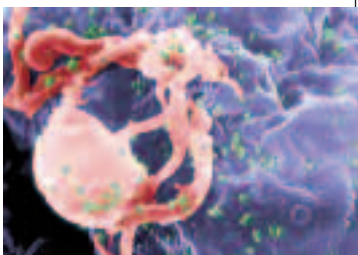


# KNOWLEDGE HELPS TAKE CARE OF YOUR HEALTH

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HIV | HIV TRANSMISSION |  
ANTIRETROVIRAL TREATMENT OR ART |  
MANAGEMENT OF SIDE EFFECTS | PREGNANCY |  
PREVENTION | POSITIVE LIVING





## INTRODUCTION

You have recently discovered you are positive for HIV antibodies: this means you are infected with HIV. However, HIV infection is not a threat of immediate death: thanks to modern therapies, it is now possible to live with HIV as with any other chronic disease. Immediately after the diagnosis of the HIV infection most people go through a difficult period during which a lot of questions are asked: why me? When did I get the infection ? How did I get it ? Will I be able to live with the disease? What does it actually mean for myself and for my future life? Or for my partner? For my children? For my friends and relatives? Whom can I, want I and must I tell it? And how?

In such a difficult moment you should avoid making rash decisions.

Informations contained in this booklet will help you clarify the precise meaning of the diagnosis and what HIV infection is. You will also find some details on infection prevention, suggestions on the treatment, food support and, most of all, on the 'positive living'.

## 1 | HIV

HIV is a member of the retrovirus family, and is composed of genes made of RNA molecules. HIV can only replicate inside cells of the immune system, in particular CD4 T-lymphocytes (helper cells), which play a central role in regulating the immune defences. There are two types of HIV: HIV-1, the most common and pathogenic strain of the virus, and HIV-2, featuring lower infectivity and found predominantly in some areas around the Gulf of Guinea, on Africa's Atlantic coast.

### How does the human body protect itself against diseases?

The immune system can be compared to a shield whose main task is to protect human body against infectious diseases; every human being is fitted with a shield composed of a lot of small metal fragments (the so called CD4).

Obviously this shield is not able to protect us against all infections: some of them behave like arrows, striking and consequently damaging it. Despite that, our shield is able to reduce the impact of the diseases on our body.

We can preserve our shield by taking care of our health (for instance, through a correct nutrition, a better stress management, regular physical activity etc. ).



## **How HIV attacks the human body**

When HIV at the early stage of infection, penetrates our body and starts attacking it, we still feel strong; however, as time passes by, the virus causes damages to the immune system (the shield in our example). In the advanced stages of infection, the immune shield breaks and numerous infectious pathologies such as tuberculosis may strike us more easily. Infections striking a host with compromised immune system are called “opportunistic infections” and appear in the later stage of the disease called AIDS (Acquired immunodeficiency syndrome).

### **How HIV attacks the human body: what happens over time**

During the early stage of HIV infection – when the infected person is simply seropositive – the immune defences are still preserved and the CD4 cells are numerous enough as to protect ourselves against diseases. In the most advanced stages of the disease (AIDS) - which takes several years to appear, - the defences of the immune systems weaken.

## 2 | HIV TRANSMISSION

### HIV can be transmitted:

- With unprotected vaginal, anal or oral sexual intercourse through contact with sperm and vaginal fluids;
- By the infected mother to the child during pregnancy, delivery, or breastfeeding;
- Through direct contact with blood or other body fluids of the infected person.

HIV IS NOT carried in sweat, saliva, tears and urine, consequently it is not transmitted in case of social contact. It is, in any case, advisable to take the following preventive measures:

- Do not share needles, toothbrushes, razors or other sharp objects which might be contaminated with the blood of the seropositive person;
- Use a disinfectant (diluted bleach) to remove the blood or body fluids of the infected person and protect hands with gloves or plastic bags;
- Machine wash at high temperatures clothes and/or underwear contaminated with body fluids.

In short, the virus is not transmitted through hugging, eating at the same table, having bath or shower together or through insect bites.





### 3 | ANTIRETROVIRAL TREATMENT OR ART

#### Which drugs may help us to fight the infection?

The best treatment to fight HIV infection is currently represented by the combination of at least 3 drugs (triple treatment or ART, the acronym for Antiretroviral Therapy). At the time being, more than 20 compounds are available acting on the basis of different mechanisms of action and at different stages of virus replication. For this reason the antiretroviral drugs are divided into several “classes”, called reverse transcriptase inhibitors, protease inhibitors, entry inhibitors, integrase inhibitors, and maturation inhibitors. Several combinations of the different classes of drugs are available to be used according to the stages of the disease, the clinical condition of the patient and the virus strain.

How does the treatment work? The treatment will not eradicate the infection, but will keep it under control by interrupting the supply of arrows (representing HIV) thus allowing the human body to repair the shield.

The treatment works only with the correct intake of prescription drugs. If the drugs are not taken as prescribed, the virus might become ‘drug-resistant’, that is it will learn how to recognize the mechanism of action of the drugs and avoid their action: HIV arrows will come back stronger than before.

The antiretroviral treatment or ART at first may seem difficult to follow, however, the support of family members, friends and health care providers will make you feel better. The treatment keeps you from falling ill as frequently and feel good for longer periods of time.

Once started, the treatment is a commitment which will last for the rest of your life, as it happens for other chronic disea-

ses ( diabetes, hypertension, asthma etc.). However, when and how to start the medications is up to you and your physician.

### **How to cope with problems?**

Sharing with someone close to you this experience can be of great help: the beginning of the treatment is often highly traumatic, as the disease actually starts affecting your daily life. When you start the treatment it is fundamental for you to maintain the positive mental attitude. The medications must not affect or change the quality of your life. Carefully follow the suggested follow-ups (blood tests and clinical visits): they are important moments to check whether the treatment works, if it creates some problems, or to clarify doubts you may have.

Health care providers supporting you – that is your physician and nurses – may help you better understand the treatment, drug regimen and coping with possible problems (such as side effects).

Do not forget that even if you take the ART sexual intercourse has to be protected: indeed, you can transmit HIV or get infected with a strain other than yours, a resistant strain, thus risking the efficacy of the treatment you are accurately following.





## How ART drugs must be correctly administered?

There are five rules you have to stick to:

- **To take the prescribed drug**
- **To take the correct amount**
- **To take the drugs as scheduled**
- **At the correct time**
- **Through the right route (mouth or subcutaneous).**

It is important to set a routine for taking your treatment medications (for instance take them with breakfast, with dinner, etc.); it is important to take the drugs every day at the same time. Drugs must be stored as directed by your health care providers (some must be stored in the fridge). At the beginning of the treatment it is useful to have a member of the family or a friend to remind you to take the drugs. You may also write down notes or use mobile phone alarms as a reminder.

If you forget to take the drugs at the scheduled time, you take them as soon as you remember and then resume the customary schedule.

In case of doubts do not hesitate to contact your health care providers ! It is better to ask than risk making an error in taking your medications.

If you forget to take a dose, do not take a double dose at the next scheduled time.

Remember that the treatment is effective only if prescriptions are carefully followed. If you have a problem with compliance, that is you cannot take drugs following prescribed procedures and times, contact your health care providers: they will help you find alternative solutions .

Remember that you are not alone! Many people all over the world take ART drugs every day, you can also take them successfully and control the virus.



## 4 | HOW TO MANAGE SIDE EFFECTS

Antiretroviral treatment or ART is decided in consultation with your physician: together you will agree on the most suitable treatment. However, in case of any problems talk to your health care providers.

Undergoing this treatment may cause symptoms commonly known as “side effects”. Listing all the side effects is not possible: each drug has its own, which may not affect every person. In the chart below some of the most common side effects are given, with suggestions on how to deal with them at home. They often occur at the beginning of the treatment, when the body has to get used to drugs, and then spontaneously disappear. It is anyway recommended to inform the health care providers in case of any signs or symptoms occurring after the beginning of the treatment.



SIDE EFFECT	SELF-MANAGEMENT (in case of minor trouble)	CONTACT HEALTH CARE PROVIDERS (when?)
<b>Fatigue</b>	Get sufficient rest and exercise regularly.	When you feel so tired that you do not want to eat or move.
<b>Headache</b>	Use over-the-counter pain medications (over-the-counter medications rarely interact with antiretroviral drugs); however avoid caffeine.	When it occurs frequently and it is not relieved by over-the-counter medications.
<b>Tingling toes</b>	Put your feet in cold water, use comfortable shoes.	If it persists...
<b>Diarrhoea</b>	Drink lots of fluids (water, tea, juices, etc.); avoid vegetables and dairy products.	If it persists or if there is blood in your stool or if you experience severe stomach pain or if you have a fever.
<b>Nausea and vomiting</b>	Take small sips of fluids frequently, eat small but frequent meals; avoid fat or spicy food.	In case they persist...
<b>Temperature</b>	Drink lots of fluids; reduce fever with common fever reducers.	In case it persists or in case it exceeds 38°C.



## 5 | PREGNANCY

Mothers can transmit HIV to their children during pregnancy, delivery and through breastfeeding. A safe and healthy pregnancy is possible, but must be managed with care and wisdom. It is possible to prevent virus transmission to the foetus during pregnancy, by undergoing ART according to your physician's directions .

### Desiring pregnancy

If you desire a child, you should inform health care providers who will provide you with necessary information about the procedures to follow to have a safer pregnancy for parents and the baby. During pregnancy you must use condoms correctly to prevent the transmission of HIV and other sexually transmissible diseases.

## 6 | HIV INFECTION PREVENTION

It is well known that sexual intercourse (homosexual, bisexual and heterosexual) is the world's most frequent mode of HIV transmission. Reducing the number of sexual partners will diminish the risk of infecting yourself and others .

The most effective measure to eliminate the risk of HIV transmission during sexual intercourses (vaginal, anal or oral) is condom use, which helps prevent all sexually transmissible diseases. Natural membrane condoms are less safe than latex ones due to the higher permeability of the material. In case of allergy to latex, which generally affects a small percentage of people, it is advisable to use synthetic rubber condoms.

The effectiveness of condoms in preventing the transmission of HIV is related to correct use and integrity (therefore effectiveness is not guaranteed in case of breakage). Main causes of condom breakage are:

- Manufacturing defect;
- Bad preservation (for example due to an excessively high temperature);
- Aging of latex;
- Errors during the use (it may seem easy to use, but many actions believed correct are incorrect).

In order to avoid the risk of breakage, you should remember that:

- condoms must be kept in cool and dry places, far from heat sources.
- condoms also have an expiration date which must be complied with, for better safety.
- Condoms with altered appearance (in colour and shape) may break more easily: be careful!
- Nails, rings and other sharp objects may easily break condoms.

For correct use, a condom is worn during the entire sexual intercourse (not just before penetration!) and is to be used just once.

If during sexual intercourse a condom breaks it is still possible to avoid infection: Post-exposure prophylaxis (or PEP) may help prevent infection. Treatment consists in a 30 day regimen of a standard three-drug-antiretroviral course. It is advisable to go to the hospital to begin preventive procedures, but do not panic: PEP must begin within 72 hours from the unprotected sexual contact, therefore there is no need to run to the nearest Hospital in the middle of the night.





## 7 | POSITIVE LIVING: HOW TO LIVE WELL WITH HIV INFECTION

It is important to remember that, even if you are HIV positive, there are many things you can do to feel good; keeping your immune shield intact means following additional precautions and changing your life style. How?

- Live your life as usual.
- share your status with someone you trust
- participate actively in group activities
- seek emotional and spiritual support at difficult times.

Furthermore, take care of your life style:

- 1. Follow a healthy diet**
- 2. Engage in physical activity suitable to your condition.**
- 3. Seek psychological support.**

Let's see these aspects in details.

### 1. Follow a healthy diet

Nutritional education , with other advice and an adequate support system, favours well-being and a positive life style . An appropriate diet with vitamins and minerals is advisable. Recommended food.

Great attention is devoted to the intake of essential elements such as calcium and vitamin D – often scarce in the seropositive individuals – which are essential for strong and healthy bones.

In the daily diet, at least 10 microgram ( $\mu\text{g}$ ) of vitamin D should be taken; the chart below shows the average content of this vitamin in some foods (all data refer to 100 mg of food).

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Daily calcium intake for good health varies with gender, age, weight and general condition of a person:

- Children need 800-1000 mg per day;
- Average weight men between the age of 30 and 60 need 800 mg per day;
- women of child-bearing age need 800-1000 mg per day, this amount should be increased up to 1200 mg per day after menopause;
- pregnant or breastfeeding women should take 1200 mg per day.

The chart below shows the average content of calcium in 100 mg of food.

It is advisable to:

- wash fruits and vegetables thoroughly;
- wash your hands before cooking or eating meals, after sneezing or coughing;
- avoid alcohol, smoking and non-prescribed drugs;
- follow good oral and dental hygiene (people affected with HIV often develop oral problems).

### VTAMIN D

Food	Vitamin D content (in µg)
Cod-liver oil	40000
Herring	65120
Mackerel	14400
Tuna in oil	9440
Yolk	4280
Butter	2240
Cod	1760
Black olives	1760
Whole cow milk	1600
Whole hen egg	1400
Parmesan cheese	1120
Mushrooms	840
Hamburger	480
Potato puree	320
Clam	160
Egg white	0

### AVERAGE CONTENT OF CALCIUM IN 100 mg OF FOOD

Food	Calcium content (in mg)
Parmesan cheese	1160
Fontina cheese	900
Gorgonzola cheese	658
Crescenza cheese	420
Sardines	386
Mozzarella cheese	350
Scamorza cheese	220
Salmon	187
Yolk	160
Chickpeas	149
Robiola cheese	111
Yoghurt	111
Shellfish	110
Milk cream	78
Whole cow milk	255



## 2. Do physical activity

Physical activity makes you feel better and keeps you in good physical condition. Physical activity, in addition to strengthening muscles, increases appetite, reduces nausea, improves digestion thus helps prevent loss of weight, especially the lean mass (muscles). Being in good shape helps you feel good.

## 3. Psychological support

The impact of this disease compels you to face many fears (pain, social exclusion, physical and mental decline, death) and the uncertainties of the future. ANXIETY and DEPRESSION, you have never felt before, may occur. The most frequent symptoms of depression are insomnia, difficulty in waking up in the morning, lack of willpower, lack of appetite and a general apathy or hyperactivity due to anxiety. These two aspects may also appear together in anxiety-depression syndrome. If you feel any of these symptoms, ask your health care providers for psychological support.

### **To be better informed on your health and treatment.**

During talks with health care providers do not be afraid of asking for explanations about the things you do not understand; take a relative or a friend with you so that they can help you understand explanations you are given during the follow-up.

Talking about your situation, expressing your feelings or explaining your fears may not always be easy. If you succeed in having a good conversation with those looking after you, you will manage to relax: talking openly about your fears helps you reduce anxiety and stress and better manage your emotional involvement.

However, remember that the treatment process requires your active involvement; exchange of views, impressions, doubts or

other problems with your health care providers, is of help in facing your delicate situation.

It is important to use the visit as an opportunity to better understand your health condition and the medications you take. Ask also for information and receive support in case of need (by the psychologist, the social care providers, patients associations etc).

Make a list of all the medications you are taking, so you can remember your treatment regimen.. If you have any doubt, ask your health care provider: they will help you.

Don't forget to ask the results of each blood test or medical examination you undergo. If you have a personal file with the results of your tests, you will have more information about your health. When you receive your test results, always ask about their meaning and how they might impact your treatment and health.

### **Proper care of yourself when HIV positive means being directly involved in managing your own health.**

You will be involved in the management of your health with the information that health care providers will give you. Thanks to this knowledge, you should find the best solutions to solve problems you will have to face. You often have to make decisions on proper behaviour (for example infection prevention); on the most suitable diet, on how to take prescribed drugs. To achieve these goals, being at the centre of each decision made for your health is fundamental. HIV is a disease lasting for your entire life: it is important to understand it thoroughly to better live with it.

## **Scientific information**

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## **ASSOCIAZIONE AURORA**

It is possible to take part in activities organized by the AURORA association, founded to support the hardships of people affected with infectious diseases. Among the opportunities offered by the association, is participation with the Department of Infectious diseases/ Outpatient clinic, to be involved with creative activities such as an artistic-expression workshop on the premises of the association in Olgiate Molgora.

