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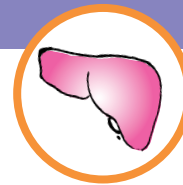
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KEEPING YOUR

NEW LIVER HEALTHY

Facts About Transplant Medications



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KEEPING YOUR NEW LIVER HEALTHY: FACTS ABOUT TRANSPLANT MEDICATIONS

THE TRUTH ABOUT TRANSPLANT MEDICINE



1 The first truth about transplant medicine is this:

- You must take it or you will lose your liver.

2 The second truth about transplant medicine is that it is very strong medicine.

- It will have side effects that can give you problems.
- You may even need to take other medicine to deal with the problems caused by the transplant medicine.

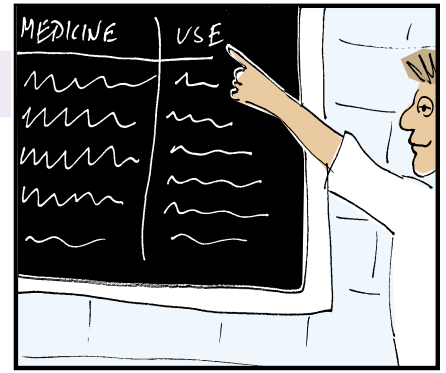
Your doctors will work very hard to keep you and your new liver healthy.

- They will be checking your blood.
- They may need to make lots of changes in your medicines. They may need to give you more or less of a certain medicine, add one, or take one away. They will try to keep things in balance.
- You need to stay in touch with your doctors. Talk with them. Ask questions. They can't do it without you.

FIND OUT WHAT THE MEDICINE DOES FOR YOU

When you have a liver transplant, you will take three different kinds of medicines:

1. Transplant medicine to **keep your body from fighting your new liver**
2. Medicine that **protects you from infection**
3. Medicine to **deal with the problems (side effects) caused by the transplant medicines**



Transplant Medicine

Transplant medicines are medicines that **stop your immune system from attacking your new liver**. They are also called immunosuppressants.

Your body's defense system — called the immune system — defends you from "foreign invaders" such as bacteria, viruses, and even pollen. Your immune system thinks your new liver is also a "foreign invader." It attacks the cells of the new liver because they're not like your body's own cells. This attack is called "rejection," the most serious problem that can happen after a transplant.

Immune System. Your body can defend itself against dangers from the outside such as illness and germs. This defense system is called your immune system.

Here's how they work:

Transplant medicines work better when they are used in combination. You may be taking two or three kinds of transplant medicine at the same time.

Medicines for Infections

Transplant medicines protect your new liver. They do this by making your body's defense system weaker. This means you have a good chance of getting an infection. Your doctor may give you medicine to prevent infections from bacteria, viruses, and fungi.

Medicines That Help to Control Side Effects

Because you have a liver transplant and take strong transplant medicine, you may have side effects from the medicine. **You may need to take other medicine to deal with these problems.** For example, if the transplant medicine bothers your stomach, you may need medicine for your stomach. Or, if the transplant medicine makes your blood pressure go up, you may need to take blood pressure medicine.

MAKE SURE YOU ARE TAKING THE MEDICINE THE RIGHT WAY

Make sure you take all your transplant medicine the right way. The transplant team will tell you how they want you to take it. Be sure you know what they are saying. This is not always easy. There are many medicines and it is easy to get confused.

There are two ways you can be sure if you are taking your medicine the way you should:



1 Bring all your medicine with you to the doctor or nurse.

2 Tell and show them which medicine you take and at what time of day. After you tell them what you are doing, they can tell you if you need to make some changes.

You are part of the transplant team. They can't do it without you. Be sure to tell the doctors about all the medicine you take or **do not** take.

1 Never stop any of your medicine without calling your doctor. If you want to stop a medicine, call the doctor first.

2 Tell your doctor or nurse if you think you are having side effects from a medicine.

3 Check with your transplant team:

- if you miss a dose of medicine
- if any other doctor gives you medicine
- before you take any over-the-counter medicine

DON'T RUN OUT

Get your prescriptions filled on time. You must have the right amount of medicine each day.

Problems Paying for Your Medicine? Tell Your Doctor

If you have problems paying for your medicine, tell the doctor. The cost of transplant medicine is very high. Most health plans will cover the costs of medicine for a certain amount of time.

If you worry that you cannot pay for your medicine, **tell your transplant team right away.** They may be able to make some changes in your medicine.

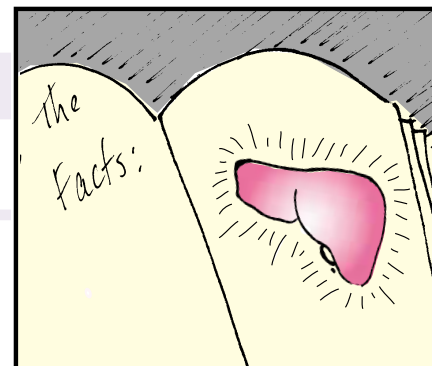
Also **talk to the social worker** at the transplant center.



LEARN ABOUT YOUR TRANSPLANT MEDICINE

How to Use This Section

Look at the list below. Find the names of the medicines you are taking. Go to the page numbers to read about these medicines.



GENERIC NAME	BRAND NAME	USE	PAGE NUMBER
Acyclovir	Zovirax®	Infection	16
Azathioprine	Imuran®	Transplant medicine	9
Bumetanide	Bumex®	Diuretics or "Water Pill"	20
Cimetidine	Tagamet®	Ulcer medicine	19
Clotrimazole	Mycelex®	Infection	18
Cyclosporine (Cyclo)	Sandimmune®, Neoral®, SangCya®	Transplant medicine	10
Famotidine	Pepcid®	Ulcer medicine	19
Furosemide	Lasix®	Diuretic or "Water Pill"	20
Ganciclovir	Cytovene®, DHPG	Infection	17
Lansoprazole	Prevacid®	Ulcer medicine	19
Metolazone	Zaroxolyn®	Diuretic or "Water Pill"	20
Methylprednisolone	Medrol®, Solu-Medrol®	Steroid - Transplant medicine	7
Mycophenolate mofetil	CellCept®, "MMF", "RS"	Transplant medicine	14
Nystatin	Mycostatin®	Infection	18
Omeprazole	Prilosec®	Ulcer medicine	19
Prednisolone	Pediapred®, Prelone®	Steroid - Transplant medicine	7
Prednisone	Deltasone®	Steroid - Transplant medicine	7
Ranitidine	Zantac®	Ulcer medicine	19
Sirolimus, Rapamycin	Rapamune®	Transplant medicine	12
Sucralfate	Carafate®	Ulcer medicine	19
Tacrolimus	Prograf®, FK506	Transplant medicine	13
Trimethoprim-sulfamethoxazole	Bactrim®, Cotrim®, Septra®	Infection	15

Side Effects of Transplant Medicine

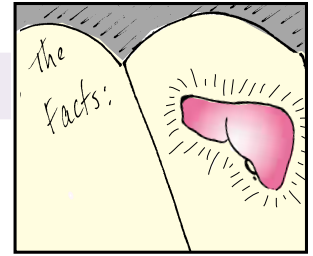
Medicines help. You will need to take transplant medicines for as long as you have the liver transplant. **If you stop taking them, you could lose your transplant.**

But, transplant medicines are strong. Each has some side effects. These side effects are different in each person. The doctors will try to give you medicine that has the fewest side effects for you. **Here are some problems you should be aware of:**

1. The biggest problem with any of the transplant medicines is that they **make it hard for your body to fight off infections.**
2. Also, transplant medicines can make you **more likely to get some types of cancer**, mostly cancer of the lymph glands and skin cancers.

Your doctors will try very hard to make sure your body gets enough transplant medicine to keep your new liver healthy. At the same time, they will try to keep you from having infections and getting cancer.

LEARN ABOUT YOUR TRANSPLANT MEDICINE (CONT.)



Here are the names of different transplant medicines.

Steroids

- Prednisone
- Methylprednisolone
- Prednisolone
- Deltasone®
- Medrol®
- Pediapred®
- Prelone®
- Solu-Medrol®

These medicines are called steroids. There are many different types of steroids. The ones that you will be taking are different from the type of steroids used by some athletes.

How Steroids Work

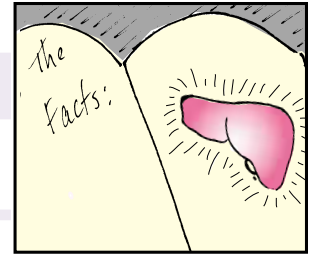
Steroids can also keep your body from fighting your liver transplant.

Steroids work a lot like the hormones in your body that help your body manage your blood sugar, your blood pressure, and stress.

How Do You Take Steroids?

1. **During and after your transplant operation**, the doctors will give you high doses of steroids by mouth or through your vein.
 - Large intravenous doses are sometimes given to help you when your body is trying to reject your new liver. These large intravenous doses are given to you for 3 to 5 days.
 - After these large doses, your daily dose may go up, but only after treatment for rejection. Then your steroid dose will slowly go down.
2. **When you have been home for a while**, you may take steroids once a day, twice a day, or once every other day.
 - Some people are able to stop taking steroids. Never stop taking steroids before you talk to your doctor.

LEARN ABOUT YOUR TRANSPLANT MEDICINE (CONT.)



Common Side Effects

Steroids can have many side effects. There will be more side effects if you have to take a high dose of steroids for a long time. Here are some things that may happen. Your doctor will help you manage them.

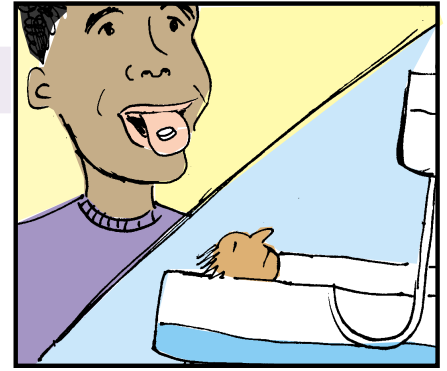
<i>Side Effects</i>	<i>Description</i>
Changes in the way you look	You might get a rounder face and more fat deposits around your waist and the back of your neck. Some people develop stretch marks; others get bruises. Teenagers and young adults frequently develop acne on the face, back, and chest. You could get very sensitive to the sun. These changes do not last. They will start to improve when your steroid dose goes down.
Stomach problems	Steroids can give you problems from mild heartburn to ulcers. Ask your transplant team about medicine you can take for your stomach. Take your steroid medicine with food. This will help your stomach feel better.
Fluid retention/high blood pressure	Steroids can cause your body to retain too much salt and water. This may raise your blood pressure. You may need more high blood pressure medicine. Stay away from salty food. This will help your high blood pressure.
Always hungry, weight gain	Steroids can make you feel hungry. Try to eat less high-fat, sweet foods to keep from gaining too much weight. Ask the dietitian on your transplant team to help you with your eating plan.
Increased blood sugar; diabetes	Your blood sugar may go up if you are on a high dose of steroids. You may need medications to bring the blood sugar levels back down. Some people may need to take insulin shots. People who have taken insulin in the past or who have diabetes in their family are most likely to need to take insulin.
Problems with bones and muscles	Steroids may cause problems with bones and muscles. You could get weak muscles from taking steroids. This will happen mostly in the thighs and shoulders. Some people get muscle cramps and pains in their joints, mostly in the hips and knees. These problems should go away when your steroid dose goes down. Using steroids for a long time may take some calcium out of your bones, which can lead to weak bones (called osteoporosis). Sometimes, there may be damage to the bone in the hips or knees, and surgery may be needed. This can be prevented by taking calcium, vitamin D, and other supplements. Speak to your doctor about the need for medicine to prevent bone loss.
Changes in behavior	Steroids may cause you to have trouble sleeping, depression, nightmares, nervousness, increased activity level (particularly in children), or mood changes. This mainly happens at high doses. It should go away when the dose is lower. A variety of medicines can alleviate these symptoms, so be sure to tell your doctor about them.
Eye problems	Some people develop eye diseases such as cataracts or glaucoma. Regular eye exams are an important part of your routine treatment. Ask your doctor about when to get your eyes checked.

MEDICINES FOR TRANSPLANTS

Generic: Azathioprine

Brand: Imuran®

Azathioprine and Imuran® are the same medicine. Imuran® is the brand name for azathioprine.



How Azathioprine Works

Azathioprine is used to help keep your body from rejecting your liver transplant. It cuts down the number of white blood cells that your body uses to fight diseases.

How Do You Take Azathioprine?

Azathioprine is a pill you can take by mouth once a day at any time. The dose may be changed if your blood count goes too low.

Things to be careful of:

- Never take azathioprine when you are taking medicine for gout such as allopurinol or Zylprim®.
- Never take azathioprine when you are taking the transplant medicine mycophenolate mofetil or CellCept®.

Common Side Effects

In most people, azathioprine causes very few side effects.

Side Effects

Description

Risk of infection

You might get an infection because of a low number of white blood cells. If your white blood cell count goes too low (less than 4000), your dose may be changed. It can also cause a drop in the number of platelets in your blood. You need platelets to help clot your blood. The number of red cells in your blood may also fall. This could cause anemia.

Stomach problems

Some people get nausea and vomiting from azathioprine. Occasionally, patients may get liver damage from this medicine. This is rare. You will have liver tests to check for this side effect.

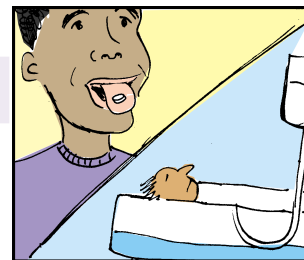
Other side effects that do not happen often

Fever, rash, hair thinning, loss of appetite, diarrhea, joint or muscle pain, or pancreas problems

Note:

Some types of skin cancer are more common in transplant patients. This happens mostly to people with fair skin who live in sunny climates. Azathioprine does not cause skin cancer. But if you develop a skin cancer, your dose of azathioprine may need to be cut down.

MEDICINES FOR TRANSPLANTS (CONT.)



Generic: Cyclosporine (Cyclo)

Brand: Neoral®

Sandimmune®

SangCya®

Neoral®, Sandimmune®, and SangCya® are brand names for cyclosporine. Cyclosporine is sometimes called “cyclo” for short.

These medicines are all the same, but they are made in different capsules. Do not switch back and forth among them. Stay with the one your transplant doctor gives you.

How Cyclosporine Works

Cyclosporine can help keep your body from rejecting your new liver. Cyclosporine has been used by transplant patients since the early 1980s. Cyclosporine makes your body's white blood cells weaker so they cannot damage the new liver too much.

How Do You Get or Take Cyclosporine?

- **In the hospital**, you will get cyclosporine **intravenously** or **by mouth**.
- **When you go home**, you will take cyclosporine by **mouth** as a **liquid** or a **capsule**.
- **When you take cyclosporine as a liquid, you must mix it in something made of glass and use a metal spoon.**
- Cyclosporine capsules come in two strengths: 25 mg and 100 mg.
- You will take cyclosporine one, two, or three times a day. When you take your medicine depends on how quickly your body uses the drug and what you are eating. (Children often need to take the drug three times a day.)
- **You must take cyclosporine at the same time each day. This is very important.**
- **You must take cyclosporine with the same kind of food. This is very important.** So, if you take your cyclosporine in the morning when you eat a bowl of cereal, then you should take your cyclosporine every morning with a bowl of cereal. **Don't make changes from day to day.**

How to Store Cyclosporine

Each cyclosporine capsule comes in a foil package. **Leave cyclosporine in this package until you take it.** Once you open the foil package, you have to take the capsule in 7 days.

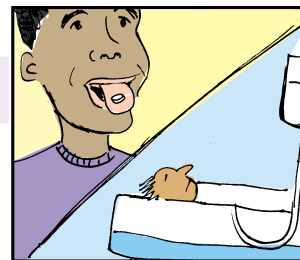
You may notice a slight odor when you open the foil package. This is normal and does not mean the medication has gone bad.

Capsules are good for up to 3 years if you keep cyclosporine in its foil packages and if you store it in a cool place.

Blood Tests for Cyclosporine

The cyclosporine in your blood needs to be checked to make sure that it is not too high or too low. Do not take your cyclosporine on the morning of your blood test. Wait until after your blood has been drawn.

MEDICINES FOR TRANSPLANTS (CONT.)



Generic: Cyclosporine (Cyclo)

Brand: Neoral®

Sandimmune®

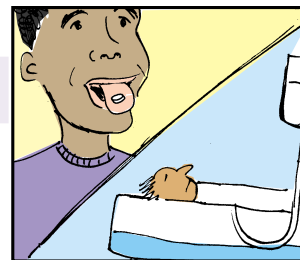
SangCya®

Common Side Effects

<i>Side Effects</i>	<i>Description</i>
Decrease in kidney function	Cyclosporine may slow down your kidney function. You may need to have your dose of cyclosporine changed. Never lower the cyclosporine dose yourself without talking to your doctor first.
High blood pressure	Cyclosporine may make your body hold extra salt and water. It may also cause your blood vessels to become narrow. These can lead to high blood pressure, even when your liver is working well. You might need to take high blood pressure medications.
Change in body appearance	You could grow more hair on your face, arms, and legs. Talk to your doctor about what you can do.
Swollen and bleeding gums	You will have to take good care of your mouth and teeth. Brush and floss your teeth at least twice a day. See a dentist at least once a year.
Tremors or shakiness and headaches	You could have headaches. Your hands could shake and your hands and feet might tingle. This is a sign of high cyclosporine levels in your blood. Tell your doctor. These side effects can go away.
High blood potassium levels	Cyclosporine will make the potassium level in your blood go up. You may need to take medicine to bring your potassium down. You may also have to stay away from food that has a lot of potassium. Talk to a dietitian if this is a problem.

Never run out of cyclosporine. Make sure you always have enough.

MEDICINES FOR TRANSPLANTS (CONT.)



Generic: Sirolimus, Rapamycin

Brand: Rapamune®

Sirolimus and rapamycin are the same medicine. Rapamune® is the brand name for both.

How Sirolimus Works

Sirolimus is used to help keep your body from rejecting your liver transplant. It prevents an increase in the number of white blood cells that could attack and damage your liver.

How Do You Take Sirolimus

Sirolimus is a liquid contained in either a bottle or as individual pouches. The dose your doctor orders should be mixed in a plastic or glass container with at least 2 ounces of water or orange juice. **Never mix with grapefruit juice.** After drinking the mixture, the container should be refilled with at least 4 ounces of water or orange juice, mixed, and taken again. Sirolimus should be taken once a day, 4 hours after you take your cyclosporine. It must be taken at the same time each day and with the same kind of food. This is very important.

How to Store Sirolimus

The bottle or pouches should be stored protected from light in a refrigerator at 36 to 46 degrees F (**not in the freezer**). Once the bottle is opened, it should be used in 1 month. If necessary, the bottle or pouches can be stored at room temperature for a couple of days.

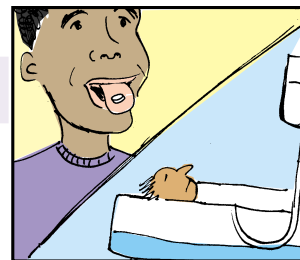
Common Side Effects

<i>Side Effects</i>	<i>Description</i>
Low blood cell counts	The white cells can decrease. This can increase the risk of getting an infection. It can cause a drop in the number of platelets in your blood. You need platelets to help clot your blood. The number of red cells can also fall. This could cause anemia.
High lipid counts	Cholesterol and triglycerides are lipids and can be increased. This can lead to atherosclerosis or “hardening of the arteries.” You may need to take additional medicine to lower your lipid levels.
Skin rash or acne	You can develop either a rash or acne on your face or body.
Stomach problems	Sirolimus can cause diarrhea.
Low blood potassium levels	Sirolimus can make the potassium level in your blood go down. You may need to take medicine to bring your potassium level up. You may also have to eat food that is high in potassium. Talk to a dietician if this is a problem.

If you are planning to get pregnant, please talk to your transplant doctor. Your doctor may have you stop taking sirolimus before attempting to get pregnant or stop it while you are pregnant.

Never run out of sirolimus. Make sure you always have enough.

MEDICINES FOR TRANSPLANTS (CONT.)



Generic: Tacrolimus
Brand: Prograf®
FK506

Prograf® is the brand name for tacrolimus. They are the same medicine.

How Tacrolimus Works

Tacrolimus can help keep your body from rejecting your new liver. Tacrolimus makes your body's white blood cells weaker so they cannot damage the new liver. Tacrolimus works the same way as another medicine called cyclosporine. Many of their side effects are the same.

You should never take tacrolimus and cyclosporine at the same time.

How Do You Take Tacrolimus

- You will probably take tacrolimus two times a day.
- **You must take tacrolimus at the same time each day.**
- **You also must watch when you eat. This medicine and your food work together.** So, if you take your pill 1 hour **before** you eat, then you must always take it 1 hour **before** you eat. If you take it 1 hour **after** you eat, then you must always take it 1 hour **after** you eat. The idea is to decide on **when** you will eat and **when** you will take your tacrolimus. Then stay with that plan. **Don't change from day to day.**

Blood Tests for Tacrolimus

Tacrolimus in your blood needs to be checked to make sure that it is not too high or too low. **Do not take your tacrolimus on the morning of your blood test. Wait until after your blood has been drawn.**

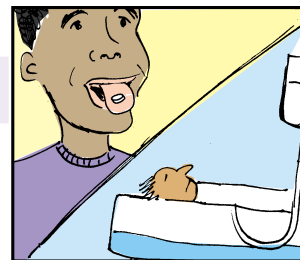
Common Side Effects

<i>Side Effects</i>	<i>Description</i>
Decrease in kidney function	Tacrolimus may slow down your kidney function. You may have to have your dose of tacrolimus changed. Your doctor will do this.
Tremors, shakiness	You could feel shaky and have tremors. This could be a sign of high tacrolimus in your blood. Tell your doctor. These side effects can go away.
Other side effects	You could also have headaches; problems with your blood pressure, stomach, and liver; high blood sugar; and high potassium in your blood. You may need to take other medicine for these side effects.

Tacrolimus is not like cyclosporine because it does not cause more hair growth on your face, arms, or legs, or cause gum growth. It also does not cause swelling of your gums. But tacrolimus causes more tremors, headaches, even seizures. Blood sugar problems (diabetes) are more common with tacrolimus than cyclosporine.

Never run out of tacrolimus. Make sure you always have enough.

MEDICINES FOR TRANSPLANTS (CONT.)



Generic: Mycophenolate mofetil
Brand: CellCept®
“MMF”
“RS”

CellCept® is the brand name of mycophenolate mofetil.

How Mycophenolate Mofetil Works

Mycophenolate mofetil can help keep your body from rejecting your transplant. Mycophenolate mofetil is a transplant medicine that keeps down the number of white blood cells that your body makes. These white cells are the cells that could attack your new liver. It is almost always used in combination with cyclosporine or tacrolimus and prednisone.

How Do You Take Mycophenolate Mofetil?

- You will take mycophenolate mofetil twice a day by mouth only.
- It comes in a capsule and a tablet.
- Mycophenolate mofetil comes in two strengths: 250-mg capsules and 500-mg tablets.

Things to be careful of:

- You should not take antacids and mycophenolate mofetil at the same time.
- You should not take azathioprine or Imuran® and mycophenolate mofetil at the same time.
- If you are planning to get pregnant, please talk to your transplant doctor. Your doctor will have you stop taking mycophenolate mofetil while you are pregnant.

Common Side Effects

<i>Side Effects</i>	<i>Description</i>
Stomach problems	This medicine can give you diarrhea, nausea, vomiting, or heartburn. These are very common side effects. They often get better if you can take a lower dose. You might also get an ulcer, but this is rare. Do not lower your dose without consulting your doctor.
Very low numbers of white blood cells	If you do not have enough white blood cells, you could get a serious infection. Your doctor may lower your dose of mycophenolate mofetil for a short time.

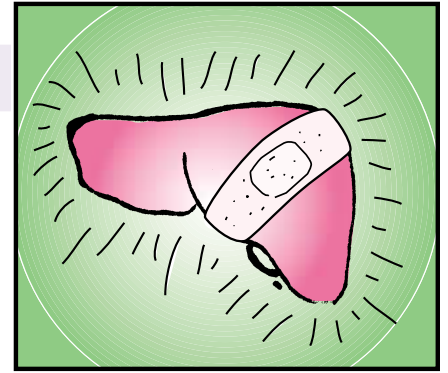
MEDICINES FOR INFECTIONS

Generic: Trimethoprim-sulfamethoxazole

Brand: Bactrim®

Cotrim®

Septra®



Bactrim®, Cotrim®, and Septra® are brand names for trimethoprim-sulfamethoxazole. They are the same medicine. They are antibiotics that are a type of sulfa drug.

How Trimethoprim-sulfamethoxazole Works

This medicine is used to prevent infections in the lungs and urine.

How Do You Take Trimethoprim-sulfamethoxazole?

- It comes as pills, liquid, or in an intravenous form. The pills come in two strengths: single-strength (SS) tablets and double-strength (DS) tablets.

Things to be careful of:

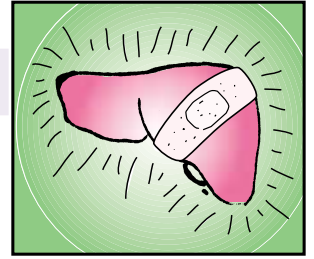
- This medication has sulfa in it. If you have an allergy to sulfa, your doctor will give you another medicine.
- This medicine should be avoided if you are pregnant.

Common Side Effects

Side effects do not happen often. But you may get the following:

- Nausea, vomiting, diarrhea, stomach cramps
- Skin rash
- Low numbers of white blood cells and other blood changes
- Your skin may become sensitive to sunlight. It will help if you do the following:
 - Use a sunscreen when you are outdoors.
 - Take each dose with a glass of water.

MEDICINES FOR INFECTIONS (CONT.)



Generic: Acyclovir

Brand: Zovirax®

Zovirax® is the brand name for acyclovir. They are the same medicine.

How Acyclovir Works

Acyclovir is medication that will fight virus infections. You will often get acyclovir for the first few months after your transplant. It helps to prevent certain kinds of viral infections such as herpes, chicken pox, shingles, and cold sores.

How Do You Take Acyclovir?

- It comes as a pill, liquid, or in intravenous form.
- It comes in several strengths. Your doctor will decide what dose you should get.

Things to be careful of:

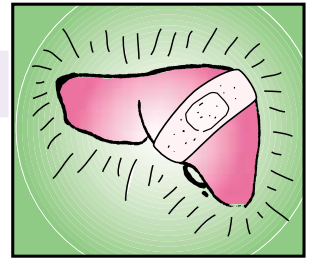
Stay away from people who have any type of viral infections, such as the flu, chicken pox, herpes, or cold sores. Tell your doctor if you are around anyone who has chicken pox.

Common Side Effects

You will not get many side effects from this medication, but you may feel tired or get headaches and nausea.

MEDICINES FOR INFECTIONS (CONT.)

Generic: Ganciclovir
Brand: Cytovene®
DHPG



Cytovene® is the brand name for ganciclovir.

How Ganciclovir Works

Ganciclovir is a medicine that will fight virus infections. It helps to prevent certain kinds of viral infections such as herpes, chicken pox, shingles, and cold sores.

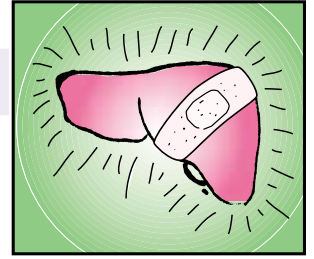
How Do You Take Ganciclovir?

- It comes as a pill, liquid, or in an intravenous form.

Common Side Effects

You will not have many side effects from this medicine. But this medicine can be hard on the liver, and you may need to have liver tests. You may have nausea, vomiting, or diarrhea.

MEDICINES FOR INFECTIONS (CONT.)



Generic: Nystatin/Clotrimazole

Brand: Mycostatin®

Mycelex®

Mycostatin® is the brand name for nystatin. Mycelex® is brand name for clotrimazole.

How Nystatin/Clotrimazole Works

Nystatin and clotrimazole are medicines used for yeast infection in your mouth. This yeast infection is often called “thrush”. Thrush looks like a white coating all over your tongue.

How Do You Take Nystatin/Clotrimazole?

- When you take nystatin, you swish and hold the medicine in your mouth for 5 minutes, then swallow.
- You should not eat or drink anything for 30 minutes following this swish and swallow process.
- Clotrimazole (Mycelex®) comes as a lozenge. When you take clotrimazole, you suck on the lozenge until it dissolves.
- Both nystatin and clotrimazole are used four times a day.

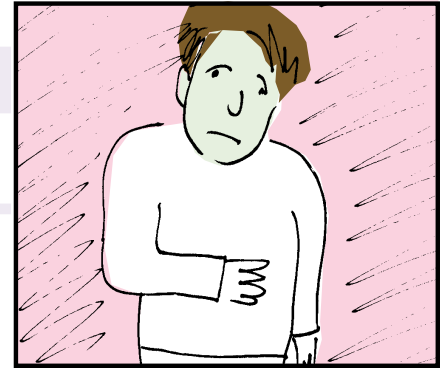
Common Side Effects

You will not have many side effects from this medicine; however, you may have nausea, vomiting, diarrhea, or stomach cramps.

MEDICINES THAT HELP TO CONTROL SIDE EFFECTS

Medicine for Ulcers

Carafate®
Pepcid®
Tagamet®
Zantac®
Prilosec®
Prevacid®



How Medicine for Ulcers Work

Because some transplant medicines are hard on your stomach, you may need to take medicine to prevent ulcers. The medicines listed above, as well as the generic brands, are the ulcer medicines used by most people.

How Do You Take Medicine for Ulcers?

- Follow directions on the label
- Ask your doctor

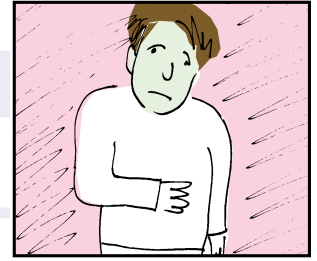
Things to be careful of:

If you are taking CellCept®, you should not take Carafate® because it prevents CellCept® from working. Your doctor should prescribe a different medicine.

Common Side Effects

Most people have very few side effects from these medicines.

MEDICINES THAT HELP TO CONTROL SIDE EFFECTS (CONT.)



Diuretics or “Water Pills”

Lasix® or **furosemide** is the diuretic used by most people. Others include the following:

Bumex® (bumetanide)

Zaroxolyn® (metolazone)

How Diuretics or “Water Pills” Work

Diuretics (“water pills”) are often needed by transplant patients. Diuretics will help the kidneys make more urine. They will also help with swelling, blood pressure, or high potassium.

How Do You Take Diuretics or “Water Pills?”

- Follow directions on the label
- Ask your doctor

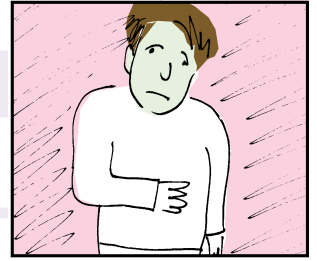
Things to be careful of:

When you take water pills it is important to watch your weight and blood pressure. You have to be careful not to lose too much water from your body.

Common Side Effects

When you first start taking diuretics, you will probably notice that you are passing more urine than before. If you feel dizzy when you stand up, get up more slowly.

MEDICINES THAT HELP TO CONTROL SIDE EFFECTS (CONT.)



Vitamins and Minerals

How Vitamins and Minerals Work

Most people get all the vitamins that they need from the food they eat. But when you have a transplant, it puts a stress on your body. Your doctor may tell you to take more vitamins or minerals, such as calcium.

How Do You Take Vitamins and Minerals?

- Follow directions on the label
- Ask your doctor

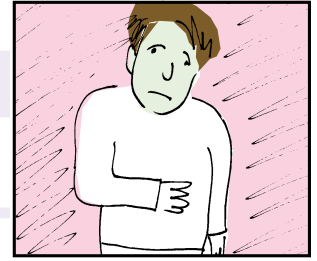
Things to be careful of:

There is no need for you to use other kinds of vitamins, but if you wish to use them, tell your transplant team.

Common Side Effects

Side effects from vitamins and minerals are rare, if you take the right dose.

MEDICINES THAT HELP TO CONTROL SIDE EFFECTS (CONT.)



Blood Pressure Medicines

How Blood Pressure Medicines Work

Some of the transplant medicines can cause your blood pressure to rise. This could happen even if your new liver is healthy.

Some people get high blood pressure for the first time after their liver transplant. They may need to start taking blood pressure medicine.

If you were taking blood pressure medicine before your transplant, you may need to continue it.

How Do You Take Blood Pressure Medicines?

- Follow directions on the label
 - Ask your doctor

Things to be careful of:

There are many kinds of blood pressure medicine. Two kinds of blood pressure medicine may have side effects that make your kidneys work less efficiently. They are:

- angiotensin converting enzyme (ACE) inhibitors
- angiotensin receptor blockers (ARBs)

Your doctor will tell you if you need to take a different kind of blood pressure medicine to prevent this problem.

Common Side Effects

The side effects you get from blood pressure medicine depend on which medicine you take. Some common side effects of blood pressure medicine are:

- Getting dizzy when you stand up
- Being tired
- Change in your heart beat
- Swelling of your feet or hands
- Problems having sex

TRANSPLANT MEDICATIONS

Find Out Which Medications Are Safe to Take Together

Transplant medicine is very strong and it does not always mix well with other medicine. This list only provides a few of the problems among medications. It will give you a starting point for your conversations with your doctor.

When you are given a new medication, remind your doctor that you are taking transplant medication. Check to make sure it is safe.

Cyclosporine (Cyclo) and its Brand Names

- Sandimmune®
- Neoral®
- SangCya®

These drugs can raise cyclosporine levels in your blood and make it too strong:

Some medicines to treat infection

- Erythromycin and some similar drugs like clarithromycin (Biaxin®)
- Antifungal medications
 - a) ketoconazole (Nizoral®)
 - b) itraconazole (Sporanox®)
 - c) fluconazole (Diflucan®)

Some blood pressure medicines

- Verapamil (Calan®, Isoptin®)
- Diltiazem (Cardizem®)
- Nicardipine (Cardene®)

Other medicines that can raise cyclosporine levels in your blood and make it too strong

- Ethisterone derivative (danazol) used for gynecologic conditions
- Amiodarone (Cordarone®) used for heart rhythm problems

The following drugs lower the cyclosporine level in your blood (a low cyclosporine level may lead to rejection and damage your new liver):

Medicines for seizures

- Phenytoin (Dilantin®)
- Phenobarbital (Luminal™)
- Carbamazepine (Tegretol®)

Some medicines to treat infection

- Rifampin (Rifadin®)
- Isoniazid (Calpas-INH™)

TRANSPLANT MEDICATIONS

Find Out Which Medications Are Safe to Take Together (cont.)

Cyclosporine (Cyclo) and its Brand Names (cont.)

The following drugs might make cyclosporine more dangerous to you:

Some medicines to treat infection

- Gentamicin (Garamycin®)
- Tobramycin (Nebcin®)
- Trimethoprim-sulfamethoxazole
- Amphotericin B (Fungizone®)

Stay away from the following pain medicines (many of these are available "over the counter")

- Ibuprofen (Motrin®, Advil®, Nuprin®)
- Indomethacin (Indocin®)
- Naproxen (Naprosyn®, Aleve®)
- Piroxicam (Feldene®)
- Phenylbutazone (Butazone™)
- Ketorolac (Toradol®)
- Ketoprofen (Orudis®)

Tacrolimus and its Brand Names

- Prograf®
- FK506

Look at the list for cyclosporine. Tacrolimus and cyclosporine have almost the same problems when they are mixed with other medications.

Azathioprine and its Brand Name

- Imuran®

Do not take gout medicine called allopurinol or Zyloprim® when you are taking azathioprine. It can give you very serious problems with your blood and bone marrow.

Do not take azathioprine with the transplant medicine, mycophenolate mofetil.

Mycophenolate Mofetil and its Brand Names

- CellCept®
- "MMF"
- "RS"

Do not take mycophenolate mofetil with the transplant medicine, azathioprine, or Imuran®.

Antacids and Carafate® can decrease the absorption of CellCept® by your body and should be taken only 1 hour before, or 2 hours after, taking CellCept®.

Steroids

Do not take aspirin when you are taking steroids. It could give you ulcers.

NEW MEDICINE FOR LIVER TRANSPLANTS: RESEARCH

Doctors are Working on New Medicines All the Time

Some of these drugs may help you keep your new liver healthy. Other new medicines could have fewer side effects or infections.

Tell Your Doctor if You Would Like to be Part of a Clinical Trial

All these new medicines must be tested with some patients before they can be given to people who need transplants. These tests are called “**clinical trials.**”

Your doctor will see if there was a clinical trial **that could be helpful to you.** Your transplant team will discuss with you the reasons for and against taking part in a clinical trial. They will explain in detail all the facts about the clinical trial so that you will have “**informed consent.**”

You do not have to join any clinical trial. That is your right. You can refuse and this will not change the kind of care you will receive after the transplant.