About HIV Infection

About HIV infection

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Foreword

This booklet «About HIV Infection» is meant to provide information and help to those who have received a positive HIV test result. It includes facts about HIV and the progression of HIV infection, and provides concrete answers to a number of questions concerning where one can get help and advice. The contents are primarily intended for persons residing in Norway.

The information in this booklet will help with all of the thoughts that will arise when an individual learns that he or she has HIV infection. The booklet provides information about how to contact others who are in the same situation and how to use their experiences to realize that for most life can continue with minimal changes. «About HIV Infection» also provides recommendations as to how one should conduct oneself with respect to school, work, family, friends and the community in general.

A person who has received a positive HIV test result needs to be knowledgeable about HIV infection and how the infection will progress. Special emphasis has been given to this. In addition, the booklet touches on questions concerning nutrition, alternative treatments, travel and vaccination, and provides information about pregnancy and the desire to have children.

This information will be useful for the family and friends of persons with HIV. It will help them to understand how a person with HIV infection can stay healthy and in this way reduce the effects of a serious and prolonged infection. Most important for a person who has tested positive for HIV, is to get as much information as possible, seek medical attention, take care of your own health and avoid infecting others.

CONTENTS

About HIV infection 6
The HIV test 6
- What does a positive HIV test mean? 6
- Other HIV tests 7

When the test is positive 7
Positive HIV test among immigrants in Norway 8
Who should be informed? 9
- Sexual partners 9
- Contacts 9
- Family 10
- Place of work 10
- Health personnel 10
- Vaccination 11
- Use of HIV drugs 11
- Insurance Companies 11
- Military 11

What is HIV? 12
How is HIV transmitted? 13
- Sexual contact 13
- Transmission via blood 14
- From mother to child 14

The immune response 14
- How does HIV destroy our immune system? 15
- What are opportunistic infections (OI)? 15
- What is AIDS? 16

Development of HIV infection 16
- Primary HIV infection 16
- Progression of infection 17
- Early symptomatic HIV infection 17
- Advanced HIV infection 18
- Does HIV infection develop differently among women and men? 19

Medical follow-up for HIV infection 20
- Medical examination 20
- Blood tests 20
- Tests to detect previous infections 20
- Tests to follow organ functions 21
- Tests to follow the immune system and the development of HIV infection 21
- The amount of virus. «Viral Load» 22

Treatment for HIV infection 22
- Modern HIV treatment 22
- When should treatment start? 23
- What should be done before treatment starts? 23
- HIV drugs 24
- How do the drugs work? 24

- The risk of mutations and development of resistance 25
- Side effects of treatment 26
- The wish for children 26
- Treatment during pregnancy 27
- Children born with HIV infection 28

Preventive treatment following risk of transmission (PEP) 29

Recommendations for everyday 30
What about a sex life? 30
- Reinfection 32

Travel 32
- What about drugs? 33
- Are there countries that refuse entry to persons with HIV infection? 33
- Travel insurance 33
- Vaccination 34

Vaccines 34
- Recommended vaccines 34
- Vaccines that should not be taken without careful consideration 34
- Vaccination for travel to foreign countries 34

Alternative treatment 35
- Traditional remedies 35
- Homeopathy 35
- Acupuncture 36

Food and nutrition 36

Rules and rights 38
- Social insurance rights and social assistance 38
- The Patient's Rights Act 39
- Infectious Disease Control Act 40

Cleaning needles 42
How to discard needles 43
How to use a Femidom 44
How to use a condom 45

Organizations for persons with HIV and other useful addresses 46
Information can be found at: 47
- Web sites 47
- Strategic Plan 47
- Information brochures 47

Key word list 48
Glossary 50

ABOUT HIV INFECTION

HIV (human immunodeficiency virus) is a virus that results in the destruction of the immune defence system such that the body is more receptive to infections and diseases. The virus is transmitted through blood, sexual contact and from mother to child during pregnancy, birth and breastfeeding.

Prospects are very good with modern HIV treatment

There is no treatment that can cure HIV infection. While the virus can result in serious illness and death, prospects are very good due to current treatment. With effective treatment, most people with HIV infection can live a long life without illness.

HIV was first identified in 1983 and determined to be the cause of AIDS (Acquired Immune Deficiency Syndrome). The virus has most likely been the cause of disease among humans for many years before it was identified. By the end of 2004, it was estimated that 40-50 million persons were infected with HIV worldwide. The virus is most prevalent in Sub Saharan Africa but we are now witnessing an increase in infection in a number of countries in Asia in addition to our neighbouring countries, the former Soviet Union and East Europe. In Norway there were approximately 2500 persons with HIV infection the end of 2004. Every year 100-200 new infections are detected in Norway.

THE HIV TEST

An HIV test is only performed after obtaining informed consent

An HIV test is only performed following informed consent. This means that the person to be tested has the right to know what the test implies and agrees to be tested. Before taking an HIV test, one should discuss with the doctor the possibility that the test may be positive based on situations that can result in infection. Regardless, a positive HIV test result may come as a shock.

What does a positive HIV test mean?

The body makes antibodies against the virus when one is infected with HIV. An HIV test is performed in a laboratory that examines a blood sample to see if there are HIV antibodies in the blood. HIV antibodies can usually be detected in the blood 2-3 weeks after infection. However, sometime it can take up to 12 weeks before HIV antibodies can be

detected. The time it takes from when one is infected until the antibodies can be detected is called the «window period»

The most common type of HIV test performed in Norway is called ELISA and may occasionally yield false positive results. A false positive test means that small amounts of antibodies against microbes other than HIV are detected. All samples that are reactive on an ELISA test are therefore examined by another test, the Western blot. This is a very specific test meaning that it will only detect HIV antibodies.

In addition, the patient will be asked to give another blood sample, a confirmatory sample, to ensure that there has not been a mistake when handling the samples. A diagnosis of HIV infection is given only after this sample has been analysed and yielded a positive test result. A positive HIV test means that a person is infected with HIV. It gives no information about when or how the person is infected or how far the illness has progressed.

Positive HIV results test must be confirmed

Other HIV tests

There are also rapid tests for HIV. Blood samples are usually sent to a laboratory where HIV tests are performed and it will take about a week before the test result is available. A rapid test may be performed immediately at the doctor's office and the result is available within 15-20 minutes. However, the «window period» is the same; it takes up to 12 weeks after infection before an HIV rapid test result will be accurate. There are only a few clinics in Norway that offer HIV rapid tests.

There are also tests that can detect HIV infection before it is possible to detect HIV antibodies in blood. These tests (PCR tests) detect the virus itself in the blood. Virus in the blood can be detected ad early as 10 days after infection. These tests are not performed on a regular basis because they are expensive and demanding.

Many questions and uncertainties will find answers and solutions whith more knowledge about HIV

WHEN THE TEST IS POSITIV

It is possible to experience many different reactions when told that an HIV test is positive. A positive HIV test is a serious message. Many ques-

tions and uncertainties will find answers and solutions with more knowledge about the disease. It often takes time to become accustomed with a completely new life situation.

Hiv infection is a matter for specialized health services

It is of great value for a person who has received a positive HIV test result to contact a doctor or centre that has experience with HIV. Treatment for HIV infection is a matter for specialized health services. A general practitioner will be able to collaborate with specialists when a patient resides far from a centre with special knowledge about HIV.

Those who feel that they cannot tackle the new life situation on their own can ask for help if they wish. In this situation it is a person's right to be referred to and helped by a psychiatrist or psychologist.

Those who feel that they are not taken care of or do not receive the help and information they are entitled to, should contact their doctor or organizations that are responsible for handling complaints and ensuring the best possible conditions for patients (see the chapter on Patient's Rights Act).

Hiv infection must still be considered a lifelong infection that can be transmitted to others

To be infected with HIV today is not as serious as it was just a few years ago. Specific medical treatment that has been available since the end of the 1990s has resulted in very good prospects. Regardless, life will be changed also for those without symptoms or complaints. HIV infection must still be considered a lifelong infection that can be transmitted to others. Drugs cannot yet cure HIV. However, a lot of research is being conducted and there is hope of development of new drugs with better effect and fewer side effects.

POSITIVE HIV TEST AMONG IMMIGRANTS IN NORWAY

An HIV test upon entry or residence in Norway is not compulsory. This applies to all groups: tourists, students and persons who apply for employment or asylum.

All immigrants (including asylum seekers, refugees and family reunion members) will be offered an HIV test upon entry to Norway. They have the right to information and must give their informed consent before the test can be performed. A person's application for residence in Norway will not be effected should it be determined that an asylum seeker has HIV infection.

Everyone staying in Norway has a right to medical treatment

Everyone staying in Norway has the right to medical treatment if they are ill. All persons with a weakened immune system due to HIV infection will be offered medical treatment. Once this treatment is started it is usually considered to be for life. It can be difficult for many asylum seekers to get the drugs and continue with this type of treatment in the event they must return to their homeland. This can therefore be of importance when applying for permanent residence. Every case will always be considered individually.

WHO SHOULD BE INFORMED?

Sexual partners

Openness is a great challenge but will most likely reduce the risk of transmitting HIV

Even though it is always best to have sex that does not involve a risk of infection, accidents can happen that result in a risk of infection. Sexual partners must therefore always be informed (see the chapter on What about a sex life?). Openness is always a great challenge but will most likely reduce the risk of transmitting HIV.

It can often be helpful to discuss relations concerning sexuality with persons in the same situation (see the references of Organization for persons with HIV). You may also use your contact person as an advisor.

Contacts

It is important to find out who infected you and if you have infected others in order to prevent the further spread of HIV. Tracing contacts is a necessary aspect in the fight against the HIV epidemic (see the chapter on the Infectious Disease Control Act).

It is important to know how to contact the persons in question. Either the persons with HIV infection or the health personnel can inform the contacts.

Health personnel will inform the contacts about possible risk without naming the persons with HIV infection. The contacts are offered advice, guidance and an HIV test.

Family

It is a personal choice as to how open one wishes to be regarding their HIV status with family, friends and acquaintances. It is important to consider who should be informed and why. In Norway, most find it to be advantageous to tell their closest friends and family that they have HIV infection.

Neither employers nor colleagues can demand to know if an employee has HIV infection

Place of work

Neither employers nor colleagues have the right to know if an employee has HIV infection. The same applies to schools and teaching centres. Some choose to be open with colleagues and employers even if they are unsure of the resulting reactions.

If there is a risk for a persons with HIV associated with the type of work, or if the person through his work can be a risk for others, can the persons with HIV infection discuss this with his contact person or advisor.

Health personnel

It is important that health personnel are aware of HIV infection among persons with whom they have regular contact. This includes the primary doctor, dentist and, when applicable, the company doctor. It is also correct to inform about HIV infection when admitted to a hospital. All health personnel have pledged not to divulge confidential matters. Divulging confidential information will have serious consequences for the person charged.

Vaccination
Some vaccines can be dangerous for a person with HIV infection. When vaccination is necessary, it should first be discussed with the advisor. Alternatively, information concerning HIV status must be provided prior to vaccination.

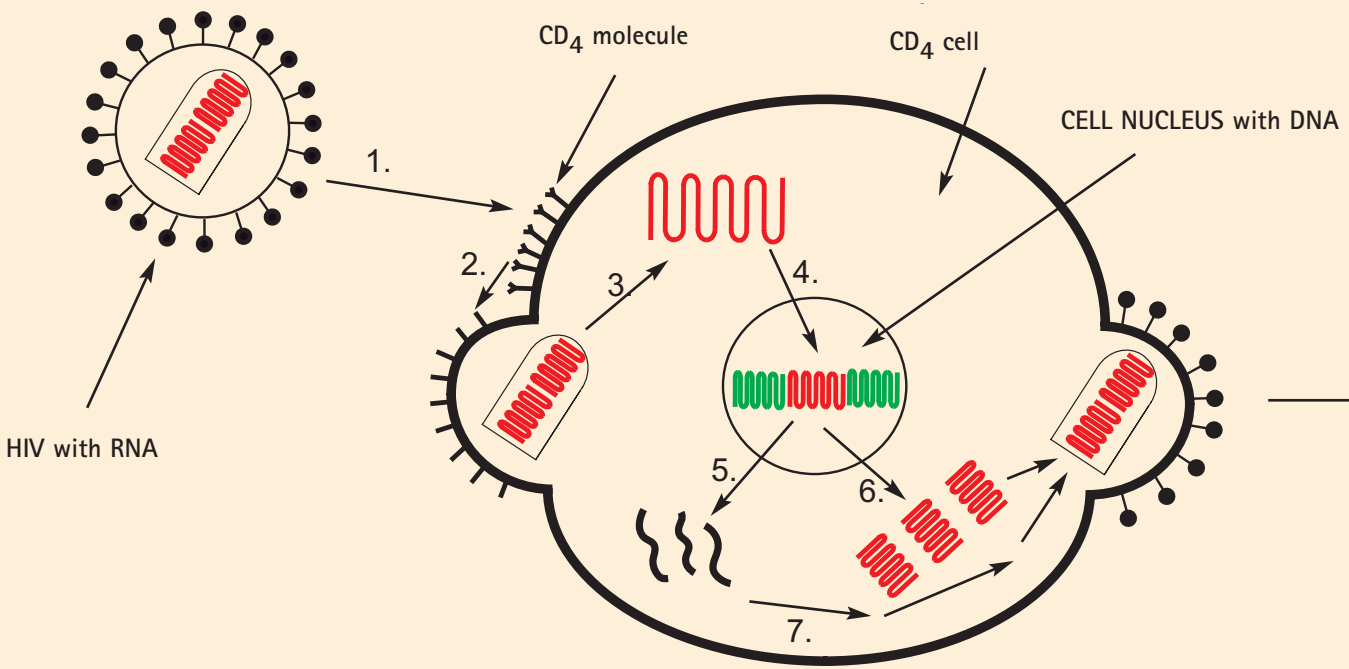
Use of HIV drugs
A number of HIV drugs can influence or be influenced by drugs that are used for other conditions (allergy drugs, some antibiotics and traditional remedies). An interaction between drugs can give serious reactions. Other drugs should never be used without approval from a specialist in HIV infection or that the primary doctor has been informed about HIV infection.

HIV drugs can be influenced by other types of drugs and give serious reactions

Insurance Companies
Insurance policies or agreements entered into before an HIV diagnosis has been made are valid and may be extended. Information concerning health must be provided when signing a new life or health insurance policy. The insurance will be invalid in the event a person with HIV does not inform the company when signing a new policy. It is not possible to sign an individual life or health insurance after one has tested HIV positive. However, as a member of a union or through an employer it is possible to be insured for disability or death without providing information about your health.

Military
All training in the Defence Forces is directed toward mobilization and possible service in international operations. Persons with HIV infection are considered to be unfit for military service and will be discharged. This is based on the individual's medical and health-related considerations and possible blood donation in the field.

Persons whith HIV infection are considered to be unfit for military service and will be discharged



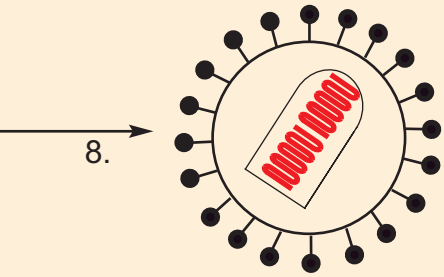
Hiv attacks special cells in the body and uses these cells as «factories» to make millions of new viruses

WHAT IS HIV?

HIV belongs to a group of viruses called retroviruses. Within this group HIV is also a lentivirus, lente = slow, meaning that it take a long time from infection to the development of disease.

As with all viruses, HIV is dependent upon living cells in order to reproduce. HIV attacks special cells in the body and uses these cells as «factories» to make millions of new viruses. The cells that are attacked are eventually destroyed in the process. The destruction of these cells weakens our immune defence because these cells belong to the most important group in our immune system (see the chapter on The immune response).

The genetic material of HIV, RNA, is different from DNA, the human genetic material. HIV RNA must change so that it resembles the human genetic material DNA before the virus can reproduce in the host cell. The change from RNA to DNA is called a reverse process. Many of the HIV drugs used today reduce or block this reverse process that changes HIV RNA to DNA.



1. VIRUS BINDS TO CD_4 MOLECULE
2. VIRUS MELTS TOGETHER WITH THE CELL
3. REVERSE TRANSCRIPTASE CHANGES RNA TO DNA
4. VIRUS DNA BINDS TO THE CELL'S DNA
5. VIRUS PROTEINS (BUILDING BLOCKS)
6. VIRUS DNA
7. BUILDS NEW VIRUS WITH HELP OF PROTEASE
8. NEW VIRUS ESCAPE FROM THE CELL

HOW IS HIV TRANSMITTED?

HIV is found in the body fluids of infected persons. The body fluids that contain enough virus to transmit HIV infection are: blood, semen, vaginal secretions and breast milk. Other body fluids (sweat, tears, saliva and urine) do not contain enough viruses to transmit HIV infection. In addition, saliva contains a factor that weakens the virus.

Sexual contact

Sexual contact is the most common way of transmission. Over 90% of all infections occur through sexual contact. Heterosexual transmission is by far the most common way of transmission worldwide. The virus is transmitted when blood, semen or vaginal secretions come in contact with the mucous membranes of another person. Mucous membranes are found in the vagina, urethra, anus/large intestines, mouth and eyes. Transmission through sexual contact can occur via vaginal/anal intercourse or oral sex. The greatest risk of transmission is through anal intercourse but it is also possible to be infected with HIV through oral sex.

Sexually transmitted infections such as chlamydia, gonorrhoea, herpes and syphilis increase the risk of Hiv transmission through sexual contact

HIV is more easily transmitted from a man to a woman than from a woman to a man. Among men who have sex with men, the partner who receives the semen is at greatest risk of infection.

It is very important that needles are never shared

Other sexually transmitted infections (Chlamydia, gonorrhoea, herpes, syphilis or other infections with genital sores) increase the risk of contracting HIV through sexual contract. Simultaneous vaginal infections caused by fungus or *Trichomonas vaginalis* also increase the risk of contracting HIV. The increased risk of contracting HIV applies whether the person with the sexually transmitted infection/vaginal infection has HIV infection or is exposed to HIV.

Transmission via blood

HIV is found in blood. While the virus can be transmitted through blood transfusion, this risk has been more or less eliminated in Norway through blood donor testing and the heat treating of blood products. HIV can also be transmitted when large amounts of infected blood come in contact with mucous membranes or damaged skin.

HIV can be spread through sharing needles and syringes or other user equipment. This applies both to drugs used for doping and narcotic substances. It is very important that needles are never shared.

T-lymphocytes are an especially important type of white blood cell

From mother to child

The risk of transmitting HIV from mother to child during pregnancy, birth and breastfeeding is approximately 30%. This risk can be reduced to less than 5% when the mother receives treatment during pregnancy and the child during the first weeks after birth, when the child is delivered by caesarean section and if the child is not breastfed.

THE IMMUNE RESPONSE

The immune response is developed to protect us against disease. Among other things the system that constitutes our immune response consists of billions of white blood cells that are made in the bone marrow. We have a number of different types of white blood cells the all have specific

tasks. Of especial importance is a type known as T-lymphocytes. White blood cells are specifically developed to recognize, neutralize and/or remove foreign particles and substances from the body. This applies especially to microbes, whether they are bacteria, virus, fungus or other infectious substances. The immune response is also important in protecting us against cancer.

How does HIV destroy our immune system?

All viruses are completely specific and HIV is no exception. HIV can only attack and reproduce in one specific type of cell. HIV is dependent upon a specific molecule on the surface of the cell in order to bind and enter the cell. This molecule on the surface of the cell is called CD4. We have many types of cells that have the CD4 molecule on the surface and that can therefore be attacked by HIV. The most important cells are the T4-lymphocyter, a group that belongs to T-lymphocytes. The T4-lymphocytes are known as «helper cells». These helper cells play a central role in the immune response because they direct all of the other cells and give signals about what tasks the other cells shall perform.

Healthy people have between 800 and 1200 T4-lymphocytes per micro litre blood. The lymphocyte is destroyed when HIV attacks a T4-cell and uses the cell to produce new virus. HIV destroys billions of T4-cells every day. Over time, the bone marrow will not be able to maintain the production of new cell and the number of T4-cells will gradually be reduced. The immune response is so weakened when the number of T4-cells sinks to approximately 200 that the person is at risk of contracting illnesses the body would otherwise be able to control.

What are opportunistic infections (OI)?

Microbes that under normal circumstances do not cause disease among people see the chance to attack when the immune response system is very weak. This is known as opportunistic infection. Most opportunistic infections are caused by microbes that we carry after having been infected during early childhood. A normal immune response protects against these microbes. This protection disappears when the immune response fails and

The lymphocyte is destroyed when HIV attacks a T4-cell and uses the cell to produce new virus

the person becomes ill. Infections caused by these microbes can to a certain degree be held under control by drugs but they cannot be eliminated.

What is AIDS?

AIDS is an abbreviation for Acquired Immune Deficiency Syndrome.

Most countries have a well-defined combination of diseases and symptoms that in conjunction with HIV infection determine the diagnosis AIDS. The definition of AIDS varies somewhat from country to country but this is most often due to the insurance schemes rather than disagreement regarding the definition. A number of countries provide better economic support for an AIDS diagnosis than for a diagnosis of HIV infection. This is not the case in Norway.

The most common reason for an AIDS diagnosis is an attack of an opportunistic infection. However, the first sign of AIDS may be lasting fever or diarrhoea, significant weight loss without reason or certain forms of cancer.

The most common reason for an AIDS diagnosis is an attack of an opportunistic infection

DEVELOPMENT OF HIV INFECTION

Primary HIV infection

50-70% develop symptoms of HIV infection 2-4 weeks after infection. This is known as primary infection. Usual symptoms include fever, sore throat, swollen lymph glands, rash, muscle and joint pains. The symptoms can resemble influenza and infectious mononucleosis (kissing disease) and usually last for 2-3 weeks. After this phase the symptoms disappear and the person feels healthy.

It is important to detect a primary HIV infection because:

- There is now agreement among scientists that treatment should be provided during primary infection in order to reduce the damage to the immune response.
- There is a high concentration of virus in the blood and therefore a high risk of transmitting the virus during primary HIV infection and the first months after the time of infection.
- It may be easier to determine where and when the transmission occur red if only a short time has passed since infection. This can make con-

tact tracing easier thereby reducing the risk for additional transmission (see the chapter on Contacts).

Progression of infection

The amount of virus in the blood will gradually decrease over 4-6 months and thereafter become stable at a certain level. This level is very different from person to person and it is not known what determines this level. Persons who maintain a high amount of virus develop disease quicker than persons with a low level of virus. One of the reasons for taking HIV drugs during primary infection is because treatment is believed to be instrumental in establishing a stable low level of virus.

How the disease develops is dependent upon the type of HIV and the patient's age and life style. Those who are infected through use of needles and continue to use drugs develop do not develop AIDS more quickly than others but are at a higher risk of dying from other illnesses caused by their life style.

In our part of the world it is believed that age at the time of infection is of greatest importance with respect to the progression of HIV infection. It appears that those who are infected after the age of 35 develop disease more quickly that adults who were infected at a younger age. How fast the infection progresses to disease varies from person to person. Even without treatment 50% of persons with HIV infection will have no signs of disease after 10 years. Today's treatment can effectively postpone the weakening of the immune system and the resulting complications. Therefore, complications occur far less frequently now than before good treatment was available.

Early symptomatic HIV infection

Common diseases will occur more often and have a longer, more complicated progression among persons with a weakened immune system than among persons with a normal immune system. A number of conditions may arise when the number of T4-cells (T4-numner/CD4-number) is reduced to between 500 and 200, for example fungus in the mouth (thrush) or vagina. Other fungal infections such as foot or nail fungus can be bot-

Even without treatment 50% of persons with HIV infection will have no signs of disease after 10 years

hersome. Herpes can result in serious problems as can regular warts and genital warts. Another early symptom of a weakened immune response is shingles (Herpes zoster). This is caused by a reactivation of the chicken-pox virus that one had as a child. Skin problems are common, especially eczema with redness and flaking in the face and upper part of the breast and back. A number of other skin diseases may also arise.

Persons with HIV infection are at greater risk that tuberculosis infection will progress to disease

Persons with HIV infection are a greater risk that tuberculosis infection will progress to disease. Reactivation of tuberculosis occurs quite early in the course of HIV infection.

There are few who have both HIV infection and tuberculosis in Norway. The combination is far more common worldwide. Tuberculosis should be considered among everyone with HIV infection. A tuberculin skin test and a chest x-ray should taken if a person with HIV infection comes from or has had a longer stay in a country with a high prevalence of tuberculosis. Infectious disease specialists will be able to interpret the results and, if indicated, recommend a suitable treatment.

Advanced HIV infection

Serious opportunistic infections may arise when the T4-number falls below 200

Serious opportunistic infections may arise when the T4-number falls below 200. These are infections caused by microbes that a normal immune response manages to hold under control without difficulty. Pneumonia caused by the fungus *Pneumocystis carinii* (PCP) is serious if the diagnosis is made late or if the infection is not treated correctly. All persons with HIV infection and a T4-number below 200 will be offered preventive treatment with antibiotics against PCP. This type of pneumonia is seen primarily among persons who have not received preventive antibiotic treatment because they do not know that they are infected with HIV.

Approximately 15% of the population are carriers of the toxoplasmosis parasite that may cause brain infections among persons with a compromised immune response. The drug that prevents *Pneumocystis carinii* also prevents toxoplasmosis. Those who do not carry this organism are advised to avoid contact with cats and with meat that is not well cooked.

Some virus that we carry can be reactivated and cause disease. Cytomegalo virus (CMV) is a virus that infects many and approximately 60% of the adult population are carriers. This virus may be reactivated and result in serious infections in a number of organs when the immune response is weakened. The eyes are often affected by a reactivated CMV infection.

An increase in the occurrence of cancer including Kaposi's sarcoma and lymphoma (cancer in the lymph glands) is also seen in with advanced HIV infection.

Does HIV infection develop differently among women and men?

The progression of HIV infection is about the same for women and men. What we know to date indicates that women have in general somewhat higher T4-numbers and lower amounts of virus than men during the first five years after infection. It appears as though women develop disease at a higher T4-number than men and that the disease progresses more rapidly thereafter. However, the results of different studies are not conclusive. One possible explanation is that on a worldwide basis women start treatment later and receive poorer medical follow-up than men. Thus the difference appears to be associated with social status rather than gender.

It can appear as though the side effects of certain drugs are different among men and women because women describe more side effects than men. Serious side effects do not appear to be more common among women than men.

Women and men with immune deficiency experience more of less the same complications (see the chapter on Advanced HIV infection). However, there are some differences. A typical form of cancer among men is Kaposi's sarcoma while women with HIV infection may have an increased risk of developing cervical cancer. Lymphomas appear to be as frequent among men as women. There are still many shortcomings in our medical knowledge concerning the progression of HIV infection among men, women and children.

Is there a difference in the development of disease between woman and men?

MEDICAL FOLLOW-UP FOR HIV INFECTION

Medical follow-up at regular intervals is important for a person with HIV infection. How often depends upon the disease progression. Every third to sixth month is adequate if the person's immune response is normal, number of T4-cells is high and the amount of virus is low.

Medical examination

At the first medical examination it is important to get a good picture of the patient's physical, psychological and social situation such that conditions that may have consequences for the HIV infection can be documented and followed. It is therefore important to ask about social relations, previous illnesses, illnesses in the family, allergies, vaccinations, use of drugs and use of artificial stimulants (alcohol, tobacco and narcotic substances).

The first medical examination is comprehensive and provides a basis for following the progression of HIV infection

In addition, a clinical examination will be performed (blood pressure, lymph glands, mouth, heart, lungs, stomach, etc.). Usually nothing out of the ordinary will be found but the examination provides a good basis should symptoms that may be related to HIV appear at a later time.

Blood tests

When HIV infection is detected a number of blood samples will be taken. This is done in order to examine past and present illnesses. Samples are also taken to see if the patient carries microbes that can give illness if the immune response becomes weakened at a later date. In addition, blood samples and other specific samples are taken in order to follow the progression of the HIV infection. The following blood samples are usual:

Tests to detect previous infections

- Hepatitis A, B and C. Vaccination against hepatitis A and B may be offered if the person has not had these infections. If hepatitis C is detected the person is examined further for possible lever damage and whether or not treatment should be given.
- Syphilis
- Toxoplasmosis
- Cytomegalovirus (CMV) antibodies

- In addition, a blood test will normally be taken to detect possible HIV drug resistance.

(See chapter on Treatment for HIV infection) The result of this test may determine what type of drugs you will be given if you need treatment for HIV.

Tests to follow organ functions

The following blood tests will often be within the normal values or show only small deviations as long as a person with HIV infection has a normal immune response. These tests are of greatest importance if and when treatment is started. All HIV drugs have side effects. The analysis of blood samples can indicate side effects at an early stage such that the treatment can be changed before serious complications arise.

Haemoglobin percent (Hgb) is important. Many with HIV develop low red blood cell count (anaemia).
White blood cells are counted and the individual types are differentiated, i.e. every type is counted.
Blood platelets (thrombocytes) are important for blood coagulation. Persons with HIV often have a low number of blood platelets but rarely so low that there is a risk of bleeding.
Sedimentation rate (SR) may be raised as a result of HIV infection but is most often normal. A high SR value may indicate another infection.
Vitamin B12 may show low values that require a supplement.
Creatinine and protein in urine are examined to follow kidney function.
Tests for liver function (ASAT, ALAT, alkaline phosphatase, γ-GT, often called liver values) are examined to follow liver function.
Amylase is checked in relation to pancreas function.
Cholesterol and triglycerides are checked in relation to the metabolism of fat.

Tests to follow the immune response and the progression of HIV infection

These are the most important tests that are taken to follow the progression of HIV infection. They provide information concerning the strength of the immune response and give an indication about the expected progression of disease. These tests are also important with respect to determining when treatment should start and the effect of the treatment.

Blood tests are of greatest importance if and when treatment is started

T4-cells give information about the immune response

T4-cells give information about the immune response. As long as the number is over 500 the immune response has a normal function and will be able to tackle most infections. The person will feel healthy and will be without symptoms. Conditions described in the chapter «*Early symptomatic Hiv infection*» may arise if the number of T4-cells sinks to about 200.

The amount of virus. «*Viral Load*»
The amount of virus or «*viral load*» is described in the number of virus per ml blood. There will often be millions of virus per ml immediately after the time of transmission and during the following months. Thereafter the viral load sinks to a lower level. The level may be several hundred or many thousands. The greater the viral load during this phase the greater the risk of developing disease quickly. At any time there is only a small amount of virus that feely circulates in the blood.

It is not possible to detect the virus in blood if the amount drops below a certain level. However, there will still be millions of virus blocked and hidden in different cells and organs in the body. These viruses can mobilize and circulate in the blood Therefore the amount of virus in the blood can fluctuate from time to time. There is usually but not always a correlation between the amount of virus in blood, semen and vaginal secretions. Amounts of virus great enough to pose a risk of infection may be present in semen and vaginal secretions even though only small amounts of virus can be detected din the blood. The viral load increases with advanced HIV infection.

HAART is a treatment concisting of at least three active drugs

TREATMENT FOR HIV INFECTION

Modern HIV treatment

Effective drugs for HIV have been available since 1996. Treatment with these drugs is known as HAART, Highly Active Antiretroviral Therapy. The treatment consists of at least three active drugs. Taking these drugs will not eliminate HIV and cure the infection, but inhibit or block virus replication so that the infection progresses slowly. Most who take these drugs will experience a significant improvement, have few or no side effects and can live a good life. Others will continue to have symptoms and some will in addition suffer from side effects caused by the drugs.

There is still some disagreement among doctors as to when treatment should start. How low should the T4-number and how high should the viral load be? The tendency during the past few years has been to wait as long as possible before starting treatment. There are many reasons for this:

- For some the treatment itself is associated with a reduced quality of life.
- There are many side effects, yet information concerning side effects over time is lacking.
- Lengthy treatment increases the risk of developing resistance such that drugs are not effective when needed.

The tendency during the past year has been to postpone treatment as long as possible

When should treatment start?

- During pregnancy treatment is given to prevent transmission to the child. It is not known how long the mother will benefit from the treatment.
- When signs of immune deficiency are observed. This is when opportunistic infections arise or when the number of T4-cells is very low.
- Preventive treatment following accidents or needle stick injuries.
- Treatment is considered during primary infection to reduce damage to the immune response over time. Treatment should start as soon as possible and within six months at the latest. The effect of such treatment is not known.

When a person is without symptoms the decision to start treatment is based on a collective evaluation of the number of T4-cells, to a certain degree the viral load and the general clinical condition in collaboration with the patient.

What should be done before treatment starts?

Treatment may be the only alternative when a person with HIV infection has symptoms indicative of a weakened immune response and feels ill. It can be difficult to decide whether or not to start treatment when a person with HIV infection feels healthy and only the results of blood tests indicate a weakened immune response. Treatment must continue once started according to current guidelines. The guidelines must be strictly followed to ensure successful treatment.

The guidelines must be strictly followed to ensure successful treatment

Good advice before the start of treatment:

1) Read the current written information.
2) It is very important to become familiar with how the drugs should be taken, for example if the drugs should be taken with or without food and how often they should be taken. It is possible that daily routines must be changed in order to take the drugs as prescribed.
3) Learn about possible side effects and how they can be tackled. Side effects can be bothersome to begin with and a medical leave of absence from work or help from others may be necessary.
4) Discuss with you contact person what can be done if it is difficult to follow the treatment schedule.
5) It is necessary to be motivated and psychologically prepared to follow a strict treatment schedule.

New drugs that work in different ways are being developed

HIV drugs

Today there are a number of different registered HIV drugs and new drugs are being developed. Drugs already in use are also under further development. They are developed to have a longer effect such that the number of times a drug must be taken every day can be reduced. In addition, two or more drugs are combined in one tablet thus reducing the number of tablets taken each day.

New drugs that work in different ways are also being developed.

The most common HIV drugs can be grouped in four categories:
Nucleoside reverse transcriptase inhibitors (NRTI), non nucleoside reverse transcriptase inhibitors (NNRTI), protease inhibitors (PI) and fusion inhibitors. Each group includes many different drugs with different side effects. Often many different names are used for the same drug. All of the drugs have a sales name and a chemical or generic name but are most often referred to by an abbreviation, for example «Retrovir»= zidovudin = AZT. All of these names are in use, and this may cause confusion.

How do the drugs work?

HIV must bind to the nucleus in the T4-cell in order to start the produc-

tion of new virus. The virus goes through several different maturation processes that are directed by different chemical substances known as enzymes (for example, reverse transcriptase). HIV drugs block these processes by inhibiting the enzyme. The virus is thereby caught in the cell and cannot escape.

The risk of mutations and development of resistance

New viruses are produced at a very high rate in persons who are not taking specific HIV drugs. Some of these viruses will be slightly different from the original viruses. This is known as mutation. Many different viruses with mutations are formed but none are produced in great enough numbers to overtake the original virus.

The original virus will be blocked by HIV drugs when treatment is started. When the treatment consists of only a single HIV drug a mutation may be formed that can withstand this drug. This mutated virus will escape the «blockade», continue to produce new viruses and with time replace the original virus. These new viruses are resistant, i.e. no longer susceptible, to the particular drug used.

The risk of developing resistance is reduced when many HIV drugs are taken simultaneously

The same can happen when two drugs are taken simultaneously but the chances of developing resistance are not as great. The risk of developing resistance is reduced when many HIV drugs are taken simultaneously. Therefore a «cocktail» consisting of three or four different HIV drugs are most often taken simultaneously. The aim of this treatment is to find a combination of drugs that will reduce the viral load to a level below detection and keep it there.

To prevent a fluctuating amount of virus in the blood and reduce the risk of developing resistance it is extremely important to take HIV drugs according to a rigid schedule every day. If a single dose is forgotten the «blockade» is lifted and viruses escape from the cell. The viruses that escape will be the «strongest» and will have the greatest chance of producing new resistant viruses.

It is important to have regular medical check-ups when taking HIV drugs

Different drugs may interact and the effect may be stronger or weaker than expected

Side effects of treatment

All drugs have side effects irregardless of the infection or disease. HIV drugs are no exception. The side effects vary from drug to drug and from person to person.

There are three major groups of side effects associated with HIV drugs:

1) Bothersome but not serious side effects such as headache, muscle and joint pains, diarrhoea and nausea. These side effects are most noticeable at the start of treatment and unusually disappear with time. If not, the combination of drugs may be changed.
2) Side effects that can damage organs such as bone marrow, liver and pancreas.
3) Side effects that influence fatty acid metabolism and can result in an increased risk for coronary disease and diabetes. The visual effect is a change in the distribution of fat in the body.

When taking HIV drugs it is important to have regular medical check-ups to follow the effect of treatment and risk for serious side effects. At the medical check-ups a number of blood samples will be taken to check if any damage has occurred.

Different HIV drugs are converted in many different ways in the body. The drugs may interact and the effect may therefore be stronger or weaker than expected. This is very important to consider. Drugs for other diseases can also have a similar effect. It is therefore very important that a doctor who treats a person with HIV infection always knows what other drugs the patient is taking. This applies also to traditional remedies and intoxicants that may have unexpected consequences and side effects when taken together with HIV drugs.

The wish for children

Today's treatment for HIV and the resulting reduced risk of transmission from mother to child, in addition to the fact that a mother or father can live a long life with correct treatment, has led many people living with HIV to raise the issue of childbirth. Despite advances, there are still a

number of dilemmas associated with questions concerning pregnancy and giving birth for persons with HIV infection.

What if the man has HIV infection and the woman does not? Is it possible to conceive a child without putting the woman at risk of getting HIV? In many countries a method is used to «wash» the virus out of semen. Guidelines for such treatment is at present being developed in Norway.

Even when the man receives treatment and has a low amount of virus in the blood, we know that there is not always a correlation between the amount of virus in the blood and the amount of virus in the semen. The risk of transmitting HIV through unprotected intercourse will always be present.

What if the woman has HIV infection and the man does not? The man is not at risk of contracting HIV infection if a child is conceived through artificial insemination. As of today, this procedure is not available in Norway.

For many it may be advantageous to discuss questions concerning the wish to have a child with others who are in the same situation. See the list of organizations at the end of this booklet.

Treatment during pregnancy

There are many women with HIV infection who become pregnant and have children worldwide. Transmission from mother to child occurs during pregnancy, birth or after birth through breastfeeding. A man cannot transmit HIV directly to the foetus. This can happen only when the mother is infected.

In Norway, all pregnant women are offered an HIV test early in pregnancy. It does not appear as though pregnancy worsens the mother's infection or increases the mother's risk for developing disease and early death. The primary risk during pregnancy is that the child can be infected.

In many countries a method is used to «wash» the virus out of semen

Modern HIV treatments is offered to pregnant woman with Hiv infections to reduce the risk of transmission from mother to child

The risk of transmitting the infection from mother to child during pregnancy, birth and breastfeeding is approximately 30%. This risk can be reduced to less than 5% when the mother receives treatment during pregnancy and the child during the first weeks after birth, when the child is delivered by caesarean section and if the child is not breastfed. There are many combinations of drugs used during pregnancy. The choice depends on the mother's possibility for medical follow-up. In our part of the world the treatment will usually be started after the first three months of pregnancy and a combination of three drugs are used. The child will start treatment immediately after birth and continue for six weeks.

To date no side effects of treatment among newborns have been reported. However, more time is needed to observe possible lasting side effects among newborn children.

At birth, children have antibodies from their mothers. The normal HIV test detects antibodies and this test will therefore be positive due to the mother's antibodies in the months after birth.

Children born to mothers whith Hiv start treatment immediately after birth

These antibodies will gradually disappear from children who are not infected with HIV by the age of two years. HIV status can be determined earlier by testing the child's blood for virus using a special test (called PCR). The first test is taken a few weeks after birth. The result of this test will give a good indication of whether or not the child is infected. Thereafter a new test is taken at the age of three months. If the result of this test is negative the child is not infected.

Children born with HIV infection

Children born with HIV infection usually do not thrive from the time of birth. An early diagnosis is important so that treatment can be continued after the first six weeks and be modified when needed. The treatment and follow-up of children with HIV must be conducted at hospital by specialists with the best possible knowledge about children and HIV infection. The majority of children with HIV infection will become seriously ill and die within the first year of life if they do not receive treatment. Most

children will grow up with treatment. It is still too early to predict how long the children will live because modern drugs have been available for a few years only. HIV infection in children is in any case a very serious condition and every possible means must be used to prevent transmission.

Most children will grow up with treatment

Preventive treatment following risk of transmission (PEP)

This treatment is often referred to as post exposure prophylaxis (PEP). The risk of contracting HIV following exposure can be greatly reduced if a specific treatment consisting of two or more HIV drugs is started immediately. Such risks occur most often among health personnel after a needlestick or sharp instrument used while treating persons with HIV infection. Transmission can also occur following an accident with a burst condom while having sex when one of the partners has HIV infection. The HIV status must be known before such treatment is started. An exception to this rule is in the case of rape. Preventive treatment can also have serious side effects. Therefore the decision as to whether or not prophylactic treatment should be given must always be made by a specialist in infectious diseases. The treatment should start within a few hours after exposure to ensure the best possible effect. A person with HIV infection should therefore know who he/she should contact in the event such a situation that may require prophylactic treatment occurs.

Preventive treatment following risk of transmission (PEP)

It is safe to share a household with HIV infected persons

RECOMMENDATIONS FOR EVERYDAY LIFE

HIV is transmitted through body fluids including blood, semen and vaginal secretions, and breastfeeding. There have been no reports of transmission through social contacts during the 20 years that the epidemic has been followed in our part of the world. It is safe to share a household with HIV infected persons, whether it is food, household equipment, washing machines, bathrooms and bedrooms. Clothes, sheets, towels or cutlery are washed in the same way as in all other households.

Use of a razor blade can result in small cuts; similarly, use of toothbrush can give small cuts in the gums. Toothbrushes and razor blades should not be shared.

WHAT ABOUT A SEX LIFE?

Many with HIV infection express that they are not interested in sex after they have been told that they are infected. Gradually life becomes normal and the majority will again have thoughts about close and intimate contact with others.

Condoms provide good protection against HIV infection. Correct use of condoms (see the instructions at the end of the booklet) during anal, vaginal or oral sex also protects against other sexually transmitted infections including herpes, gonorrhoea, syphilis and chlamydia. The femidom may be an alternative for women. The femidom is easy to use and give the woman a greater degree of control. Persons with HIV infection are entitled to free condoms. These are supplied by the Directorate for Health and Social Affairs. Your doctor can order free condoms from the Directorate without revealing your identity.

The risk of transmission is greatest with anal intercourse, somewhat less with vaginal intercourse and far less with oral sex when semen is not ejaculated into the mouth. However, oral sex without ejaculation in the mouth is not without risk.

Semen or vaginal secretions that come in contact with intact skin are not considered to be a risk and it has never been shown that HIV can been transmitted by kissing

It is always the receiving partner that has the greatest risk of becoming infected. This is because transmission may occur when infected semen enters the intestine or vagina. The virus will have good conditions to survive due to the temperature and moisture, and will be in contact with the mucous membranes for a long time.

Condoms and femidoms provide good protection against HIV and other sexually transmitted infections

Condoms must always be used during vaginal/anal intercourse and oral sex relationships when one partner has HIV infection and the other does not. The use of condoms is also recommended when both partners have HIV infection due to the risk of reinfection with a new virus. There are different subtypes of HIV and it is possible to be infected with a new virus in addition to the virus that caused the original infection. When a person with HIV infection is taking HIV drugs there is a risk of developing resistance and therefore a risk of infecting the partner with a resistant virus (read more about resistance in the chapter on The risk of mutations and development of resistance). The consequence of reinfection as related to the progression of the illness is uncertain. There is to date no definitive answer.

A person with HIV has a legal responsibility not to infect others

A person with HIV infection has a legal responsibility not to infect others or put others at risk of infection. In reality this means that you should always inform a possible sexual partner about your HIV infection before sexual contact so that you can both take the responsibility that the infection with not be transmitted. The use of condoms is usually not sufficient to ensure exemption from legal prosecution and punishment if you have not informed your sexual partner of your HIV status, and this person later feels that he/she has been put unknowingly at risk of being infected. This applies whether or not HIV infection has been transmitted. The risk of infection is reason enough for legal prosecution (see also the chapter on Who should be informed?).

There is always a risk that a condom will burst or fall off. Preventive treatment can be given if this happens. It is important to know who may be contacted in order to get advice about treatment should this be necessary. See the chapter on PEP treatment.

It is important to protect yourself against a new HIV infection even if you already have HIV

Reinfection

There are a number of different HIV subtypes. A person who is infected with one HIV subtype can be reinfected with a different HIV subtype if exposed to a new risk of infection.

HIV is constantly changing. These changes are called mutations. Resistant viruses may evolve when mutations arise during treatment. It is possible to become infected with a resistant virus in addition to the virus a person with HIV infection already has if exposed to a new risk of transmission. It is therefore important to protect yourself against a new HIV infection even if you already have HIV.

TRAVEL

When travelling to countries outside Europe it is wise to contact your primary doctor

Travel, particularly to countries outside Europe and to subtropical and tropical areas, is associated with an increased risk of infection for all people and especially for persons with a weakened immune response. It can be wise to contact your primary doctor before making travel plans.

The most common illnesses during travel are infections that are transmitted through food or water and give symptoms inducing diarrhoea, nausea and vomiting.

General advice:

- Drink only bottled water and do not use ice cubes
- Eat only fruit/vegetables that can be peeled
- Eat only thoroughly boiled/fried food
- Avoid swallowing water when swimming and do not swim in water that may be contaminated with sewage

It is not advisable to use preventive antibiotics to avoid infections while travelling abroad even though the risk of infection may be high. It can, however, be wise to bring along an antibiotic (for instance, ciprofloxacin 500mg x 2 per day for 5-7 days) in the event of diarrhoea. «Imodium» (anti-diarrhoea drug) is an alternative. A doctor or hospital should be contacted if the treatment does not work, i.e. if the symptoms last for more than 48 hours, if there is blood in the stools or high fever.

A number of diseases are transmitted by insect bites (for instance malaria, yellow fever). Use of malaria prophylaxis is important. Which malaria drugs that should be taken depend on the destination(s). Vaccination clinics and general practitioners have the necessary information. It is also important to use a good insect repellent, sleep under a mosquito net at night, use long sleeved shirts and trousers after sunset and do not walk barefoot.

Be sure to have the necessary vaccines and documents for the drugs used during travel abroad

What about drugs?

You should take an adequate amount of the drugs you use for HIV and other illnesses with you when you travel. In addition, be sure to have a document from your doctor stating that these drugs are necessary.

Are there countries that refuse entry to persons with HIV infection?

This must be investigated for every country. Most countries do not require an HIV test for a usual three month tourist visa. A number of countries require an HIV test if you are going to study, apply for employment or reside in the country. Some countries accept only tests that are performed in the country for which the residence application applies.

Travel insurance

I many cases regular travel insurance will be sufficient for persons with HIV infection. However, regular travel insurance does not cover expenses related to chronic diseases that you know about and that require treatment at the time of departure. It is possible to sign an additional insurance that covers medical expenses in the case of a worsening of an exist-

ing illness. The need for an additional insurance must be clarified with the insurance company for every individual case. Norway has an agreement with the European Union (EU) whereby Norwegian citizens will get the same treatment and pay the same costs for medical services as the citizens in EU countries. In order to get these benefits when travelling to EU countries you must present a special European Health Insurance Card. This card can be obtained through the National Social Insurance Office («Trygdeetaten»).

Vaccination

See the chapter on Vaccination for travel to foreign countries.

VACCINES

Recommended vaccines

Take relevant vaccines for other illnesses as soon as possible after testing positive for HIV

It can be difficult for persons with a weakened immune response to get the full effect of vaccines because they do not make antibodies against the illness for which the vaccine is designed. It may therefore be wise to take the vaccines one may need in the future as soon as possible after one has tested positive for HIV while the immune response is still strong. This applies especially to hepatitis A and B vaccines in addition to the pneumococcus vaccine (against a bacterium that can cause serious pneumonia). These are vaccines that are safe to take. It is recommended to take the influenza vaccine every autumn.

Vaccines that should not be taken without careful consideration

Decide which travel vaccines are necessary with your doctor

Some vaccines are dangerous for those with a weakened immune response. This applies especially to the tuberculosis vaccine (BCG), the triple vaccine against measles, mumps and rubella (MMR) and yellow fever (for travel to certain countries in Africa and South America). These are «live virus» vaccines and can cause illness among those with weakened immune responses.

Vaccination for travel to foreign countries

It is recommended to take a refill dose (booster) against diphtheria and tetanus. The polio vaccine administered as an injection is also recom-

mended. When travelling to countries where typhoid fever is a risk it is recommended to take the vaccine given as an injection.

The vaccines required are dependent on the countries to be visited. This can be determined by your doctor. If this is not possible, inform the vaccination clinic about your HIV infection.

Remember that it often takes many weeks after vaccination before enough antibodies are made to protect against illness. Therefore do not wait until the last minute.

ALTERNATIVE TREATMENT

Alternative treatment refers to methods that are not included in «classical» medicine.

There are numerous forms of alternative treatment and combinations of several types are often used. Many using such treatments experience better health and well-being but the improvement is difficult to measure scientifically.

Traditional remedies

The use of traditional remedies is very common in many cultures and has grown also in Norway. Many herbs are known to be able to relieve symptoms but are used most often to improve health in general. It is claimed that a number of herbs can strengthen the immune response but the effect is difficult to measure.

A number of herbs contain potent components that can be poisonous and harmful if taken in large doses. Herbal remedies can also be dangerous if taken simultaneously with HIV drugs. Persons taking HIV drugs must not take traditional remedies without consulting an herbalist and their doctor.

Homeopathy

Homeopathy is based on the principle that «like cures like». Natural substances that would be harmful in large doses are diluted and used. These

Many using traditional treatments experience better health and well-being but the improvement is difficult to measure scientifically

substances are taken in order to cure symptoms that they would otherwise cause. Homeopathic drugs include a number of minerals, vitamins and animal products. Homeopathic drugs must be adjusted for the individual patient and their symptoms by a homeopath.

Acupuncture

Acupuncture is a very old medical method that was developed in China many thousands of years ago. Needles of different thicknesses and lengths are stuck into the body at specific places. Acupuncture has been widely used in the western world during the past 30 years.

In conjunction to HIV infection, acupuncture is used for neuropathy, other pains and fatigue. The method is also used to strengthen the immune response.

FOOD AND NUTRITION

The National Council for Nutrition has given out a brochure providing general recommendations for good nutrition (see the section on Information brochures at the end of the booklet). In brief it is recommended to eat a lot of fruits and vegetables. Whole corn products and fish are also good. The consumption of fat, sugar, salt and alcohol should be limited. A good and balanced diet strengthens health.

A person with HIV infection experiencing illness or the side effects of drugs may need extra supplements. This may be a result of nausea/loss of appetite, vomiting, diarrhoea or other digestive conditions that reduce the absorption of important food stuffs. When the immune response fails, loss of appetite can lead to reduced absorption of nutrients, increased weight loss and degeneration of muscles.

Illness or the side effects of HIV drugs can reduce the absorption of nutrients. Therefore it may be necessary to take larger dose of vitamins and other supplements than recommended on the packages. It is, however, important not to take too many vitamin and supplements. A number of different supplements available contain the same substances and it therefore possible to take too much. This applies especially to certain vitamins.

It is difficult to give general advice regarding food and nutrition for the different symptoms and afflictions that may arise as a result of HIV infection. Below is some good advice for common symptoms. Many larger hospitals have nutritionists and it is possible to request an appointment for special advice if needed.

Good advice for loss of appetite:

- Eat small portions frequently
- Make simple, attractive, colourful food
- Choose food that is rich in protein and energy
- Eat small snacks between meals (for example, nuts, cheese and dried fruit)
- Nutritious drinks can be made at home or purchased at the drug store.

Source: The Norwegian Cancer Society

Good advice for diarrhoea:

- Drink a lot, at last two litres every day. Lost fluids must be replaced
- Choose lean and easily digested food
- Choose boiled or baked rather than fried meals
- Rice, pasta, boiled vegetables, canned fruits and yoghurt are good, avoid foods with a lot of fibre (beans, peas, cabbage, etc.)
- Avoid sweat milk.

Source: The Norwegian Cancer Society

Good advice for nausea:

- Eat small portions frequently; nausea may worsen on an empty stomach
- Choose food with little fat (fruit, vegetables, fish and lean meat)
- Dry food such as biscuits and white bread are good
- Sour food (pickles, candy, water with lemon, fruit and yoghurt) may reduce nausea
- Avoid fried foods
- Avoid spicy food and food with an intense aroma.

Source: The Norwegian Cancer Society

RULES AND RIGHTS

Social insurance rights and social assistance

A person with HIV infection has a chronic complex disease. This gives the right to benefits from health and disability insurance, rehabilitation and social assistance according to the existing regulations as for other chronic diseases.

According to Norwegian legislation, persons with HIV infection have the right to medical care at no cost for everything related to HIV infection. Diseases and symptoms that may or may not be a consequence of HIV infection must be discussed with the doctor.

According to Norwegian legislation, persons with HIV infection have the right to medical care at no cost for everything related to HIV infection

If a person with HIV infection has expenses in conjunction with a chronic disease that is not covered by the health system, there are additional regulations stating that social insurance services can contribute to covering such expenses. A list of such expenses and a letter of recommendation from the doctor stating that the expenses are necessary must be presented for reimbursement. Expenses for which it is possible to apply include extra expenses for bedding and night clothes due to night sweating, or creams, salves and other skin care products for eczema and extra dry skin. Expenses for supplements are not covered.

It is possible to apply for a basic assistance to cover extra expenses that are expected within the next few years. It is also possible to apply for assistance in the home if supervision and care become necessary.

Dental expenses are also covered by national social insurance. Persons with HIV infection receive full coverage for oral surgery, preservative dental treatment and periodontitis. Coverage is according to the rates set for public dentist treatment. If a dentist with higher rates is used, the patient must cover the difference in costs. The patient must pay for the dental treatment and thereafter apply for reimbursement from the National Social Insurance Office. It is wise to clarify this with the National Social Insurance Office in advance.

According to the legislation patients with HIV infection have the right to psychological help at no cost. A referral from a medical doctor is necessary and the treatment must be provided by an approved specialist in clinical psychology who has an agreement with the municipality.

Some diseases or symptoms give the right to free physiotherapy.

The Patient's Rights Act

The Patient's Rights Act ensures that everyone living or staying in Norway receives medical assistance and the same access to health services of high quality. The law includes different rights including the patient's right to choose a public hospital, the patient's right to participation and the patient's right to access his/her medical record. Every patient has the right to receive a copy if their own medical record.

The right to information is guaranteed in the Patient´s Right Act

The right to information is also guaranteed in the Patient's Rights Act. This ensures that the patient shall receive the information that is necessary to understand his/her state of health and the content of the medical help. The patient should also be informed of possible risks and side effects of treatment and examinations. The information should be suited to the individual. Consideration shall be given to age, maturity, experience, culture and mother tongue. Health personnel shall ensure to the best of their ability that the patient has understood the content and meaning of the information.

If the patient feels that the regulations in the Patient's Rights Act have not been observed a complaint may be registered. Initially, the patient can encourage the health personnel to comply with the regulations. The patient may register a complaint with the regional medical officer if the health personnel refuse to acknowledge the request or maintain that the regulations have been followed.

There is an Patient ombudsman in every region who will hear and investigate complaints concerning administrative decisions. The Patient ombudsman shall take care of the patient's needs, interest and rights within the

health services. Every patient may contact the Patient ombudsman and request that a case be considered. The Patient ombudsman may also be contacted for information, advice and guidance when needed.

The Infections Disease Control Act includes both rights and responsibilities

Infectious Disease Control Act

The Infectious Disease Control Act divides infectious diseases into two groups; general infectious diseases and infectious diseases of special importance for public health. HIV infection is in the latter category along with the majority of sexually transmitted infections (including syphilis, gonorrhoea, chlamydia and hepatitis B). The law covers among other things the infected person's rights and responsibilities in addition to the health personnel's responsibility to send a report to the Reporting system for infectious diseases.

The rights for the individual include assistance to prevent transmission of the infection to others. With HIV infection this includes adequate access to condoms and clean needles. It can also include necessary assistance for housing, education, employment or rehabilitation. The rights do not necessarily mean that all assistance is free of charge.

General responsibilities are imposed on a person who has reason to believe that he/she is infected with an infectious disease of special importance for public health. These are:

- To contact a doctor for necessary examination
- To provide information that may help to understand the conditions
- regarding the transmission
- To accept personal counselling regarding the infection
- To be isolated if necessary

The regulations for use of isolation are very strict and not usually relevant for HIV infection.

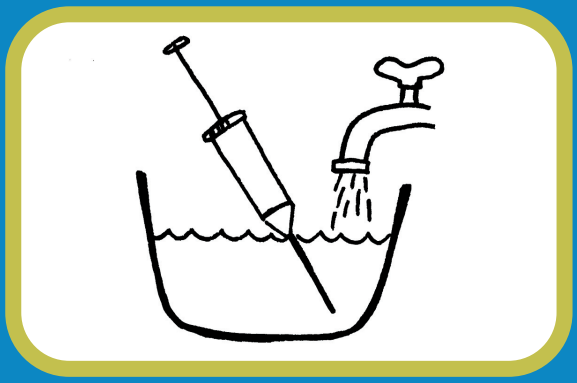
Health personnel are required to notify infectious diseases to the Norwegian Institute of Public Health (Folkehelseinstituttet) and to the municipal medical officer. The report for HIV infection does not include the individual's

name but information about gender, month and year of birth, mode of infection transmission and place of infection. This information is important to follow the development of the epidemic. According to the regulations, AIDS is reported to the Norwegian Institute of Public Health and the municipal medical officer with name and other personal identifiers. The Norwegian Institute of Public Health regularly sends information to a European HIV surveillance centre in Pairs. These reports do not include any information by which a person can be identified.

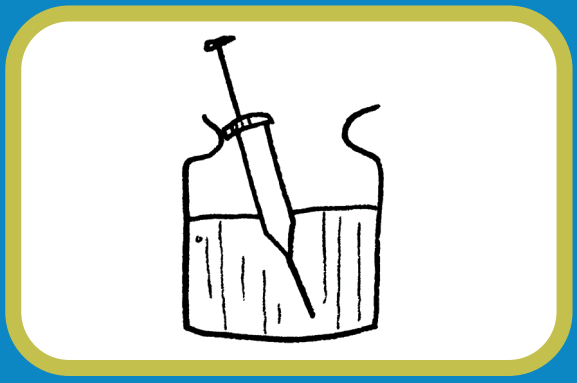
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Cleaning needles

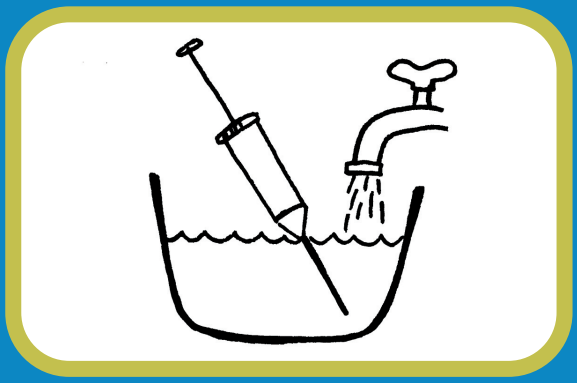
1. RINSE WELL IN COLD WATER. Rinse first with cold water to remove traces of blood. (Warm water will stiffen the blood).



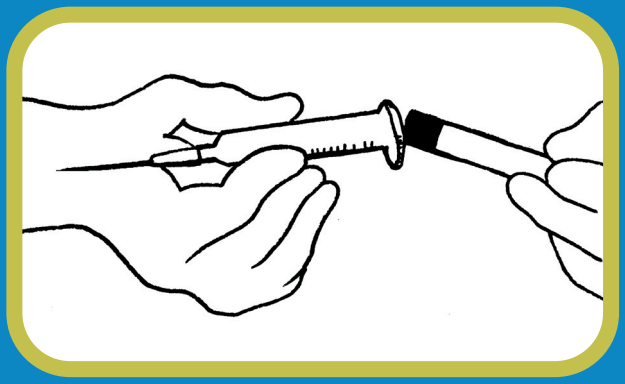
2. FIVE MINUTES IN CHLORINE. Draw chlorine up into the syringe and let it work for five minutes. The chlorine from the syringe should be discarded after use.



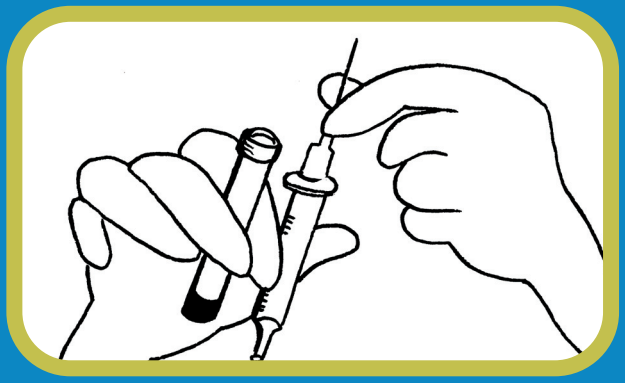
3. RINSE FOUR TIMES IN CLEAN WATER. Finally rinse the syringe four times with clean water.



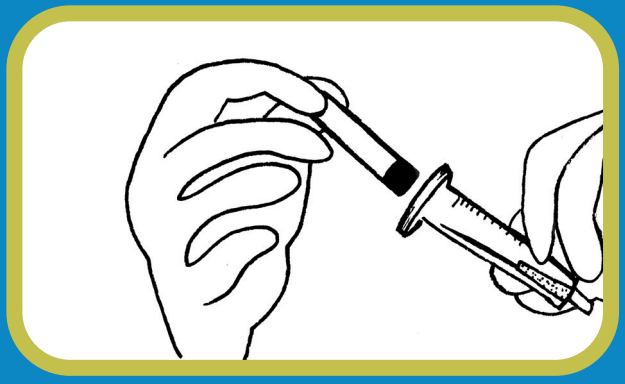
How to discard needles



1. Remove the plunger form the syringe.



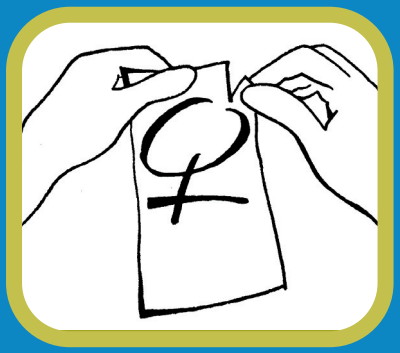
2. Remove the needle and place it in the open syringe.



3. The needle should rest against the plunger as it is carefully put back into the open syringe. Pack the syringe well before discarding the equipment. You may for example use empty milk cartons, hermetic cans or plastic bottles.

How to use femidom

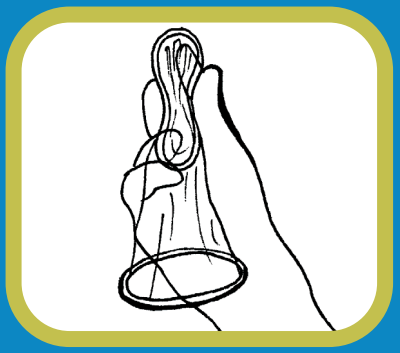
1. Carefully open the package as shown in the diagram.





2. The Femidom has two rings. The outer ring should cover the area surrounding the opening of the vagina. The inner ring that you find in the Femidom ensures that the Femidom stays in place during intercourse.

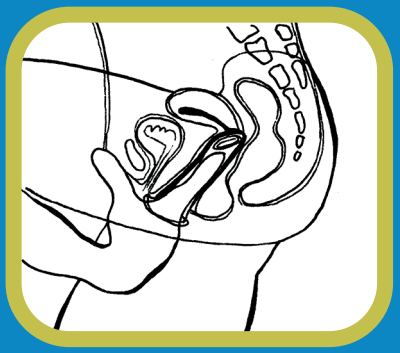
3. Hold the closed end of the Femidom. Press the inner, flexible ring with the thumb, pointing finger and long finger (middle finger) so that the ring becomes long and thin.





4. Place the inner ring carefully in the vagina. Feel that the ring slides in.

5. Place the pointing finger in the Femidom and push the inner ring as far up into the vagina as possible. Make sure that the Femidom is not curled. The outer ring should remain outside the vagina.

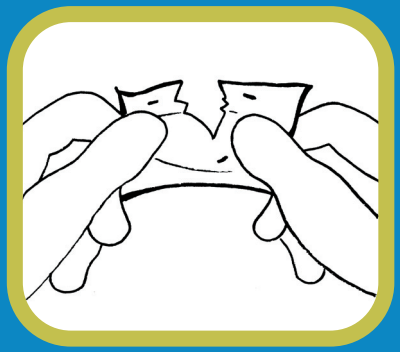




6. Guide your partner's penis with your hand carefully into the opening of the Femidom.

How to use a condom

1. Carefully open the package as shown in the diagram.

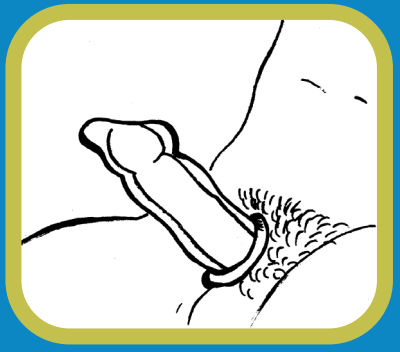




2. Roll the condom out about a half a centimetre and squeeze out the air in the tip between two fingers. This ensures that there will not be an air pocket in the condom and that the semen will be collected in the tip of the condom.

3. Roll the condom on when the penis is erect.





4. The condom must be in place during the entire inter-course to protect against sexually transmitted infections.

5. You should use a lubricant if the vagina is dry or if you practice anal sex.





6. Hold around the condom and pull out of the vagina/ anus while the penis is still erect.

Organizations for persons with HIV and other useful adresses

Aksept – Centre for everyone affected by HIV. (Contact centre for all HIV-positive persons and their next of kin).
Visiting address:
Fagerheimgata 16
PO Box 6590 Rodeløkka
0501 Oslo
Tel: 23121820
Fax: 23131821
E-mail: hivsenter@aksept.org
Internet: www.aksept.org

Ministry of Health and Care Services
Einar Gerhardsens plass 3
PO Box 8011 Dep
0030 Oslo
Tel: 22249090
Internet: www.odin.dep.no/hd/

The Gay Health Committee (Oslo)
Øvre Slottsgate 29, 4th floor
0157 Oslo
Tel: 23357200
Fax: 23357201
E-mail: oslo@helseutvalget.no

HIV Foundation – for help in a difficult situation
c/o Advokatfirmaet Haakonsen & Haaland DA
Munkedamsveien 45
0250 Oslo
Tel: 22834000
E-mail: post@hivfondet.no
Internet: www.hivfondet.no

AIDS Information
Telephone
Tel: 81010200
Monday-Thursday: 17:00-20:00

Clinic for Sexual Information (KSO)
Visiting address:
Trondheimsveien 2, building B
Monday-Thursday: 16:00-20:00
PO Box 6699 Rodeløkka
0560 Oslo
Drop-in:
Monday-Thursday: 16:00-20:00
Discussion telephone: 22993900
Monday-Friday 09:00-15:00
Fax: 23228061
E-mail: ksexo@online.no
Internet:
www.seksuellopplysning.no

Norwegian Institute of Public Health
Geitmyrsveien 75
PO Box 4404 Nydalen
0403 Oslo
Tel: 22042200
Fax: 22248701
Internet: www.fhi.no and
www.fhi.no/nyhetsbrev/aidsinfo

Olafia Clinic (Oslo Municipality) (Clinic for Sexually Transmitted Infections)
Grensen 5-7
0159 Oslo
Drop-in:
Monday 11:45-17:00
Tuesday-Friday: 07:45-11:00
Tel: 22082950
Fax: 22082990
Internet: www.olafia.no

HIVNorway
Hausmannsgate 7
0186 Oslo
Tel: 21314580
Fax: 21314581
E-mail: post@hivnorge.no
Internet: www.hivnorge.no

Directorate for Health and Social Affairs
Universitetsgata 2
PO Box 7000 St Olavs plass
0130 Oslo
Tel: 2416300
Fax: 24163001
Internet: www.shdir.no

Information may be found at

Web sites

AEGIS
AIDS Education Global Information System
A good website about HIV/AIDS that is updated daily
www.aegis.org

UNAIDS
Joint United Nations Programme on HIV/AIDS
An international organisation aimed at strengthening HIV preventive efforts and improving the rights for persons with HIV. The organisation provided recommendations to national authorities concerning strategies and implementation of HIV/AIDS activities.
www.unaids.org

The CDC National Prevention Information Network (NPIN)
www.cdcnpin.org

Strategic Plan

Responsibility and Consideration – A strategy for the prevention of HIV and Sexually Transmitted Diseases
The Norwegian Ministry of Health 2001
www.odin.dep.no/hod/

Information brochures

Brochures may be ordered from the Directorate for Health and Social Affairs, Publications Office
Tel: 24163368 (Tuesday-Thursday: 12:00-14:00)
Fax: 24163369
E-mail: trykksak@shdir.no

Brochures may be ordered from Norwegian Institute of Public Health
Facts about HIV AIDS (available in 14 languages)
E-mail: publikasjon@fhi.no
Tel: 23 40 82 00
Fax: 23 40 81 05
Internett: www.fhi.no/tema/hiv

HIVNorway
Booklet concerning rights (only available in Norwegian)
May be ordered from HIVNorway
Hausmannsgate 7
0186 Oslo
Tel: 21314580
E-mail: post@hivnorge.no
HIVNorway also employs a lawyer who works especially with issues concerning a person's rights

KEY WORD LIST

Acupuncture 35
Advanced HIV infection 18, 19, 22, 50
AIDS 6, 16, 17, 40, 46, 47
Alternative treatment 34, 35, 50
Amylase 21, 50
Assistance to prevent transmission 40
AZT 24
Blood platelets 21, 51
Blood tests 20, 21, 23, 26
CD4 cells 50
Cholesterol 21, 50
Condom 30, 31, 40, 45
Contacts 9, 16, 50
Creatinine 21, 50
Cytomegalovirus 18, 20, 50
Dentist 10, 38
DNA 12, 50
Enzymes 25
Femidom 30, 44
Fungal infections 17
Fusion inhibitors 24, 50
Genetic material 12, 50
HAART 22
HIV (definition) 6, 12
HIV infection 6, 16, 17, 18, 19
HIV test 6, 7, 8, 9, 27, 33
Homeopathy 35
Immune response 12, 14, 15
Infected 6, 7, 8, 9, 13, 14, 15, 17, 18, 27, 28, 30, 31, 32, 40
Infectious diseases 40, 50
Infectious diseases of special importance for public health 40, 50
Informed consent 6, 8
Lentivirus 12, 50
Microbes 7, 15, 18, 20
Mutations 25, 31, 32
Needles 14, 17, 40, 42, 43
NNRTI 24
NRTI 24
Nutrition 36
Opportunistic infections 15, 18, 51
Patient's Rights Act 8, 39
Pledge of confidentiality 10
PCP 18, 51
PEP treatment 28, 51
Pneumococcus vaccine 34
PI 24
Potent components 35
Pregnancy 6, 14, 23, 26, 27
Protein in urine 21
Primary HIV infection 16, 51

Psychological help 39
Reinfection 32
Resistance 20, 23, 25, 31, 51
Retrovir 24
Retrovirus 12, 51
Reverse process 12, 51
RNA 12, 50, 51
Sedimentation rate 21
Sex life 9, 30
Sexually transmitted infections 46, 47
Shingles 17, 50
Side effects 8, 19, 21, 22, 23, 24, 25, 26, 28, 29, 36, 39, 51
Skin problems 17
Social assistance 38
Social insurance rights 38
Supplements 36, 38
T-lymphocytes 14, 50
Toxoplasmosis 18, 20, 51
Traditional remedies 10, 26, 35
Travel 32, 34
Travel insurance 33
Treatment schedule 24
Tricomonas vaginalis 21, 51
Triglycerides 21, 51
Tuberculosis 17, 18, 34, 51
Vaccination 10, 34
Vaccines10, 34
Vaginal infections 14, 51
Virus 6, 7, 12, 13, 14, 15, 16, 18, 22, 25, 27, 28, 30, 31, 32, 50, 51
Viral load 22, 23, 25, 51
Vitamin B12 21
White blood cells 14, 21, 51

GLOSSARY

Alternative treatment: treatment not included in classical medicine. Alternative treatment includes the use of herbs, homeopathy, acupuncture etc.

Amylase: an enzyme that is produced in the pancreas and is necessary for the metabolism of starch

Antigen: something that the immune response recognizes as foreign and destroys, for example bacteria

Antibody: a protein that is made by the immune system in response to a foreign substance (antigen) in order to destroy it

Asymptomatic: without symptoms

Bacteria: single celled organisms; some may cause disease

Bone marrow: a tissue found in long bones and ribs that produce red and white blood cells

«Cocktail»: a selected combination of drugs used to treat HIV infection

CD: Cluster determinant

CD4: a molecule on the surface of some cells that enables HIV to bind and enter the cell

CD4-cell: a cell with the CD4 surface molecule

CD4-number: the number of CD4 cells per millilitre blood; the number provides information about the strength of the immune response

CMV: cytomegalovirus; a virus that may cause serious illness and blindness in persons with advanced HIV infection

Cholesterol: a fat-like substance produced by the liver; important for the production of hormones and for the development of cell walls

Contacts: all who have been at risk of contracting an infectious disease

DNA: deoxyribonucleic acid; the genetic material of nearly all living organisms that controls heredity

Enzyme: a protein that promotes chemical reactions

Fusion inhibitors: drugs that inhibit or block HIV from binding to cells

HAART: Highly Active Antiretroviral Therapy; term for a specific HIV treatment regime

Haemoglobin: Hgb; a red coloured substance iron-containing substance found in red blood cells that binds to and transports oxygen.

Hepatitis: liver infection/jaundice

Herpes simplex: a virus that causes sores on the mouth (cold sores) or genitals

Kaposi's sarcoma: tumours found on the skin, mucous membranes or internal organs arising from cancer in the blood vessels

Lentivirus: comes from the word «lente» meaning «slow»; a virus that uses a long time to cause disease

Lymphocytes: a type of white blood cell; to subgroups are called B- and T-lymphocytes

Lymphoma: cancer of the lymph glands

Molecule: a substance made up of one, two or more atoms

Mutation: a change in the genetic material of an organism

Nucleotides: the «building blocks» of DNA and RNA

Nucleotide/nucleoside analogue: a chemical substance that resembles a nucleotide/nucleoside

Opportunistic infection (OI): infections that cause illness in persons with a weakened immune response; caused most often by organisms that do not cause problems among healthy persons

PCP: Pneumocystis carinii pneumonia; a lung infection (pneumonia) cause by a fungus (*Pneumocystis carinii*) in persons with a seriously weakened immune response

PEP: Post Exposure Prophylaxis; preventive treatment that is given to prevent infection following risk of exposure

Pneumococcus: the bacterium associated with pneumonia

Primary HIV infection: influenza-like symptoms that occur two to four weeks after infection among more than 50% of persons infected with HIV

Prophylactic: preventive measures/treatment

Protozoa: numerous different types of single celled organisms; many can cause illness in humans

Resistant: a organism that is unaffected and can no longer be treated with a particular drug(s)

Retrovirus: a large group of viruses that can cause different diseases in humans; HIV is a retrovirus

Reverse transcriptase: an enzyme that changes the genetic material RNA to DNA

Reverse process: occurs when RNA (the genetic material in HIV) with the help of an enzyme reverse transcriptase, is changed to DNA (the human genetic material)

RNA: ribonucleic acid; builds proteins in the cells based on the DNA pattern and is the genetic material of some viruses

Sexually transmitted infections (STI): infections that usually are transmitted by sexual intercourse or other sexual contact

Serum: a clear fluid in blood without cells that contains antibodies and other chemical substances

Shingles: a painful skin disease with blisters caused by herpes zoster; caused by the reactivation of chicken pox virus and occurs most often among the elderly and in persons with a weakened immune response.

Side effects: unintended effects (often negative) of a drug taken in the recommended dose

Strains or subtypes: HIV exists in many strains or subtypes with different distributions worldwide; different strains or subtypes can be found in most countries

Symptomatic: to have signs of disease

Symptomatic treatment: to treat the symptoms and not the cause of disease

Syndrome: a group of symptoms characteristic of a particular disease or condition

T-cell: one group of lymphocytes belonging to white blood cells

T4-cell: helper cell; a group of lymphocytes that warn the immune system about infections; HIV attacks and destroys T4-cells

Toxoplasmosis: an illness causes by the parasite *Toxoplasma gondii* that can result in inflammation of the brain in person with a seriously weakened immune response

Trichomonas vaginalis: a protozoa that causes vagnitis (vaginal infection) among women; transmitted sexually; Infrequent among women in Norway but common worldwide

Triglycerides: the «building blocks» of fat

Thrombocytopenia: low number of thrombocytes; can occur with HIV infection

Thrombocytes: blood platelets; a type of blood cell that is important for the clotting (coagulation) of blood

Tuberculosis: an illness caused by the tuberculosis bacterium (*Mycobacterium tuberculosis*)

Virus: a micro organism that can only reproduce in living cells

Viral load: number of virus particles in a micro litre of blood

Western blot: a test that can be used to detect antibodies specific for a particular infection, for example HIV

White blood cells: a group of cells that are a central part of the immune system



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