer annually, with an approximate 5-year survival rate of 15%. Around 12,700 people are currently living with a diagnosis of bile duct cancer.

Do hepatitis viruses increase the risk of disease?

Most hepatocellular carcinoma cases occur in people with chronic liver disease. **More than 70% are caused by infection with hepatitis C virus (HCV) or hepatitis B virus (HBV)**. About 1/3 of cases are linked to alcohol abuse, and those related to metabolic causes, such as obesity and diabetes, are on the rise. These same risk factors may also contribute to cholangiocarcinoma, along with gallstones and chronic bile duct inflammation. Patients at high risk (liver cirrhosis, chronic HBV or HCV infection) should undergo half-yearly liver ultrasound scans to check for malignancy. **For primary prevention of viral cases, HBV vaccination and**

the HCV screening campaign launched by the Ministry of Health and implemented in several Italian regions are crucial.

What are the most common symptoms?

Liver tumours often cause no specific symptoms at first and, in more advanced stages, may lead to **pain, abdominal fullness**, weight loss, fatigue and loss of appetite. Bile duct cancers may also cause jaundice, dark urine (marsala in colour) and pale (hypochromic) stools.

How is the disease diagnosed?

Diagnosis and staging rely on imaging tests such as ultrasound, CT scans, MRI (including MR cholangiography), ERCP for certain bile duct tumours, and biopsy for histological confirmation.

Breast

ADRIANA BONIFACINO

Breast cancer is a formation of tissue consisting of cells that grow in an uncontrolled and abnormal manner within the mammary gland. The various stages of the disease (I to IV) concern the involvement of the mammary gland alone, the surrounding tissues, and tissues from other parts of the body.

Early diagnosis is the most effective method of breast cancer prevention.

Lifestyle!

There are two fundamental and effective ways to stay healthy: a healthy diet and physical activity. Numerous scientific studies have shown that these should be considered as "medicines" to be used for prevention, as well as during and after treatment. **By maintaining a healthy lifestyle, up to 40% of cancers could generally be prevented.** *(AIOM.* Cancer Figures in Italy 2024)

Mammogram

The public health Mammogram Screening model envisages a free mammogram every two years for women aged 45/50 through 69/74, at the invitation of their local Public Health Office (in some regions, like Emilia Romagna and Tuscany, mammograms are offered one a year for women between the ages of 45 and 49).
If these investigations should reveal a significant and/or suspicious alteration, the patient will be called back for further investigation at a Level II public centre. Law no. 388 of 23 December 2000 (The Veronesi Law) provides for mammograms every two years for all women between 45 and 69 years of age, with no out-of-pocket payment.

Adherence to the screening programme is an excellent tool for early breast cancer detection.

EPIDEMIOLOGICAL DATA

Breast cancer is the most common cancer in women aged 35 and older.
In 2024, approximately 53,686 new cases are expected (53,065 in women and 621 in men), making it by far the most common cancer among women and representing 30% of all female cancers. There are currently 925,000 women in Italy living with a breast cancer diagnosis, with 6-7% being cases that have already metastasised. 45% of breast cancer diagnoses are in women aged 45-74, 35% in women > 74 years of age, and 20% in those < 45 years of age. 1-2% of breast cancers affect men.
The 5-year survival rate following diagnosis is 88%. The likelihood of surviving beyond the first year is 91%. (Aiom. Cancer Figures in Italy 2024).
It's a type of cancer that can be linked to family history, and in some cases (around 10%) to a genetic mutation (BRCa1 and 2), which can lead to ovarian, prostate, or pancreatic cancer. Additional genetic mutations that are not yet fully understood may also be involved, so taking a detailed clinical history of each individual, woman or man, is essential to determine whether genetic counselling is warranted.

What if you have breast implants?

All imaging tests can be performed in women with implants, whether for augmentation, post-cancer reconstruction, or preventive purposes in women with genetic mutations.

What can you do if you are outside the screening age?

There is no current scientific evidence showing that mammogram screening is effective as a public health model for women aged 40-

45. However, if personal and/or family risk factors or symptoms are present, women of any age are encouraged to consult their doctor to determine whether a personalised prevention programme may be advisable.

Can breast cancer be hereditary?

About 10-12% of all breast cancers are hereditary. In **hereditary syndromes**, mutations are most often found in the BRCA1 and BRCA2 genes, but other genes may also carry mutations. Individuals with family histories that include multiple cases of malignant breast, ovarian, prostate, pancreatic and/or stomach cancer (carcinoma), on the side of either the mother or father, may way to consider genetic counselling order assess the likelihood of a genetic mutation. In order to be proactive and take fewer risks, gathering information about your own family history (oncological, autoimmune, neurological, vascular diseases) can be a useful way to come up with a more personalised prevention pathway with your doctor.

What are the programmes to be followed in the case of family history, BRCa1 and 2 genetic mutation, or very dense breast tissue?

The Ministry of Health and the Regions are aware of the need for prevention programmes dedicated to women who fall into these categories. Some regions already have personalised programmes dedicated to the highest risk groups, with admissions open to the public. It is recommended to visit the your Region's website and consult with your doctor to find out whether any such programmes are already available. However, there is an urgent need for a national programme that will put an end to local inequalities, and will be able to guarantee appropriate and effective public treatment programmes for all women. Associations dedicated to patients and citizens, like the IncontraDonna Foundation, are in constant contact with the institutions in order to assert these rights and ensure the presence of adequate and coherent public health programmes within every local area and region.

What are the selection criteria, and who should undergo genetic counselling?

General criteria: multiple cases of breast cancer in the family (at least 2 or 3) especially if arising at a young age (2 cases if < 50 years; even just one case if < 35 years); family history of male breast cancer, ovarian cancer, pancreatic cancer, coexistence of breast and ovarian cancer within the same family or in the same individual, or bilateral breast cancer.
Under some circumstances, (e.g. when there is a clear indication for the genetic-molecular test, and the family members with cancer are all deceased, or living relatives who do not agree to undergo the test) genetic counselling and the performance of the test on the healthy subject are also considered.

Where can one go for genetic counselling?

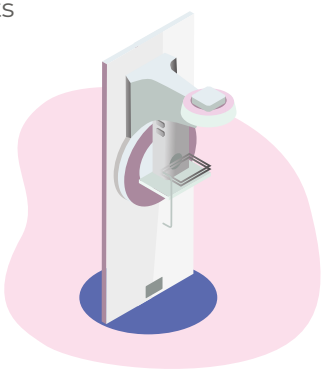
There are many dedicated public centres in Italy. It is always best to contact a large hospital or university that has a centre specifically dedicated to medical genetics or hereditary cancers.

For more details, please refer to the section on "Hereditary cancer risk" on page 34 of the Health Guide.

What kinds of instrumental investigations are carried out?

Attention! All imaging results should be carefully stored and brought to each follow-up appointment.
Mammogram: a radiological examination that uses an extremely low dosage of radiation. The breast is compressed between two surfaces, thus allowing for any changes in tissue density, nodules, microcalcifications, distortions, or glandular asymmetries to be detected. Different technologies are available: digital and tomosynthesis. Tomosynthesis involves a three-dimensional (3D) reconstruction of the mammary gland. In regional screening programmes, additional imaging is currently only offered if further investigation (level II) is necessary. BI-RADS is a radiological clas-

sification system for lesions that consists of 5 categories: 1 to 3 (benign), 4 (suspicious), 5 (carcinoma). It also provides for 4 categories of breast density (A to D). Classes C and D are those which indicate the greatest density. Higher breast density is associated with an increased risk of developing breast cancer. The early diagnostic methods used for these higher categories include ultrasound combined with mammography, and in some cases MRI with a contrast medium (if requested by the specialist).



CEM (contrast-enhanced mammography) is a digital mammogram with iodinated contrast medium (requiring fasting, a specific point in the menstrual cycle and a recent creatinine test) and in some cases may be an alternative to contrast-enhanced MRI. This is recommended by the specialist in specific cases. It is not a routine test but could play a role in personalised screening, particularly for high-risk women and those with dense breasts.

Ultrasound imaging: uses ultrasound waves (not radiation) to detect changes in the mammary gland. It can also provide insight into vascularisation (colour and power Doppler) and tissue stiffness (elastosonography). It can be performed at any point of the menstrual cycle. Mainly used in young women, and those with dense breasts, regardless of age. Mammography and ultrasound are complementary, and one does not exclude the other.

Magnetic resonance imaging (MRI with contrast medium): uses a magnetic field (not radiation). It is only recommended by the specialist as an in-depth examination or to supplement the investigations, in specific cases where detailed tissue vascularisation imaging is required. A kidney function test (creatinine level) and information about the menstrual cycle are required. It is neither a substitute for mammography nor ultrasound imaging.

What kinds of cell or tissue samples can be taken?

The need for sample collection is determined by the breast specialist (radiologist, clinician, surgeon, oncologist, radiotherapist) based on that which is revealed by the mammogram/ultrasound. In many cases, unnecessary surgery can be avoided. In the case of breast cancer, however, this allows the surgery itself to be planned in detail. In addition, thanks to recent technological and scientific advances, the examined tissue is able to be classified with increasing precision, with the possibility of adopting extremely effective and personalised treatments (hormone receptors, c-erb b2, Ki67 cell proliferation index, testing for particular genes in the tumour tissue). All cell and tissue sampling procedures are performed on an outpatient basis.
No cell or tissue sampling procedure causes cells to spread.

Fine needle aspiration: this method of cell collection (cytological examination) is performed by inserting a simple syringe needle, often guided by ultrasound, but also by stereotactic (mammographic guidance) or MRI technology at specific facilities, into a nodule or area of gland that requires further investigation. This method is minimally invasive, does not require local anaesthesia, and, in the case of breast cancer, has a reliability rate of up to 97%.

Biopsy: this tissue collection method (histological examination) is performed using a 1-2 mm calibre needle designed to remove small fragments of tissue, called a tru-cut, and is performed under local anaesthesia.

VABB (Vacuum Assisted Breast Biopsy): this method of tissue collection (histological examination) is performed by inserting a needle of just over 2 mm (probe) into a very small incision in the skin (2-3 mm). It is performed under local anaesthesia, and requires specific, technologically advanced equipment capable of precisely centring nodules and microcalcifications using both ultrasound and radiological (stereotactic) guidance.

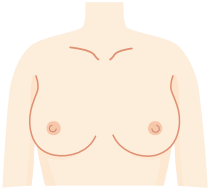
Who should I contact if I am diagnosed with breast cancer?

Each region has dedicated **Breast Units**, which are identified by the Regions according to criteria established by the Ministry of Health. The Breast Unit is public, and consists of a multidisciplinary team that takes care of the cancer patient throughout her journey. From diagnosis to treatment and support. The Breast Unit must begin treatment, whether surgical or pharmacological (time needed to plan and carry out all the preliminary investigations), within 30-40 days of diagnosis. Statistics have shown that being cared for by an interdisciplinary public Breast Cancer Treatment Centre can result in up to a 20% greater chance of recovery and survival 5 years after the event.

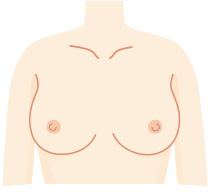
Breast self-examination

Self-examination is not a substitute for mammography or ultrasound scanning. Periodically observing and palpating your breasts can facilitate the detection of any changes, which in turn should be referred to your doctor for evaluation and/or advice. The time of least breast tension should be chosen, or rather the week following the menstrual cycle (or simply once a month if you are menopausal or pregnant).

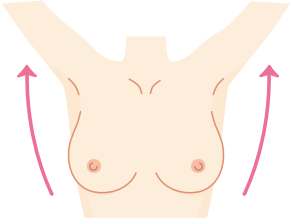
WHAT TO CHECK FOR



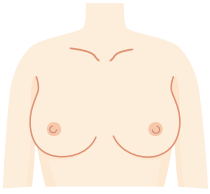
Stand in front of the mirror, with your arms at your sides. Observe and carefully compare the shape and volume your breasts and nipples. You will likely notice that they are not exactly the same. This is perfectly natural. Check whether any changes occur over time.



Next, carefully observe the profile of each breast as well. Check that there aren't any unusual changes in shape. Pay particular attention to any lump-like protrusions. Also examine the appearance of the skin: watch for any wrinkled or sunken areas.



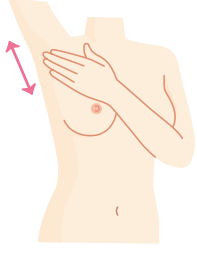
Standing in front of a mirror, raise both arms. Examine the appearance of both breasts again, comparing them carefully. Having the arms raised further highlights the characteristics of the nipple. Observe the profile of your breasts in this position as well.



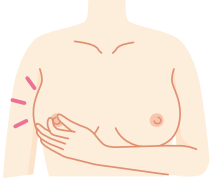
Last position. Stand in front of a mirror with your arms at your sides. Take a deep breath. Recheck the appearance of both breasts. In this position, as the skin is more taut, you can more easily observe any skin alterations. Check the regularity of the profile again.

WHAT TO FEEL FOR

Lie down with a pillow under your back to raise the breasts and make them easier to examine. Raise your arm on the side of the breast to be examined, with your hand under your head. Perform the palpation with the other hand. Palpation should follow a spiral pattern, moving from the outside inwards towards the nipple. With your fingertips together, press gently but firmly, moving slowly in a circular motion towards the nipple. Check for changes in consistency (lumps or hard areas).



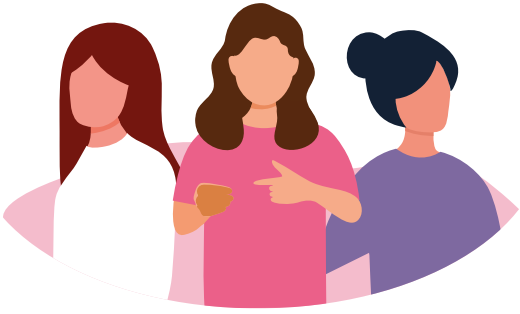
Carefully examine the area, starting from the fold beneath the breast and including the space between the breast and the armpit. Perform the manoeuvre first with your arm raised, then with it lowered, perhaps while seated. In this position, it is easier to detect any lumps in the lower part of the armpit (lymph nodes).



Next, take the nipple between your fingers and press gently. Check that no discharge is present. You can also check for this while pressing on the breast. If fluid is released, check its colour with a tissue and inform your doctor.

Consult a doctor if you notice any of these symptoms:

- Unusual breast shape
- Change in breast profile
- Skin changes: wrinkled or sunken areas
- Any lumps in the breast or armpit
- Any irregularity in the nipple's appearance (for example, retroflexion: retracted nipple)
- Secretions from the nipple
- Eczema (rash) of the breast



Breast implants and the risk of lymphoma

ARIANNA DI NAPOLI

Breast implants are medical devices regulated in Italy by Legislative Decree no. 46/1997, implementing European Directive 93/42/EEC, which lays out the criteria for their design and manufacture. Since they are considered class III devices (the highest risk class), their placement on the market requires a CE certificate to be issued by a relevant certification body. Implants are currently used for cosmetic reasons, as well as for reconstructive purposes in patients who have undergone mastectomies for breast cancer.

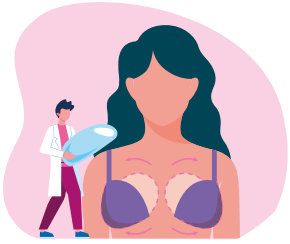
How many types of breast implants are there?

There are various types of implants. In particular, they are available in a rounded shape, with either a smooth or rough surface (macro- or micro-textured), or else in a teardrop shape (anatomical) to mimic the natural shape of the breast, but only with a textured surface. Both are available in a wide range of sizes to suit the needs of each patient. Their contents can consist of either silicone or saline solution, and there are even dual chamber implants with a silicone core surrounded by saline solution. **Most of the implants utilised in Europe over the past 20 years have been the textured type**, while those utilised in the United States have mainly been the smooth type.

What is breast implant-associated anaplastic large cell lymphoma (BIA-ALCL)?

Breast Implant Associated Anaplastic Large Cell Lymphoma BIA-ALCL) is a rare form of malignant cancer that develops around breast implants placed for both cosmetic and reconstructive purposes. The cancer originates from T lymphocytes, a type of immune cell, which, about 9 years after implantation on average, transforms into a lymphomatous cell that multiplies, creating a build-up of fluid (seroma) between the implant and the fibrous peri-prosthetic capsule (a kind of scar tissue surrounding the implant). In a mi-

nority of patients, the neoplasm manifests itself as a solid mass that grows within the tissues surrounding the implant and/or with an enlargement of the axillary lymph nodes, or with an erythema (pathological reddening) of the skin on the breast.



BIA-ALCL must be distinguished from another form of lymphoma that can occur in patients with medical implants, including breast implants: Fibrin-associated Large B cell Lymphoma (FLA) in which the neoplastic cells show signs of Epstein Barr virus infection. To date, 16 cases have been described in the international literature, including one case in Italy.

Another rare form of cancer that can arise in association with breast implants is squamous cell carcinoma (BIA-SCC), of which the US Food and Drug Administration (FDA) had reported 19 cases as of 8 March 2023. No cases have been reported in Italy.

How is the diagnosis made, and what is the clinical course of BIA-ALCL?

Diagnosis is carried out by cytological examination of the aspirated seroma under ultrasound guidance, or by histological examination of a fragment of the tumour mass or enlarged lymph node collected by surgical biopsy. The prognosis is generally excellent when a timely diagnosis is followed by the removal of the implant, the peri-prosthetic capsule, and all the tumour tissue.

What should women with textured implants do?

The Scientific Committee on Health, Environmental and Emerging Risks (SHEER) has reaffirmed the importance of careful clinical follow-up for patients with breast implants, whether cosmetic or reconstructive, to enable early diagnosis and timely treatment of BIA-ALCL, which is largely curable. In particular, the referring physician, plastic surgeon or breast specialist will determine the frequency and type of examinations required (ultrasound or magnetic resonance imaging).

Italy's Ministry of Health is actively monitoring the clinical cases on the ground, also thanks to the various educational and awareness-raising activities carried out by healthcare professionals through the dissemination of specific memoranda, complete with the guidelines for the diagnostic and treatment pathway and the informed consent to be submitted to patients prior to implantation, both of which were drafted by the Permanent Technical Working Group on BIA-ALCL established by the Ministry in 2019. Moreover, the Ministerial Circular of 5 June 2024 recently limited the implantation of breast implants for cosmetic purposes to people who have reached the age of majority, with the exception of individuals with severe congenital malformations certified by a doctor affiliated with the National Health Service or a public health facility.

What is the incidence of BIA-ALCL?

As of 30 June 2024, the FDA had reported 1,380 cases of BIA-ALCL worldwide, including 64 deaths, while in Italy, as of November 2024, 114 cases had been recorded, with two deaths and an estimated incidence of between 2.7 and 6.3 cases per 100,000 implant recipients. Lymphoma develops equally in patients who have received implants for reconstructive purposes (16% of cases) and for cosmetic purposes (16% of cases), while in 68% of cases the reason is unknown.

Onco-haematology

LUIGI CAVANNA

Blood cancers are based on an irregular and uncontrolled growth of cells. They are diseases that often arise in the bone marrow and lymphatic system.

EPIDEMIOLOGICAL DATA

They account for an estimated 10% of all cancers in Italy, and 35,000 new cases are diagnosed each year. Seven out of ten patients manage to beat the odds and go on living normal lives.

Like with solid tumours, blood cancers have recognised risk factors, which can make them more likely to arise. The most important are the following:

- **unhealthy lifestyles** (namely obesity and smoking);
- **environmental factors** (prolonged exposure to certain chemicals or radiation);
- **side effects** of certain anti-cancer treatments;
- **age** (two thirds of cases involve people over 65);
- **particular diseases** or genetic factors;
- **infections** with certain viruses.

Blood cancers manifest with non-specific symptoms that are often mistaken for trivial health problems (fatigue, weakness, fever, aches, weight loss, minor bleeding, excessive night sweats, or itching). But signs such as these should always be reported to a doctor, who can then prescribe more in-depth examinations.
Onco-haematological diseases are detected through specific blood tests or through a bone marrow biopsy (or biopsy of an enlarged lymph node).

They are divided into three macro-groups:

- **Acute and chronic leukaemias**: caused by the uncontrolled proliferation of cells in the bone marrow, which produces red and white blood cells and platelets
- **Lymphomas:** these affect the lymphatic system, especially B and T lymphocytes, or rather the cells used to fight infections
- **Myelomas:** these affect the immune system cells originating in the bone marrow (plasma cells). They derive from B lymphocytes which, together with T lymphocytes, are among the main cells involved in the immune response

Pancreas

MASSIMO FALCONI

The pancreas is a gland about 15 centimetres long located in the upper abdomen, and is divided into three parts: head (right), body (middle) and tail (left). Pancreatic cancer occurs when certain cells that make up the organ multiply out of control. The portion of the organ that produces pancreatic juices is called the "exocrine pancreas". About 90-95% of all cancers originate here. The part that generates hormones, on the other hand, is the "endocrine" part, and can account for the remaining 5-10% of all malignancies.

EPIDEMIOLOGICAL DATA

13,585 new cases were diagnosed in Italy in 2024 (6,873 among men and 6712 among women). The five-year survival rates are 11% and 12% respectively. A total of 23,600 people are currently living with this cancer.

How does the disease manifest itself?

At the onset, it usually causes pain, jaundice (yellowing of the skin), and weight loss. There may also be less specific symptoms, such as acute or chronic diarrhoea and depression. Symptomatology depends on the location and extent of the carcinoma. Pain is present in 75-90% of cases, is continuous, and is often accentuated after meals and at night: it is also localised mainly in the upper abdomen radiating to the back. Weight loss is consistent, progressive, and associated with aversion to food. Diabetes is also associated in over 25% of patients.

Is it linked to certain hereditary genetic diseases?

There are proven links with multiple atypical familial melanoma syndrome, Peutz-Jeghers syndrome, hereditary pancreatitis, hereditary non-polyposis colorectal cancer, familial breast and ovarian carcinoma syndrome (BRCA), familial cystic fibrosis adenomatous polyposis, ataxia telangiectasia and Fanconi anaemia.

What examinations should be carried out?

For a correct diagnosis, ultrasound, abdominal CT scan, endoscopic ultrasound. and sometimes MRI are used. A positive diagnosis of the disease, however, is obtained with a biopsy.

Lung

MASSIMO DI MAIO

Lung cancer can develop from the cells that make up the bronchi, bronchioles, and alveoli, and can form a mass that obstructs the proper flow of air, or else can cause bleeding, or symptoms such as coughing or chest pain. A distinction is made between non-small cell lung cancer (the most common form) and small cell lung cancer (less frequent but more likely to have a clinically aggressive and rapid course).

EPIDEMIOLOGICAL DATA

The new diagnoses recorded in Italy in 2024 amounted to about 44,800 (31,900 among men, and 12,900 among women). The 5-year survival rates amount to 16% and 23% respectively, but are naturally better in cases diagnosed at an early stage and worse in cases diagnosed at an advanced stage. In our country, there are approximately 109,000 patients living with lung cancer.

What are the symptoms?

The most frequent and common symptoms are a dry cough with phlegm (sometimes streaked with blood), difficulty breathing, minor bleeding with coughing, chest pain, weight loss, and fatigue. These symptoms are non-specific, meaning that they are not always indicative of lung cancer. However, people considered to be at risk (such as heavy smokers) should not underestimate the symptoms.

What diagnostic tests are necessary?

The most advanced test for detecting the disease is the 3D spiral CT scan. In order to diagnose the disease by taking a piece of tissue, it is necessary to perform a bronchoscopy (which allows for a direct view of the bronchi) or percutaneous needle biopsy under CT guidance (which allows a few cells from the suspected lesion to be removed via a needle introduced from outside the chest wall).

In recent years, the need to obtain tissue samples has become essential, not only for a "traditional" diagnosis (microscopic examination by a pathologist) but also for molecular analyses, which guide the choice of the most effective drug therapy. In many cases, it is useful to perform a biopsy not only at the time of initial diagnosis but also later in the disease, for instance when new information could guide a change in therapy. Obtaining a tissue sample is not always easy: in recent years, major advances have been made with the so-called "liquid biopsy", which analyses tumour DNA from a "simple" blood sample. Although liquid biopsy does not yet replace "traditional" biopsy, it is likely to be used increasingly in future clinical practice.

Are there prevention and screening programmes for early diagnosis?

The high incidence and mortality rate of lung cancer **highlight the importance of primary prevention, especially smoking cessation**, the main risk factor, as well as secondary prevention through **screening**.

Clinical studies have shown that the use of low-dose spiral CT can reduce mortality in heavy smokers by about 20%. In Italy, a population-wide screening programme is not yet available (unlike those for breast or colorectal cancer). While a population programme would be highly desirable, screening is currently only carried out within specific projects, including the ministerial RISP (Italian Lung Screening Network) programme, for men and women considered

at risk (aged 55-75, current smokers of at least one pack a day for over 30 years, or heavy smokers who quit less than 15 years ago).

What treatment options are available?

Lung cancer treatments have advanced considerably in recent years. **Today, alongside traditional treatments such as surgery, chemotherapy and radiotherapy, molecularly targeted therapies and immunotherapy are also available**. These innovative approaches have transformed treatment, offering renewed hope to patients. Many molecularly targeted drugs, used when the tumour carries specific molecular alterations (mutations or rearrangements), are taken orally. Immunotherapy uses drugs that enable the immune system to fight the tumour and may be given intravenously or, more recently, in a more convenient subcutaneous form for some medications. Thanks to these therapies, significant progress has been achieved not only in advanced and metastatic disease, but also in optimising care for patients with limited-stage disease (where drugs can be given before surgery as neoadjuvant treatment or after surgery as adjuvant treatment).

Prostate, kidneys, testicles, bladder

Genitourinary cancers account for about 20% of all cancers recorded in Italy.

Prostate cancer is the most frequent among the Italian male population, and usually does not manifest through specific signs or symptoms. It is often diagnosed in patients who undergo specialist urological examinations for urinary disorders associated with benign prostatic hyperplasia. Testicular cancer is considered a "juvenile" form of cancer, as it typically occurs between the ages of 14 and 45. It is a curable disease in the vast majority of cases, but can have **a strong negative impact on fertility**.

Kidney cancer is the fifth most common form of cancer in males. Several risk factors have been identified, related to either lifestyle (including smoking and obesity) or chronic disease (such as diabetes or hypertension). Certain chronic kidney diseases may also increase the risk of occurrence.

With bladder cancer, the main symptom is haematuria, or the presence of blood in the urine. The persistence or recurrence of this phenomenon is a red flag that should not be underestimated. This is especially true for men who are considered to be at risk, e.g. those over 50 or heavy smokers.
Nowadays medical specialists have various effective methods available for treating urological cancers. The traditional therapies, which have long been used, include surgery, radiotherapy, and chemotherapy. These have more recently been joined by immunotherapy and

targeted therapies.

Finally, **primary and secondary prevention is fundamental**. Therefore, in addition to a healthy lifestyle, it is also extremely important to undergo check-ups and medical examinations aimed at detecting genitourinary cancers early on.

For further information on this topic, visit the IncontraDonna Foundation website and consult the handbook on male cancer prevention.

Stomach

EMILIO DI GIULIO

Cancer is caused by the formation of tissue consisting of cells that grow in an uncontrolled manner. 90% of cases of stomach cancer form in the inner wall of the stomach, and are called adenocarcinomas.

EPIDEMIOLOGICAL DATA

14,105 new cases were recorded in 2024 (8,593 among men and 5,512 among women). The five-year survival rates are 30% and 35% respectively. It is estimated that there are currently 72,900 people in Italy living with a gastric cancer diagnosis.

Are the symptoms generic?

They can be mistaken for those of much less serious diseases, such as gastritis or ulcers. The most common symptoms experienced by patients are digestive problems, lack of appetite, feelings of nausea and vomiting, feelings of heaviness, pain or heartburn, difficulty swallowing, presence of blood in the stool or black stools, fatigue due to anaemia, and significant weight loss.

What is Helicobacter pylori?

It is a **bacterium** that can colonise the stomach lining (or gastric mucosa). It is a very common microorganism, and is responsible for ulcers and gastritis. Chronic infection can lead to stomach cancer in some cases, if left untreated. It is classified by the International Agency for Research on Cancer (IARC) as a Group 1 carcinogen.

For this reason, eradication of the bacterium with **antibiotic therapy** prescribed by your doctor is essential. The cancer risk is reduced by eradication and endoscopic surveillance of any precancerous lesions that may have already developed.

How can the disease be detected?

Through **gastroscopy** and **biopsy**, which allow cancerous lesions to be definitively diagnosed through the collection and analysis of cells, or with a CT scan, which also allows the extent of the cancer to be assessed.

Thyroid

LAURA LOCATI

Two types of malignant tumours originate in the thyroid gland: the first and most common is differentiated carcinoma, which includes papillary, follicular, oncocytic and anaplastic subtypes; the second, very rare, is medullary carcinoma.

EPIDEMIOLOGICAL DATA

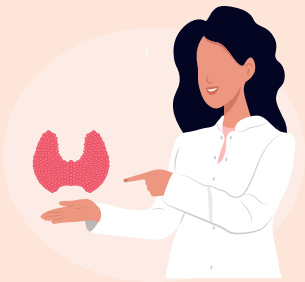
In Italy, an estimated 11,378 new cases of thyroid cancer were recorded in 2024 (3,056 in men and 8,322 in women). The five-year survival rate is 92% in men and 96% in women, with 236,000 people currently living in Italy after a diagnosis of thyroid cancer.

What is the most common and widespread symptom?

The most common sign is the appearance of a lump or swelling at the front of the neck. In most cases, this lump is painless, and is discovered incidentally during a medical examination or ultrasound for other reasons. Other, less common symptoms (usually in more advanced stages) include enlarged neck lymph nodes, difficulty swallowing and changes in voice tone. Most thyroid nodules are benign. Only a small proportion are malignant thyroid tumours.

What are the main tests that allow a diagnosis to be made?

Diagnosis is made through ultrasound, fine-needle aspiration biopsy and blood tests.



Are women at greater risk than men?

Women are affected about 4 times more frequently than men. Among the various risk factors is exposure to ionising radiation. In fact, thyroid cancer can occur in individuals who have undergone radiotherapy on the neck or who have been accidentally exposed to high doses of ionising radiation, as happened in the Chernobyl accident or, more recently, in Fukushima. Iodine deficiency is also considered a risk factor.

3.

In-depth analysis

Cardiometabolic health, obesity and cancer prevention

GIUSEPPE PUGLIESE

Although **cardiovascular disease and cancer** are often regarded as separate conditions, they share many features, including **numerous risk factors** such as obesity, diabetes and chronic inflammation, all closely linked to unhealthy lifestyles combined with genetic predisposition.

In 2024, there were an estimated 390,000 new cancer diagnoses in Italy (AIOM data), a figure that continues to rise, partly due to the spread of unhealthy lifestyles. **Excess weight is a major cardiovascular and oncological risk** factor and, in our country, **about 36% of the population is overweight** and 12% is obese, with a **worrying increase in excess weight among children**, particularly in the south.

How are metabolic syndrome, diabetes and obesity defined?

Metabolic syndrome refers to a complex condition in which risk factors for **diabetes** and cardiovascular disease are present at the same time: **abdominal circumference, blood sugar, cholesterol, triglycerides and blood pressure. Diabetes** is a metabolic disorder caused by a defect in the secretion or peripheral action of insulin, and **characterised by glucose levels of 126 mg/dl or more**. **Obesity**, on the other hand, is **a condition of excessive fat mass**, defined as a ratio of weight (in kilograms) to height squared (in metres) equal to or greater than 30 (25 for overweight). Central obesity is an **accumulation of fat at the abdominal level,** defined by a waist circumference, measured at the navel, greater than 102 cm in males and 88 cm in females. **It represents the lowest common denominator of metabolic syndrome**, in which it is associated with type 2 diabetes or prediabetic condition, high blood pressure, and so-called atherogenic dyslipidaemia, or rather triglyceride levels above 150 mg/dl and HDL cholesterol levels below 40 mg/dl in males and 50 mg/dl in females.

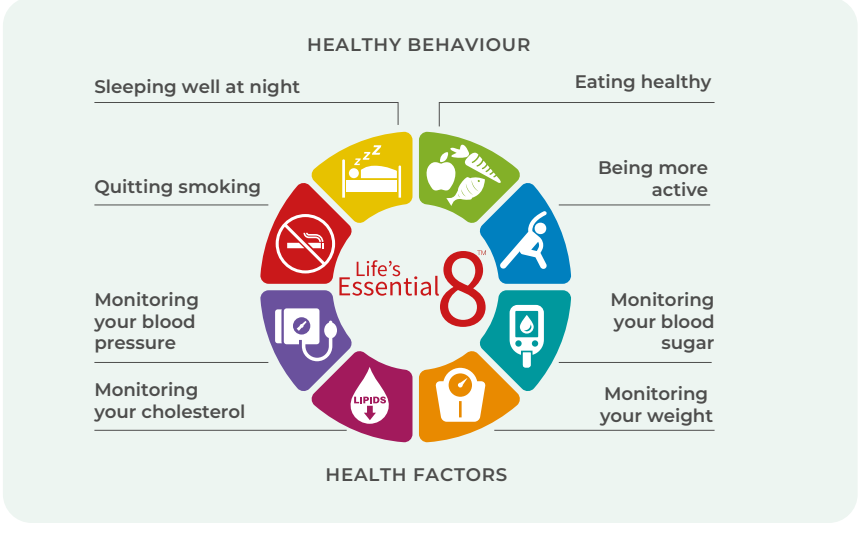
What are these conditions caused by?

The development of these conditions is closely tied to **unhealthy lifestyles**, particularly poor diet and sedentary behaviour, in combination with genetic predisposition.

How can they be prevented and treated?

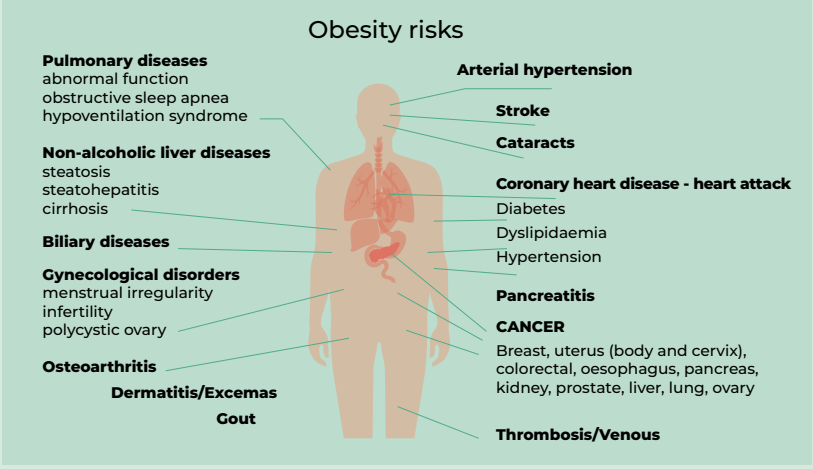
Prevention relies on **adopting healthy habits from childhood** or, if this has not been done, making lifestyle changes as early as possible in adulthood (balanced diet, physical activity, avoiding smoking and alcohol abuse). Such changes are of fundamental importance, even after these conditions have manifested themselves, together with the possible use of medications prescribed by a doctor. **Prevention is therefore essential, but the proper management of the condition once diagnosed is also extremely important to avoid potentially serious complications.**

8 ESSENTIAL FACTORS FOR LONGEVITY AND QUALITY OF LIFE



FOCUS: Obesity is a chronic and complex disease. And it must be treated as such.

Excess weight is a major cardiovascular and oncological risk factor that affects 4 in 10 adults in Italy: 33% of citizens are overweight and 10% are obese. (AIOM data).



Body weight is influenced by a combination of physical and genetic factors, as well as socio-economic, cultural, environmental, relational and emotional elements that shape **a person's eating habits and lifestyle**. Education on primary prevention and the management of overweight and obesity therefore requires a multidisciplinary approach: healthy habits, **combined with awareness and accurate medical information**.

➲ **Get informed.** If you believe you are overweight or obese, consult your doctor. They can refer you to a specialist who will provide a diagnosis and guide you through the process.

Judgements and prejudices

Obesity is not merely a matter of individual choices or solely the result of lifestyle, but a **chronic, progressive and recurrent disease caused by a complex network of factors.** Society repudiates and invalidates obese people with **social stigma and**

discrimination, and "blames" them for their condition. It is therefore essential to promote a culture of risk factor prevention, while also **fostering a culture of inclusion and respect, and change begins with us**.

➲ **Get informed.** Look beyond, with empathy. There are many factors to consider behind an overweight or obese person.

Obesity is also a risk factor for cancer

40% of deaths are linked to modifiable risk factors, in particular smoking, alcohol consumption, sedentary behaviour and excess weight. In fact, **severe excess weight** is **one of the main risk factors for many chronic illnesses**, including **cardio-metabolic and oncological diseases** such as endometrial, colorectal, oesophageal, kidney, pancreatic and breast cancer, particularly among post-menopausal women. It can also reduce the effectiveness of treatments and increase the likelihood of complications and recurrence.

Physical activity and healthy eating play a crucial preventive and therapeutic role. This should be combined with an **increasingly multidisciplinary approach** (metabolic, endocrinological, nutritional, and oncological) that takes into account the individuality of each cancer patient, including psychological and social aspects.

➲ **Get informed.** If you are a cancer patient and believe you are overweight or obese, consult your **doctor and a specialist.**

Watch the video interview

"The importance of getting informed and taking action: how to combat obesity and chronic diseases"

by **Prof. Andrea Lenzi**, Professor Emeritus of Endocrinology, University of Rome "La Sapienza"

Vaccinations

Vaccination and immunisation programmes are therefore recognised as a fundamental preventive health protection strategy for protecting both the individual (before the infectious disease manifests itself) as well as the public, when vaccination is carried out on a large scale. Vaccines are one of the greatest successes in public health, saving millions of lives from preventable diseases that, until about a century ago, were the leading cause of death worldwide, even in developed countries (e.g. polio, measles, diphtheria, whooping cough, human papillomavirus and tetanus).

Vaccination is ageless!

As far as **children's health** is concerned, prophylactic vaccinations (a set of rules and methods for avoiding or preventing the spread of diseases) have led to a significant reduction in the number of serious illnesses, deaths, and disabilities among children worldwide. For **adolescents**, the introduction of the human papillomavirus (HPV) vaccine, for example, has significantly reduced the incidence of HPV-related cancers. From the perspective of healthy ageing, **adult vaccination** is a key element in a society where people are enjoying increasing longevity, with a consequent increase in the prevalence of chronic diseases. A major focus must be placed on **groups that are at-risk due to age, illness**, occupational exposure, or other conditions, for which a specific vaccination calendar is provided.

Vaccination fatigue and "fake news"

Despite the evidence, knowledge of the benefits of vaccinations among the population (especially those at risk) and **adherence to these preventive strategies is still too low** due to several factors, including the impact of the pandemic and so-called "vaccination fatigue", and increasing access to misleading information. **Healthcare misinformation poses a serious risk** to individuals and society as a whole. It is therefore fundamentally important to increase

trust between civil society and healthcare professionals, through wide-reaching and authoritative information campaigns that make reference to official sources.

The **IncontraDonna Foundation**, which has always been on the side of patients and the public, collaborates with the **Ministry of Health** to promote health communication and information campaigns, and to encourage more accessible and effective protection and immunisation measures. A good example of this synergy is the **Vaccine Calendar Disc**, a convenient reference tool to support the #VaccinationHasNoAge awareness campaign and in line with the National Vaccine Prevention Plan. The Vaccination Disc is distributed during FrecciaRosa 2025 and in other community outreach initiatives promoted by the IncontraDonna Foundation.

RISK CATEGORIES BY AGE AND DISEASE

When associated with frequent concurrent diseases, an age-related decline in immune response can lead to increased susceptibility to infection and a greater risk of infectious disease severity in the elderly. Faced with an ageing population, this phenomenon poses and **increasingly serious public health challenge.**

Prevention is one of the most appropriate and cost-effective responses to the challenge of ensuring the best living conditions for everybody, as it helps **to improve the health of an ageing population in a sustainable manner.** The **PNPV promotes an expanded vaccine offering and a gradual increase in vaccination coverage**, with a particular focus on protecting the most vulnerable individuals.

People ≥ 60 years of age

Flu vaccination: offered free of charge starting at the age of 60, in accordance with the annual indications contained in the Ministry of Health Memorandum.

Anti-pneumococcal vaccination: offered as a priority people 65 years of age, even together with or independently of the flu vaccination, and at any time of year.

Herpes Zoster vaccination: recommended for 65-year-olds and at-risk individuals aged 18 and over. This vaccination can very effectively reduce the risk of developing Herpes Zoster (also known as Shingles) and post-herpetic neuralgia (one of the most frequent and debilitating complications of the disease).

People at risk of disease

This group faces a higher risk of contracting invasive infectious diseases and, if infected, of developing severe complications that may also affect adherence to treatment. The PNPV therefore provides recommended and free vaccinations for people of all ages considered at risk due to conditions such as cardiovascular, respiratory, oncohaematological, metabolic, chronic renal, immunological disorders and HIV.

LET'S DISPEL A FEW DOUBTS

Which vaccinations are free?

all those recommended based on age, health conditions, and specific types of behaviour or conditions are generally to be understood as currently offered free of charge. There may be regional differences, with some regions having an expanded offering.

How do I book a vaccination?

Contact your GP and/or consult your region's website.

Can cancer patients get vaccinated?

Yes! Some vaccinations are strongly recommended for cancer patients and for those who live or work in close contact with them.

During cancer treatment, the immune system may be weakened and less able to defend against vaccine-preventable diseases such as influenza, pneumonia, meningitis and shingles (herpes zoster). These infections not only endanger health but can also delay or compromise cancer treatments.

This is why getting vaccinated and taking care of yourself is crucial, even during treatment. The same is recommended for anyone in close contact with the patient. In some regions, flu vaccination is free and actively offered to cancer patients and their families, specifically to protect them from the most serious complications.

Watch the video interview:

"Vaccinations: a key element in the treatment pathway of cancer patients"

by **Prof. Lucia Del Mastro**, Oncologist at the University of Genoa – San Martino Hospital in Genoa

Oncofertility and sexuality

FRANCESCA POGGIO, LUCIA DEL MASTRO

Cancer diagnoses in women of childbearing age are becoming increasingly frequent, partly due to the rising age at which women have their first child.

Cancer treatments, such as chemotherapy, can impair fertility and trigger early menopause. The level of risk depends on the patient's age, ovarian reserve and the type of therapy received. **Today, treatment goals include not only curing the disease but also safeguarding future family planning.** It is therefore crucial to inform patients before treatment begins about its possible effects and the options available to preserve fertility.

The main strategies include:

- embryo freezing: currently prohibited in Italy by Law 40/2004;
- oocyte cryopreservation: this technique involves hormonal stimulation, and is recommended for patients who are able to postpone chemotherapy treatment by about 2-3 weeks and who have an adequate ovarian reserve. This technique involves pharmacological hormonal stimulation, followed by oocyte retrieval, assessment, selection and cryopreservation. The likelihood of success depends largely on the patient's age and the number of oocytes retrieved;
- Ovarian tissue cryopreservation: this technique is still considered experimental, but can be applied in cases where the previous techniques cannot be used due to age or the timing of the cancer treatment. This procedure involves laparoscopic surgical removal of ovarian tissue for cryopreservation and later reimplantation. It does not require hormonal stimulation and can be performed at any point in the menstrual cycle;
- pharmacological protection of the ovaries with GnRH analogues (synthetic hormones similar to human sex hormones): these induce temporary ovarian rest during chemotherapy, lowering the risk of early menopause and increasing the chances of pregnan-

cy after treatment. In 2016, this drug was approved by the Italian Medicines Agency (AIFA) and is now standard practice, included in both national and international guidelines. Ovarian suppression with GnRH analogues and other cryopreservation methods are not mutually exclusive, can also be combined to maximise fertility preservation in young women undergoing chemotherapy.

In addition to fertility, sexuality can also be affected by cancer and its treatments. The consequences may be personal or affect the couple, influencing self-esteem, body image, desire and the quality of relationships and sex life. It is important to address these issues as a key part of the treatment journey.

The approach is multidisciplinary and usually involves an oncologist, gynaecologist, psychologist and sexologist. The goal is to help patients understand and manage bodily changes, promoting psychological and physical well-being, greater awareness of their sexuality and a fulfilling intimate life both during and after treatment.

Research and scientific innovation

LUCIA DEL MASTRO AND DAVIDE SOLDATO

Research and scientific innovation play a fundamental role in improving the prognosis and quality of life in women diagnosed with cancer.

Among women, breast cancer is the type of cancer most frequently diagnosed. In Italy, the latest epidemiological data, published in "The Cancer Figures in Italy 2024", estimate 53,686 new cases diagnosed in 2024. The same report states that approximately 37,000 women in Italy are living with a diagnosis of metastatic breast cancer. **Recent advances in cancer research and the availability of new drugs have led to a dramatic improvement in terms of prognoses.**

Today, over 90% of women are STILL ALIVE 10 years after being diagnosed with breast cancer, and the 5-year survival rate for women with metastatic cancer has increased by 16% over the past 20 years. Unfortunately, breast cancer is still the leading cause of cancer death among women, and it is therefore essential to continue to promote and support research aimed at further improving these results.

In recent years, thanks to scientific research and a better understanding of cancer, **drugs have been able to be introduced that have revolutionised the treatment of women's cancers**, and breast cancer in particular. A better understanding of how cancer cells multiply has led to the development of **"Cyclin-dependent kinase (CDK) inhibitors"** for the treatment of women with breast cancer expressing receptors for female hormones. These drugs act in an intelligent manner to block cancer cell multiplication, and their use has dramatically improved survival for women with metastatic breast cancer, and has significantly reduced the risk of recurrence for women with early-stage breast cancer.
Another important innovation has to do with the way in which cancer cells are targeted by drugs, for example thanks to the use

of **“antibody-drug conjugates”**. These are drugs that selectively target cancer cells, releasing a chemotherapeutic agent into them, thus reducing their action on the body's normal cells and therefore limiting side effects. These drugs are now used to treat all forms of metastatic breast cancer, and have been shown to improve survival rates with respect to conventional chemotherapy drugs.

Thanks to scientific research, it has been possible to **develop strategies to reduce the use of certain treatments without increasing the risk of recurrence**, for example through the use of **genomic tests**. These tests make it possible to analyse tumour tissue in greater depth, and to determine whether or not chemotherapy should be administered as a preventive measure after the surgical removal of the breast cancer expressing receptors for female hormones.

Finally, scientific research has led to **numerous achievements in terms of improving quality of life for women suffering from breast cancer**. These include, for example, the introduction of new drugs to reduce side effects, the use of new strategies to preserve ovarian function and maintain fertility in young women, and an increased focus on integrated strategies aimed at preserving women’s physical well-being both during and after treatment. **Similar results have been obtained with other cancers affecting women.** Examples include the use of innovative drugs for the treatment of ovarian cancer in the presence of specific gene alterations, the introduction of immunotherapy for the treatment of endometrial and cervical cancer, and the introduction of HPV vaccination campaigns for the latter as well.

SCIENTIFIC INNOVATION, QUALITY OF CARE AND QUALITY OF LIFE IN CANCER PATIENTS

Scientific innovation has an exceptionally positive impact on cancer care, leading to significant improvements in clinical outcomes and in the overall experience of patients throughout treatment.

Thanks to advancements in research, **we now have more effective, targeted and less invasive treatments that increase the chances of curing or controlling the disease while reducing side effects**.

Innovative, low-impact methods of administration, such as subcutaneous or oral therapies, are also becoming increasingly common, shortening the time spent in healthcare facilities and allowing patients to **cope with treatment with less stress and discomfort, thus enhancing quality of life throughout the treatment journey**. The adoption of advanced technologies and personalised treatments marks an important step towards more effective, compassionate and patient-centred cancer care.

Metastatic: main innovations

GIACOMO BARCHIESI AND GABRIELE PIESCO

Metastatic breast cancer

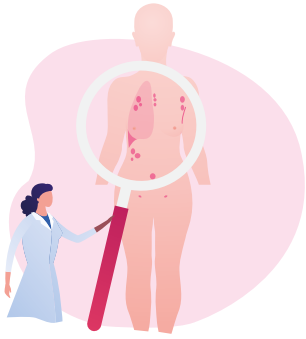
A metastatic tumour is defined as a neoplasm that spreads from its original organ to other parts of the body via blood and lymphatic vessels.

Only the cells of malignant tumours, and not those of benign tumours, are able to metastasise. In most cases, **metastatic diseases cannot be cured, but they certainly can be treated, or rather controlled and made chronic with drugs**.

The main sites of metastasis in breast cancer vary according to the histological subtype: hormone-responsive tumours (oestrogen and/or progesterone receptor positive, HER2-negative) metastasise most often to bones and lymph nodes, whereas HER2-positive and triple-negative tumours tend to spread mainly to the liver, lungs and brain.

There are several treatment options for metastatic disease: surgery, radiotherapy and drug therapy. While drug therapies aim to slow the overall progression of the cancer, surgery and radiotherapy target specific disease sites and, in most cases, relieve symptoms (e.g. radiotherapy on bone metastases to reduce pain).

Drug treatments vary according to tumour type and may include chemotherapy, molecular targeted therapies, immunotherapy, hormone therapy and the latest antibody-drug conjugates, which can also be used in combination.



Modern oncology increasingly seeks to offer **increasingly personalised and precise treatments**, focusing on identifying specific genetic mutations in order to choose more selective drugs, thereby increasing the likelihood of prolonged disease control. Such precision (molecular-targeted) drugs are often better tolerated than chemotherapy, because they specifically target cancer cells without damaging the body's healthy cells. **In general, the treatments offered today (including chemotherapy) are well tolerated, guaranteeing good quality of life for working, family, and intimate relationships.** The use of many of these drugs requires molecular assessments to be performed either on the tumour tissue sample (immunohistochemistry, FISH and NGS) or by taking blood samples (genetic tests and liquid biopsies).

Liquid biopsy

Liquid biopsy is an extremely **valuable and non-invasive** diagnostic test: it consists of a simple blood sample with which circulating tumour DNA is intercepted, allowing the DNA mutations to be identified, thus enabling the oncologist to determine the most suitable type of therapy for the individual patient with greater **precision**.

Personalised medicine

PAOLO MARCHETTI AND ANDREA BOTTICELLI

Medicine today no longer focuses solely on treating the disease but on caring for the whole person, with all their unique characteristics. This is the essence of personalised medicine, an approach that enables the selection of more effective treatments with fewer side effects, thanks to an in-depth understanding of the patient and their cancer.

What does "personalised medicine" mean?

Every person is unique: they have their own genetic profile, lifestyle, associated conditions and take different medications. Personalised medicine takes all of this into consideration in order to create a "tailor-made" treatment plan that not only takes the disease into account, but also the individual living with it.

Why is it important?

Each of us responds differently to medications. Some drugs may be highly effective for one person but not for another. By studying the genes that control drug metabolism, we can now predict whether a treatment is likely to work or whether it might cause adverse effects. Drug interactions are also crucial: the more medications a person takes, the more important it is to evaluate their combined effects.

Every cancer is unique

Even cancers of the same type can differ greatly from one another. For this reason, we can now examine the genetic alterations of a cancer to better understand how the disease will behave (its prognosis), and which treatments it is most likely to respond to.
In some cases, this information can be obtained from a simple **blood sample** (liquid biopsy), without the need for a new tumour biopsy.

Tailor-made drugs

With this information, targeted therapies can be selected, such as:

- **Elacestrant** for patients with ESR1 mutations in HR+ tumours;
- **Trastuzumab** and other "smart" drugs for HER2-positive tumours;
- **Osimertinib** for certain lung tumours with specific mutations.

A new generation of drugs: ADCs

One of the most exciting innovations is **antibody-drug conjugates (ADCs).** These are "smart chemotherapies" that, thanks to an antibody, deliver the drug directly into the cancer cells, minimising side effects. Some examples:

- **Trastuzumab deruxtecan** for HER2+ and HER2-low tumours;
- **Sacituzumab govitecan** for triple-negative tumours.

Genetic testing to choose the right therapy

Today, advanced tests (such as **Next Generation Sequencing**) are available that analyse hundreds of tumour genes. They are used to:

- identify the most appropriate treatments,
- avoid ineffective therapies,
- understand how to prevent drug resistance.

These tests must be performed at the right moment, interpreted by experts and integrated into a structured treatment pathway. This is the role of the **Molecular Tumour Board**, a multidisciplinary team (oncologists, biologists, pathologists) that determines the best strategy for each patient.

Understanding the risk of recurrence

Some genetic tests (such as **Oncotype DX, Mammaprint, Prosigna**) are used after surgery to determine whether chemotherapy is necessary or whether hormone therapy alone is sufficient.

In summary: Thanks to personalised medicine, it is now possible to offer **more accurate, effective and safer treatments**, tailored to the unique characteristics of each patient and their cancer. This approach not only focuses on the disease, but also the individual.

Immunotherapy

PAOLO MARCHETTI AND ANDREA BOTTICELLI

Until recently, the main treatments for cancer were surgery, chemotherapy, radiotherapy, hormone therapy and molecular targeted therapy. Today, however, we have an additional weapon: **the immune system.**

The immune system's role is to protect us from "foreign" substances, such as viruses, bacteria and even cancer cells. At the early stages, it often succeeds in recognising and destroying cancer cells. Over time, however, these cells become more "intelligent", learning to hide and suppress immune activity, which allows the tumour to grow.

Immunotherapy was developed precisely for this reason: to help the immune system recognise cancer cells again and attack them. It is an **innovative treatment** that has already transformed the outlook for certain cancers, such as metastatic melanoma, significantly improving survival rates and quality of life for patients.

Today, immunotherapy is also successfully used in lung, kidney, gynaecological, head and neck cancers, and more recently in breast cancer, particularly in advanced or metastatic triple-negative carcinoma.

One major breakthrough is the use of immunotherapy in the **neoadjuvant** phase (prior to surgery) in patients with triple-negative breast cancer. At this stage, treatment can lead to complete disease regression in about 60% of cases.
Access to this therapy, patient selection and management of possible side effects are guaranteed at breast centres, where a multidisciplinary team of specialists supports patients throughout the entire treatment journey.

Communication doctor-patient-caregiver

ANNA COSTANTINI

A recent Italian multi-centre study conducted among patients with advanced stage cancer showed that 49% lack correct information about their prognosis, 60% believe that their family is shielding them from bad news, and 56% would like to talk more about their disease with their relatives.

Systematic surveys have shown that cancer patients would like to receive more information about their disease, future symptoms and how to manage them, treatment options, and life expectancy, in ways that differ from person to person. In general, they would like to dialogue with a doctor who is empathetic and asks them questions. But talking about cancer isn't easy for anybody. Cancer is still something that instils a great deal of fear in the general population. It can strike at any age, it can change our outlook on life, and can alter our roles both inside and outside the family. Previous experiences interfere in our relationships with people who have fallen ill, by influencing the words we choose, in most cases not always in a conscientious manner. It is important to pay attention to how we communicate, for various reasons: first, because words have a psychological effect; second, because we cannot avoid communicating, and we must therefore choose whether to communicate what we really want to, or something else. While there are no absolute right or wrong things to say, **when dealing with a person suffering from an illness there are certain general indications that can help facilitate communication, convey the right information, and offer support to the patient:**

1. **Communicate conscientiously:** saying things like, “Everything is going to be fine”, “Everything will work out”, “You’ve been cured, take it easy”, or “Don’t worry, the scan will be fine”, might offer premature reassurance and provide a degree of immediate relief, but can cause greater disappointment afterwards if they turn out to have been a source of false hope. Saying “Don't worry” can also convey the idea that we are unwilling to listen to the person’s fears. Another thing that people often say is: “You’re strong, you have to fight this”, which, in a certain sense, implies that it is not good to show weakness or to express anxiety, thus impeding the possibility of sharing negative thoughts.
2. **Be careful not to draw comparisons:** don’t say things like, “If I were in your place”, of “If it were my father going through this.” You are not the patient, and the patient is not your father. People have different life stories, personality traits, and ways of coping with stressful events.
3. **The importance of non-verbal communication:** communication is not only verbal. Your tone of voice, expression, and posture are immediately grasped, long before any words are stated. Using a solemn or awkward tone, avoiding eye contact, or expressing exaggerated optimism when not appropriate for the situation can communicate that something is wrong and that you’re trying to hide it.
4. **Remember that cancer can lead to depression or anxiety, even in those who have never suffered from these conditions.** Seeing a loved one demoralised or depressed is painful. It can make us feel powerless, and reacting by saying things like, “Cheer up! It’ll be worse if you let it get you down”, “You shouldn’t even be thinking about certain things,” or “You have to stay positive to help the recovery process”, which aren't even based on scientific data, can lead to feelings of guilt, due to the belief that their thoughts and feelings are making things worse.
5. **Be aware that emotions can cause embarrassment,** and the fear of not knowing how to handle them can sometimes lead us to block or minimise them by changing the subject, giving

unsolicited practical advice ("Try to think about other things", "Try that supplement, it's miraculous"), or making claims like "You've be cured, take it easy." Saying things like this will result in the patient feeling that they're not understood or that they can't freely express their emotions, prompting them to repress them in the future, thus leading to feelings of loneliness.

6. **Treating the patient like he/she always needs to be protected** and is no longer able to make decisions on his/her own is not always effective. Saying things like "Just let everybody else handle everything", "Let me talk to the doctors", or "Don't you worry about anything" is acceptable at certain stages of the treatment pathway, but helping the person maintain a sense of identity and a certain level of autonomy can also prevent them from feeling demoralised.
7. **Answering questions while first trying to understand what the person really wants to know**, and how he or she wants to be told, thus facilitating personalised communication.
8. **Helping the patient understand what is going on** restores a general sense of control, which an illness like cancer tends to take away, and prevents psychic regression, which in turn can fuel feelings of helplessness.
9. **How do you start talking?** It's not easy to overcome the speechlessness we face when attempting to engage in a personal dialogue with a loved one who has fallen ill. Nor is it easy for a doctor, who, despite having been trained in the technical aspects of the illness, has not necessarily been trained to handle difficult intimate and existential conversations. One useful suggestion is to always begin with an open question like, "How are you doing?", because the person will naturally begin talking about the thing that's most important to them. Asking "How are you feeling?" also communicates interest in the person's subjective experience, a willingness to listen, and solicits a reply. Finally, it is important to listen to the patient without interrupting them with premature reassurances or minimisation, so that the patient is able to indicate how he/she wants to continue the discourse, as well as his/her needs and limits.

10. **Each person their own individual ways** of dealing with difficult situations, and their own points of weakness. Not everyone likes to talk about it in the same way or at the same moments. There are even those who prefer not to talk about it at all, and to think about other things. The patient's personal preferences should always be respected.

11. **If an authentic channel of communication is opened up, emotions should be expected**, both on our own part, and on the part of the patient. Cancer is a trying situation for everyone. It is therefore important to be prepared, not to be frightened by the emotions, and to express your sorrow in a genuine fashion. The point is that we cannot resolve the patient's health problems or prevent their suffering, but we can be supportive by expressing genuine interest and empathy.

12. **Feeling one's emotional experience acknowledged** makes one feel more profoundly understood, and decreases the intensity of the emotions. Empathy is one of the most powerful support tools for modulating emotions. It consists of the ability to understand how a person is coping with difficult situation, to see it from their perspective, and to communicate that understanding to them. For example, instead of saying, "Cheer up, everything will be fine", one can say: "This treatment must have been really hard for you to cope with", or "You must have been very disappointed with the results of the CT scan."

13. **Our sources of hope can change.** While the only hope we are able to give is that of winning the war against cancer, sometimes we win it, and sometimes we lose it. It is therefore better to help the individual find difference sources of hope. For example, one can give hope by highlighting the successes achieved in the field of medicine and in clinical trials, by being there, by saying things "I'll always be there for you", "We can talk whenever you want", "I'm here to support you in your decisions", by using appropriate terms like "chronic" rather than "incurable", or by helping to maintain a sense of worth, saying "Being brave doesn't mean not being afraid, but being able to cope", or "Being strong doesn't mean not feeling scared or discouraged."

14. **Human beings need to have a reason to live, and it is therefore important to encourage them to find meaning:** "Even if you're sick, you're still a father, a husband, and a role model", or "You can live with your illness and still maintain your dignity, your identity, and your sense of self worth." Austrian psychiatrist Viktor Frankl wrote: "If you don't like something, change it. If you can't change it, change your attitude." More recently, on the other hand, Vialli wrote: "Life is made up of 10 percent of what happens to us, and 90 percent of how we deal with it."

The key role of doctor-patient communication in the success of therapies

Effective doctor-patient communication is not only vital **for improving adaptation to the disease and quality of life, but also for encouraging adherence to treatments**. Maintaining open dialogue with the medical team throughout treatment helps patients understand their prescribed therapies, associated symptoms and how to manage them, with positive effects on survival rates and quality of life. Being well informed about potential side effects enables patients to identify them promptly and adopt the best management strategies. **Relationships based on clear, honest and supportive communication** help patients feel respected as human beings**, keep them actively involved in their care, and foster a positive mental and behavioural attitude** towards the treatment, while reducing the anxiety that comes from the sense of having no control over what's happening. Ongoing support and proper management of side effects strengthen trust in the healthcare facility and team, encourage adherence to treatment and, importantly, can prevent the feelings of demoralisation often experienced by cancer patients. **Talking to your doctor and sharing doubts or problems is the best way to face this challenge together**.

Guarda la videointervista:

"L'Importanza dell'Ascolto e della Comunicazione nel Percorso Oncologico, per favorire una migliore aderenza alle terapie"

del **Prof. Massimo Di Maio**, Direttore dell'Oncologia Medica 1U, città della salute e della scienza, Torino.
Presidente eletto AIOM

Patient and caregiver rights

ELISABETTA IANNELLI

Information about the rights of cancer patients and their caregivers

In recent years, the life expectancy of cancer patients has improved significantly thanks to advances in scientific research and medicine. More people are now able to recover completely or live with the disease for extended periods. This progress has created new non-medical needs, requiring practical solutions in the social, economic and employment spheres. It is crucial for patients and caregivers to know their rights so they can better handle the challenges of the disease and maintain a good quality of life. For further information on these matters, please refer to the publications of the Italian Association of Cancer Patients (AIMaC), edited by Atty. Elisabetta Iannelli, with review by the INPS General Medical-Legal Coordination: "The rights of cancer patients" and "The right to cancer confidentiality", from which the following information was taken.

Exemption from out-of-pocket payment due to illness or disability

Cancer patients are entitled to exemption from the prescription charge (code 048) for drugs, visits and tests related to cancer treatment and its complications. If 100% civil disability is recognised, full exemption (code C01) is granted for any medical condition.

Welfare protection (civil disability and handicap)

The 1992 Ministerial Decree defines the disability percentages for cancer patients (11%, 70% and 100%), granting access to welfare benefits depending on the severity of the disease and financial situation: disability pension, disability allowance, carer's allowance and attendance allowance.

To obtain these benefits, it is necessary to apply through the National Social Security Institute (INPS) via a two-step procedure: online completion of the introductory oncology certificate by a certifying physician, followed by the electronic submission of the administrative application.

Verification by INPS of severe disability status also ensures access to tax and employment benefits, such as leave, paid leave, workplace choice and flexible working hours, to help reconcile treatment with work.

Rights at the workplace

Cancer patients can access various employment benefits depending on the percentage of disability or disability status confirmed by INPS.
Those recognised as having a severe disability can request a transfer closer to home and may refuse transfers without their consent. They are also entitled to tasks suited to their working capacity and can be exempted from night work with a medical certificate confirming their unsuitability for such duties.

Part-time work and remote working are valuable tools for balancing employment and treatment, with the option to return to full-time work when health permits.
Cancer patients are exempt from being available for check-ups when undergoing life-saving therapies or when their recognised disability exceeds 67%.

The types of leave and time off work available include:

- **monthly leave (3 days or 2 hours per day – Law 104/92);**
- **leave for special events (3 days per year);**
- **leave for treatment for workers with a disability exceeding 50% (30 days per year).**

Some collective agreements provide remuneration for days of absence due to life-saving treatment.

VAT-registered workers

Self-employed workers and freelancers can access financial assistance schemes regulated specifically for their professional categories.

Social security protection

Cancer patients who have paid at least five years of contributions may apply to INPS for recognition of pensionable disability, receiving the ordinary disability allowance if their working capacity is reduced to less than one third, or a total disability pension if they are unable to work. If the patient requires continuous care and is not hospitalised, they may apply for a monthly personal care allowance.

Those with a civil disability equal to or above 75% are entitled to two months of notional contributions for each year of work as a disabled person, up to a maximum of five years, allowing them to retire earlier.

Free circulation and parking permit

Cancer patients undergoing treatment may obtain a free travel and parking permit from their local Municipality to facilitate travel.

Right to be forgotten in relation to cancer

As of 2 January 2024, **Law 193/2023** guarantees the right to be forgotten in relation to cancer, protecting individuals from discrimination linked to a past cancer diagnosis. People who have been cancer-free for at least 10 years (or five years if diagnosed before the age of 21) are no longer required to disclose their medical history or incur relative consequences in areas such as insurance, mortgages, adoption and employment.

Caregivers' rights

Caregivers of cancer patients recognised as disabled or severely handicapped are entitled to measures that help reconcile work and caregiving. These include:

- **the option to work at a location closest to the person being cared for and protection against transfer without consent;**
- **3 days of leave per month (Law 104/92);**
- **two years' paid special leave for continuous care;**
- **priority access to convert full-time to part-time work;**
- **exemption from night shifts to maintain a better balance between care and work;**
- **solidarity leave and rest periods, with the option to receive donated days off from colleagues.**

These measures are vital to support those caring for a sick family member, providing greater flexibility and security. Concrete support at such a crucial time.

Healthy ageing

IGNAZIO UGO CARRECA AND ANNA PAOLA CARRECA

What is ageing?

Ageing has traditionally been seen as a gradual process beginning between the ages of 30 and 40. However, a Stanford University study published in *Nature Ageing* shows that ageing accelerates at two critical stages: 44 and 60 years of age. At 44, mechanisms linked to fat regulation change, while at 60, sugar metabolism and the immune system are affected, significantly influencing health and the onset of age-related diseases. Despite this, the threshold for "old age" remains set at 75, based on a linear view of ageing. The study may help redefine what it means to be "elderly", improving prevention and overall quality of life.

What are the parameters of ageing and senescence?

Age (documented or chronological): primary indicator attainable from the subject's official documents. **The older we get, the greater the likelihood of developing chronic or degenerative diseases** affecting major organs (such as cancer). Our body's proper functioning is based on two principles: homeostatic cellular balance and functional organic reserve. The efficiency of this mechanism allows each organ of the human body to renew all of its cells while maintaining the same total number of cells and its functionality. It is also capable of repairing the damage and failures induced by serious or persistent "insults" that may affect the entire organism or an individual organ during the course of an individual's life, restoring basal conditions. This perfect mechanism loses its effectiveness over time, as it can no longer cope with the constant demands for action that the body is almost always sending out. Cell renewal is slowly reduced until it comes to a complete halt. It is important to point out that cell renewal is due to various factors, including a particular type of functional element located on the ends of human chromosomes, called "telomeres". These shrink with each cellular repair until they are too small to function, thus triggering the onset of cellular senescence in all the organs of the body.

Age (biological or physiological): this refers to the age that can be attributed to an individual based on his or her morphological and functional conditions, in relation to the reference standards. This should typically coincide with the individual's documented age, but **many other prevailing factors must often be taken into consideration, such as genetic, behavioural (lifestyle, diet), and environmental factors (climate, pollution)**. In this case, the biological age can appear to be much higher than the chronological age due to the effects of various long-lasting morbid events that engage and either partially or fully exhaust the body's overall functional response, leading to frailty.

Types of ageing

In 2014, the WHO (World Health Organisation) defined two basic types of ageing: successful ageing and frailty.
The former is a process that optimises age progression with good health, while the latter is a typical condition of ageing characterised by increased vulnerability to morbid events.

However, ageing is an inevitable process. Understanding **how we can age in a healthy manner and the main risk factors to be monitored** in order to prevent the onset and spread of cancer has become a priority in terms of health protection and management. Lifestyle plays a key role in successful ageing.

Types of cancer and treatments for the elderly

Italy ranks second in the world for its percentage of people over 65 (28%), after Japan (30.5%). This demographic trend is linked to a rise in chronic degenerative diseases, especially cancer. More than 65% of Italy's 390,000 new annual cancer cases occur in people over 65. The risk of cancer increases with age: in people over 70, it is around 40 times higher than in those aged 40-50, and 10 times higher than in the 60-65 age group. Between the ages of 60 and 69, 1 in 5 men and 1 in 8 women are diagnosed with cancer. The most common cancers among older adults are prostate, lung, breast, colorectal, bladder, stomach and pancreatic cancer.

Treatment strategies

The treatment strategies for elderly people with cancer must be determined considering that, among people over the age of 65, age and pre-existing illnesses can affect the outcomes of the cancer treatments. Moreover, up until now it has been assumed that treating an elderly person was the same as treating an aged adult, thus using the same treatment protocols used for young people. This preconception often has led, and continues to lead, to unsatisfactory results, resulting in errors in patient management, with high toxicity, and increased mortality rates.

The WHO has already divided the elderly into two categories, **based on their physical and mental status**: those "in (good) health" physically and mentally, defined as ***fit*** and the frail ones, defined as ***unfit***.

Recent studies have shown that, during cancer treatment, *fit* subjects are able to withstand the toxicity and side effects of the treatments like younger subjects, with similar therapeutic results. Conversely, the *unfit* develop severe multi-organ and multi-apparatus toxicities, often with very serious consequences. For these subjects, the disadvantages outweigh the advantages, and attempting treatment becomes a dangerous pathway, with only modest benefits. In these cases, the treatment choices must be made with caution, taking into account the problems associated with the therapy and the cost-benefit ratio.

An oncologist treating an elderly person with cancer should know how to carry out personalised treatments for unfit individuals, with minimal toxicity and side effects, or palliative care only. There are currently very few such experts out there. Those with decision-making power should make this a priority issue. Certain assessment tests can help better determine the **characteristics of the patient to be treated.**

Charlson Comorbidity Index (1) and (2)

Comorbidity	Score		
Mild liver disease	1	Myocardial infarction	1
Diabetes	1	Congestive heart failure	1
Hemiplegia	2	Peripheral vascular disease	1
Moderate or severe renal disease	2	Cerebrovascular disease	1
Malignant cancer (any)	2	Dementia	1
Leukaemia	2	Chronic bronchopneumopathy	1
Malignant lymphoma	2	Connective tissue disease	1
Moderate or severe liver disease	3	Ulcerative gastritis	1
Metastatic malignant cancer	6		
Aids	6		

+6 indicates a 40% lower survival rate in 5 years

Elderly people, obesity, and cancer risk

The World Health Organisation considers **obesity to be a rapidly growing global disease, largely linked to diets high in processed foods and sedentary lifestyles**. Obesity affects all social classes and may also have a genetic component that makes weight loss more challenging. Being overweight or obese increases the risk of numerous conditions, including heart disease, diabetes and several cancers, such as post-menopausal breast, colon, uterine, liver and pancreatic cancer. **In people over 65, the build-up of visceral fat, which surrounds internal organs, is especially harmful**. Reducing this fat requires a healthy diet and regular physical activity.

Benefits of a healthy lifestyle:

1. **Mental Health:**
   - Reduces stress and improves mood;
   - Reduces symptoms of anxiety and depression;
   - Boosts self-esteem and confidence;
   - Stimulates the production of endorphins, known as "happy hormones".
2. **Cardiovascular Health:**
   - Strengthens the heart and blood vessels;
   - Lowers blood pressure;
   - Improves blood circulation;
   - Reduces the risk of heart disease and stroke.
3. **Muscular and Skeletal Health:**
   - Maintains muscle strength and flexibility;
   - Reduces the risk of osteoporosis and fractures.

World Obesity Day is observed on 4 March to raise awareness among citizens and institutions about the health impact of obesity and to promote prevention at a societal level. The Lancet, a leading scientific journal, published a study involving participants of all ages across 190 countries, revealing that the number of obese children, adolescents, adults and elderly people has surpassed one billion. The study also shows a decline in the number of people of normal weight or underweight from the 1990s up until 2024. This confirms that **obesity is now the most widespread form of malnutrition in industrialised nations and poses a major threat to global public health.**

Latest news (2025)

Approved by the Chamber of Deputies on 7 May 2025, the bill recognising obesity as a chronic disease is continuing its passage through the Senate. The objective is to secure final approval so that the law can take effect next year. A **more accurate definition for diagnosing obesity** has also been introduced. Body Mass Index (BMI) alone is no longer considered sufficient; body fat distribution

must also be evaluated. One simple and practical parameter is the ratio between waist circumference and height, which should remain below 0.5 for both women and men. For example, someone who is 170 cm tall should not exceed 85 cm in waist circumference.

Cancer risks associated with obesity

Obesity, particularly after the age of 70, raises the risk of several types of cancer (breast, colorectal, uterine, liver, pancreatic, and others). It is far more than an aesthetic issue: visceral fat disrupts metabolism **and contributes to chronic illnesses** such as diabetes, fatty liver disease and cardiovascular conditions. Regular physical activity **has been proven to be a key factor in improving overall health**. Practising activities such as yoga, Pilates, tai chi or aerobic exercise provides significant health benefits. These disciplines have proven particularly effective for patients with breast, lung, digestive system and other organ cancers. This is confirmed by a study published in the British Journal of Sports Medicine, which recommends **including physical activity in cancer treatment protocols, as it not only reduces therapy-related side effects such as heart and nerve damage but also improves sleep quality, mood and overall quality of life**. These exercises have shown benefits for patients with breast, digestive system, blood, lung, prostate and other cancers. The strength of this evidence was evaluated using the GRADE method, which found that 54% of the associations studied were statistically significant.

In 2025, AIOM and the AIOM Foundation are once again engaged in a major initiative aimed at reaching the population across the country.

The AIOM is a scientific society founded in 1973 that brings together Italian oncologists. The **AIOM Foundation** was established in 2005 to unite clinical specialists, patients and nurses within one organisation. Together, we are committed to fighting cancer in all its forms and providing support to those directly or indirectly affected by these diseases.

Cancer is a heterogeneous group of more than 200 distinct diseases that can affect men and women of all ages. In 2024 alone, there were over 390 thousand new cases in Italy, a figure that remained broadly stable compared with the previous two years. There has also been a decline in cancer-related mortality among young adults aged 20 to 49. Over a span of 15 years (from 2006 to 2021), mortality fell by 21% in women and 28% in men. Significant progress has also been made in treatments, which are becoming increasingly effective and "personalised". As a result, there is a steady rise in the number of people living after a cancer diagnosis. Last year, there were approximately 3.7 million such individuals nationwide.

However, this encouraging news must not lead us to underestimate cancer or the importance of another powerful tool at our disposal: **prevention**. By following a few simple daily rules, it is possible to prevent many serious health problems. Early action against cancer is possible, which is why we have long been committed to promoting a strong culture of cancer prevention, both primary and secondary, in Italy.

We have therefore renewed our contribution to the drafting of the new Guide.

Francesco Perrone, President of the AIOM
Saverio Cinieri, President of the AIOM Foundation

FONDAZIONE Incontra donna
OCCUPIAMOCI DI SALUTE

The IncontraDonna Foundation is a non-profit organisation that, thanks to the authority of its Scientific Committee and the experience of its patients, is now among Italy's main associations dedicated to the national health system.

In particular, the Foundation works:

- **To actively foster dialogue between Institutions**, Scientific Communities and Associations through effective and participatory patient *Advocacy*, helping to build a more equitable, innovative and accessible healthcare system that meets the needs of the community and cancer patients, with a particular focus on breast cancer.

- **To raise awareness of the importance of prevention and spread knowledge about healthy lifestyles**.

- **To improve the population's knowledge** of the services offered by the National Health Service.

- **To support patients and their caregivers**, including through the provision of free programmes to promote psychological and physical well-being.

- **To promote research in oncology.**

incontradonna.it

HOW TO SUPPORT THE INCONTRADONNA FOUNDATION

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