



# PREVENTION & TREATMENT

A SUMMARY OF KEY FACTS

hepatitis

Protect yourself!



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# I. Hepatitis

## GENERAL INFORMATION

### **Hepatitis (inflammation of the liver)**

Hepatitis is also often called jaundice. This is misleading because the yellowing of the skin is merely one of many symptoms of the disease, which does not occur with every form of hepatitis and can also be observed in the case of other diseases.

### **Causes of hepatitis**

- In industrialized countries the various forms of hepatitis are most commonly caused by excessive alcohol consumption.
- The second most common cause of hepatitis is as the result of an infection with a hepatitis virus.
- An increasingly frequent cause of inflammation of the liver is fatty deposits caused by being overweight or having a poor diet.

For all types of hepatitis, the following applies:  
Hepatitis viruses need the cells of the human liver as their host.

### **Progression forms of viral hepatitis**

- Acute infection often develops unnoticed, or may be associated with exhaustion, nausea, vomiting and pain in the right upper abdomen.
- Chronic infection persists over many years and can lead to cirrhosis of the liver; the liver forms scar tissue to replace dead liver tissue (with increasing impairment of liver function), or liver cancer (carcinoma of the liver cells) may develop.
- Advanced cirrhosis of the liver means severe disruption of liver function, and can result in disease patterns with very wide-ranging symptoms.

## **Detection of viral infections**

In cases of suspected viral hepatitis the treating physician will initially make a simple primary diagnosis. This will include a blood test for the detection of antibodies, which the immune system has formed in response to the virus and/or the direct detection of viral components.

## **Who should be tested for hepatitis?**

- In general, hepatitis tests should be conducted on anyone exhibiting possible symptoms of the disease, such as yellowing of the skin, fatigue, and nausea.
- The infection rates for hepatitis diseases are high among drug users. The earlier an infection is discovered and treated, the better the chances of recovery.

### Recommendations

Each drug user should be tested for hepatitis A, B and C, and in the case of negative results and ongoing risky behaviour, each drug user should be screened once annually (screening for antibodies). The tests can be used to detect the various categories of antibodies.

→ More information in the Manual, Chapter I

## VACCINATION

There is both an active and a passive immunization against hepatitis A and B. There is no vaccination against hepatitis C to date. Combined hepatitis A and hepatitis B vaccinations do exist. They are usually administered at zero time, after one month, and after six months and have been shown to be highly effective ( $\geq 90\%$ ).

### **Vaccination against hepatitis A**

The vaccination is recommended for:

- Drug users
- Any personnel coming into close contact with drug users or with persons from at-risk regions
- Travellers to endemic zones (→visit [www.safetravel.ch](http://www.safetravel.ch) for a list of corresponding countries)
- Children residing in Switzerland and originally from endemic areas, who are travelling to their home countries
- Men who have sex with men
- Persons with chronic hepatitis, especially hepatitis C
- Persons with HIV, HCV and HBV coinfections

### **Vaccination against hepatitis B**

The vaccination has been recommended for all 11- to 15-year-olds in Switzerland since 1998. Its vaccination is preventive in nature in order to minimize the risk of infection with the onset of sexual activity. The vaccination is recommended for the other age groups in the following situations:

- Health care personnel coming into contact with blood or possibly infected bodily fluids, soiled or contaminated objects, and infectious materials
- Social workers, prison and police personnel, coming into frequent contact with drug users
- Drug users
- Persons who frequently change sexual partners
- Persons living in the same household with or having sexual contact with virus carriers (HBs antigen)

- Persons originally from at-risk areas (Africa, Asia, Oceania, certain regions of South America) (→ visit [www.safetravel.ch](http://www.safetravel.ch) for a list of corresponding countries)
- Travellers to endemic zones who will come into close contact with the local population (extended stay or risky behaviours)
- Persons with reduced immunofunction (immunocompromised persons), patients with artificial kidneys (patients with hemolytic anaemia), hemophiliacs
- Persons with chronic hepatitis C
- HIV/HCV coinfecting persons

## OVERVIEW OF THE 5 FORMS OF VIRAL HEPATITIS

|                        | Hepatitis A   | Hepatitis B   | Hepatitis C   | Hepatitis D   | Hepatitis E   |
|------------------------|---|---|---|---|---|
| Route of transmission  | <b>oral</b><br>Fecal contamination of water, food or people | <b>percutaneous/per mucosal</b><br>Contaminated blood, unprotected sexual intercourse, from the mother to her newborn | <b>percutaneous/per mucosal</b><br>Contaminated blood                                   | <b>percutaneous/per mucosal</b><br>Like hep B and only found in conjunction with hep B (coinfection or superinfection)* | <b>oral</b><br>Like hep A                               |
| Incubation time        | 15–50 days  | 1–6 months  | 50 days–6 months  | 1–6 months  | 15–50 days  |
| Progression            | Symptoms in 50–70 % of those affected (nausea, etc.)        | Very different, depending on age  | Usually without symptoms, long-term effects are cirrhosis of the liver and liver cancer | Like hep B  | Like hep A; progression can be severe in pregnant women |
| Acute hepatitis        | Yes   | In 50–70 % of all infections in the adult age group   | Rare (in 5–10 % of those affected)  | Yes   | Yes   |
| Chronic hepatitis      | Never   | In 5 % of adults and 90 % of children during birth  | In 70–80 % of those affected  | Yes   | Never   |
| Reinfection            | No  | No  | Yes   | No  | No  |
| Preventive vaccination | Yes   | Adults 3/adolescents 2 injections; also protects against hep D  | No  | Yes. Vaccination against hep B also protects against hep D  | Yes   |
| Treatment              | No  | Anti-viral medications and interferon; varying success rates < 50 %   | Interferon and ribavirin; 50–90 % successful  | Interferon and anti-viral medications; low success rates  | No  |

\* When an infection with both viruses occurs at the same time or when a person with hepatitis B becomes infected with hepatitis D as well.

## II. Prevention

### HAND HYGIENE

Pathogens are often spread through unwashed hands. Therefore, special attention should be paid to hand hygiene especially in the milieu of illegal drugs. This applies equally to personnel and clientele. An advice sheet with the key information should be available in every establishment.

#### **Why should you wash your hands?**

- Pathogens (viruses and bacteria) are tiny and are often not visible to the naked eye. Some of these pathogens can, for example, cause diarrhoea, colds or more serious, sometimes life-threatening illnesses.
- Most germs are removed by washing the hands thoroughly using soap.
- Pathogens can get into your body when you touch your nose, mouth or open wounds with unwashed hands.

Employees of the health care system (private practices, hospitals, etc.) are professionally obligated to pay special attention to washing their hands. You should make washing your hands a high priority!

#### **When should you wash your hands?**

- Before and after each intravenous drug use
- After each time you come into contact with your own blood, someone else's blood or any blood-contaminated surfaces
- When you get home
- Before you prepare or eat any meal
- Before you put in or take out your contact lenses
- After touching uncooked foods (especially fish, meat or poultry)

- After each time you use the toilet and/or any time you come into contact with your own stool or someone else's
- After intensive contact with animals (petting)

Use alkali-free soap with a pH value of 5.5 in order to avoid damaging the protective acid mantle of the skin.

**How do you wash your hands properly?**

- Use soap and warm, running water.
- Wash the entire surface of your hand, the palm of your hand, and the back side of your hand; wash your fingers and also under your finger nails, if necessary.
- Rub your hands together for at least 10 to 15 seconds.
- When drying your hands, use only a clean towel; use only disposable paper towels when using a public toilet. Instead of rubbing down your hands, it is better to dab them dry in order to avoid placing too much stress on the skin.
- After washing your hands do not use your clean hands to touch the tap (which is covered with germs). Instead, use a paper towel to cover it and turn it off.
- Take care of your hands regularly with hand lotion in order to prevent them from getting too dry.

→ More information in the Manual, Chapter II

## SPREADING VARIOUS PATHOGENS

Hepatitis and HIV viruses can be spread in a number of different ways:

|   | Hepatitis |    |     |    |   | HIV |
|---|-----------|----|-----|----|---|-----|
|   | A         | B  | C   | D  | E |     |
| Contact and smear infection (passing stools)        | ■         | -  | -   | -  | ■ | -   |
| Droplet infection (coughing, sneezing)              | -         | -  | -   | -  | - | -   |
| Via foodstuffs and water                            | ■         | -  | -   | -  | ■ | -   |
| Via blood   | ■         | ■  | ■   | ■  | - | ■   |
| Via sperm and vaginal fluid                         | -         | ■  | (■) | ■  | - | ■   |
| Via saliva  | -         | -  | -   | -  | - | -   |
| Via the hands and intermediate hosts                | ■         | -  | -   | -  | ■ | -   |
| Via objects (injection materials, inhalation pipes) | ■         | ■* | ■*  | ■* | ■ | ■** |

Hepatitis B and C viruses can survive for a number of days exposed to the air in the smallest amounts of dried blood.

\* contaminated (=infected) objects coming into contact with injured skin or injured mucosa can transmit hepatitis B, C and D (syringes, spoons, filters, etc.).

\*\* especially needles!

### **Safer sex**

- During sexual intercourse involving penetration – whether vaginal or anal – always use a good-quality condom; always use lubrication for anal penetration.
- Do not take any sperm into your mouth, do not swallow any sperm.
- Do not take any menstrual blood into your mouth, do not swallow any menstrual blood.
- Sex workers: Always use a condom, even during oral sex (to avoid sexually transmitted diseases).

→ More information in the Manual, Chapter II

## RULES OF USE

### **General information**

- Hepatitis viruses A, B and C are more easily transmitted and more widespread than the HIV virus, for example.
- If the rules of use given below are strictly followed, the spreading of hepatitis and of other infections directly related to drug use can be limited to a significant extent, and infection can be avoided with a high degree of certainty.
- Drug users must also become sensitized to so-called *blood awareness*. Blood – even dried blood, even in the tiniest amounts – can be fundamentally contaminated and must therefore always be treated as infectious  
→ Fact sheet on „blood awareness“
- The rules of use are to be communicated to clients in an appropriate manner and with suitable emphasis. Drug users should also be encouraged to follow these rules when away from the supervised consumption rooms.  
→ Fact sheet on injection

### **Intravenous drug use**

- Only with one's own, new, sterile syringes, needles and filters and using thoroughly cleaned equipment (water containers and spoons).
- Wash hands thoroughly before and after any use of drugs.
- Transferring by either frontloading or backloading only with one's own, new, sterile syringes, needles and filters each time.
- Water containers and spoons must be washed very thoroughly. Pathogens, which can remain infectious for a long time, can get stuck on them following multiple uses.

- Any type of filter should only be used once. This also applies to cases where there may still be some of the drug left in the filter (no "cotton shots"). Used filters contain blood residue, which are often home to viruses and large cultures of bacteria, which reproduce rapidly especially at body temperature (e.g. when the filter is carried in a trouser pocket).

The fundamental rule is: always use your own, sterile equipment if injecting or inhaling!

## **Smoking**

- Wash hands thoroughly before and after any use of drugs.
- No shared use of pipes for inhaling (risk of injury).
- When "freebasing", do not share pipes, and use your own mouthpiece.
- When "freebasing", use sodium bicarbonate

The fundamental rule is: the Hepatitis C virus can be transmitted by smoking!

## **Snorting**

- Disinfect the surface on which the *lines* will be prepared.
- Make sure to use your own tube or straw when inhaling or snorting drugs and do not share it.
- Never use rolled up bank notes.
- If a snorting person has injured nasal mucosa, then the tube or straw (even rolled up bank note) that he or she uses can become contaminated with blood, which could contain the hepatitis B or C viruses. These viruses can be transmitted to anyone sharing the tube, straw or bank note.

The fundamental rule is: the Hepatitis C virus can be transmitted by snorting!

## Disposal of the materials for drug use

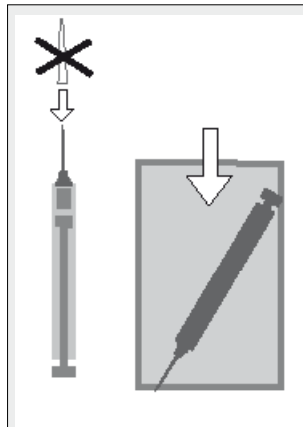
All materials used for drug use must be disposed of quickly and in the safest possible manner.

### Non-sharps

- Used swabs or pads, filters, etc. must be disposed of in a container intended for this purpose.

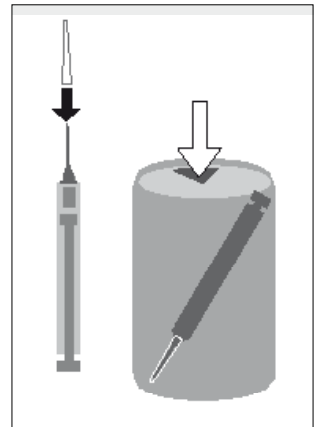
### Sharps

Medical settings  
(including the consumption  
rooms):



**Do not replace** the plastic cap on a used cannula (needle). Cannulas together with the syringes must be able to be disposed of on-site in puncture-proof, unbreakable containers

Following injections outside  
of supervised (consumption  
rooms):



**Always replace** the plastic cap on a used cannula and dispose of it together with the syringe in sturdy containers (e.g. empty aluminum cans) and dispose of the whole thing in the normal manner with the other refuse.

→ More information in the Manual, Chapter II

## POST-EXPOSURE-PROPHYLAXIS (PEP)

### ***In the workplace***

- Persons whose work involves a lot of contact with infected blood should get vaccinated for hepatitis B and an HBsAb titer test should be run in order to prove that the protection provided by the vaccination is sufficient.
- All institutions should be able to quickly access the corresponding information about their employees so that no time is lost for the administration of post-exposure prophylaxis.
- In addition to the hepatitis B vaccination, persons whose work involves contact with intravenous drug users should also be vaccinated against hepatitis A.
- Nowadays there are highly effective medications available for the prevention of an infection with the HI and hepatitis B viruses. PEP must be applied as soon as possible following the contact with blood.
- Active vaccination is possible for hepatitis A.
- There is no PEP for hepatitis C.

Each workplace must designate a physician to whom the employees can report in cases in which they have been exposed to potentially infected materials or any other risk of infection (puncture wounds or bites).

The immediate administration of a post-exposure prophylaxis (e.g. active and passive immunization) may be indicated.

## AT-RISK SITUATIONS

In cases of

- needle puncture wounds
- bites
- injured skin (eczema, wound, etc.) coming into contact with blood
- the mucosa coming into contact with blood

the general practitioner or emergency physician or specialized HIV hotline must be contacted right away in order to discuss how to proceed.

### **Measures**

- Wherever possible, a blood sample should be taken from the index patient that may have infected the exposed person in order to perform HIV, hepatitis C, and hepatitis B tests. His/her personal details should also be recorded.
- Even if a person refuses the post-exposure prophylaxis, a physician must be sought as soon as possible to take a blood sample for insurance-related and legal reasons.
- Blood tests must be repeated after 3 months and after 6 months. In the meantime the person affected is to be treated as possibly infected and therefore possibly contagious.

→ More information in the Manual, Chapter II

# III. Treatment

## UNDERGOING TREATMENT

- The prospects for successful treatment of viral hepatitis diseases in drug users are similar to those for patients who do not suffer from an addictive disorder. However, the treatment should be administered by doctors or in medical establishments, where they have experience and the necessary knowledge of diseases relating to addiction and also of the particular problems associated with viral hepatitis infections.
- Providing information consistently to the individual and explaining to hepatitis C-positive drug users about treatment is vital.
- A key aim of the treatment is the elimination of the hepatitis C viruses, as a result of which the possible consequences of the infection, particularly chronic progressive liver damage, can be prevented or stopped.
- There are four subgroups of the hepatitis C virus in Western Europe (genotypes 1 to 4). The success rate of treatment for genotypes 2 and 3 is between 70% and 90%. For genotype 1 a full recovery is achieved in around 50% of cases, and the figure for the relatively rare genotype 4 is somewhat higher.

### **Indication**

According to our present state of knowledge, the following criteria are to be taken into account when deciding to carry out a hepatitis C treatment:

1. The virus (HCV RNA) is detectable in the blood and the indication is found in the histology, i.e. portal fibrosis and septa are detectable.
2. There are no contraindications, such as uncontrolled depression or psychosis, advanced heart, lung or neurological diseases, uncontrolled alcohol abuse or intravenous drug use.

3. The patient is informed about the prospects of success of the treatment, the potential side effects and the risks of the disease progressing if the therapy is not carefully followed.
4. The ability of the patient to adhere to the therapy and the follow-up appointments, and/or creation of a setting that promotes adherence for the administration of the therapy.

Further points to be noted:

- It is recommended to combine a hepatitis C therapy with an opiate replacement therapy and corresponding counseling, wherever possible. It is often useful to temporarily increase the methadone or heroin dosage during therapy.
- Hepatitis C therapy, while undergoing drug withdrawal treatment or less than 6 months thereafter, is contraindicated due to the high rate of relapse.
- Hepatitis C therapy is feasible for prison inmates and long-term in-patient situations. Adherence to therapy and follow-up appointments is especially well ensured in such settings.

Treatment can be given in instances of sporadic incidental drug use under hygienically appropriate conditions and where the quantities involved do not occasion any cognitive impairment.

In the case of persistent, uncontrolled, intravenous, inhalation-based or pernasal drug use, the advice is not to administer a treatment.

## TREATMENT OF CHRONIC HEPATITIS C

- Chronic hepatitis C is currently treated with a combination of pegylated interferon and ribavirin. The pegylated interferon is injected subcutaneously once every week. The injection can be performed by the patient or a qualified person after receiving the corresponding training.
- Depending on the genotype of the hepatitis virus, the period of treatment is 24 or 48 weeks.

For treatment, the following points should be taken into account:

- Patients must be aware that the hepatitis C treatment is a long-term treatment which requires regular follow-up. They should attend a consultation at least once a month.
- Treatment given to drug users often progresses poorly, above all due to the mental side effects. Therefore, a physician-patient relationship based on trust is important.

For patients with unstable psychiatric disorders, any possible treatment should be undertaken in specialist centres/practices with training in dealing with psychological problems.

## SIDE EFFECTS

The appearance and extent of side effects vary widely from person to person. Most side effects occur in the first four weeks of the treatment and often diminish gradually over the course of the treatment.

### ***Somatic side effects***

- Flu-like symptoms most commonly occur within several hours of the interferon injections, including fever, headache, fatigue, sore muscles, joints, and limbs. These can be readily treated preventively by administering a cold remedy (paracetamol, 500 mg, 30-60 minutes prior to the interferon injection).
- Fatigue, which will decrease during the course of the therapy and will not completely disappear until the conclusion of treatment.
- Nausea, often occurring when first taking ribavirin, can be handled with medicinal treatment.

### ***Psychic side effects of interferon***

- Irritability, mood-swings
- Depression
- Sleep disorders
- Anxiety, manic behaviour
- Cognitive disorders (memory, concentration, occasionally confused states)

→ More information in the Manual, Chapter III

# IV. Appendix

## AN OVERVIEW

### **Hygiene**

Pathogens are often spread through unwashed hands. That is why you should always be sure to wash your hands thoroughly.

→ Chapter II. 1.1

### **Develop blood awareness**

Blood can always be contaminated with hepatitis and HI viruses and should therefore always be treated as potentially infectious. The rule of thumb here: pay special attention to even the smallest amounts of residual blood – even dried blood – and not just during intravenous drug use.

→ Chapter II.1.3 | Fact Sheet on Blood Awareness

### **Drug users should always use their own sterile materials**

A sufficient supply of sterile injection materials must be on hand and available 24 hours a day. It should be noted here that intravenous cocaine users have especially substantial needs.

When setting up for intravenous injection: Be sure to use a clean surface. Use your own sterile syringe and needle, your own filter, your own spoon, and your own water. Disinfect the insertion site with alcohol prior to injection.

→ Fact Sheet on Injection

When snorting: Be sure to use a clean surface. Use your own tube or straw.

When smoking or freebasing: Use your own tube or straw and your own mouthpiece.

→ Chapters II.2.3 and 2.4

### **Clean injection technique**

- Wash hands thoroughly.
- Use a sterile syringe with a filter or use a piece of your own cigarette filter, if necessary. Do not remove the cigarette filter with your teeth after use, but instead use your washed hands.
- Do not share/loan/pass along the filter.
- Use your own spoon. Clean it thoroughly before use (with water, with disinfecting wipe).

- Use sterile water or – if not available – use fresh water directly from the tap.  
→ Chapter II.2.2

### **Safer sex**

- During sexual intercourse involving penetration – whether vaginal or anal – always use a good-quality condom; always use lubrication for anal penetration.
- Do not take any sperm into your mouth, do not swallow any sperm.
- Do not take any menstrual blood into your mouth, do not swallow any menstrual blood.
- Sex workers: Always use a condom, even during oral sex (to avoid sexually transmitted diseases).  
→ Chapter II.1.4

### **Get vaccinated**

- You can get vaccinated against hepatitis A and B.
- There is no vaccination against hepatitis C and HIV.  
→ Chapter I.2.7

### **Get tested**

Hepatitis-contaminated injections often go unnoticed (no symptoms). But the earlier a contaminated injection is discovered and treated, the better your chances of recovery. As a result, it is important to get tested.  
→ Chapter I.2

### **Get treated**

The chances of success in the treatment of hepatitis viruses among drug users are similar to those for patients with no addictions. → Chapter III  
Therefore, it is important to seek good advice from a qualified professional. → Chapter III.1.6

**Please note: It is possible to become reinfected with hepatitis C.**