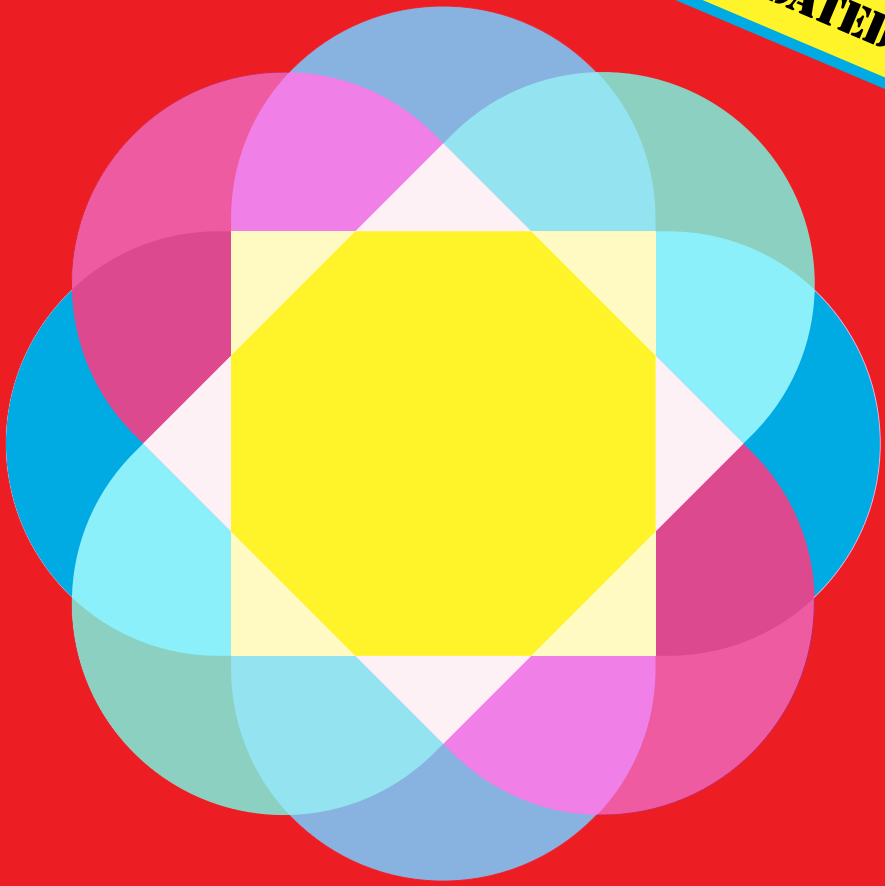
i-base
0808 800 6013

# Introduction to combination therapy

April 2012

NEW & UPDATED



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www.i-Base.info
Watch for out-of-date information

# Contents



Written and compiled by Simon Collins for HIV i-Base with thanks to an extended advisory group of HIV positive people and community advocates. Design by No Days Off. Funding thanks to The Monument Trust. Not-for-profit copying is encouraged or call for additional free copies.

Disclaimer: information in this booklet is not intended to replace information from your doctor. Decisions relating to your treatment should always be taken in consultation with your doctor.

HIV information dates quickly, please call to see if up-dated information is available.

If you have questions after reading this guide, i-Base runs a free treatment information phoneline for information and support on all aspects of HIV treatment.

Phoneline 0808 800 6013
Monday– Wednesday, 12–4 pm

The website also has a question and answer service where questions can be answered online and by email.

# Introduction

This guide includes information about the most important aspects of HIV treatment.

It is written and reviewed by HIV positive people and health professionals.

If HIV is new to you, many of the issues relating to treatment can be scary. This booklet should help you feel more in control of this aspect of your health care.

We update this guide every 12-18 months because information about HIV can change quickly. This is the 15th edition.

Information is based on the most recent draft UK guidelines (March 2012). These include significant changes from the previous guidelines.

www.bhiva.org

When appropriate we have also used European and US guidelines.

www.europeanaidsclinicalsociety.org

www.aidsinfo.nih.gov

All guidelines stress that HIV treatment should be individualised.

This guide is to help in discussions with your doctor. Make sure any information you read is up to date.

Be cautious of information, whether printed or from the Internet, that does not have a recent date.

If you are reading this after July 2013, please call i-Base for a new edition.

The main changes to this edition include:

- New recommendations for first choice of meds and alternatives.
- A new section on access to meds if you are not treated according to the guidelines.
- Recently approved new drugs and formulations. These include nevirapine-PR (prolonged release), etravirine 200 mg, rilpivirine and Eviplera. Nelfinavir and indinavir are no longer included in the ARV chart and paediatric doses for efavirenz and lopinavir/r have been added.
- That all newly diagnosed people in the UK are tested to see if the infection may be recent (p. 15).
- New links to online risk calculators for heart disease and diabetes (p. 13).
- Why treatment does not always work (p. 8) and drug resistance (p. 26).
- Use of abacavir in first-line therapy (pages 29-30).
- The more common use of atazanavir and darunavir rather than Kaletra when PI-based combinations are used (pages 29-36).
- A new section on the use of the integrase inhibitor raltegravir (p. 34)
- Updated information on non-standard combinations, including maraviroc, etravirine and rilpivirine (p. 36).

# First questions: what, when, why?

## What is combination therapy?

Combination therapy is the term for using three or more drugs to treat HIV. It is also called triple therapy, ART or HAART (Highly Active Anti-Retroviral Therapy).

HIV drugs are called antiretrovirals (ARVs) because HIV is a type of virus called a retrovirus.

## Do the drugs really work?

In every country that uses ARVs, there has been a dramatic drop in HIV-related deaths and illnesses.

Treatment works for women, men and children. It works no matter how you were infected. Whether this was sexually, through IV drug use, at birth, or by blood or blood products.

Taking HIV meds exactly as prescribed will reduce the HIV in your body to tiny amounts. But some HIV stays in your body and you will still be HIV positive.

## Does everyone need treatment?

Nearly everyone who is HIV positive will need treatment at some time.

But HIV infection progresses at very different rates in different people.

Many people are diagnosed a long time after infection.

- About 20% of people need treatment within 2 years of infection.
- 50% will start treatment after 2-10 years (average of 5 years).
- About 25% stay well for over 10 years without treatment.
- Less than 5% of people can go for 15-20 years without treatment.
- 0.01% may never need treatment!

When you need treatment is something you have to discuss with your doctor. This will usually take place over several visits.

- Ask any questions until you are happy with the answers.
- Get information from other sources: other health workers, the Internet, friends, newsletters and phone lines.

Even if you are well, it is a good idea to get to know something about treatment now, before you need it.

This is most important if your immune system has been damaged by HIV (if you have a low CD4 count). Or if you have high levels of HIV in your blood (if you have a high viral load).

## Two essential blood tests: CD4 and viral load

Your CD4 and viral load results are the main tests used to monitor your health.

### CD4 tests

- CD4 tests measure your immune system. Results are given as cells/mm$^3$. Above 500 is considered "normal".
- Your CD4 count is important for deciding when to start treatment.
- Even if you start with a very low CD4 count, once you start treatment, your immune system can become strong enough for your body to be able to recover from HIV-related illnesses.
- UK guidelines recommend starting treatment when your CD4 count is around 350, but some people can start earlier.

### Viral load tests

- Viral load tests tell you how much virus is in a small sample of blood. Results are given as copies/mL.
- If you are on treatment, viral load tests show how well your treatment is working. You need to aim to get this 'undetectable'. This means less than 50 copies/mL.
- Getting undetectable and staying there shows that the drugs are still working.
- If the viral load doesn't become undetectable or it increases later, it means the drugs may not be working or that you may not be taking them correctly.
- Any unusual result should be checked with a second test before making a change in treatment.
- A high viral load (over 100,000 copies/mL) can be a reason to start treatment at any CD4 count.

### Your CD4 count and the risk of becoming ill

Your CD4 count is the most important test for your risk of becoming ill. It is the most important test for deciding when to start treatment. How quickly your CD4 count is falling is also used in this decision.

While your CD4 count is above 350 you still have a good immune system. Below 350 you are at a higher risk of infections that cause diarrhoea and weight loss.

If your CD4 count falls below 200 your risk of developing a pneumonia called PCP increases.

Below 100 your risk of very serious illnesses increases further.

A low CD4 count does not mean that you will definitely become ill. It is just more likely. Most drugs used to treat these HIV-related illnesses are much more difficult to take than HIV meds.

Although you may be worried about treatment, HIV is still a very real and life-threatening illness. You can delay treatment until it is too late.

Deciding when to start treatment is discussed in more detail on page 14.

**Fig 1: When not on treatment, your immune system works in overdrive**

1. HIV infects CD4 cells and uses them to make more virus.

2. In response, your body makes more CD4 cells to fight the new HIV.

3. These new CD4 cells are targets for HIV to infect and reproduce again.

4. Each cycle gradually weakens your immune system

*After treatment, when viral load becomes undetectable, the body stops over-producing CD4 cells and this cycle is broken.*

*Your immune system can then take time to repair itself and grow stronger.*

## How do the drugs work?

HIV drugs work by stopping the virus from making copies of itself.

This brings viral load down to tiny levels. Your immune system (including your CD4 cells) then has a chance to become stronger again.

When not on treatment, your immune system is working in overdrive. HIV infects CD4 cells to make more virus. Your body produces new CD4 cells to fight the virus but HIV just uses these cells to keep reproducing. It is like a dog chasing it's own tail! (See Figure 1).

This cycle of immune activation is also thought to lead to other health complications. It is one of the reasons that people are now using treatment earlier. Effective treatment stops this over activation.

There are now over 26 drugs that work in at least six stages of the HIV life cycle. (See Figure 5 on page 29).

## How long will the drugs work?

The first goal of treatment is to reduce your viral load to undetectable levels. This means less than 50 copies/mL.

As long as your viral load is undetectable you are unlikely to develop drug resistance as long as you keep taking your meds properly. This includes taking them at the right time, not missing doses and following any dietary advice.

Regular monitoring using blood tests will check that the drugs are working and that they continue to work.

How long a combination works depends on not developing resistance.

Around 95% of people whose viral load stays undetectable for the first year, will continue to be undetectable for each following year.

There is no built-in time when treatment will stop working. If you take your meds as they are prescribed, you can use them until we get a cure!

"I was diagnosed with HIV in 1997 and had to start on treatment when I was still in shock.

I discussed the pros and cons of each drug with the nurse but most of it went in one ear and out of the other. I needed time to find out about the different drugs and side affects, but with a low CD4 count I needed to start treatment soon. The information I got from the clinic was detailed and complex.

I was lucky. I had a good network of positive friends and got sound advice in terms I could understand.

Over the past 15 years, I have seen treatments become easier to take with far less side effects.

HIV treatment is not rocket science. You can easily learn about it. I am sure I get better treatment for my HIV because I understand what is going on. This gives me the confidence that I should live a long and happy life, just with a manageable illness.

I talk with my doctor and I take an active role in my choice of treatment. I always say if I have problems with side effects or adherence."

*Paul, London*

## Can I take a break in my treatment?

Taking a break in treatment is not usally recommended unless there is a medical reason to do this.

Staying on treatment is better for your long term health. It keeps your CD4 count high and stops HIV from doing more damage.

Treatment protects against damage that HIV may do to your heart, liver, kidneys and other organs and lowers the risk of some cancers. This is compared to either not being on treatment or starting and stopping treatment.

- Stopping treatment is not generally recommended.
- Your viral load can increase again very within weeks. Each interruption has a risk of developing drug resistance.
- Your CD4 count is likely to drop and it will be more difficult to recover when you restart treatment.

If you really want to take a break it is essential you talk to your doctor first. If this is because side effects are too difficult you could change to a combination that is easier to manage.

## Does treatment always work?

HIV meds work for nearly everyone. If you are unlucky not to get a response if could be due to one of the following reasons.

- Adherence: This means checking you are taking the right dose at the right time each day, and following any food recommendations.
- Potency: Is the combination strong enough. With a high viral load (over 100,000) some combinations are not recommended. Also, the higher you start, the longer it may take to come down.
- Resistance: You may have been resistant to one or more of the drugs before you started. UK guidelines recommend a resistance test before starting treatment to check for this.
- Absorption: One or more of the drugs may not be absorbed properly. There can be big variations between people and tests can check for this.
- Side effects: You have to be able to tolerate your meds and they have to be easy for you to take.

Trial results never show a 100% response. But if you have a good doctor and you follow your regimen carefully, anyone starting treatment for the first time should be able to get an undetectable viral load.

## Can I change treatments?

Initial side effects usually improve after the first few weeks. But, if your first combination is too difficult to follow, you can change the drug or drugs that are causing the problem.

If this is your first combination, you have many choices. You should not put up with difficult side effects for months on end.

Some people use one combination to get their viral load undetectable, and then change to an easier combination afterwards.

A few people may change quickly, occasionally after days. Everything in HIV care is individual.

## What is 'treatment-naive'?

'Treatment-naive' or 'drug-naive' refers to someone who has never used HIV drugs.

Someone who has used drugs before is called 'treatment-experienced'.

## Should I enter a study?

Many hospitals are also research centres and you may be asked to join a study.

If you are interested in the study, take time to find out about the details.

If you are only just finding out about treatment, you should not feel pressurised into taking part.

Ask about the alternatives to the treatment in the study. Ask what advantages or risks the study offers over existing treatment. You can ask for advice from i-Base or other HIV organisations.

Your future care will not be affected if you decide not to join a study.

However, well-planned research can often offer better monitoring and care than you would normally receive at your regular clinic. This may mean a few more clinic visits.

Research is important for getting new drugs. It can improve how we use both new and existing drugs. This information can only come from research.

## What about alcohol and recreational drugs?

Some HIV drugs interact with recreational and street drugs, methadone and some complementary medicines.

The interactions can be complicated and can increase or decrease levels of HIV meds or other drugs.

It is therefore important that your HIV doctor and pharmacist know about other drugs or supplements that you take. Even if you use them rarely. Your doctor will treat this information in confidence.

Alcohol does not interact with HIV medications. However, alcohol use, as with recreational drug use, may reduce adherence.

Low adherence has been linked to how much alcohol someone drinks and the risk of treatment failure. This is something else that is good to discuss with your doctor.

## What else do I need to know?

Ongoing research changes how we think about and use treatment. The meds that your doctor prescribes today may be different from last year. And it may be different again next year.

This isn't just because there are newer drugs available. It is to do with a better understanding of:

- How the drugs work;
- Why meds sometimes stop working;
- Drug resistance; and
- The impact of HIV when not on treatment.

## Are the drugs a cure?

The current drugs are a treatment, but they are not a cure. They stop the progression of HIV. They let your immune system start to repair itself and your CD4 count increase. But you will still be HIV-positive.

Even people who take meds for many years, with undetectable viral load, still have very small amounts of HIV. This HIV is mainly in cells that are inactive. Most of your immune cells are resting or sleeping - like books in a library. They only become active in response to an infection - like someone taking a book off the shelves. HIV meds only work on cells that are active and awake.

These sleeping cells are one of the reasons that it is difficult to find a cure for HIV. Some of these cells can sleep for 50 years, but they can also wake up at any time. This is why you need to continue taking treatment.

Exciting research is trying to cure HIV but this is still likely to be many years away.

This is still a good goal though. Whether from treatment or a cure you could still die of old age rather than from HIV.

"I was caught just in time, in 1996, when the first effective combinations became available. I did not think that it would make a difference. Now that I understand how the drugs work, I know that they are active, whether I believe in them or not.

Ask questions about anything you don't understand. You can then take responsibility for whatever you decide.

Look at treatment as something you have to be really committed to for the next few years. Take this new aspect of your life more seriously than anything else until you get it right."

*Simon, London*

# Age, gender and pregnancy

## How do children use HIV treatment?

Children with HIV are treated in a similar way as adults. However, there are a few important differences.

The immune system and drug absorption can be different in babies, children and adults. This is why specialist paediatric HIV care is recommended for children of all ages.

CD4 counts are higher in children than adults. A new-born baby, for example, can have a CD4 count that is 3000 cells/mm$^3$. Because of these differences, children are usually monitored by their CD4 percentage (CD4%).

This is the percentage of white blood cells (lymphocytes) that are CD4 cells. The CD4% of an HIV-negative person is around 40%.

A CD4% of 12-15% is similar to a CD4 count of about 200 in an adult (22% is about 350 and 25-30% is about 500).

There are separate treatment guidelines for children. However, they tend to be updated less frequently than adult guidelines. It is therefore important to be aware of changes in adult care that may be just as relevant for children.

For more information about children and HIV, visit the Children with HIV Association (CHIVA) and PENTA web sites:

www.chiva.org.uk

www.pentatrials.org

## Is age an important factor in adults?

As you get older, HIV treatment becomes more important.

The UK treatment guidelines (www.bhiva.org) include a useful table on the risk of AIDS illnesses at different CD4 and viral load levels.

Importantly, this includes separate tables for ages 25, 35, 45 and 55. All risks increase with age.

Many researchers are looking at HIV and ageing. This is becoming a specialised subject and HIV services are changing to reflect this. New services are being developed for older patients.

Ageing is linked to many health problems, which is why lifestyle changes (diet, exercise, smoking etc) are just as important if you are HIV positive.

## Age, HIV drugs and heart disease

The biggest risks for heart disease are smoking, poor diet and low exercise.

Other factors include age (over 45 for men and over 55 for women), sex (male), family history of heart disease, alcohol, high blood pressure and diabetes.

High cholesterol (and sometimes triglycerides) are independent risks. They are also related to diet and exercise.

As some HIV drugs can cause cholesterol and triglycerids to increase you will be monitored for this.

HIV itself may be a risk for heart disease if you are not on treatment.

In the SMART study, people who stopped treatment were more likely to develop heart, kidney or liver disease than people on continuous treatment. This study showed that the benefits of HIV treatment generally outweigh any additional risk of heart disease.

The largest study looking at heart disease and HIV treatment (called D:A:D), has shown that most HIV meds are not linked to heart disease.

There are two exceptions though: the protease inhibitor lopinavir/r (Kaletra) and the nucleoside abacavir.

It is important to know your underlying risk of heart disease if you use either of these drugs.

Checking your risks of heart disease is recommended when you are first diagnosed, before starting HIV treatment and then every year after.

Online risk calculators:

http://www.chip.dk/TOOLS/tabid/282/Default.aspx

http://www.qrisk.org/

http://www.qintervention.org/

As in the general population, making lifestyle changes to reduce your risk of heart disease is good advice if you are HIV positive.

This becomes even more important if you have other risk factors as these add up to a higher overall risk.

## Are recommendations the same for men and women?

Very few differences in HIV treatment between women and men have been reported.

A few side effects may be different but many are very similar.

One difference is that at the same CD4 count, women can have a slightly lower viral load than men. Some studies also show that women have a higher risk of becoming ill than men at the same CD4 count.

This may be a reason for women to start treatment slightly earlier (at a higher CD4 count) than men.

## What about treatment in pregnancy?

HIV can be treated very safely and effectively during pregnancy.

In addition, treatment with combination therapy that reduces viral load to below detection, dramatically reduces the risk of transmitting HIV to your baby to almost zero.

Treatment during pregnancy is a specialised area.

For more information see the i-Base guide: *HIV, Pregnancy and Women's Health*.

# Deciding when to start treatment

## When should I start treatment?

If you are not yet on treatment then this is probably something that you think about.

The answer depends on many things:

- Your CD4 count, CD4% and viral load, and how fast they are changing.
- Your current health, including whether you have other complications such as TB or hepatitis coinfection.
- Your age and how long you have been HIV positive.
- Whether you are pregnant.
- Current guidelines and available drugs.

As long as there is not a medical urgency (such as pregnancy or a very low CD4), it also depends on whether you are ready to start treatment.

You are the person who has to take the meds. You have a choice over when to start and the drugs you use.

Discuss this with your doctor before you need treatment.

- Ask about the different drugs. You need to know the good and bad things about each of them.
- Take time to think about what you want to do. Do not feel rushed or pressurised into doing something you don't understand.
- If you have just been diagnosed, you may want time to think about this before you feel ready to start treatment. Unless your CD4 count is very low this should usually be ok.

## CD4 count and guidelines

All guidelines recommend starting treatment based on your CD4 count.

The lower it drops the more important your need to start. UK guidelines recommend treating anyone whose CD4 count is below 350 and at higher levels if there are other complications.

This is because:

- With a CD4 count below 350 your risk of serious illness increases.
- Treatment will protect your immune system and increase the chance of reaching a 'normal' CD4 level above 500.

With counts just below 350, you still have time to understand your choices. This is true even just below 200 when a few weeks either way will not make much difference.

The further below 200 the higher the risk from delaying treatment.

Some guidelines (including the US, France and Australia) recommend starting treatment earlier, when the CD4 count falls below 500.

UK guidelines recommend treatment at CD4 counts above 350 if you have:

- HIV-related complications.
- Hepatitis B or C.
- TB coinfection.
- If you want to reduce the risk of transmitting HIV to sexual partners.

Some guidelines include being over 50 years old as a reason to start treatment.

## Early diagnosis and primary infection

If you are recently diagnosed you may find out whether you are likely to have been infected in the previous six months.

This is from a second HIV test called STARHS or RITA (or sometimes an 'avidity' test).

Knowing when you were infected can help you know how quickly HIV progresses.

The Health Protection Agency (HPA) has recommended this test for all diagnoses since 2011.

These results are only a guide though.

UK guidelines only recommend treatment in primary infection in a few circumstances.

- When there are serious HIV or AIDS-related symptoms.
- If CD4 is confirmed less than 350.
- To reduce the risk of transmission.
- As part of a research study.

## Using treatment at higher CD4 counts: the START trial

A large international study called START is looking at whether it may be better to start even earlier - when your CD4 count is above 500.

This is likely to be a very important study. No other randomised trial has answered this question.

If your CD4 count is still over 500 and you are interested in earlier treatment, talk to your doctor about this study.

Advantages of earlier treatment include:

- Treatment reduces the risk of some less common but serious illnesses, even at relatively high CD4 counts;
- Drugs used in most Western countries are now more tolerable. They have fewer side effects and require fewer daily pills and doses.
- By starting treatment at a higher CD4 count, you keep more of your immune system. This increases the chance of reaching or keeping 'normal' levels (CD4 over 500). (See Figure 2).
- Treatment will make you less infectious to sexual partners.

There are potential benefits and risks from both earlier treatment and from delaying treatment. This is why we need this study.

## Late diagnosis and low CD4s

In the UK, half of all new diagnoses are in people whose CD4 count is already less than 350. This is the threshold to start treatment.

25% of people are diagnosed even later with a CD4 count of less than 200.

These late diagnoses are related to:

- Fear of testing.
- Denial: 'it will never happen to me'.
- Fear of stigma and prejudice.
- Lack of up-to-date information about HIV and treatment.

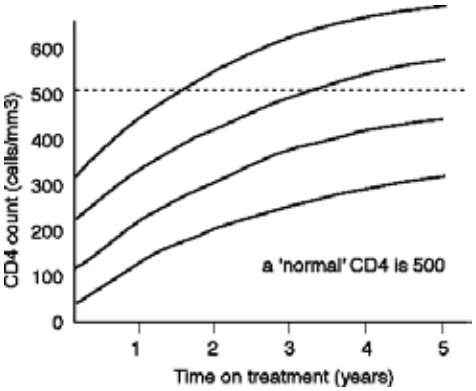
Some people, across all age ranges, only find out they are HIV-positive when they become ill and are admitted to hospital.

This often means starting treatment straight away, especially when the CD4 count is below 100.

Even with a very low CD4 count, even below 10, if you follow your treatment very carefully, you have a good chance that treatment will work. Your viral load will drop and your CD4 count will rise to safer levels.

This should not be seen as an option to delay treatment. Starting with a very low CD4 count can cause some infections, such as TB or CMV to activate. This is called Immune Reconstitution Inflammatory Syndrome (IRIS).

## Fig 2: Average CD4 increases by starting CD4 count




**The higher your CD4 count when you start treatment, the more likely that it will increase to normal levels. This may be important over 20, 30 or 40 years because your CD4 count drops when you get older.**

**This graph shows average levels. Some people can still reach 500 when they start at less than 200.**

"I got a shock diagnosis in January 2002 and immediately worried about dying. I pictured myself as a person in the media adverts for African people with AIDS who were just bones and skin.

My viral load was 650,000 and my CD4 was less than 10. Therefore I had to start ART immediately.

I read the leaflets and could not believe I was on treatment for HIV! I was only sleeping for two hours a night with very vivid dreams and nightmares related to efavirenz.

Because my CD4 count was so low when I started, the increase in CD4 cells caused TB to activate. So I started on TB treatment. I asked the pharmacist to have the TB meds as an oral solution as I couldn't swallow the large tablets.

Now, ten years on, I take my HIV medication every day and at the right time. I would love to go back home, but a lot of people in my country have no access to ARVs."

*Memory, London*

# What about side effects?

All medicines have some risk of side effects. It would be wrong to pretend that everything is easy.

This is something that everyone worries about.

However:

- Most side effects are usually mild.
- They can often be reduced with other medication that is easy to use, or by switching to other drugs.
- There is only a small risk of serious side effects. It they occur, they should be picked up by routine monitoring.
- Within a few weeks most people find that taking HIV treatment is much easier than they expected. It usually becomes an ordinary and manageable part of daily life.
- If you need to modify your combination, there are many other choices for meds that are likely to work better for you.

Ask your doctor, nurse or HIV pharmacist about the most common side effects of the drugs that you might use.

- Ask how likely they are to occur.
- Ask how many people stop treatment because of them (usually very few).
- Even rough estimates will give you a good idea of what to expect.

## Common side effects

Side effects like nausea (feeling sick), diarrhoea and tiredness, are less common with modern treatments. If they occur, they usually become easier after the first few weeks.

Very rarely, nausea and tiredness can be a symptom of another illness. This is why you should talk with your doctor about any problems.

If the first anti-nausea or diarrhoea medications do not help, ask for more effective drugs.

One of the most used drugs (efavirenz) can affect sleep patterns and change your mood. You need information about this before starting treatment. These side effects are usually strongest when you first start treatment.

They usually reduce in most people over the first few weeks. If the side effects continue, you can use another drug.

"Get involved in choosing your treatment. It needs to fit to your life, schedules and routines as much as possible.

Being able to share with my relatives and close friends has helped me a lot. My boyfriend always asks me if I took the pills on time.

I've been taking HIV treatment for the last 20 years. When I started, no one would had imagined the choice we have now. I now feel truly optimistic about the future.

As new drugs become available, choices will become even more individualised. A good relationship with our doctors and nurses is important: we'll probably need to see them for years!"

*Xavi, Barcelona*

## Lipodystrophy and metabolic changes

Lipodystrophy refers to changes in fat cells and the distribution of body fat. It also refers to changes in blood fat and blood sugar levels (metabolic changes).

It is not known why some people get these changes. They are less common with newer meds.

The greater awareness of lipodystrophy means that you will be monitored carefully. The changes usually, but not always, develop slowly over many months.

If you have any worries, make sure your doctor takes them seriously and does something about it.

**Fat loss** (from arms, legs, face and buttocks) is now unlikely with new drugs. This was linked to d4T and AZT which are no longer used in the UK.

**Fat accumulation** to the stomach or breasts and/or across the shoulders or neck has been linked to combinations that include protease inhibitors and NNRTIs.

Mild symptoms may reverse if you switch to different HIV meds. Exercise and dietary changes can also help.

**Changes in fat (cholesterol and triglyceride) and sugar (glucose) levels** are linked to many drugs and will be monitored by routine blood and/or urine tests.

Diet, exercise, changing treatment or using lipid lowering drugs can all help.

## Other side effects

Serious side effects can occur with any medicine, but these are rare. Each drug has its own side effect profile that is different from the others.

Ask about the potential side effects for all the drugs in your combination, before you start treatment.

The i-Base booklet: *HIV and your quality of life: a guide to side effects and other complications* includes information for each drug:

www.i-base.info/guides

It also contains useful information about long-term health issues that may be related to both HIV and some of the drugs used in treatment.

Your routine monitoring should also include heart disease and bone health.

For a free copy please call 020 7407 8488.

The i-Base website also includes information on each drug and links to other sources.

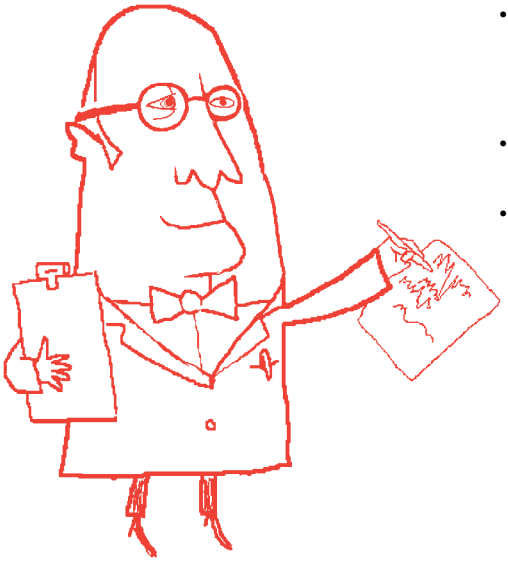
# You and your doctor

A good relationship with your doctor and health workers can help your health in the long-term.

Nurses and pharmacists can give you support and advice on all aspects of your treatment. This includes adherence and side effects.

They can make referrals to other professionals, including dieticians, psychologists and social workers.

Both you and those involved in your care have certain rights and responsibilities. The following lists include some of your rights and responsibilities as a patient.



## Your rights as a patient

- To be fully involved in all decisions about your treatment and care.
- To be seen within 30 minutes of your appointment. If they are running late, you should expect an explanation.
- To be treated with respect and confidentiality.
- To have different options for treatment explained to you. This should include the risks and benefits of each option.
- To have your doctor or nurse explain any test results.
- For your records to be kept securely. They should be made available for you to see if you ask.
- To choose whether to take part in research trials. This should not affect your current and future care.
- To be able to make a complaint about your treatment. Any complaint must be fully investigated. Again, this must not affect your future care.
- To have a second opinion from a suitably qualified doctor.
- If you write to your hospital or clinic, you should have a written response within 14-28 days.

- To change your doctor or treatment centre without it affecting your future care. You do not have to give a reason for changing doctors or clinics. However, if there has been a problem, then giving a reason can sometimes help resolve the problem.
- To have test results and a summary of your treatment history forwarded to your new doctor or clinic.

## Things you can do to help

- Find a clinic that is convenient to you and that you feel comfortable with.
- Find a doctor who you like. If you are a woman and want to see a female doctor then ask for this.
- If you are a gay man and want to see a gay doctor, this may be available and may affect your choice of clinic.
- Turn up for your appointments on time. Tell the clinic if you can't make it. Then they can give your slot to another patient.
- Make a list of things you want to discuss with your doctor. Remember to take it to your appointment!
- Ask to see the same doctor at each visit at least until you are settled with your care. This is important. It's difficult to develop a good relationship if you always see a different doctor. Once you are more settled, the advantages of sometimes seeing a different doctor include getting a second opinion and perspective.
- Have your routine bloods taken 2-3 weeks before your regular clinic visits so the results are ready for your appointment.
- Treat all people involved in your care with the same respect you would wish to receive yourself.
- Listen carefully to the health advice that you are given, and act upon it.
- If you don't understand something, ask your doctor to explain it again or in a different way.
- Be honest with those caring for you. Tell them about any other drugs that you are taking. This includes alcohol, legal and illegal drugs and complementary treatment.
- Be honest about your level of adherence. If the people managing your care don't know you are having problems, they can't help.

# Adherence and why it is so important

## What is adherence?

Adherence is a word used to describe taking your drugs exactly as prescribed. This includes taking them at the right time. It also includes following any special diet restrictions.

Adherence is the most important thing you have to think about when you start treatment. It makes sure that all the drugs in your combination are at high enough levels to control HIV for 24 hours a day. If these levels drop too low it increases the risk of resistance.

Adherence can be a challenge. You may need some support to get used to the changes treatment makes in your life. A routine or daily schedule can really help.

Start treatment when you can give yourself the extra time and space you may need to adjust.

During the first few weeks nothing else should take priority over getting your treatment right.

Some treatment centres have a health advisor who can help you.

## How much is enough?

Unfortunately, 'almost 100%' is still the best goal... Even missing one or two doses a week can cause some meds to fail, especially when starting treatment.

Taking medication on time is important. However, there is usually a window period of about an hour that is still okay. Some drugs (and some people) have a wider window period than others.

Because of this variation it is better to aim for the same time each day.

Diet restrictions are important too. Ignoring these can be like only taking half a dose. You will not absorb enough of the drug for it to work properly.

## Tips to help

- Choose a treatment you think you can manage. Find out what is involved before you choose your treatment: How many tablets? How big are they? How often do you need to take them? How exact do you have to be with timing? Are there food or storage restrictions? Are there easier choices?
- Plan your timetable (see page 25). For the first few weeks mark off each dose and the time that you take it.
- Contact your doctor if you have difficulties with side effects. S/he can prescribe additional medication to help and change the treatment if necessary.
- Use a daily or weekly pill box. Then you can see if you miss a dose.
- Use a pill beeper or alarm watch for both morning and evening doses. It can be better to set this just after the right time, so it is a reminder and not something you rely on.
- Take extra drugs if you go away for a few days. Be prepared in case flights or other travel arrangements change.

- Keep a supply where you may need them in an emergency. This can be in your car, at work or at a friend's house.
- Ask a friend to help you remember difficult dose times. Ask a friend to remind you when you are out at night.
- Ask friends how well they are managing and if they have tips. Most clinics can arrange for you to talk to someone who is already taking the same treatment.
- Ask your doctor for a small prescription for meds to control nausea and diarrhoea. These side effects are more common when starting therapy.
- Many combinations are taken once-daily. This usually means taking them every 24 hours. Twice-daily drugs need to be taken every 12 hours.
- Completely missing a once-daily combination may be more serious than forgetting a twice-daily dose. Adherence is especially important with once-daily combinations.

## What if I forget to take my pills?

Almost everyone will forget or be late with their drugs at some time.

There is a difference though between occasionally missing a dose and regularly forgetting on a daily or weekly basis.

- Be strict with yourself in assessing how adherent you are.
- If your adherence is not good, you need more support. It is available but you will need to ask.

If you regularly take your HIV meds late or miss doses completely, talk to your doctor, nurse or pharmacist about other options.

There may be an easier combination.

You need a regimen that you can follow everyday. This includes both during the weekend and in the different situations involved in life.

There are always things that can help improve adherence, whatever your lifestyle.

Taking days off treatment is a risky way to use HIV meds.

**If you realise you have missed a dose, take it as soon as you remember.**

**BUT, if you only realise when you're going to take your next dose, do not take a double dose.**

# Adherence diary

Use the table below to mark when you take each drug in the first few weeks of your combination. This will help you know if you have just taken a dose - or if you are late or miss a dose. Getting everything right from the start is important.

Date at start of week _____

| | Drugs & times (morning) | Drugs & times (evening) |
|---|---|---|
| Monday | | |
| Tuesday | | |
| Wednesday | | |
| Thursday | | |
| Friday | | |
| Saturday | | |
| Sunday | | |

Date at start of week _____

| | Drugs & times (morning) | Drugs & times (evening) |
|---|---|---|
| Monday | | |
| Tuesday | | |
| Wednesday | | |
| Thursday | | |
| Friday | | |
| Saturday | | |
| Sunday | | |

# Resistance

## What is resistance?

Drug resistance occurs when the genetic structure of HIV makes changes that stop a drug from working. These changes are called mutations.

- The risk of resistance is highest when the levels of a drug in your body are low. This usually only occurs when you miss doses or stop treatment.
- You cannot develop resistance if you have not started treatment or if you stopped several weeks ago.
- You can be infected (or reinfected) with a strain of HIV that is already resistant to some or all HIV drugs.

About 8% of new infections in the UK have resistance to at least one med.

This is why in the UK everyone should have a resistance test when they are diagnosed and before starting treatment.

But you may need to ask for this test, so check.

## How does resistance occur?

Mutations that lead to drug resistance are generally only produced if you continue taking a treatment when you have a detectable viral load.

If your viral load is still above 500 copies/mL after 2-3 months, or above 50 after 6 months, you may have developed resistance and may need to change drugs.

Your doctor should look for why the results are not as good as they could be.

Your doctor will also want to discuss how you are managing adherence and side effects. This may include tests for resistance and possibly drug levels.

Resistance can develop even at viral load levels between 50 and 500 copies/mL.

You should have a viral load test four weeks after starting or changing treatment. This should then be checked every 3–4 months when on treatment.

Get the results when they are ready, usually within two weeks. Don't just wait until your next routine visit.

Some clinics let you get your blood tested 2-3 weeks before you see your doctor. Then you will have the results back for the appointment.

## What happens if my viral load rebounds?

If your viral load has increased, you should get a second test when you get these results, or soon after.

Often slight increases are due to errors in the test. You can also have small increases that go back down again that are called 'blips' or 'spikes'.

The second test will check what is happening. If the combination is failing then you reduce the risk of further resistance by checking this straight away.

You will get a better response to a second treatment if you change when viral load levels are still low.

## How do I avoid resistance?

The best way to avoid resistance is to take all your meds on time, every day. But you also need to be using a combination that is strong enough to control the virus.

Avoiding resistance is more important than increasing in your CD4 count. Avoiding resistance will let your treatment work long-term.

If your viral load becomes undetectable (less than 50 copies/mL) you dramatically reduce the risk of resistance. If you are starting treatment and are adherent this is a realistic goal.

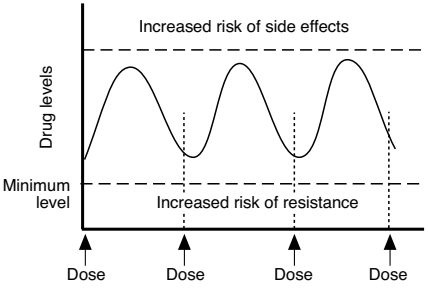
## What is cross-resistance?

Cross-resistance is when resistance to one drug causes resistance to other similar drugs, even if you have never taken them before.

This is particularly true of drugs in the same class.

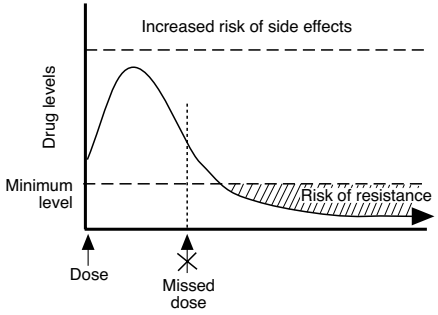
So if you develop resistance to one NNRTI such as efavirenz then you may also have resistance to other NNRTIs such as nevirapine.

## Fig 3: Drug levels with good adherence



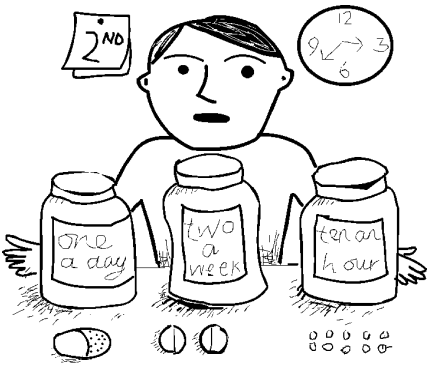

Drug doses are calculated so that average drug levels are high enough to be active against HIV for 24 hours a day. They are also low enough to minimise the risk of side effects.

## Fig 4: A missed or late dose increases the risk of resistance




Missing or being late with a drug lets the drug levels fall to a level where resistance can develop. The more often you are late, the greater the chance of resistance.

# Which drugs, which combination?






## Main types of HIV drugs

There are six main types of drugs that work at different parts of the HIV life cycle. (See Table 1, Fig 5 and pill chart on pages 47-49).

### Table 1: Main drug families

| Abbreviation | Full name (s) |
|---|---|
| **NRTIs (nukes)** | Nucleoside/tide reverse transcriptase inhibitors. or nucleoside/ tide analogues |
| **NNRTIs (non-nukes)** | Non-nucleoside reverse transcriptase inhibitors |
| **PIs** | Protease inhibitors |
| **Fusion inhibitors** | Fusion inhibitors are a type of entry inhibitor |
| **CCR5 inhibitors** | CCR5 inhibitors are a type of entry inhibitor |
| **INIs** | Integrase inhibitors |

With over 26 HIV drugs there are hundreds of potential choices. However only a few combinations are recommended in first-line combinations.

## What is the best combination?

There isn't one best combination because different drugs can affect people differently.

Any combination should be:

- Strong enough to reduce your viral load to below detection.
- One you can tolerate and follow the daily schedule and stick to any dietary restrictions.

Guidelines recommend a few combinations over others. The most commonly used ones are discussed on the next few pages.

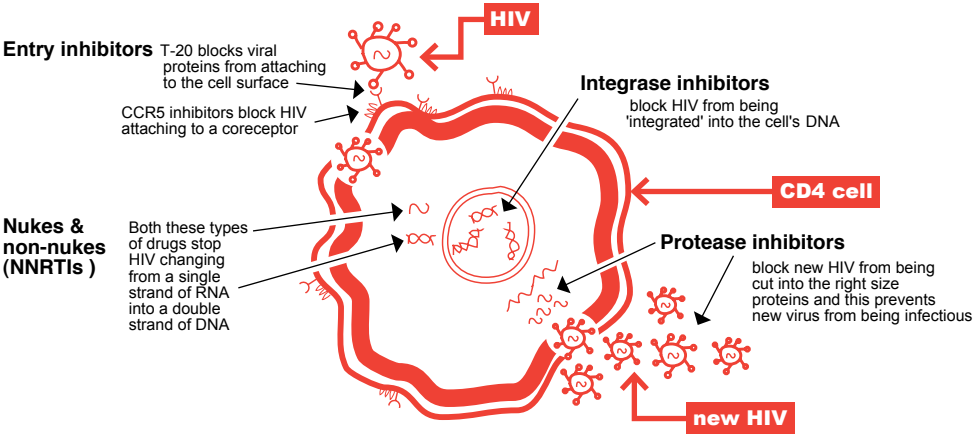
Your doctor will discuss with you which combinations are more likely to get your viral load undetectable.

If you have taken HIV drugs before, or have drug resistance, this will affect your choice.

Ask for information about dosing, pill size and side effects. This will help you pick a combination that is right for you.

## Fig 5: HIV lifecycle - how drugs work in different ways

**If a CD4 cell is infected by HIV, this cell is used to produce hundreds of copies of new HIV. Different drugs block different parts of this process, called the HIV life cycle.**




## First combination meds

UK guidelines include starting treatment with two nukes plus a third drug. The 2012 draft recommendations are summarised in Table 1.

## Table 1: UK first-line options

| | Preferred | Alternative |
|---|---|---|
| Two nukes | tenofovir + FTC (Truvada) | abacavir + 3TC (Kivexa) |
| Plus a third drug | efavirenz (NNRTI) ***or*** atazanavir/r (boosted PI) ***or*** darunavir/r (boosted PI) ***or*** raltegravir (integrase inhibitor) | lopinavir/r (boosted PI) ***or*** fosamprenavir/r (boosted PI) ***or*** nevirapine (NNRTI) ***or*** rilpivirine (NNRTI) |

## The two nukes

Nukes were the first type of HIV drugs to be invented. They are still the basis of most HIV combinations.

Several formulations combine two nukes in one pill. One is called Truvada (tenofovir + FTC) and the other Kivexa (abacavir + 3TC).

UK guidelines recommend Truvada as a better choice for most people. They suggest Kivexa is an alternative.

These meds are once-daily drugs. They are all generally easy to tolerate with a low risk of serious side effects.

None of them cause fat loss (lipoatrophy), nerve pain (neuropathy) or damage red blood cells (anaemia).

**Tenofovir** is processed by your kidneys. This means your kidney function will be monitored if you use this drug.

You also need to be careful of other drugs that can affect the kidneys.

Tenofovir also causes a small reduction in bone density during the first six months. This does not appear to increase bone loss more than other HIV meds after six months.

This means that tenofovir may not be recommended if you already have kidney or bone problems.

**FTC (emticitabine)** is generally a very easy to tolerate med.

A mild rash on the palms of the hands was reported in about 10% of people who are black. This is now thought to be less common.

FTC is very similar to 3TC, but it may have slight advantages for adherence as drug levels stay higher for longer.

**3TC (lamivudine)** is very similar to FTC. If nukes are prescribed separately rather than a combined pill, then either FTC and 3TC can be used.

3TC was approved in the 1990s and generic versions may make this less expensive than FTC.

**Abacavir** should not be used if your viral load is over 100,000 copies/mL.

Some studies showed that it increased the risk of a heart attack **in people who had a high risk of heart problems**. This was not reported in people who have lower risks for heart disease.

Abacavir can cause a hypersensitivity reaction. However, a test called HLA B*5701 is now used routinely in the UK. If you are negative for this test your risk of this reaction is dramatically reduced.

Hypersensitivity symptoms include fever, rash, headache, sore throat, diarrhoea, abdominal pain, tiredness, nausea, vomiting and flu-like aches that get worse each day.

Anyone who gets these symptoms must seek urgent medical advice with a view to stopping the abacavir.

**Once stopped, abacavir must not be used by that person again.**

## Other nukes: d4T, ddI and AZT

Nukes that are no longer recommended for first-line treatment in the UK are d4T (stavudine), ddI (didanosine) and AZT (zidovudine).

These drugs may still be used in certain circumstances, for example if someone has resistance to other drugs.

AZT is included with 3TC in a combined pill called Combivir.

"Seeing people get better on combination therapy is without a doubt the most extraordinary thing I have ever seen. It made me become an activist."

*Polly, London*

"My first reaction was to put off starting therapy for as long as possible. I tried to improve my immune system by stopping smoking and using supplements, until I realised that my best bet was to use ARVs. They are the only way to ensure my long-term survival.

After 8 months of resisting treatment I eventually started ARVs. I do not say that I gave in but that I became more clever!"

*Vladimir, St Petersburg*

"No-one wants to take drugs every day and I certainly didn't. I put it off til the last possible moment. Looking back I wish I had started sooner.

I still wonder whether the three years I spent waiting for my CD4 count to fall to 200 would have been happier and more active ones if I had started treatment when my doctor recommended, when my CD4 count was 300."

*Matt, Brighton*

Triple-nuke combination
A triple-nuke combination is not recommended. These are less effective but may be used to avoid side effects related to PIs or NNRTIs or interactions between these drugs and other medications (ie for TB).

## Nukes that don't mix

Although one nuke can often be switched for another, Table 2 shows some combinations that should never be used.

### Table 2: Nukes that don't mix

| | |
|---|---|
| **AZT and d4T *** | At any time |
| **3TC and FTC** | At any time |
| **ddI and tenofovir** | Especially with an NNRTI |
| **abacavir and tenofovir** | Not in a 3-drug combo |
| **d4T and ddI** | Never during pregnancy |
| **Triple-nuke combinations** | Only two combinations: AZT+3TC+abacavir or AZT+3TC+tenofovir, can be used. Others have a high risk of failure. |

* d4T (stavudine) is a nuke that has not been used in the UK for many years because of the higher risk of side effects. It is unfortunately still widely used in developing countries.

## Choice of the third drug

There are four choices in the UK guidelines to make up the combination.

- efavirenz (NNRTI) ***or***
- atazanavir/r (boosted PI) ***or***
- darunavir/r (boosted PI) ***or***
- raltegravir (integrase inhibitor).

These four meds produced similar results in research studies.

The differences between these meds may be important depending on your individual circumstances.

All combinations have been associated with a low risk of side effects like nausea and diarrhoea that are usually mild or easy to manage.

All types of HIV drugs have also been linked to increased fat in some people. This may be less common with modern drugs.

If you have problems with any of these meds then it is easy to switch to another.

Given they are similarly effective, the choices for how use them may be related to drug costs.

This may vary in different parts of the UK.

## Efavirenz - an NNRTI

**Efavirenz** is once-daily NNRTI. It is also availble with tenofovir and FTC in a single pill called **Atripla**.

This combination has been widely recommended for many years.

The main side effects of efavirenz relate to the Central Nervous System (CNS). These can include mood changes such as anxiety, euphoria and depression, and sleep disturbance that includes vivid dreams and nightmares.

They occur in nearly everyone who first uses efavirenz, but usually get easier after a few days or weeks. About 10-20% of people stop efavirenz because of the general effect on their quality of life.

Severe side effects are more rare. Less than 3% of people get severe psychiatric symptoms, but switching to an alternative med is important when this occurs.

Before starting efavirenz, your doctor should give you specific information about the side effects.

For the first time the guidelines state that efavirenz can now be used during pregnancy or for women trying for a baby. Previously this was not recommended.

## Ritonavir-boosted PIs

The two PI combinations recommended are **atazanavir/r** and **darunavir/r**. Both these PI's need to be boosted. Currently, there is only one booster so the 'r' stands for ritonavir.

The ritonavir is given as a separate pill.

The small dose of ritonavir gives you better drug levels. This reduces the risk of resistance. It also reduces the number of pills and dietary requirements compared to unboosted PIs.

The main side effects from ritonavir are stomach upset, diarrhoea and nausea.

These are usually mild and are easy to manage, for example, using loperamide (Imodium) for diarrhoea. Ritonavir can increase cholesterol and triglycerides.

**Atazanavir/r** is a once-daily PI.

The daily dose is 300 mg (taken as one 300 mg or two 150 mg capsules), boosted by 100 mg of ritonavir.

Atazanavir is usually a well tolerated med with few side effects.

The main side effect is that it can increase levels of bilirubin.

This can cause your skin or whites of your eyes to look slightly yellow. Unless levels become very high (more than five times the upper normal limit) this is not harmful.

It can be disconcerting though and about 1 in 10 people switch to an alternative for this reason.

In these cases the ritonavir booster may not be needed. Some people use a higher atazanavir dose (400 mg) without ritonavir. But drug levels need to be checked using therapeutic drug monitoring (TDM).

**Unboosted atazanavir should not be used in a combination with tenofovir.**

**Atazanavir can also interact with some over the counter antacid drugs (called proton pump inhibitors).**

**Darunavir/r** is a PI that is mainly used once-daily (800 mg plus 100 mg ritonavir) if you have no drug resistance.

It usually needs to be dosed twice-daily (600 mg with 100 mg ritonavir) if you have drug resistance to other meds.

Darunavir is generally an easy to tolerate drug. Side effects include rash, nausea, diarrhoea and lipid changes.

## Integrase inhibitors

**Raltegravir** is an integrase inhibitor that needs to be taken twice-daily.

It probably has fewer side effects compared to other first line options. It has none of the CNS side effects. It also has fewer ritonavir related side effects like nausea, diarrhoea and lipid changes.

However, raltegravir is less widely used because in some parts of the UK it is more expensive than other options.

## Alternative first-line options

Drugs listed as alternatives in UK guidelines have been widely used in the past and can still be good options.

## Nevirapine

**Nevirapine** is similar to efavirenz but has a slightly higher risk of very serious side effects.

This includes a rash called Stevens-Johnson Syndrome (SJS) and liver toxicity (both can be fatal). However, it does not cause sleep and mood disturbance.

The risk of liver toxicity means that nevirapine is not recommended in people with hepatitis C and HIV.

Side effects usually occur in the first two months of treatment. In people who do not get these reactions nevirapine is generally easy to take.

Nevirapine use is limited by CD4 count to only starting in women whose CD4 is less than 250 or less than 400 in men.

Nevirapine is started at 200 mg once-daily for the first two weeks, and then, only if you do not have a rash, the dose increases to 200 mg twice-daily. **Any rash should be promptly shown to your doctor.**

In 2012, a new once-daily 400 mg formulation of nevirapine became available. This is only for use after the two week lead-in period.

"Having lived with HIV since July 1996, it never dawned on me that I had never come to terms with my diagnosis. For all those years I was in survival mode and I had survived.

I always advocated for treatment and have been on treatment, including through two pregnancies, though I never had symptoms and never had a CD4 count less than 460. So when for the first time I had persisent painful lumps in my neck, you can guess what happened!

I realised that, yes, the HIV test in 1996 was not wrong and yes, after 13 years of claiming to be HIV-positive, I actually am HIV-positive!

I kept saying to myself "It is true, I am HIV-positive!" How do you come to terms with something you have known and lived with for so long?

The mind is very complex. I think the child in me had wished this nasty thing away for so long - acknowledging yet not acknowledging."

*Faith, Luton*

**Lopinavir/r** (Kaletra) and **fosamprenavir/r** are alternatives.

Both these drugs are used less than other PIs because they were not quite as good in studies.

They may be useful if you cannot tolerate other options.

Kaletra does not require separate ritonavir because this is already included in the same pill.

**Rilpivirine** was approved in 2011 as a first-line drug.

However it is only approved for people who have a viral load when they start treatment that is less than 100,000.

This is a once-daily NNRTI that needs to be taken with food.

It has similar side effects to efavirenz and a higher risk of serious resistance.

Eviplera is a 3-in-1 once-daily pill that combines rilpivirine plus Truvada .

## Non-standard approaches

Other options than using two nukes plus either an NNRTI or boosted PI are sometimes used. This is only in specific circumstances or in research.

Some studies are not using nukes at all. These include using boosted darunavir only, or a boosted-PI plus either an NNRTI, an integrase inhibitor or 3TC.

If you are alread using an unusual combination that is working well, you do not need to change treatment unless there are reasons to do Ask your doctor about your current drugs if you are unsure.

## Other meds that are sometimes used

**Maraviroc** (a CCR5 inhibitor) is usually only used in second-line treatment or in studies. Before using maraviroc you need a test to check that your HIV uses the CCR5 co-receptor.

**Etravirine** is used if you have resistance to efavirenz or nevirapine. It has also been studied and used as a alternative for people who have side effects to efavirenz.

**Tipranavir/r** and **T-20 (enfuvirtide)** are only used by people with extensive drug resistance.

**Saquinavir, nelfinavir** and **indinavir** are old PIs that have largely been replaced by newer meds.

# Your personal treatment history

The next few pages include space to record important information about your own treatment and treatment history.

These have been taken from the i-Base Treatment Passport which is available free from i-Base.

If you'd like a copy of the more detailed booklet please call 020 7407 8488 or go online:

www.i-Base.info

## Why keep a treatment history?

Keeping a record of your treatment history can:

- Help you understand your health and treatment.
- Help if your doctor changes at your clinic.
- Help if you speak to other health care workers or to a treatment advocate for advice.
- Help if you ever change hospitals or clinics, if you want a second opinion, when on holiday or abroad or if you move to another country.

Any treatment choice for your future care is closely linked to your previous treatment history.

This includes results from blood tests like the CD4 count, viral load and resistance tests, as well as the history of drugs you have used and your reasons for changing them.

As treatment improves you could need this record for 20 years or more. Whether new treatments work will depend on your previous treatment history .

This record is important. If you change clinic you should ask for your medical records to be forwarded. Because this does not always happen or is delayed, make sure that you have a record of your GUM or clinic number.

These pages will help provide a useful record in all these situations.

Your doctor can provide you with details to help fill in these pages but it does not replace your medical notes.

All patients have the right to see their medical records. You can also make photocopies but you need to let the clinic know beforehand.

If you are changing clinics it is sometimes easier to take a summary copy of your notes with you.

## CD4 and viral load results

These blood tests are used to monitor your health and your response to treatment.

**CD4 count** This blood test checks your immune system.

**CD4%** This is similar to the CD4 count but is often more stable.

**Viral load** This test measures the amount of HIV in a sample of blood.

It is used to decide when you need to start treatment, and whether the treatment is working effectively.

Even rough figures are useful from your previous history and your doctor can provide you with these.

The lowest CD4 count and highest viral load results when you were first diagnosed and before you started treatment are the most important.

| | Date (month/year) | CD4 (cells/mm3) | CD4% | Viral load |
|---|---|---|---|---|
| e.g. | July 2006 | 234 | 14 | 180,000 |
| | | | | |
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| Date (month/year) | CD4 (cells/mm3) | CD4% | Viral load |
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## Antiretroviral treatment history

Your choice of new and future drugs will depend on the drugs you have used in the past and the reason you stopped using them. It is important to know whether this was because of resistance or side effects.

If you can't remember exact details, even rough dates are useful (ie taking AZT for 6 months in 2001 etc).

A list of drug names is included on the centre page pull out section.

| | Drugs & combination details (name & dose) | Date started | Date stopped | Reason |
|---|---|---|---|---|
| e.g. | Kaletra | Feb 07 | Jan 09 | High cholesterol |
| | | | | |
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## Other infections and illnesses

A record of other infections (eg TB) or HIV-related illnesses (PCP, shingles, etc) is also important.

| Illness or infection | Treatment & dose | Dates |
|---|---|---|
| | | |
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## Side effect and allergies

Main side effects or drug-related allergies.

| Side effect or symptom | Suspected drug | Date started/stopped |
|---|---|---|
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| | | |

"I was confused about how my clinic worked, even when I was on treatment. One day I asked the nurse to explain the tests and what a 'good' or 'bad' result might mean.

It was tremendously helpful. I used to be happy with doctors saying 'everything's okay' but now I want to know details about a few key things - my cholesterol, my bone health, my liver and kidneys."

*Matt, Brighton*

"I was very scared of treatment. I did not think it worked cause I had just arrived from Zimbabwe.

I came to the UK after my husband died and I needed treatment immediately. I told my doctor that I did not want to be on d4T and ddI and he just laughed because these drugs were no longer in use in this country. It is amazing what the disparity of wealth does to countries.

I never used to read about the meds I was given but after my experience with efavirenz (which I changed) I now read every detail on every drug.

Now I tell everyone that the drugs are fantastic because they have given me a new lease of life."

*Hosanna, UK*

## Immunisation record

Keeping a history of vaccination and immunisation (hepatitis A and B, pneumovax, flu, tetanus and holiday vaccinations, etc) can also help. HIV positive people usually need to use 'non-live' vaccinations and you may have to ask for these specially.

| Date | Vaccination |
|---|---|
| | |
| | |
| | |

| Date | Vaccination |
|---|---|
| | |
| | |
| | |

## Trials and studies

| Study name and treatment received | Dates |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |

## Resistance tests

| Date | Results (continue summary on notes pages if necessary) |
|---|---|
| | |
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| | |

# Glossary

**adherence**
The term to describe taking medication exactly as prescribed – at the right time and following any diet advice.

**antibody**
A protein that is part of the immune system and which is produced to fight an infection.

**antigen**
A protein found on the surface of a virus or bacteria. It is recognised by the immune system which then generates antibodies.

**antiretroviral (ARV)**
An HIV drug (HIV is a retrovirus).

**CD4 cells**
A type of white blood cell that helps your body fight infections.

**first-line therapy**
The first combination of HIV drugs that you use.

**HAART or ART**
A term for combination therapy (Highly Active Anti-Retroviral Therapy).

**mutation**
A change in the structure of the virus that can stop a drug from working.

**opportunistic infection (OI)**
An infection that occurs after your immune system has been damaged by HIV.

**seroconversion**
The time after HIV infection (usually a few weeks) when your body generates an immune response to HIV.

**side effects**
Secondary effect of a drug other than the reason it is prescribed. Side effects are usually related to negative effects.

**therapeutic drug monitoring (TDM)**
A test to measure the levels of a drug in your blood.

**toxicity**
The term for the degree to which a substance causes harm.

**treatment-experienced**
Someone who has previously used anti-HIV treatments.

**treatment-naive**
Someone who has never taken any anti-HIV treatments before. People who are treatment naive can have drug resistance if they were infected with a drug resistant strain of HIV.

**triglyceride**
A type of body fat similar to cholesterol.

**viral load test**
A test to measure the amount of HIV in blood but which can also check levels in other compartments like genital fluid, semen or spinal fluid. Tests can only measure down to certain levels (ie 50 copies/mL).

**viral rebound**
When taking treatment and your viral load increases above detectable levels.

**wild-type virus**
HIV that has not developed any mutations. This is usually, but not always, the virus that you are first infected with.

# Further information

If you have questions after reading this guide or would like to talk to someone about treatment, contact the i-Base information service.

## HIV i-Base

The i-Base wesite has other treatment guides including translations, technical bulletins, an online Q&A service, a treatment manual, information about workshops and many other resources.

It also contains information about each drug, conference reports and technical reviews of published studies.

www.i-Base.info

## UK-CAB

A community network that focusses on treatment including peer-support and training.

www.ukcab.net

## Community treatment information

The following community sites, most of which are based in the US, have information on individual HIV drugs, factshets, more detailed referenced research, conference reports and treatment news.

www.aidsinfonet.org
www.aidsmeds.com
www.tpan.com
www.aidsmap.com
www.natap.org

## Pipeline drugs

i-Base and the US activist organisation TAG produce a pipeline report each year.

This includes a review of new drugs in development for HIV, hepatitis and TB.

http://i-base.info/home/2011-pipeline-online/

## HIV and ageing

A guide to HIV and ageing is available from HIVTRI.

www.justri.com

## Drug approval agencies

Detailed prescribing information in most European languages and other scientific documents are available from the European Medicines Agency (EMA). This the European organisation responsible for drug approval and drug safety.

Use the link on their site for 'product information/human medicine':

www.ema.europa.eu

## Patient rights in the UK

For information about your rights as a patient, see **'Your Guide to the NHS'** available by phoning 0800 555777 or online:

nnuh.nhs.uk/docs%5Cleaflets%5C36.pdf

Information about healthcare services including how to make a complaint are on the 'About the NHS' link on the NHS homepage:

www.nhs.uk

"Part of the reason I started combination therapy was hearing the experiences of other people living with HIV and seeing how well they looked. I have been on HIV treatment ever since, without a break.

The biggest challenge for me to being adherent is the travel involved in work and for holidays.

Once or twice I have mistakenly taken my efavirenz during the day instead of at night. I have barely been able to function because of the side effects.

I now facilitate treatment workshops with African people in the UK. People want to know more about their treatments and want to learn. One person came up to me and said that they always tried to adhere to HIV treatment but didn't know why they had to.

Learning the reasons why they need to be adherent was an eye opener for them and they were then able to confidently tell others the same things."

*Winnie, London*

## Feedback

Your feedback on this guide helps us develop new resources and improve this resource. All comments are appreciated.

These can be made using an oline survey at:

http://www.surveymonkey.com/s/978R8F9

Comments can also be posted free to:

FREEPOST RSJY-BALK-HGYT, i-Base, 57 Great Suffolk Street, London SE1 0BB.

## Notes

# ARV chart
2012

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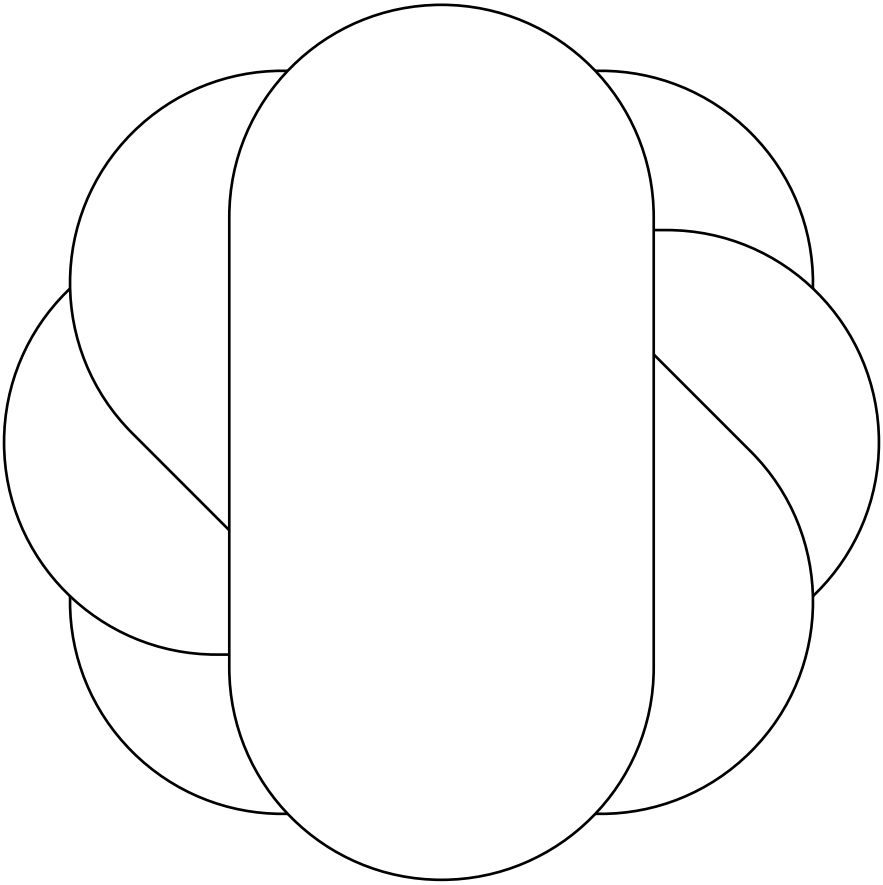

**A supplement to the i-Base Introduction to Combination Therapy**

| Drug names | | Recommended adult dose * | Total daily pills |
|---|---|---|---|
| **Nukes: nucleoside or nucleotide reverse transcriptase inhibitors (NRTIs)** | | | |
| *Dual nukes* | | | |
| Truvada<br>(tenofovir 300 mg + FTC 200 mg) |  | One tablet, once-daily. | 1 |
| Kivexa<br>(abacavir 600 mg + 3TC 300 mg) |  | One tablet, once-daily. | 1 |
| Combivir<br>(AZT 300 mg + 3TC 150 mg) |  | One tablet, twice-daily. | 2 |
| *Single nukes* | | | |
| 3TC, lamivudine<br>(Epivir) |  | 1 x 300 mg or 2 x 150 mg (150 mg shown), (taken as a once-daily or twice-daily dose). | 1 if 300 mg<br>2 if 150 mg |
| abacavir<br>(Ziagen, Epzicom) |  | 2 x 300 mg tablets (taken as a once-daily or twice-daily dose). | 2 |
| FTC, emtricitabine<br>(Emtriva) |  | 1 x 200 mg capsule, once-daily. | 1 |
| tenofovir DF<br>(Viread) |  | 1 x 300 mg tablet, once-daily. | 1 |
| AZT, zidovudine<br>(Retrovir [pictured], or generic) |  | 1 x 250 mg capsule, twice-daily. | 2 |
| ddI<br>(Videx, didanosine) |  | 1 capsule, once-daily, (125, 200, 250 or 400 mg). Take on empty stomach, 2 hrs before & after food. | 1 |
| *Triple nukes* | | | |
| Trizivir<br>(AZT + 3TC + abacavir) |  | One tablet, twice-daily. | 2 |

| | | | |
|---|---|---|---|
| **INIs: integrase inhibitors** | | | |
| raltegravir<br>(Isentress) |  | 1 x 400 mg tablet, twice-daily. Take with or without food. | 2 |

| | | | |
|---|---|---|---|
| **Entry inhibitors, including CCR5 inhibitors** | | | |
| T-20<br>(Fuzeon, enfuvirtide) |  <br>not to scale | 90 mg injection under the skin, twice-daily. | 2 injections daily |
| maraviroc *<br>(Celsentri, Selzentry) |  | 150 mg or 300 mg or 600 mg once or twice daily depending on ARV combination. | 1 or 2 or 4 |

| Drug names | | Recommended adult dose * | Total daily pills |
|---|---|---|---|
| **NNRTIs: non-nucleoside reverse transcriptase inhibitors (non-nukes)** | | | |
| efavirenz (Sustiva) 600 mg or 200 mg |   200 mg  | 1 x 600 tablet (or 3 x 200 caps) once-daily; at night, not with high fat meal. | 1 tablet (or 3 capsules) |
| nevirapine 200 mg (Viramune) and nevirapine 400 mg (Viramune PR) |  200 mg 400 mg   | 200 mg once-daily for first 14 days. Then 1 x 200 mg tablet, twice-daily or 2 x 200 mg once-daily; OR 1 x 400 mg prolonged release tablet once-daily (pic on right). | 1 or 2 ( based on 200 mg or 400 mg) |
| etravirine (Intelence) |   | 1 x 200 mg tablet, twice daily, take with food. Dispersible in water. | 2 |
| rilpivirine (Edurant) |   | 1 x 25 mg tablet, once-daily, take with main meal. | 1 |
| **Fixed dose NNRTI + dual nuke combinations** | | | |
| Atripla (efavirenz 600 mg + FTC 200 mg + tenofovir 300 mg) |   | One tablet, once-daily. Guidance as for separate drugs. Take at night not with a high fat meal. | 1 |
| Eviplera (rilpivirine 25 mg + FTC 200 mg + tenofovir 300 mg) |   | One tablet, once-daily, with main meal. See separate drug info. | 1 |
| **PIs: protease inhibitors** | | | |
| atazanavir/r * (Reyataz) |   | 1 x 300 mg cap + 100 mg ritonavir, once-daily. Take with food. 150 mg and 200 mg capsules also available. | 1 (+ 1 ritonavir) |
| darunavir/r * (Prezista) |   | 2 x 400 mg + 100 mg ritonavir once-daily or 1 x 600 mg + 100 mg ritonavir twice-daily (if resistance). | 1 or 2 (+ 1 or 2 ritonavir based on dose) |
| lopinavir/r (Kaletra) 200/50 or 100/25 mg |  100 / 25 mg  | 2 x 200/50 tablets twice-daily or 4 x once-daily (or 4 x 100/25 mg tabs twice-daily). With or without food. | 4 (or 8 using smaller pills) |
| fosamprenavir/r * (Telzir) |   | 1 x 700 mg tablets + 100 mg ritonavir, twice-daily. Take with or without food. | 2 (+ 2 ritonavir) |
| saquinavir/r * (Invirase) |   | 2 x 500 mg tablets + 100 mg ritonavir, twice-daily. Take with food. | 4 (+ 2 ritonavir) |
| tipranavir/r (Aptivus) |   | 2 x 250 mg capsules + 200 mg ritonavir, twice-daily. Take with food. | 4 (+ 4 ritonavir) |
| ritonavir (RTV) Meltrex (Norvir) |   | 100 mg tablets used at different doses to boost other PIs. | depends on PI |

elfinavir
Viracept)

*All doses need to be confirmed by your doctor and pharmacist as different doses and formulations are sometimes used. Smaller pills are for children or if larger pill are difficult to swallow. Some drugs are not recommended for first-line therapy. Thanks to aidsinfo.nih.gov for some images. Pictures approximate to actual size. www.i-Base.info

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## i-Base publications

**All i-Base publications are available free**
**Treatment guides are written in everyday language**
**HTB is written in more technical medical language**

**Please photocopy or cut out this form and post to**
**HIV i-Base**
**4th Floor, 57 Great Suffolk Street, London, SE1 0BB**
**or fax to 020 7407 8489**
**or order online www.i-Base.info**

**Please send me**

- Guide to hepatitis C for people living with HIV ☐
- Changing treatment: guide to second-line therapy ☐
- Pregnancy and womens health ☐
- HIV & your quality of life: side effects and other complications ☐
- HIV testing and risks of sexual transmission ☐
- HIV Treatment Bulletin (HTB) ☐

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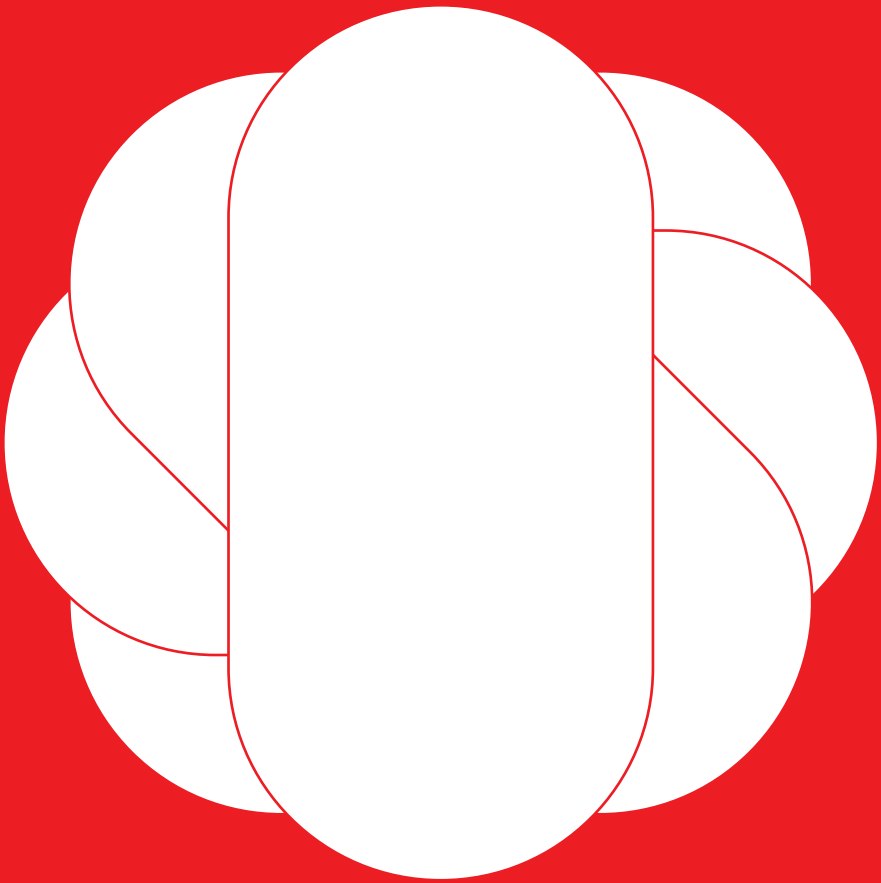
i-Base would like to thank The Monument Trust for their support in funding this publication

# Call us on
# 0808 800 6013

**i-Base Treatment Information Phoneline**

**Monday to Wednesday**



i-Base can also answer your questions by email or online

**questions@i-Base.org.uk**
**www.i-Base.info/questions**