

CON IL SOSTEGNO DI



Bando Ambiente 2012 - "Verso Rifiuti Zero"



# DRUG USE AND AWARENESS GUIDE



# USE, STORAGE AND AWARENESS OF DRUG DISPOSAL

## *Index*

Green Health: History of the drug and a new vision

### **1 - USE OF DRUG**

What we need to know to make good use of our medicines

#### **USE OF DRUG - CHECKLIST**

#### **SPECIAL CASES**

Antibiotics

Drugs for children

Homeopathic medicines

Interaction of drugs with foods and supplements

### **2 - STORAGE OF DRUG**

Make an inventory of your medicines

Find a cool, dry place to store your medicines

Lock up your medicines

Small tips for smart storage of drugs

#### **STORAGE OF DRUG - CHECKLIST**

### **3 - DISPOSAL OF MEDICATION**

The environmental impact of drugs

The danger for adults, children and pets

How to recover the drugs you do not need anymore

How to dispose of expired medicines

Ways to reduce pharmaceutical pollution

# Preface

## Green Health: History of a new vision of the drug

The project "Green Health" was born from the desire of a group of associations and organizations to change the citizens' attitude towards the "drug"; It was created to promote a new vision, a "green" approach with ethics, which gives values to the role of a drug and put away the habit of abuse which, unfortunately, appears to be a common practice for most of the Italians.

According to the latest OSMED<sup>1</sup> report on the use of medicines, the total pharmaceutical expenditure (public and private) in Italy amounted to 21.3 billion euro, of which 76.5% is reimbursed by the National Health Service (NHS). The regional public expenditure amounted to 9.727 billion euro (about 159 euro per capita), an increase of +9.6 compared to the same period last year, resulting in an increase of drugs. On average, in 2015, 1,041 doses of medication a day per thousand inhabitants were consumed and 851 million boxes were dispensed, about 14 packs per capita. Rising consumption evidenced by the latest data are in line with the general trend of an aging population and the chronicity of the disease.

The use of drugs will increase, this is why we must correct some bad habits, even if the products are beneficial and control diseases. As consumer goods are subject to concerns and they may have the habit of getting a hold of large stocks, without thinking about the damage that could entail.

What should we do to give the right information to the relationship we all have with the medication? Some answers that are given by Green Health has been to increase "knowledge" and "awareness", a challenge pursued through training<sup>2</sup>, communication<sup>3</sup>, periodic and constant collection campaigns of the drug, with a goal to explain to the citizens what the "good use" of a medicine are, what it is, how to use it, why, and what to do when no longer needed.

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<sup>1</sup> The use of drug in Italy. Italian National Report January - September 2015. Rome: Italian Agency of Drug, 2016 National Monitoring on use of drug

<sup>2</sup> Green Health organized workshops in order to educate old people, disable people, young people, families, foreneing people, physician and vet.

<sup>3</sup> Communication campaign has been developed to raise awareness through social media and press actions.

At the conclusion of a two-year commitment, it remains, as a kind of inheritance, thanks to the know-how learned and disclosed to the public through the various initiatives put in place. In it we treat, in simple and practical means, the main issues concerning the relationship between the drug and consumer: three sections covering the use, storage and disposal of medication and clarifying the simple practice that is effective in following a correct lifestyle about the medicines we take.

We start from the use of the drug: a conscious awareness of the drug that must be used correctly, always in line with what we have been explained and prescribed by our doctors; better to have some doubts and ask questions, rather than acting rashly or risking self-medication to be inappropriately misused, the drug could become harmful to our health. For proper use of the drug you can not forget some simple rules for its preservation in a suitable and safe environment, maintaining its properties and its effectiveness, monitoring the intake by children, pets or to those specifically prescribed by a doctor. Finally, the last argument cornerstone, the heart of the entire project and crucial section of this brochure: the drug disposal. The relationship between the drug and the environment is perhaps the least known of the three themes from our citizenship and society in general.

Little is addressed by local bodies responsible for waste disposal and environmental protection, this is commonly forgotten by the media and, above all, by the pharmaceutical companies in the accompanying information of the drugs themselves. Yet, despite the lack of information, it is a topic of utmost relevance and importance if we think that an improper disposal may affect the water table, impacting heavily on the environmental balance.

To raise awareness with respect to these key issues we wanted the content of our brochure to be validated by a scientific committee<sup>4</sup>, made up of a multidisciplinary pool, able to evaluate the different contents of the messages that we were interested in spreading and could offer perspective views on the issue.

The result is a guide that we hope will be useful in everyday life and can help all of us have a new, more ethical, drug vision.

How would the world perform today without the use of these drugs, we can not even imagine it.

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<sup>4</sup> Scientific committee for Green Health included a pharmacist, a sociologist, a psicologist a journalist and a expert patient.

Pharmaceutical research allows us to have a life and a better world; all of us - individually and collectively - have a deep responsibility to know how to use these resources and to correct misuse, that we do not harm ourselves, others and our environment.

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# PART I

## USE OF DRUG

### *What do we need to know to make good use of our medicines*

For the proper use of medications, there are five key elements we receive when we are prescribed a new therapy:

- the name of the drug
- why and how long the drug should be taken
- the amount and frequency of drug intake
- information regarding possible side effects and what to do if you experience them
- information on interactions with other drugs or foods

This information is necessary for an appropriate and responsible use of the drug in order to avoid unnecessary hospitalizations and therapeutic errors.

### *Ask your doctor*

- What is the name of the drug and why are you taking them?
- What do these medicines cure?
- How many times a day will you have to take this drug? what is the quantity?
- How long will you take your medicine? When you should stop taking it?
- What should you do if you miss a dose?
- This medicine may cause side effects? should you call for help in case of side effects?
- Can you safely take this medication with supplements, vitamins or other medications that you're already taking?

Whenever you go for a medical visit, be sure:

- ask the doctor if you still need to continue the same therapy
- to inform him of being allergic to certain drugs or active ingredients

### *Senior citizens*

As we age, we are often faced with health conditions that require a drug treatment smooth and continuously. It is important to be aware that an increased use of drugs and normal body changes caused by aging, can increase the chance of side effects or dangerous interactions between drugs. Often, in the case of senior citizens, the side effects go unnoticed or are misdiagnosed because they are thought to be caused by an existing illness or a new health problem. physical reactions to medications, such as fatigue, a fall, or weight loss, may be incorrectly labeled as effects of "normal aging".

The more you know about the drugs that you or your loved ones are taking and better communication with your doctor, it will be much easier to avoid potential future problems that may occur.

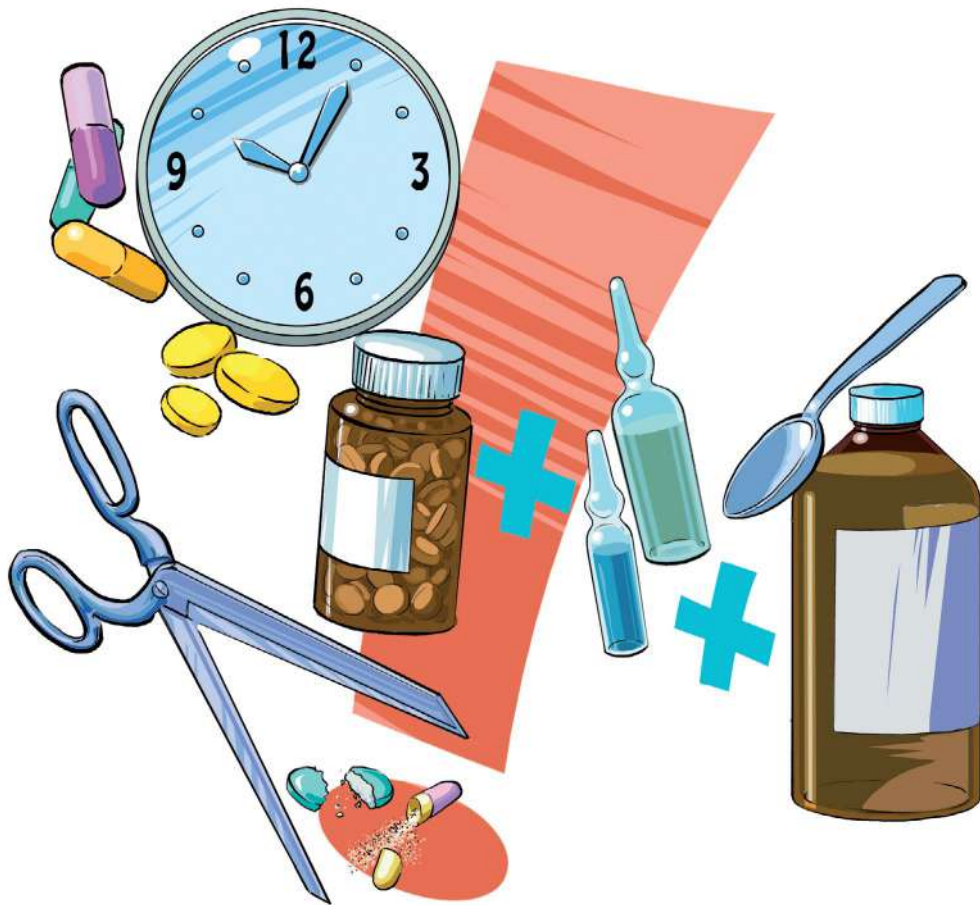
As an elderly patient or a caregiver, it is important to educate yourself on the correct use and proper storage of medications.

### *Some useful tips*

- Make a list of all medications you are taking and keep it in a safe place
- Bring a list when you talk to your doctor or pharmacist
- Use a pillbox
- Put some notes around the house to remind you to take medicine every day as you have been directed by the physician
- Talk to your doctor about any medications, vitamins, supplements you use, including any drugs purchased without a prescription

### *Pin also*

- the name of the drug, the doctor who has prescribed it and how you administer it
- the name and dosage of each medication, vitamins and other medications



# USE OF DRUG - CHECKLIST

Questions	Useful Tips
<p>Are the medication instructions easy to read?</p>	<p>If the medication instructions are not easy and clear to read, ask for more information and clarify this with your doctor or your pharmacist</p>
<p>Do you know all the medications side effects?</p>	<p>Make sure you are informed on possible side effects. In case you have a symptom not described, please inform your doctor.</p>
<p>Are the medications you are taking known under other names?</p>	<ul style="list-style-type: none"> <li>• The brand name of a generic medication is different from an equivalent medication.</li> <li>• Medications can have more than one name.</li> </ul>
<p>Do you know if you are allergic to some drugs or any drug ingredients?</p>	<ul style="list-style-type: none"> <li>• If you know you are allergic do not take that drug.</li> <li>• Make sure that the Doctor who prescribes you the drug knows you are allergic to them before they write any prescriptions.</li> <li>• If after you have taken the drug and think you may be having an allergic reaction please call the doctor immediately</li> <li>• If you take the drug and have difficulty breathing, call 118 or go to the Emergency room to get treated.</li> </ul>

<p>Are there foods or activities to avoid when you are taking your medications?</p>	<p>Is important to know what are the risks so you can avoid them.</p> <p>It may be recommended to avoid certain foods, drinks or supplements when you are taking certain medications</p>
<p>Should I take the medication with food?</p>	<p>It is very important to know if a medication has to be taken with food or on an empty stomach.</p>
<p>What should I do if i miss a dose of my medication?</p>	<p>Sometimes forgetting to take a medication can be bad.</p> <p>Make sure you ask your doctor what to do in case you forget to take it.</p>
<p>Should I need a device to have the correct dose of my treatment?</p>	<ul style="list-style-type: none"> <li>• If your pill has to be split, you may have to buy a pill cutter</li> <li>• Caps or gel pills cannot be split</li> <li>• Spoons can have different measurements, always use the spoon or measuring cup inside the medication box</li> </ul>

<p>Can I easily take my medication?</p>	<ul style="list-style-type: none"> <li>• If you have a difficult time taking your medication, ask your doctor if there is a syrup or if there is another way to take it</li> <li>• The pill should never be ground or mixed with other foods if your doctor did not inform you.</li> <li>• Make sure you know how to take your medication, not all drugs have to be taken by mouth</li> </ul>
<p>Are there any possibilities of bad interactions with other treatments that I'm taking?</p>	<ul style="list-style-type: none"> <li>• It is very important that you know all the dangerous interactions. Not all treatments can be taken together</li> <li>• Inform your doctor of any drugs and supplements you are taking even they are natural or vitamins</li> <li>• Do not take any other drug without first talking to your doctor</li> </ul>

# SPECIAL CASES

## Antibiotics

Italy is the fifth country in the world for the consumption of antibiotics<sup>5</sup>. OsMed 2014 data confirmed its inappropriate use, particularly in the treatment of respiratory infections and flu. It is the southern regions that have record consumption and expenditure.

In general women take more antibiotics than men, with a peak in the 66-75 age bracket. However, in recent years consumption and spending have dropped slightly and this suggests that the change of incorrect behavior may also occur through communication initiatives that inform citizens and the public opinion on these issues.

The results of a survey conducted by WHO in different countries around the world have shown, in fact, such as **antibiotic-resistance** phenomenon is not well understood and how the information is necessary to fill this gap.

Suffice it to say that three-quarters of respondents have stated that antibiotic resistance is a phenomenon of the human body resistance to the antibiotics, instead of bacterial resistance to antibiotics.

Just follow the few but important rules to ensure that antibiotics really constitute an effective public health protection and that they continue to be so in the near future.

- Take antibiotics only when necessary and prescribed by a physician
- Do not take them to treat viral infections, flu and colds
- Always carefully follow correct dosage and timing of therapy not to impair the effects

These simple steps can make a difference. Improper use of antibiotics, in fact, can promote the development of bacteria resistant to treatment and endanger public health.

<sup>5</sup> ref. 2013 from Organization for Economic development





## The medicines for children

The pediatric population is sparsely investigated with reference to a rational use of drugs intended to it. It follows that very often, in the absence of specific data from clinical studies, are used in children medicinal actually authorized for adults, but at lower doses. In practice, it is considering the child as a small adult.

Not all drugs used in the pediatric field, in fact, have the exact same responses in infants, children and adolescents, due to the differences of metabolism and absorption rates of the various growth processes. Therefore, at the time of administration, much attention must be paid to the choice of medications and their respective dosages, not just to be assessed by the age and weight for the young patients.

**"The child is not a small adult":** an important concept to understand, being able to highlight the specificity of the pediatric subject compared to an adult in response to drug treatment. One of the mistakes made during the administration of drugs to a child is the reduction of the dosage of a medication commonly used for adults, arbitrarily adjusted according to body weight and age of the child.

**NB:** DIY, word of mouth or the use of web sources must be avoided, since each drug should be administered after appropriate consultation and medical supervision.

It is important to correctly read the leaflet and respect the doses and directions provided, to avoid receiving errors such as the risk of overdose. Administering drug dosages, indications and formulations not specifically approved for pediatrics involves an off-label use of the drug.

## Infants and adolescents: different ages, different drugs and doses

Infants and young teenagers have the capacity for varying absorption rates of different drugs from each other: the first, from an accelerated growth process, present times of much more rapid metabolism, while others require careful dosing measured according to the metabolic processes related to pubertal development.

From these characteristics is therefore crucial to keep in mind the choice of medicines and their doses to be administered should be carefully evaluated according to different ages.

## Taking medication with food and supplements

Among the factors that contribute to the success of a therapy (general health, age, sex, body weight, lifestyle, medical history, disease and current therapies, patient adherence, appropriateness of the prescription and cooperation with the treating physician etc.), are of no small importance of the drug interactions with other medicinal products, supplements, herbal products and food products.

Food and beverages can affect the absorption, metabolism, bioavailability and excretion of the drug, making it ineffective, enhance their toxicity or a particular side effect or create serious side effects.

Those who take a medicine must carefully follow the instructions contained in the instructions and the recommendations of the prescribing physician and contact your doctor and/or pharmacist for any question that relates to the method of taking the drug and possible interactions with food and drink during treatment: from the opportunity to take on an empty stomach (one hour before or two hours after a meal) or during or after a meal (fed), temporary exclusion from their special diet foods or drinks.

The potential for interactions grow with increasing number of medications (polypharmacy), the duration of therapy with interacting drugs, physiological changes or the presence of pluripatologie or chronic degenerative diseases that affect the kinetics of drugs (liver or kidney disease , heart failure etc.).

Foods may influence the effectiveness and the therapeutic effect of a drug. Alcohol, for example, can amplify or reduce the effect of many medicinal products; Grapefruit juice should be avoided if you are taking drugs such as immunosuppressants (cyclosporine), anti-anxiety drugs (buspirone, triazolam), anti-malarial, antihistamines, and some drugs used for high blood pressure (calcium channel blockers).

Monoamine oxidase inhibitors (MAOIs) should not be taken with excessive amounts of chocolate. Drug interactions are also possible with food supplements and remedies based on herbal products. In most cases the clinical consequences associated with these are almost completely unknown to the patient and are the result of individual and sporadic reports from health professionals.

Therefore, to increase knowledge about these products, you need the support of the health workers, who must promptly inform your doctor or pharmacist any adverse effects revealed in the course of treatment, such as for drugs, even with supplements or herbal remedies.

Only then will it be possible to early and unequivocally identify a causal association between intake of the product and the onset of the adverse reaction, safeguarding the health of consumers.



# SUMMARY OF FDA GUIDANCE ON DRUG-FOOD INTERACTIONS<sup>6</sup>

<p><b>Allergies</b></p>	<p><b>Antihistamines</b> (brompheniramine, cetirizine, chlorpheniramine, clemastine, desloratadine, diphenhydramine, fexofenadine, levocetirizine, triprolidine).</p> <p>Do not drink alcohol, which could increase drowsiness induced by these drugs.</p>
<p><b>Arthritis, pain and fever</b></p>	<p><b>Analgesics / antipyretics</b></p> <p><b>Paracetamol</b> Acetaminophen may cause liver damage. The possibility of serious liver damage is higher if you drink three or more alcoholic drinks a day.</p> <p><b>Anti-inflammatory drugs (NSAIDs)</b> (aspirin, celecoxib, diclofenac, ibuprofen, ketoprofen, naproxen). In case of gastric disorders they may be taken with food or milk. Drinking three or more alcoholic drinks a day can increase the chances of stomach bleeding.</p> <p><b>Narcotic analgesics</b> Some of these drugs may be associated with other non-narcotic, such as acetaminophen, aspirin, or cough syrups (codeine +paracetamol+acetaminophen hydrocodone, meperidine, morphine, oxycodone+acetaminophen). Do not drink alcohol while using narcotic substances. Alcohol can increase the chance of dangerous side effects, coma or death.</p>

<sup>6</sup> AIFA (Italian Drug Agency) made a summary of a guide called Avoid food -drug Interaction, the guide was written by the US regulatory along with the National Consumers League (NCL)

<p><b>Asthma</b></p>	<p><b>Bronchodilators (albuterol, theophylline)</b></p> <p>Foods can have different effects according to different formulations of theophylline (controlled release, prolonged release tablets and powder). Check with the pharmacist which drug formulations are taken and if there are potential for interaction with food. Carefully follow the directions for the powder formulation. You can swallow the capsules or open them, mix them with foods like applesauce or pudding and swallow them without chewing, and then drink a glass of water or fruit juice. The bronchodilator with food and drinks that contain caffeine can increase the chance of side effects such as excitability, nervousness and tachycardia. Avoid alcohol while using based on such as nausea, vomiting, headache and irritability.</p>
<p><b>Cardiovascular disorders</b></p>	<p><b>ACE inhibitors (captopril, enalapril, lisinopril, moexipril, quinapril, ramipril)</b></p> <p>Take captopril and moexipril one hour before meals. ACE inhibitors may increase the amount of potassium in the body. Too much potassium can be harmful and can cause irregular heartbeat and palpitations. Avoid excess of potassium-rich foods, such as bananas, oranges, green leafy vegetables and salt substitutes that contain potassium. Tell your doctor if you are taking salt substitutes containing potassium, potassium supplements or diuretics.</p> <p><b>Beta-blockers (carvedilol, metoprolol)</b></p> <p>Take carvedilol at meal times to reduce the probability of lowering blood pressure too much. Take the extended-release capsules in the morning with food; do not crush, chew or divide the capsule. Take metoprolol concurrently with food or shortly after the meal.</p>

## Cardiovascular disorders

### Diuretics (bumetanide, furosemide, hydrochlorothiazide, metolazone, triamterene, triamterenehydrochlorothiazide)

Take a diuretic with the meal if you feel stomach pain.

Some diuretics cause loss of minerals like potassium, calcium and magnesium. Other diuretics such as triamterene (not with hydrochlorothiazide), reduces the kidneys' ability to eliminate potassium, excessively increasing the level in the blood (hyperkalemia). Too much potassium can be harmful and can cause an irregular or accelerated heartbeats.

When you use diuretics that increase potassium in the body, avoid using too much potassium-rich foods.

### Glycosides(digoxin)

Take digoxin an hour before or two hours after a meal. Try to take it at the same time each day and carefully follow the instructions of the leaflet and physician.

High-fiber foods can reduce digoxin in the body, so it is better to take it at least two hours before or two hours after eating foods high in fiber (such as bran). St. John's wort can reduce the amount and the reaction of digoxin in the body.

Avoid the intake of digoxin with black licorice (that contains the licirizina used in some sweets and cakes ).

The association of digoxin with glycyrrhizin can cause cardiac arrhythmia and heart attacks.

## Cardiovascular disorders

### Statins (atorvastatin, fluvastatin, lovastatin, pravastatin, simvastatin, rosuvastatin)

Most statins can be taken with or without food. Some work best if you take an evening meal. Do not use too much of grapefruit juice (no more than a quarter of a liter) if you are taking atorvastatin, lovastatin, simvastatin. Large quantities of grapefruit juice can increase the levels of statins in the body and therefore the likelihood of side effects. Some statins do not interact with grapefruit juice. Ask your doctor or pharmacist if you have any doubts. Avoid alcohol because it can increase the risk of liver damage.

### Nitrates Vasodilators (isosorbidedinitrate and mononitratenglycerin)

You can take them on a full or empty stomach. Avoid alcohol, which can increase the effect of vessel relaxation and dangerously reduce blood pressure.

### Vitamin K antagonists/anticoagulants (warfarin)

You can take warfarin on a full or empty stomach.

Vitamin K in foods can make the drug less effective. Vitamin K-rich foods include: broccoli, cabbage, spinach, broccoli and Brussels sprouts. Avoid cranberry juice or cranberry-based products while using anticoagulants, because they can change the effects of warfarin. Many food supplements and vitamins can interact with anticoagulants and reduce the benefit or increase the risks. Avoid garlic, ginger, glucosamine, ginseng, ginkgo because they may increase the risk of bleeding.

Tell your doctor and pharmacist if you drink alcohol or have alcohol abuse problems.

**Gastroesophageal reflux disease (GERD) and ulcers**

**PPI's (Rabeprazole, Dexlansoprazole, Esomeprazole, Lansoprazole, Omeprazole, Pantoprazole)**

Dexlansoprazole and Pantoprazole can be taken on a full or empty stomach.

Esomeprazole should be taken at least an hour before the meal. Lansoprazole and Omeprazole should be taken before meals. Ask your doctor or pharmacist how to take Rabeprazole.

Tell your doctor if you have difficulties swallowing medicines, because it should not be divided, crushed or chewed. Some of these drugs can be mixed with food, but you need to carefully follow the directions of your doctor or pharmacist.

**Hypothyroidism**

**Thyroid medications (Levothyroxine)**

Tell your doctor if you are allergic to some foods.

Take levothyroxine once daily in the morning on an empty stomach, half an hour or an hour before taking any food.

Tell your doctor if you eat soybean meal (which is also found in soy infant formula), cottonseed meal, walnuts and dietary fiber; you may need to change the dose of the drug.

**Infections**

**Antibacterials**

**Antibacterialquinolones (ciprofloxacin, levofloxacin, moxifloxacin)**

You can take ciprofloxacin and moxifloxacin on a full or empty stomach. Levofloxacin tablets can be taken with or without food, the oral solution may be taken one hour before or two hours after a meal. You may take ciprofloxacin with dairy products (such as milk and yogurt) or calcium-fortified juices, but you can do it with a meal that contains these products. Tell your doctor if you are taking food or drinks with caffeine when you are being treated with ciprofloxacin, because caffeine can accumulate in the body

**Antibacterial tetracycline (doxycycline, minocycline, tetracycline)**

Take this medication one hour before or two hours after a meal, with a glass of water. You can take the tetracycline in conjunction with meals if you feel stomach pain, but avoid milk and dairy products (cheese, yogurt, ice cream) one hour before or two hours after. Minocycline and some forms of doxycycline can be taken with milk if it upsets your stomach.

**Antibacterialoxazolidinones (linezolid)**

Avoid large amounts of tyramine rich foods and beverages while using linezolid. High levels of tyramine can cause a dangerous sudden increase in blood pressure. Follow your doctor's instructions very carefully. Spoiled food, non-refrigerated, handled or stored improperly, seasoned foods, pickled, fermented or smoked may contain tyramine. Some of these are: aged cheese, beef or chicken liver, dried sausage, caviar, dried or pickled herring, anchovies, meat extracts, avocado, bananas, canned figs, dried fruit (raisins, prunes), raspberries, over-ripened fruit, sauerkraut, soybeans and soysauce, yeast extract (including brewer's yeast in large quantities), beans, excessive amounts of chocolate. They also contain tyramine many foods and drinks with caffeine. Ask your doctor if you should avoid or limit caffeine. Avoid alcohol. Many alcoholic beverages contain tyramine, including draftbeer,redwine, sherry and liqueurs. The tyramine may also be present in the non-alcoholic beer or at a reduced alcohol content.

## Infections

### Metronidazole

Do not drink alcohol while taking metronidazole and for at least one full day after finishing the medication; metronidazole and alcohol together can cause nausea, stomach cramps, vomiting, flushing and headache.

### Antifungals (fluconazole, itraconazole, posaconazole, voriconazole, and griseofulvin, terbinafine)

Itraconazole capsules work best if taken during or immediately after a full meal. Itraconazole solution must be taken on an empty stomach. Posaconazole will act best when taken together with a meal within 20 minutes from a full meal, or with a liquid nutritional supplement. Do not mix suspension voriconazole with other medicines, water or other liquids. Griseofulvin work best if taken with fatty food. Other antifungals listed here can be taken either on a full or empty stomach. Avoid alcohol if you are taking griseofulvin. Together they can cause an increased heart rate.

### Antimycobacterials (ethambutol, isoniazid, rifampin, rifampicin+isoniazid, rifampicin+isoniazid+pyrazinamide)

Ethambutol can be taken with or without food. Take other drugs one hour before or two hours after a meal, with a glass of water. Avoid foods and drinks with foods that contain tyramine and histamine (skipjack, tuna and other tropical fish) if you are taking isoniazid alone or in combination with other antimycobacterial medications. Foods with histamine can cause headaches, sweating, palpitations, flushing and hypotension. Follow your doctor's instructions very carefully. Avoid alcohol.

### Antiprotozoal (metronidazole, tinidazole)

Alcohol associated with these drugs can cause nausea, stomach cramps, vomiting, flushing and headache. Avoid drinking alcohol while taking metronidazole for at least one full day after finishing the medicine. Avoid alcohol while taking tinidazole for three days following the end of treatment.

## Psychiatric disorders

### Medications Anti-Anxiety and Panic (alprazolam, clonazepam, diazepam, lorazepam)

Avoid alcohol, which can increase the side effects caused by these drugs, such as drowsiness.

### Antidepressants (citalopram, escitalopram, fluoxetine, paroxetine, sertraline)

You can take these medications on a full or empty stomach. Paroxetine is swallowed whole; do not chew or crush. Avoid alcohol.

### Antidepressant inhibitors of monoamine oxidase (MAO) (phenelzine, tranylcypromine)

Avoid foods and drinks that contain tyramine. Do not drink alcohol while using these drugs.

### Antipsychotics (aripiprazole, clozapine, olanzapine, quetiapine, risperidone, ziprasidone)

Take the capsules of ziprasidone with meals, the other either on a full or empty stomach. Avoid caffeine when you take clozapine because it can increase the amount of the drug in the bloodstream and cause side effects. Avoid alcohol.

Sedatives and hypnotics (eszopiclone, zolpidem)

To allow a more rapid effect, not taking these drugs during or immediately after meals. Do not drink alcohol.

### Medications for bipolar disorder (carbamazepine, sodium valproate, lamotrigine, lithium)

Valproate may be taken with food if it upsets your stomach. Take lithium shortly after a meal or with food or milk to avoid stomach discomfort. Lithium can cause loss of sodium so it is good to maintain a regular diet, which also includes salt; drink plenty of fluids (8 to 12 glasses a day) while taking the drug. Avoid alcohol.

## Osteoporosis

**Bisphosphonates (alendronatesodium, alendronatesodium+cholecalciferol, ibandronate, risedronate, risedronate sodium+calciumcarbonate)**

These drugs work when taken on an empty stomach. Take them in the morning, barely awake, with a glass of plain water (not mineral water), when sitting or standing.

Do not take antacids or any other medicine, food, beverage, calcium, vitamins or other dietary supplements for at least 30 minutes after taking alendronateorrisedronate and for at least 60 minutes after taking ibandronate. Do not go to bed for at least 30 minutes after taking alendronateorrisedronate and for at least 60 minutes after taking ibandronate.

Do not lie down before you have taken the first meal of the day.

# PART II

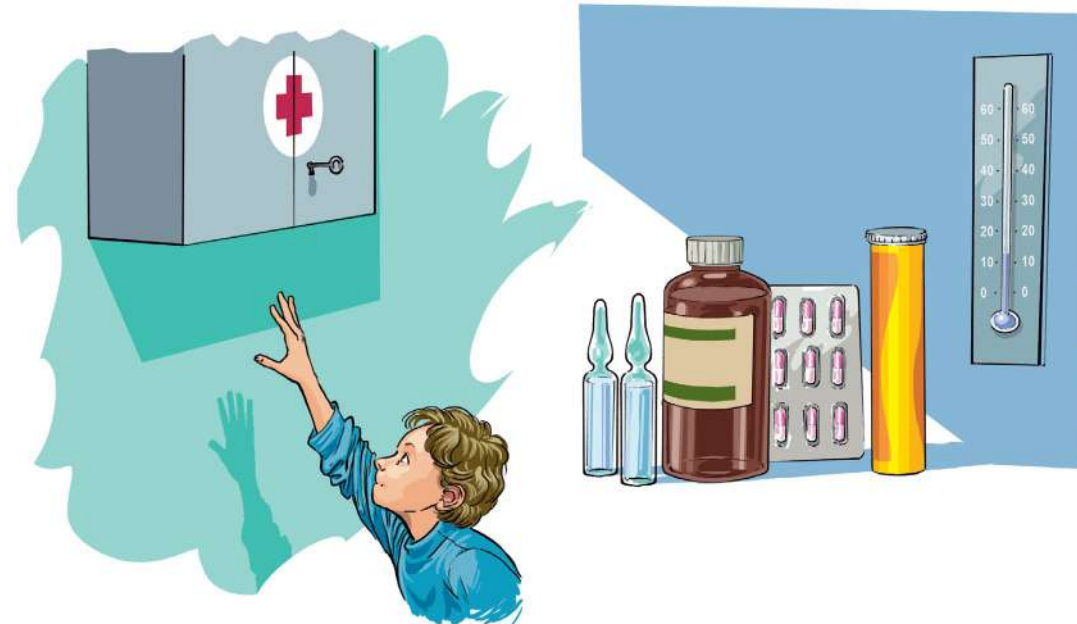
## CONSERVATION OF MEDICATION

### *Make an inventory of your medicine*

Keep your medicines in different places? Some in the bathroom, some in the kitchen, and a bit 'in the bedroom? As a parent, grandparent, or family member, it is important to organize the medicines you have at home well.

When you or another adult family need to find a medicine, you need to know immediately where it is. And it is also important to keep the medicines safe so that a child or adolescent, or even a stranger, can not find them. This way, you can prevent an accident and the abuse of drugs.

The first step to better organize the medicines is to proactively monitor all the medications you have. You should do this type of inventory every six months or at least once a year.



Start by checking the expiration date on the container so as to avoid taking something that is not working as it should.

Give attention to medications that have changed in their appearance, which may appear in a different color or show signs of deterioration.

Remember that the expiration date changes according to the type of medication you are taking (pills, eye drops, syrups and so on.).

Tablets/capsules	For tablets/capsules, the expiration date is printed on the packaging or blister.
Eyedrops	Eyedrops can be divided into single-dose and single vial. The single vials should be stored below 25°C (in the summer it can be stored in the refrigerator) and once opened it must necessarily be discarded after 30 days (sometimes 15), if not used. This, not so much because the drug may become ineffective, but because such preparations may be contaminated and could be a breeding ground for bacteria or fungi, because they contain very few preservatives. The single-dose eye drops should be stored below 25 ° C (in the summer you can put in the refrigerator).
Syrups	The various syrups (expectorants, sedatives "cough", antibiotics) must always be stored below 25° C (for many reconstituted antibiotics in the refrigerator). The duration, once opened, is one to two months, although it may degrade the drug after a prolonged period.
Eardrops	The eardrops should not be used after the expiration date which is stated on the bottle or carton. The bottle should not be frozen and should be discarded after 4 weeks after first opening. If kept open or in the wrong places, it may lose their effectiveness or, even worse, it could be a breeding ground for bacteria or fungi.

The stability period of a medicinal product varies from drug to drug. The exposure to light, air, moisture, and inappropriate temperatures can affect the rate of degradation of a drug. Remember that the expiration date assigned by the manufacturer of the drug refers to closed medicine in its original container and stored at the right temperature.

If you have medicines that have been prescribed for a disease or a previous health condition and you no longer need them, do not share them with others without a specific medical prescription. Future symptoms or health conditions may be the cause of a new health condition requiring a new drug for treatment.

### Find a cool, dry place to store medicines

Now that you have disposed of expired drugs that are no longer needed, the next step is to find a safe place to store useful drugs.

We'll want to store medicines in a convenient place, but especially cool, dry, away from heat and humidity. For this reason, the bathroom is not a good place for the storage of drugs, unless you are able to keep them dry and in a ventilated room (The bathroom is however the ideal place to store items such as bandages, tweezers, gauze, cotton balls, scissors, and other products that are not damaged by heat or moisture).

### Lock up your medications

If there are children around it is advisable to lock the medicine cabinet. The key is also a great solution if you use substances that you have been prescribed under medical supervision (these include drugs such as hydromorphone, oxycodone, hydrocodone, and alprazolam).

The abuse of prescription drugs is a serious problem.

Each patient plays an important role in keeping these powerful drugs out of the reach of those who should not have them. Being dangerous substances, keep them in a locked and secure place means that they are not accessible to anyone.



## Small tips for smart storage of drugs

Here are more tips for conservation and intelligent use of the drugs.

- Separate your drugs from those of the spouse or other family members (for example on a different shelf or at least on a separate side of the same shelf or drawer). In this way it will be less likely to take the wrong ones by mistake
- It can be helpful to have a medical tray or a shelf near the tray of medicines so as to open the package on the floor surface. In the case in which a pill is dropped, it will land above and will not be lost on the floor
- Keep the syrup in the original bottle with which you bought it. The amber color of the container protects from light
- Keep the caps of the bottles tightly closed to ensure good conservation
- The medicines should always be kept out of reach of children

## USE OF DRUG - CHECKLIST

Questions	Answers
Have you looked the medicine cabinet recently?	<ul style="list-style-type: none"><li>• Clean out the medicine cabinet is something that should be done regularly. Remove expired medicines, which are not be safe to use, to prevent accidental consumption of an expired medication</li><li>• Dispose of medications properly (see next paragraph). Throwing the drugs in the toilet or in the garbage could cause damage to the environment</li></ul>
Do you keep all your medicines in the same place?	<ul style="list-style-type: none"><li>• It contains all medications in one place to find more easily when you need them</li><li>• Make sure that drugs are out of reach of children or people who may abuse them</li></ul>
Are the drugs stored at recommended temperatures?	<ul style="list-style-type: none"><li>• Most of the drugs in need a preservation temperature or to be stored at the temperatures indicated in the illustrative sheets. Be careful to follow these guidelines</li><li>• Insulin, some liquid antibiotics, suppositories should be kept in cool places</li><li>• Nitroglycerin must be kept away from heat sources</li><li>• The bathrooms are almost always too humid of an environment to store medicines</li></ul>

Do you keep medicines in their original containers?

- Keep medications in their original containers helps to remember what they are, how they should be stored and their expiration date
- Medicines should not be mixed together in the vial
- The pill may be useful to remember which drug should be taken and when. However, it is always wise to keep the doctor's prescription or write it down, keeping your medicine information on hand



# PART III

## DISPOSAL OF MEDICATION

### *The environmental impact of drugs*

The environmental impact of pharmaceuticals is decades-old object of the attention of the academic and regulatory world. The introduction and release of active pharmaceutical ingredients into the ecosystems could be, according to some studies, one of the underlying causes of a global wildlife crisis.

Also in the field of research are presented considerable uncertainties, as there are still not enough information to judge what the effects of medicines will be that were designed to be biologically active at low concentrations on the natural world.

The presence of drugs is ubiquitous in the environment, as evidenced by a comprehensive review commissioned by the German Environment Ministry in 2014. Out of 713 selected drugs as samples for the study, well 631 (or their metabolites / transformation products) were found in concentrations above the detection limits in 71 countries around the world and, very surprising, even in the least developed. The drugs found were mostly in surface waters (lakes and rivers) but also in the underground and even in drinking water and manure.

Scientists are studying what the effects of these medicines produce in the ecosystems while trying to find the best ways and means to prevent this phenomenon. Among the most congenial solutions, for example, the proper disposal of drugs, the improvement in the treatment of wastewater and ultimately the design of drugs, specifically regarding the standards to be met to protect the environment.

An active principle taken orally is released into the environment with a variable percentage between 30% and 90% through the excretions and the metabolites of many drugs can remain active even after being expelled into the environment. However, throwing the drugs in the sink or in the toilet, worsen this already delicate environmental situation.

### *The danger for adults, children and pets*

Some drugs can be particularly harmful if taken by someone other than the person to whom they were prescribed. Even accidentally taking medicines may cause serious side effects and lead to death in infants, children, animals and even adults.

Expired or unused medications must not be discarded in the sink or in the toilet and not be recycled together with other waste but, because of their potential toxicity, must be collected and treated separately. Each region decides the different ways in which to pursue the collection, these vary according to the different municipalities.

**NB:** Obtain information from the offices of your city municipality who run the dump/ water treatment plant for the instructions for the collection of medicines in your area. Improperly disposed medicines, in fact, end up spreading into the environment. The active ingredients can damage the soil, pollute drinking water wells, jeopardizing the operation of water treatment plants, sewage and harm other human beings.

### *How to recover the drugs they do not need me anymore*

Both in large cities and small towns, many pharmacies are equipped with special binders or expired medicines that are no longer needed. All packages thus collected, are brought to incinerators and burned separately from other waste at very high temperatures.

**NB:** the drugs are not wasted, either because they are mostly paid by the health service, supported by fees paid by all of us, and because there are so many people in the world who need them.

In some cities is ongoing initiative that involves the collection of drugs not yet due but not used maybe due to a change in treatment followed by the patient and their delivery to the Pharmaceutical Bank which, in turn, distributes them to charities. A simple gesture that allows you to not waste still useful drugs, protect the environment and our own health.

## How to dispose of expired medicines

The following guidelines have been developed to promote the proper disposal of drugs and help reduce the damage from intentional abuse or accidental intake after they are no longer needed:

- Follow the disposal instructions specified on the instructions/information that accompanies the medication or the instructions of your municipality
- Do not dispose of medicines down the sink or in the toilet unless there are no clear instructions in this regard
- Participate in programs that allow the public to give medications for proper disposal

In the absence of disposal instructions in the leaflet of the medicine and territorial drug withdrawal programs, follow these simple tips:

- Prepare the collection of drugs at home
- Remove the medication from its original container. It is important to separate the blister from the paper box. Same thing for the glass vial and package leaflet
- The paper and cardboard packaging must be disposed of in the paper while the plastic and metal blister should instead be thrown together with the plastic
- If it is liquid medicines, better to confer the entire glass container in front of the bin to the pharmacies
- Sphygmomanometers, syringes and other sharp medical devices or stinging - such as razor blades, IV cannulas, disposable scalpels (carry their cap and the protective cover) - are not medicines and should be disposed of in accordance with the specific municipal rules. Some of this waste will go in waste collection, others, such as thermometers and sphygmomanometers, they will be taken to the equipped ecological station.
- Although supplements do not go together in the collection of expired drugs, since they are considered food and not typical drugs

The same procedures apply to both prescribed medications for over the counter medicines. When in doubt about proper disposal of a medication, ask your pharmacist.

## Ways to reduce pharmaceutical pollution

- Do not accept free samples of medications if you will not use them. You will create only waste!
- When you are prescribed a new medication, buy only the first pack you need if you were forced to change therapy
- Keep all your medicines in the same place to avoid buying medicines that you already have
- It is not useful to adopt large stocks of medicines because the medicines are subject to expiration
- Buy drugs in the minimum amount necessary, and keep in the house only drugs routinely used by some member of the family

The information contained in this brochure are presented with the aim to educate the consumer on what are the best practices for the use, storage and disposal of medicines. Nothing herein is intended to interfere, in any way, with the diagnosis or medical treatment.

The information comes from a variety of qualified sources. In any case the information provided is of a general nature and may not be complete in relation to use, storage and disposal of drugs with special characteristics.

Nothing contained here in shall in any event replace the information provided by your doctor.

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