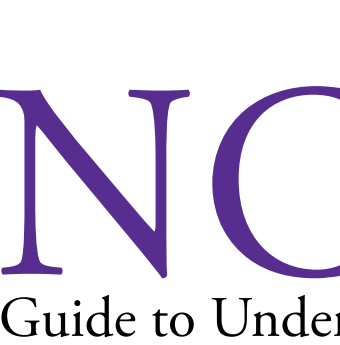
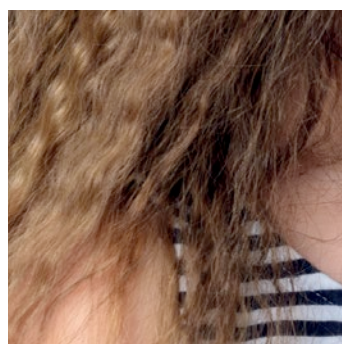
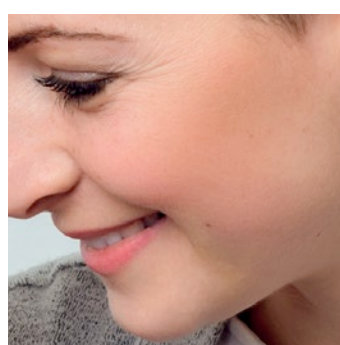
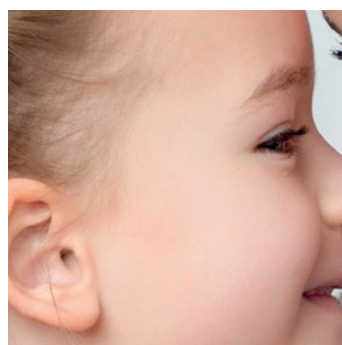
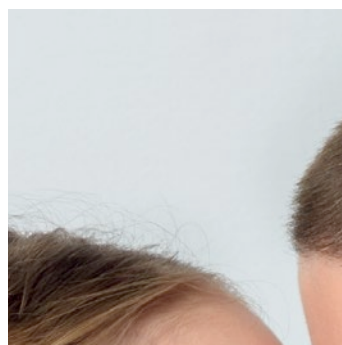
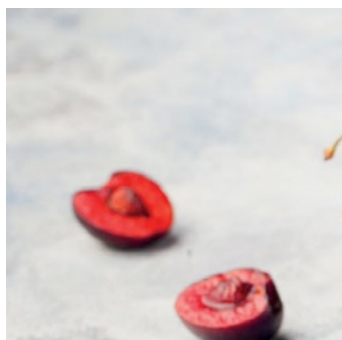


RANIERO  
FACCHINI



# CANCER

Practical Guide to Understanding,  
Preventing and Coping with the Disease



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# What Is Cancer?

*The disease  
that doesn't knock  
before it enters.*

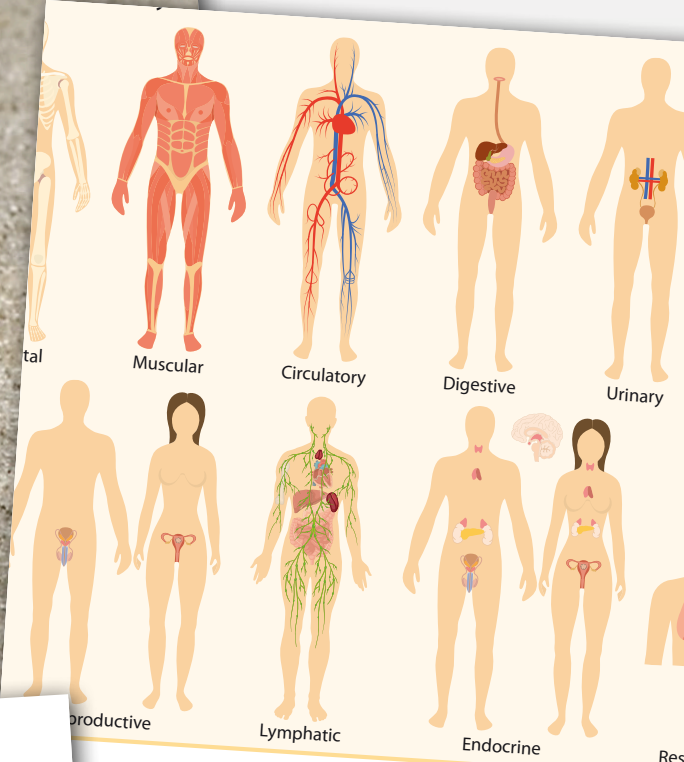
**Susan Sontag**  
*Illness as Metaphor*

**"W**e have won the war against cancer!" How many times have we hoped to read this story in the newspapers, on the Internet, or to see it announced on social networks or on television? A hope that is as legitimate and as old as time.

Hopefully one day it will be a reality.

It will occur, but in a gradual way. For cancer is not a unique disease. It is not an infection and it does not suffice to discover the pathogen, to develop a vaccine and voilà, everything is solved, saving millions of lives. Cancer is something too complex for a drug alone, a therapy, or a unique solution to suffice. It is rather a group of diseases. Distinct diseases among them, labeled under the same name simply because they share a characteristic: the uncontrolled and abnormal growth of cells that appear different from the original ones.

The first to name it was Hippocrates (fifth century BC) who described the disease as *karkinos*, a crab that hides in the sand and kills.



## GENETIC MUTATION

*A cell with an altered genetic code is no longer able to maintain its form, carry out its task, and follow its life cycle.*

### WHAT IS MUTATION?

A **genetic mutation** is an **alteration of the DNA molecule** (deoxyribonucleic acid) inside the cell, which distorts its sequence of information in the **genes** (genetic code).

It can happen in a **spontaneous** manner or by the action of harmful agents (**mutagens**).

Mutations occur at the time that the DNA molecule **unwraps for its duplication** during the process of cellular division. Damage in the DNA that prevents it from normally compacting, leaving it exposed and defenseless to the attack of any mutagenic agent.

The greater the number of mutated genes and DNA molecules, the greater the probabilities for cancer to originate.

### FROM MUTATION TO CANCER

The mutated cell loses its properties and functions as a normal differentiated cell, turning into a **carcinogenic or neoplastic** cell that does not act following the physiological cycles of cellular

reproduction and **multiplies in an uncontrolled way**. It has all the danger of a dissonant voice in a choir, breaking the harmony and imbalance has the danger of spreading becoming even more serious. If the same conditions are present [further ahead "Carcinogenesis"], the sum of the mutations can invade the rest of the tissue forming healthy cells, altering the functioning and system where it is located. This is the **origin of cancer**.



### CARCINOGENESIS

**Carcinogenesis** or **oncogenesis**, is the process by which cancer originates.<sup>1</sup> It is described in five stages:

- Initiation
- Proliferation or promotion
- Progression or expansion
- Organization
- Metastasis or dissemination

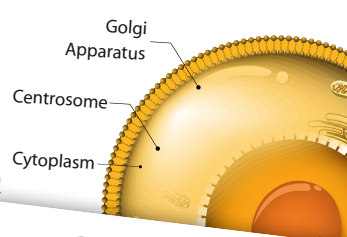
#### Stage of Initiation

It is the moment in which mutation occurs in the DNA of a cell [see previous section "What is a mutation?"]. But after a mutation, cancer does not necessarily develop; instead certain conditions are necessary:

There are insufficient lymphocytic defense mechanisms because of excess of mutated cell proliferation and persistence of mutagenic agent over time.

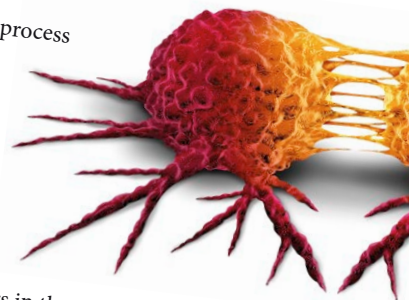
As a result, the mutation affects specific genes that are important in the regulation of cellular growth.

### Animal Cell



## How Does Cancer Form?

*Any type of cancer originates when one or some of the cells multiply without control and spread to nearby tissues. But how does mutation spread to form a tumor?*



the transformation of a normal cell into a carcinogenic cell.

– **Tumor suppressor genes** (oncogenes) are genes that inhibit excessive proliferation, reducing the possibility of a normal cell from becoming a cancer cell. Therefore, a mutation of an oncogene blocks it.

### Dna (Deoxyribonucleic Acid)

It is a very large molecule located in the **nucleus** of the cell. It is coiled on itself and around proteins called **histones**. It contains the **genetic instructions** for the development and functioning of a living organism and is responsible for its hereditary transmission. Its primary function is the **storage of information** to build the components of the cells. The DNA sequences that have this genetic information are the **genes**.

Each cell has:

- 46 chromosomes



# How Do We Become Ill from Cancer?

*Illnesses do not come upon us out of the blue. They are developed from small daily sins against health. When enough sins have accumulated, illnesses will suddenly appear.*

Hippocrates

**M**any questions about cancer are still unanswered. But those unresolved matters are the ones that encourage you to continue researching. Finding what the cause of cancer is or how we become ill are highly complex questions.

Risk factors exist and some specific causes are known, but the relationship is not always simply a direct cause-effect one. The origin of cancer is multifactorial.

A large part of the known causes and risk factors are related to lifestyle and to the environment. On the other hand, genetics also plays a role.

cases, the consumption of alcohol, about 4-6%; infections about 15-20%; the remaining 10-15% of cancers are linked to exposure to chemical and environmental contaminants. In summary, more than 60% of acquired cancers (environmental) are preventable through our decisions. Being aware of this is an important advantage for cancer prevention.<sup>2</sup> In this chapter, we will set out the main cancer causes so that we may prevent them in our lives.

The International Agency for Research on Cancer (IARC) classifies cancer causes into three main groups:

## NON-GENETIC CAUSES: LIFESTYLE

### STRESS

*Sustained stress can disrupt the hormonal and defensive functions.*

#### TYPES OF STRESS

Stress is a reaction of adaptation to a change in a situation of physical, mental, or emotional nature. Physiologists define stress as the manner in which the body reacts against a stressful factor, real or imaginary. Acute stressful factors affect the organism in the short-term, while chronic stressors have long-term effect.

At a certain point, a small dose of stress can be normal since it allows the senses to be prepared to deal with emergency situations. In contrast, a state of persistent stress due to work, complex socio-familial situations, or illnesses, etc., can eventually harm health and reduce the quality of life.

#### STAGES OF STRESS

In the middle of the twentieth century, Austrian physician Hans Selye developed the theory of stress known as the General Adaptation Syndrome or Stress Syndrome<sup>1</sup>, which describes stress in three stages<sup>2</sup>:

- **Alarm or Awareness Stage:** the body prepares itself for the fight or the flight.

– Activation of the **sympathetic nervous system**: release of the hormones adrenaline and noradrenaline into the blood:

- ✓ Increased blood pressure, heart rate, breathing, muscle tone, and peripheral circulation; also, the pupils dilate.

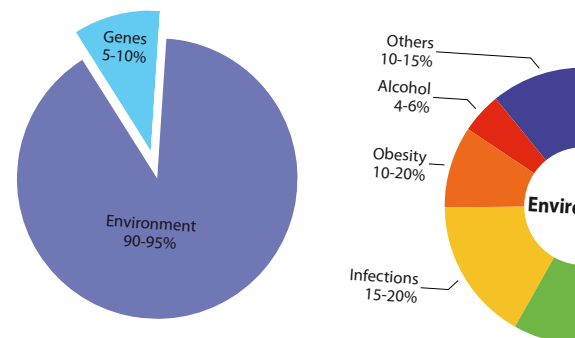
- Activation of the **hypothalamic-pituitary-adrenal axis**: with an increase in the release of the hormone cortisol that prepares the body to react by attacking or escaping the stressful situation. Cortisol increases the release of sugar (glucose) in the blood and suppresses the muscle response. An adverse effect of cortisol is that it triggers the suppression of the immune system.

- **Resistance Stage:** The organism adapts to the stress and attempts to adapt, but it becomes gradually exhausted.

– The activation of the **hypothalamic-pituitary-adrenal axis** persists with increased cortisol secretion.

- **Cortisol**, at high doses, suppresses the function of the immune system and is retained.

## Cancer Causes



Source: Preetha A. et al., Cancer is a Preventable Disease that Requires Major Lifestyle Changes. 2008.



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## NON-GENETIC CAUSES: LIFESTYLE

### TOBACCO

*Smoking is the main preventable cause of cancer worldwide.*

#### TYPES OF CANCER ASSOCIATED WITH TOBACCO

Tobacco is the risk factor responsible for more than 25% of cancer cases of non-genetic origin, i.e., due to environmental causes. Lung cancer is the main type of cancer directly associated with tobacco. It is followed by cancers of the throat (larynx), oral cavity, renal pelvis, esophagus, anus, penis, bladder, kidney, pancreas, cervix, stomach, uterus, and vulva. Regarding breast cancer, research results

vary.<sup>1</sup> [See graphic]. In a study discovered that smoking during pregnancy increases the risk of breast cancer in women who began smoking before their first child.<sup>2</sup>

1 A. Agudo, et al., "Impact of Cigarette Smoking on Breast Cancer Risk: Results from the European Prospective Investigation into Cancer and Nutrition (EPIC)," *Journal of Clinical Oncology*, 30, no. 12, (2012): 1200-1207, <http://dx.doi.org/10.1200/jco.2011.41.0183>.

2 M. Gaudet, et al., "Active Smoking and Breast Cancer Risk: Results from the Cohort Data and Meta-Analysis," *Journal of Clinical Oncology*, 31, no. 8, (2013): 515-525, <http://dx.doi.org/10.1200/jco.2012.42.0183>.

#### Cancers That Have Been Associated with Tobacco and Alcohol



1 H. Selye, "Stress and Disease," *Science*, 122, no. 3171, (1955): 625-631, DOI: 10.1126/science.122.3171.625.

2 S. E. Taylor, F. M. Sirois, *Health psychology*. (Toronto: McGraw-Hill Ryerson, 2012).

# The Thousand Faces of Cancer

"Doctor, I have cancer:

"Am I going to be cured?

I have a friend who was cured of cancer with a therapy... can I be cured?"

To this and other questions, there is no universally valid response because cancer is not a single disease but a group of diseases each with its own characteristics. Addressing them by body systems helps to understand how much diversity there is in the different forms of cancer.



## PROSTATE CANCER

Cancer represents approximately 20% of the male population. The risk of this low, especially if we treat it in time. For this reason, it is important to know both the risk and the early tests that can radically and quickly change the course of the disease.

### WHAT IS THE PROSTATE?

The prostate is a gland of the male genital system. It is located just below the bladder and surrounds a part of the urethra, the duct that transports the urine from the bladder to outside the body. It is a small but important gland. It measures between 3 and 4 cm in diameter and weighs less than 20 g.

Its function is to produce the prostatic liquid, which is a good portion of the seminal liquid, diminishing the viscosity and speeding up the motility of the spermatozoa. Prostatic liquid provides almost the entirety of electrolytes, diminishes the acidity of vaginal secretions and supplies zinc for the defense of bacterial infections.

### TYPES OF CANCER IN THE PROSTATE

• **Adenocarcinoma** is a malignant cancer that originates from a prostatic glandular element.



Of all organs, it is the one that we are all most aware of. Conceptually, we know that without the heart we can't live and we cannot stop our hearts to see what would happen. In contrast, we can do the test with the lungs. Let's inhale and exhale. Breathe in, breathe out. And what if we hold our breathing for 10, 20, 30 seconds, one minute, two? You can't continue any longer without breathing. This is how we begin and, from a very young age and very instinctively, end up understanding that the lungs are essential for living.

The lungs are the quintessential vital organs. Two pyramid-shaped bags, supported by the base of the diaphragm, surrounded and protected by the pleura and the thoracic cage. They draw air and expel it; they draw the oxygen present in the air, pass it into the blood to be transported to every part of the body and collect carbon dioxide from the blood to expel it in the exhaled air. All thanks to the special consistency of these sponge-like organs that maintain air in one side and blood fluid in the other. Two sponges filled with air

## BREAST CANCER

### CANCER TODAY

Breast cancer is the most common cancer among women. Early detection of the disease increases the possibilities of healing. It is the feminine cancer of our time. In Western countries, one out of eight women will develop some type of breast cancer at some point in her life.<sup>1</sup>

In recent years, the fight against breast cancer has benefited from the remarkable media coverage generated by, among other things, the familiar pink ribbons and by campaigns and annual days dedicated to this cause.

One type of cancer that can be diagnosed early through appropriate examinations and tests, the increasing sensitization about performing the

necessary checkups for early detection is greatly useful for public health.

The news about breast cancer is a destabilizing event, giving rise to health repercussions, it affects a woman's body that represents her femininity and identity.

### TYPES OF BREAST CANCER

Breast cancer is usually referred to as breast cancer but, in reality, there are many types that reflect the anatomical structure of the mammary gland. A general classification:

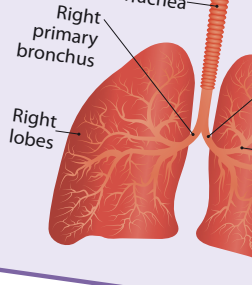
- According to where the cancer originates, it is classified as ductal cancer or lobular cancer.
- According to its capacity to invade, it can be:
  - Non-invasive cancer or in situ
  - ✓ **Ductal carcinoma in situ** (ductal intraepithelial neoplasia)
  - ✓ or **lobular in situ** (lobular intraepithelial neoplasia)
  - Invasive or infiltrating
  - ✓ **Ductal carcinoma, tubular** (70% of all cases), originates in the galactophorous duct and extends beyond the wall of this duct.
  - ✓ **Lobular carcinoma** originates in a lobule of the mammary gland and extends beyond the lobule's structure.
- According to its sensibility to hormones, it can be either hormone-positive or hormone-negative. That is what determines the treatment.

<sup>1</sup>"Dietary Fat Intake and Development of Specific Breast Cancers." *Journal of the National Cancer Institute*, (2014): 106(5), p.10.1093/jnci/dju068.



## LUNG CANCER

### Parts of the Lung



and blood that are rhythmically "soaked." The lungs manage an air of approximately 3,500 cm<sup>3</sup>, while the blood volume is 5,000-6,000 cm<sup>3</sup> with forced ventilation.

### LUNG CANCER TODAY

It is the second most common cancer that affects both men and women. Nearly 14% of all new cancer diagnoses are lung cancer. Lung cancer is the leading cause of death from cancer in men and women. One out of every cancer death is due to lung cancer. For example, each year more people die from lung cancer than from the sum of breast, and prostate cancers.





# Diagnosis... When and How to Do It

Ogni mal fresco agevolmente si risana  
(Every new disease is easily cured)  
Italian proverb

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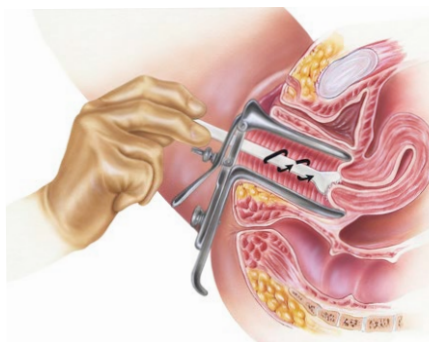
CANCER • 4 • Diagnosis... When and How to

### TEN POINTS TO REMEMBER

- 1 Prevention is divided into primary, secondary, and tertiary
- 2 Primary prevention: measures that prevent the onset of cancer
- 3 Secondary prevention: early diagnosis tools
- 4 Tertiary prevention: follow-up and reeducation tools
- 5 Early diagnosis tools: screening tools, self-diagnosis, ASCO standards
- 6 Main screening tests: Papanicolaou (Pap test), mammography, PSA, FOB
- 7 Early diagnosis tests in specific cases: colonoscopy, tumor markers, chest X-ray, ultrasound
- 8 Second and third-tier tests: CAT, MRI, PET-CAT, gamma scan
- 9 Large-scale screening can lead to over-diagnosis and overtreatment
- 10 Need for greater education in primary prevention more so than in secondary and tertiary

## MAIN TOOLS ONCOLOGICAL DIAGNOSIS

**To whom is it offered and when?** It is a general screening test which is offered to all women after the start of sexual activity or, at minimum, from the age of 25 until the age of 65. It is performed every three years. It can also be administered to women with an intact hymen, with special attention and care by the gynecologist, during pregnancy, menopause or while taking any type of contraceptive. The only warning is to avoid sexual relations and the use of any topical, vaginal chemical agent two days prior to the test.



### Pap Test

Advantages	Drawbacks
<ul style="list-style-type: none"><li>• Significant reduction of mortality from cervical cancer as a result of much earlier diagnosis</li></ul>	<ul style="list-style-type: none"><li>• Discomfort in some cases involving a speculum-aided vagina exam</li><li>• Reduced test sensitivity: does not detect all cases</li></ul>

## THE TOOLS FOR AN EARLY DIAGNOSIS WHEN TO USE THEM AND WHY

### WHAT IS EARLY DIAGNOSIS?

It is the detection of disease in the first stages before it reaches more advanced stages in which it causes perceptible symptoms, so that it can be treated as soon as possible. A surgical intervention is better sooner than later, but what is even better is not having to intervene at all. It is like the seatbelt of a car, which can save us in case of an accident, although it would be better to drive in a manner that avoids the accident.

### DIFFERENCE BETWEEN DIAGNOSIS AND PREVENTION

There is a certain generalized confusion between the concept of prevention and early diagnosis due to, in part, the three-pronged meaning of the term "prevention."

- **Primary prevention**, "true" prevention, hinders the appearance of cancer. For example, the elimination of environmental risks, some vaccines, lifestyle and health education.
- **Secondary prevention**, which would in fact be **early diagnosis**, are the measures used to detect

the disease in its initial phases and thus establish adequate measures to hinder its progression.

- **Tertiary prevention**, it is comprised of follow-up and re-education tools after recurrence. They are measures aimed at treatment and rehabilitation of a disease to curb its progression and the appearance of worsening of complications. It also aims to improve the patient's quality of life.

The importance of early diagnosis is in reality due to a characteristic of itself: many types of cancer develop without symptoms and, often, the diagnosis is

A disease that already begins with a visible clinical manifestation does not offer the same diagnostic difficulties, given that, from the first symptoms, the diagnosis and then the treatment are established. Generally, in the case of cancers, symptoms appear when the disease is already advanced; in a way, that delays the diagnosis and, as a consequence, the treatment will be less effective.

# Therapies for the Treatment of Cancer

*If you cannot do good,  
at least do no harm.*  
**Hippocrates**

For a therapy to be utilized, it must have passed the verification of the international medical-scientific community through **EBM criterion**, in other words, it must be "**Evidence-based Medicine**." The effectiveness of a therapy is objectively measured with this method. To do so, rigorous quality scientific studies are needed. For example, the study of new substances draws on an expert's working hypothesis; based on which laboratory search will be conducted; then experimentation with cells; followed by experimentation in animals; it will later be used in isolated cases with people and, finally, with groups of people in different parts of the world. For other types of therapies, the course is similar. It is not an infallible method, but nowadays it is the best available to us for evaluating the true efficacy of a treatment. Cancer is a serious disease.

disease. Cancer is a journey of difficulties, perhaps surgical interventions and treatments. In short, it is synonymous of an altered, disturbed everyday life. On occasions, a therapy frightens more than the cancer itself. Must therapy be synonymous with fear? There are only negative aspects? Definitely not, because, while it is true that at times death occurs from cancer, it is also true that many times, thanks to the therapies, the patient can be cured. What is important is creating a **therapeutic partnership between the doctor and the patient, as well as between the doctor and his treatment**.

## RADIOTHERAPY

Radiotherapy is a healing tool that utilizes ionizing radiation to treat tumors. This radiation consists of several types of high-energy electromagnetic waves (seen in chapter 1: gamma, X-ray, photons, etc.). They are more energetic than those used in X-rays and CAT scans but have a lower energetic content. In fact, in X-rays, the waves only have to pass through the body and are captured on a plate like in an analog photograph; in radiotherapy, the waves must be stronger to kill cancerous cells.

Specifically, they act by **destroying the tumor cells** to counter uncontrolled

growth: they eradicate the cancer or slow down its development and alleviate some of the symptoms.

### HOW DOES IT WORK AND WHY IS IT UTILIZED?

This occurs because every time the DNA of a cell is affected and damaged by radiation in an irreversible way, the internal processes of the cell are broken down and the cell is no longer able to effectively organize its energy, or nourish and reproduce itself, which is why it dies. **Cancerous cells are more susceptible to radiation than**

### KNOW MORE ABOUT IT

#### Hadron Therapy, a New Treatment

Hadron therapy is an advanced form of radiotherapy that, instead of X-rays and electrons, utilizes a beam of protons or carbon ions, far more effective in tumors that are resistant to radiotherapy and cannot be operated. The beam breaks down the DNA of cancer cells with greater force and keeps them from reproducing. There are few centers worldwide that practice hadron therapy with heavy ions.

## SURGERY

Surgery is the oldest way of fighting against tumor masses. Currently, surgery has become more sophisticated compared to the past years. It is more effective, less invasive, more efficient, and it continues to be the first-line oncological treatment of most cancers.

While in past years the only solution was the excision of the tumor mass, today the surgeon is not the only person who tends to the oncological patient. The surgical procedure is usually preceded, accompanied, or followed by other types of therapies and the figure of the surgeon forms part of an entire team of specialists. All of this is to guarantee a multidisciplinary approach to patient care and to his illness.

To have an idea, in just one case, in addition to an oncologist, a radiologist, an oncologist specializing in radiotherapy, a cardiologist, an internist, an anatomopathologist, a nutritionist, a laboratory technician, a psychologist, a physiotherapist, and an immunologist may be necessary. And, for a short term, other specialists will join as

medicine and the increasingly higher hyperspecialization advances.

### TYPES OF SURGERY

Nowadays, there are various types of intervention according to the objectives.

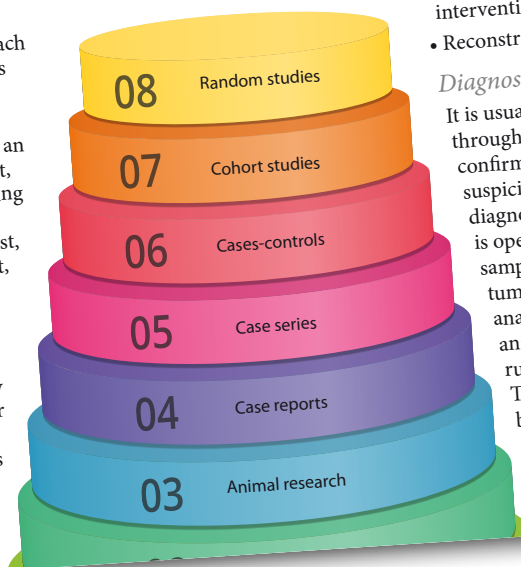
- Diagnostic surgery
- Preventive surgery
- Radical surgery

- Cytoreductive surgery: removal of metastases
- Palliative surgery
- Urgent oncological intervention
- Reconstructive surgery

### Diagnostic

It is usually performed through which confirms or rules out suspicion of a diagnosis. It is operative, sample collection, tumor analysis, anatomical analysis, rule of out. This is a biopsy.

### Evidence-based medicine (EBM)



## CHEMOTHERAPY

Recognized cancer treatment, at the same time, intimidates a large part of the fear associated with diagnosis is due to the idea of being synonymous with chemotherapy, synonymous with an infinite effects. In reality, in many cases, it can be tantamount to cure and remission. Pros and cons of chemotherapy that has a problem: a low toxicity, chemotherapy attacks cancerous cells and other healthy

chemotherapeutic element and it would be discussing antimicrobial infectious chemotherapy. In this it involves antineoplastic chemotherapy. Since the 60's it has become standard in cancer treatment. The option against cancer is that of to sanitize the locally affected area with chemotherapy as treatment for the body. Currently and because of effectiveness, this therapeutic approach has changed much.

Chemotherapy is used in almost all cases, followed, albeit not always, by surgery. Other therapeutic options created in the years. What has substantially changed in terms of chemotherapy, is the treatment itself: the best time at w





# Treatment of Cancer and Types of Medicines

## TREATMENT OF CANCER AND TYPES OF MEDICINES

The best doctor is nature:  
it cures three quarters of the diseases  
and does not speak ill of fellows.  
Galen

### Chapter Summary

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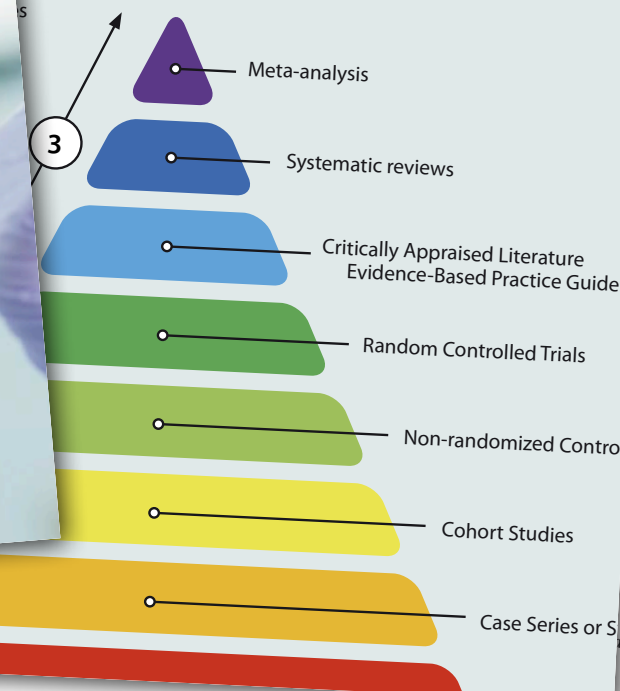
### EVIDENCE-BASED MEDICINE (EBM)

who requires serious and his diagnosis, the physician says the specialist relies Evidence-Based Medicine characterized in that, to make a it seeks the best published

and up-to-date scientific ev available to treat the patient The publication of studies o treatment and the easy acce through the systems of scier enables practically immedi already standardized new/be

1 L. M. Junquera et al., "Evidence-based m de cirugía oral y maxilofacial, 25, no. 5, (2 s1130-05582003000500003.

### of Evidence Pyramid



### Their Uses, Therapeutic Effects, and Interactions

offer three tables with a breakdown of some of the most relevant natural and phytotherapeutic elements, classified based on their proven effects. We identify those that cause interactions in cancer treatment in red ●, those that can be ed with some precaution in orange ●, and those that do not have antagonistic problems with chemotherapy in green ●. is orientation is due to the fact that some substances, although they are defined as "natural," can cause interactions and ects similar to those produced by drugs.

### Phytotherapeutics and Natural Principles That Interfere with Anti-Cancer Therapies:

Antihypertensive, antibacterial, antiparasitic	Interferes with some chemotherapeutic agents such as anthracyclines (Adriamycin and epirubicin)
Antibacterial, antiparasitic, astringent, antifebrile, sedative and for the stomach	Increased toxicity of many drugs, including chemotherapeutics
Immunostimulant, local anti-inflammatory	Interferes with chemotherapies used for colon and breast cancer
Mild antidepressant	Interferes with all chemotherapeutic agents (in the event, stop 15 days prior to chemotherapy)
Refreshing, remineralizing	It has interactions with a large number of drug classes, including chemotherapeutics
Indicated in menopause and for hypercholesterolemia.	Interferes with tamoxifen; limit its intake in case of therapies for hormonodependent tumors
Immunomodulator, prevents prostate cancer, interesting benefits from its use in case of chronic lymphatic leukemia and bladder cancer	Despite its beneficial properties, it cannot be taken during chemotherapy due to its interactions
Mild anxiolytic	Interferes with tamoxifen and with some chemotherapeutics (cyclophosphamide, teniposide)

### POINTS TO REMEMBER

- Evidence-based medicine (EBM) is not a perfect method, but it is the best we have and the one that allows us to achieve the current level of medical attention
- Alternative medicine usually substitutes recognized medical treatments with little or no real evidence
- Some substances or therapies that promise to cure all types of cancers, without proven basis, are ineffective and even dangerous
- Complementary treatments do not substitute conventional treatments; rather, they seek to complement them by improving or completing their scope
- Integrative medicine complements evidence-based medicine with traditional medicine
- Integrative medicine is in continuous development and has to be managed in medical centers or by well-trained professionals
- More than 60% of cancer patients use dietary supplements
- Phytotherapy can be used under the supervision of a medical specialist as complementary treatment
- Hyperthermia is still hardly utilized because of the risk/cost/benefit balance it contributes
- Although manual therapies are beneficial, the oncologist must indicate when they can be used

# PART THREE

## HOW TO PREVENT OR LIVE WITH CANCER

# Psychological Aspects of Cancer

"Must one really have cancer to e  
An old English friend wrote t  
I wrote to him that he ought to not enjoy havin  
but if he wanted to carry out an interesting  
to imagine, for a day, that he had it and to think about how we view not  
but also the people and the things around us in a  
perhaps, mo  
T.  
Un altro giro di  
(One More Ride on the Merry-Go-

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## DOCTOR-PATIENT COMMUNICATION

### PSYCHO-ONCOLOGY, OR THE DOCTOR

How do you give the bad news? How do  
manage stress upon communicating the  
news? How do you prevent burnout?

Receiving the news  
is always a trauma. Receiving the news  
is devastating, and giving it is not easy at all.  
Communicating an oncological diagnosis is a  
personal and professional challenge for the physician.  
It is to provide the information in a careful  
manner, supporting the patient's pattern of  
coping, to accept any type of reaction, to offer  
emotional support respecting both the courage  
and individuality of the person. Thus, the physician  
becomes a travel companion.

After having assessed the patient's type of coping,  
the doctor should inform him of the diagnosis in  
the presence of a psycho-oncologist; the latter's  
presence can be helpful both for the patient and  
for the physician. The news is not just information;  
communication between the physician and  
the patient goes far beyond the mere content and

is laden with more profound meaning. Ineffective  
communication can drive the doctor to deep  
frustration and, in time, to burnout.

**The psycho-oncologist can help the doctor to  
take notice of such mechanisms by providing  
him the tools to prevent their consequences.  
There are corporal techniques, discussion  
groups, and psycho-drama therapies of clinical  
cases that can help to reduce stress.**

Sharing the emotional experiences is something  
essential: the assisting health professional has  
to feel as though he is a part of the team, he has  
to know that he is not alone in supporting the  
patient throughout the therapeutic course and  
coming to terms with the disease.

Therefore, the objective is the psycho-emotional  
well-being of the physician for his own good and  
that of the patient. When a doctor manages stress  
well, his positive emotional state is transmitted  
to the entire team and the one who primarily  
benefits from it all is the patient. Thus, psycho-  
oncology is available to the patient, the family,  
and the physician.

## PSYCHE AND SPIRITUALITY

Ecclesiastes mentioned in the text  
is a universal value that constitutes the  
"time." In previous verses we can  
find everything there is a season, a time for  
everything under heaven: A time to be born,  
a time to die... Many words are not needed  
to say that time is precious. Those who  
are aware of it and even more so the  
elderly. The outlook spontaneously  
changes: "How long do I have left to live," although  
it does not visualize quality of life with  
spontaneity.

A famous photograph of Sigmund Freud  
with a lit cigarette in his mouth. In 1923, when  
he was 77 years of age, Freud realized that he had  
a lot of time left to live. With tremendous suffering  
he underwent three surgical operations, he  
lived 17 more years after  
the operations, but he never stopped  
smoking because the  
"habit" did not  
have any impact in those  
years. However, Freud  
intuited  
the importance  
of the unconscious or  
body.

### WHAT ARE THE FACTORS THAT CREATE THE MIXTURE OF WHAT WE CALL "WELL-BEING"

Time, duration, and quality of life  
Or "well-being" as defined by psy  
Vittorino Andreoli, in his book *The  
Discipline of Well-being. Live as w  
identifying it with the ability of l  
meaning of existence, of the esse  
corresponds to neither success n  
Philip Zimbardo and John Boye  
to the paradox of time, confirm  
in other words that "the truly in  
life are not found in superficial  
spiritual happiness that does n  
time."*

Andreoli cites research carried out  
the past century<sup>3</sup> on two  
They had the same age  
in common. One of  
distinguished by th  
lost a loved one. F  
the research, the

<sup>1</sup> Andreoli V. (2016) *La nuova  
Vivere il meglio possibile*

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.



# Principles of Prevention 1: Weight, Physical Exercise, Lifestyle and Emotions

*Patients should enjoy rest, food, fresh air and physical exercise: the quadrilateral of health.*  
William Osler

## Chapter Summary

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## PREVENTION AS A CHOICE

*How do we carry it out?*

In practice, how is prevention done? **Prevention is a universal medicine aimed at those who are healthy and do not want to get sick and those who are sick and do not want to get worse.**

### Four Key Points of Prevention

- optimal and stable weight
- healthy diet
- physical exercise
- mental tranquility

## NOT JUST EARLY DIAGNOSIS

We talked about screening tests and the chance of early diagnosis in order to treat disease in the initial phases. We have also seen that early diagnosis is not synonymous with prevention: **early diagnosis is passive**—the person undergoes studies to detect a possible disease that has not yet manifested; **prevention is active**—the person adopts measures to prevent the onset of the disease.

**Prevention is not just about early diagnosis (and we are not just about cancer), as well as enabling it, it is a free and active choice of the person.** Prevention draws from a responsible awareness to take the opportunity of living longer with quality of life.

Before coming, act before the times. We can call it vision for the common sense, intelligence and it can be an act of love towards oneself.

our body. Like when we love other people: our children, our spouse, parents, among others, we ensure that they have the best. We all enjoy beauty and well-being; therefore, we seek to surround ourselves with what we like and we take care of our hair, face, and clothing. We also like financial prosperity and we strive to maintain it. Why don't we do the same for our physical well-being? Why do we forget that our body and our health should come first, as they are necessary to be able to enjoy rest?

To love our body is a duty that we owe to ourselves, because only with it and by means of it will we live our lives.



# Principles of Prevention 2 Diet

All wholesome food is caught without a net or a trap.  
William Blake

We are what we eat. The problem is that we have come a long way in the supply of food but not so much in our choice of food.

In many places in the world, thanks to advanced harvesting and distribution techniques, there are all kinds of food and drink readily available, as well as fruits in any season of the year at affordable costs, as there is no need to hunt, fish, raise cattle or cultivate the land first-hand.

However, nowadays there are still people who die because of food but as a result of consuming it in excess or eating what is not healthy.

If we take a look at the last century, we can observe an important increase in cases of diabetes, infarction, cerebrovascular diseases, metabolic syndrome, allergies, intolerances, and cancer. The causes are mostly due to industrialization, pollution, a more urbanized, sedentary lifestyle and, of course,

cases.<sup>1</sup> And we have verified that people who overcome cancer coin- cide in their lifestyles: <sup>2</sup>three of them take supplements, and taking them is a part of a psycho-emotional intuition, freeing repressed positive emotions, acceptance and social support, interpersonal connection and having a sense of purpose.

Considering that the best way to be healthy is to be well, the only way of applying this is to choose a healthy diet.

Some ancient peoples described the original diet as: "I have given you the seed which is on the face of every tree whose fruit shall be for food" (Gen. 1:29). This was intended, as we will see,

## ANTICANCER FOOD

Dietary guidelines boil down to prevent the onset of cancer of those that promote it. So far, it is beneficial to reduce the intake of meat especially if it has been processed, to limit the intake of alcohol, to substitute fat-based flavor enhancers, to choose low glycemic index and to avoid sugars.

They should enrich dishes with vegetables. They are easy-to-find foods with properties that inhibit cellular growth. In regard to many foods, it is not the protective action is the result of a specific protective action in different metabolic pathways in carcinogenesis: prevention of the first steps, elimination of the first steps, mechanisms of autophagy, inhibition of production of growth factors

contain highly protective substances capable of acting in the "initiation" phase. The sulfur-containing compounds that they contain acts at the cellular nucleus protecting the DNA from possible acetylation and methylizations caused by toxic agents. In other words, it protects the stability of the DNA and avoids the possibility of mutations.

Indole-3 appears to be an anticarcinogen that acts on the hepatic enzymes involved in detoxification. It can, for example, reduce the speed of toxic transformation of aflatoxins and the elimination of those intermediate compound carcinogens even before they attach to the DNA. **Studies on humans demonstrate a protective role of these foods for bladder and lung cancer.**<sup>1,2</sup>

**Apples and Quercetin (Flavonoids)**  
They promote hepatic enzymes of detoxification and have a protective action against the carcinogenic effects of tobacco smoke.

## MAJOR FOOD CATEGORIES

Foods are divided into grains, legumes, vegetables, fruits, nuts, meat (red and white), eggs and dairy products. From the point of view of nutrition for oncological prevention, we are going to divide them into protective foods against cancer and foods that promote cancer.

### PROTECTIVE FOODS AGAINST CANCER

#### Grains

They are the foods that contain, by far, the highest quantity of carbohydrates. Wheat, corn, sorghum, oats, rice, Khorasan wheat (commercially known as *Kamut*), barley, millet, teff, and many others; we also have the so-called pseudo-grains such as buckwheat, amaranth, and quinoa. Without forgetting all their derivatives: flours, bread, pasta. Due to their high content of starch (60-80%) they are the most important source of complex carbohydrates, carrying out a fundamental energetic role. We recommend that they should be **whole-grain, that is, not**

subject to a refining process. Their nutrient content remains intact, therefore, they are an abundant source of various minerals such as magnesium, zinc, iron, B-complex vitamins and fiber. They are rich in proteins, although the problem lies in their bioavailability. Bioavailability alludes to the proportion of the ingested food that actually reaches the tissue where it will be utilized. Contrary to what occurs with animal origin foods, plant-based proteins do not have a good bioavailability, in other words only a small proportion of that protein reaches the tissue. Grains neither contain all the amino acids necessary and the only way to complement the absorption is by combining grains with a protein of legumes (see section *Know more about proteins*).

As explained in the section *Know more about them: carbohydrates*, the Mediterranean diet provides a daily intake of carbohydrates that must constitute 55-65% of the daily caloric intake. When we have to make a choice, it is always advisable to choose grains with the low glycemic index, like whole grains or semi-whole grains.

PROTEIN SOURCE	BIOAVAILABILITY
Eggs	100%
Cow's milk	80%
Fish	78%
Soy	74%
Rice	59%
Wheat	54%
Peanut	43%
Bean	34%
Potato	34%

### Bioavailability

It is the percentage of a specific nutrient present in a food that the organism is able to absorb.



- **Breakfast:** fruit
- **Lunch:** vegetable puree without potatoes, with water (1 cm); add buckwheat for a heavier lunch
- **Snack:** Mallow infusion
- **Dinner:** prepare vinaigrette with lemon + extra virgin olive oil + flaxseed or hemp oil and fresh vegetables: carrot, fennel, celery, artichoke, broccoli

### THE DAY AFTER

- **Half an hour before breakfast:** the juice of one lemon and a pinch of potassium bicarbonate in water; 30 ml of aloe vera without alcohol that be taken until the contents of the bottle are finished
- **Breakfast:** a fruit, whole grain or germinated rice drink with 2 teaspoons of chia seeds and a pinch of cashews
- **Snack:** water kefir (1 glass)
- **Lunch:** semi-grain rice, millet, or sorghum with pumpkin or artichokes, always seasoned with water
- **Snack:** mallow infusion or extract to taste
- **Dinner:** prepare vinaigrette with lemon + extra virgin olive oil + flaxseed or hemp oil and fresh vegetables: carrot, fennel, celery, artichoke, broccoli; add legumes, but without skin, or fried white





# Never Let Your Guard Down

*People can cure diseases,  
diseases can cure people.*

Gerhard Uhlenbruck

## WHEN THE DISEASE RETURNS: RECURRENCE

President Richard Nixon signed the National Cancer Act in 1971, he described the war as a “war against cancer.” Cancer is not only a disease but a real battle that has to be fought. The metaphor created by the many patients in general who live with cancer is a part of daily language. It is about the cause, perhaps the fact that it involves a very long battle, is born in ourselves from within our bodies, or because it is a long and arduous process that encompasses battles and tests, and as with a fierce enemy, it can be at any moment.

It seems it is referred to as a war because it can be the same or different. The issue is that you must fight it down.

Statistics show that there is an important concept, **five years without cancer**, once a patient has been cancer-free for five years, there can certainly be

talk of healing in an extremely high percentage of the cases. That is why, when there is mention of a tumor diagnosis and of the patient's life expectancy, the five-year survival rate is given as a reference.

### WHY DOES THE TUMOR REAPPEAR?

For two reasons:

1. The presence of one or more **carcinogenic agents capable of recreating the process of cellular mutation**.
2. A weak **immune system** incapable of dealing with and eliminating already mutated cells.

### HOW DO WE PREVENT RECURRENCE?

#### *Risk Factors*

It proves essential **to avoid risk factors** because they can reactivate the same mechanisms that had previously led to the onset of the disease.

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y of disease  
on wish  
se who are  
enity, with  
pain or  
liative care

allows. It permits to rechannel the concept of agony so erroneously linked to death. Agony comes from *agone* in Latin and *agon* in Greek, meaning “struggle”—the body's struggle against pain and against death. Since every struggle entails hardship, it is no coincidence that, with the passage of time, it took on the current and almost unique meaning of agony, sorrow, or torment.

Dying need not be neither agony, struggle, nor anguish. The rejection of this parallelism is what underpins pain therapy and it is the positive element from which it stems.

years free of disease

area or a different one

risk factors and immunosuppression

risks in subsequent years and the culmination

positive thinking, psychological support

hope for the relief

management of pain

very  
terminal patient

TUMOR MARKERS

# The "Extended" Disease: Family Implications and Patient Rights

*From caring  
(by the other)  
comes courage*  
Lao Tzu



## How Do We ACT WITH AN ONCOLOGIC PATIENT?

idespread talk about cancer. Every  
et makes reference to it. We talk about  
st like we do about politics, the economy  
fic news like wars in other territories. It  
ning that exists, but it never has anything  
h us. Until one day it suddenly strikes  
the diagnosis comes as a surprise—news  
possible to accept for both the patient  
se around him. **For family members,**  
**people who live close to someone with**  
**the diagnosis is like a challenge; for**  
**in their own way, cancer presents a new**  
**ard situation such as "I don't know how**  
**ave":** What do you say to a cancer sufferer?  
do you act? Is it better to pretend as if  
ng has happened? Or is it better to address  
ue? Is it better to say something or is it  
respectful to leave him or her alone? In the  
of the situation, thousands and thousands of  
ts arise.

Hoping that it may be helpful in times of  
uncertainty, let's seek to understand **what**  
**be the best attitude to aid and to be close**  
**patient.** Recommendations aimed at this  
follows:

- Maintain a realistic view of the situation allows you to help and be available with falling into anxiety. In fact, the uncertainty about the future—due to the precarious conditions of the person who is close to **CANCER** well as the social and financial matters **ALL OF RIGHTS** disease—can often generate both in fame The European Cancer Patient's members and friends states of stress that was approved on February 4, 1999 (France) under the direction of patients, attorneys, and researchers. The undermine the serenity of the relationships, and researchers. The d economic variances between the rights not to be uniform
- Always keep in mind that every concrete and useful thing that you do for the patient especially after various therapeutic phases is an expression of affection. It is true that nothing replaces an "I love you very much"

ent's Bill of Rights," European Cancer Concord  
19, <http://www.europecancercor concord.eu/>

## THE FAMILY OF THE ON

have discussed the physical and psychological  
ds that disease entails. Now, let's consider the  
ple around the patient: family, friends, all  
se who live that same disease from the outside.  
term "caregiver" means "someone who takes  
of another person." It is generally used to  
to the patient's family members: **those who**  
**lose to whom, as a result of the illness,**  
**experienced reduced autonomy.** On some  
ions, the caregivers can be people who are

Let's ta  
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## PATIENT'S RIGHTS

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and not decrease (seems co  
the respect of liberty, self-de  
and the personality of the

Umber

This bill is a document signed by hund  
associations of medical professionals an  
members of Parliament and professiona  
Although it is not a European directive,  
great interest because it shows the need  
many groups of patients and health pro  
value as preemptive.



# Treatment at the Table: Anti-Cancer Recipes That Help Us

## DRINKS

### WATER KEFIR

#### INGREDIENTS (FOR 1 LITER OF WATER)

- 3 tablespoons **kefir granules**, regularly provided by its producer or ½ packet of bio-ferments for water kiefir (may be found in diet-food or health-food shops)
- 1 L water

#### Preparation

1. Pour lukewarm water in a clean, dry and sealable glass bottle. Dissolve the sugar in the water. Add juice from half a lemon freshly squeezed. Add the plums or dehydrated fruits.
2. Let preparation stand at room temperature for 48 hours.
3. The drink will be ready and will be even more delicious if enjoyed cold. But do not place the drink in the refrigerator until 48 hours have passed.

Reserve 200 ml of water as a base for the next preparation (after eight cycles) and prepare the mixture again following the same instructions.

Brief fermentation times (minimum, 24 hours) will produce a sweeter, less carbonated, non-fermented drink.

## BREAKFAST

### PORRIDGE

#### INGREDIENTS (FOR 5 PORTIONS)

- 200 g **oat flakes**
- 500 ml **water**
- Add to taste:
  - fresh fruit (**apple, pear, banana, melon, kiwi, fruits of the forest**)
  - nuts (**hazelnuts, almonds**)
  - dehydrated fruit (**raisins, coconut, blueberries, goji berries**)
  - 70% dark chocolate for melting

#### Preparation

1. Pour oat flakes into a pot, add water.
2. Mix and let cook over low heat for 10 minutes.
3. When oatmeal is ready, serve on a plate with fruit to taste.
  - a. It is advised to prepare the porridge the previous night and to add the fruit, shavings, ground flaxseed in the morning.

### GRANOLA (CRUNCHY MUESLI)

#### INGREDIENTS (FOR 5 PORTIONS)

- 150 g **oat flakes** (or **barley**)
- 150 g nuts including **almonds** (partidas), **cashews, sunflower seeds** or **pumpkin seeds**
- 150 g sweetener (**maple or agave syrup, or rice malt**)
- 30 g **puffed cereal**
- 50 g **raisins**
- 20 g **coconut shavings**
- 2 tablespoons **extra virgin olive oil**
- 20 g **goji berries** or **blueberries**
- 1 teaspoon **chia seeds**

#### Preparation

1. Pre-heat oven to 150°C.
2. Mix all ingredients (except oil) added when baking is done on a parchment paper.
  - a. Bake for about 30 minutes.
3. Let cool and store in a glass jar or with a plant-based milk.



## SECOND COURSES

### MILLET AND SPINACH MEATBALLS

#### INGREDIENTS

- 150 g **millet**
- 3 **potatoes** (about 400 g)
- 250 g **spinach**
- 1 **garlic clove**
- 1/4 onion
- **extra virgin olive oil**
- 1/2 small **carrot**
- **pepper**
- **breadcrumbs**

#### Preparation

1. Wash millet in a colander under running water until clear. Place it in a pot with twice its volume in water and cook for about 15 to 20 minutes (when cooked, it triples in volume).
  - a. Once cooked, let stand for about 10 minutes. Do this to prevent loss of nutritional properties.
2. Boil potatoes and mash with a fork. Sauté spinach in a pan with 3 tablespoons oil and the chopped garlic, onion, and carrot.
  - a. For the millet, add potatoes and spinach and salt to taste.
  - b. Shape into meatballs and dredge through breadcrumbs, then place them on a baking dish and dress with oil.
  - c. Bake for about 25 minutes until golden brown.
3. Serve hot.

### SOY SALAD WITH VEGAN MAYONNAISE

#### INGREDIENTS


- 1 **lettuce**

#### Preparation




# CANCER

Practical Guide to Understanding,  
Preventing and Coping with the Disease



According to the World Health Organization, cancer is one of the leading causes of death in the world. Today an increasing number of people are being diagnosed with this dreaded disease. The good news is that between 30 and 50% of cancers can be prevented by avoiding risk factors and applying well-founded preventive strategies. Moreover, when you learn to recognize the disease at its beginning, the chances of overcoming it are greatly enhanced.



Dr. Facchini's work contains reliable references and practical recommendations that can help you prevent cancer. It presents valuable information and useful and proven advice to help in the prevention and treatment of the disease.

We invite you to open these pages and discover how to live with more health and a better quality of life.



**RANIERO FACCHINI.** Specialist in Digestive Surgery and master in Clinical Nutrition and Integrated Oncology Therapies

Dr. Facchini actively collaborates with various associations and media for the promotion and dissemination of a healthy lifestyle based on the concept of preventive medicine. In addition to his extensive medical practice, he has vast experience as a medical informant. His work seeks to give understandable answers to the complex health-related questions that we all ask ourselves.

