



Grupo de Investigación en
Atención Farmacéutica (CTS-131)
Universidad de Granada

How to improve your

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WHY DO YOU MUST TAKE CARE OF YOUR CARDIOVASCULAR HEALTH?

What are cardiovascular diseases?

Cardiovascular diseases (CVD) consist of all those diseases affecting the **heart**, the **brain** and more generally to the **blood vessels**.

CVD's most frequent examples are acute heart attack, angina pectoris and stroke.



Did you know that...?

In Spain, every year, about 35 of every 100 deaths are caused by a CVD.

What is the cardiovascular risk?

The cardiovascular risk (CVR) is the possibility that a person has of falling ill or dying for a CVD.

A person is considered to have CVR when presents certain behaviours or biological individual conditions, called **cardiovascular risk factors**, which increase the probability of suffering a CVD.

How can you know your cardiovascular risk?

As more cardiovascular risk factors that a person assembles, higher is his CVR and, therefore, higher is the probability of appearance of CVD. It is important that you know your CVR, which can be HIGH, MODERATE or LOW. **Consult your doctor or pharmacist.**



Which are the cardiovascular risk factors ?

Some risk factors are non modifiable, for being characteristics of the person. These are:

- ▶ Age: the risk of suffering a CVD, increases with the age; being more notable from 55 years old, in men, and from 65, in women.
- ▶ Gender: men present higher CVR than women.
- ▶ History of CVD: people who have suffered a CVD, present a higher probability of suffering a new event of CVD.
- ▶ Heredity (family history): CVD's risk increases if some relative of the first order (parents or brothers) has developed or died of a CVD in a early age (under 55 in men or under 65 in women).

Other risk factors exist, which can be modified and even eliminated. These are known as controllable or modifiable cardiovascular risk factors. These are:

- ▶ Hypertension ("high blood pressure")
- ▶ Smoking
- ▶ Diabetes ("excess of glucose or sugar in blood")
- ▶ Dyslipemia ("increased cholesterol")
- ▶ Obesity ("overweight")
- ▶ Physical Inactivity ("sedentary lifestyle")

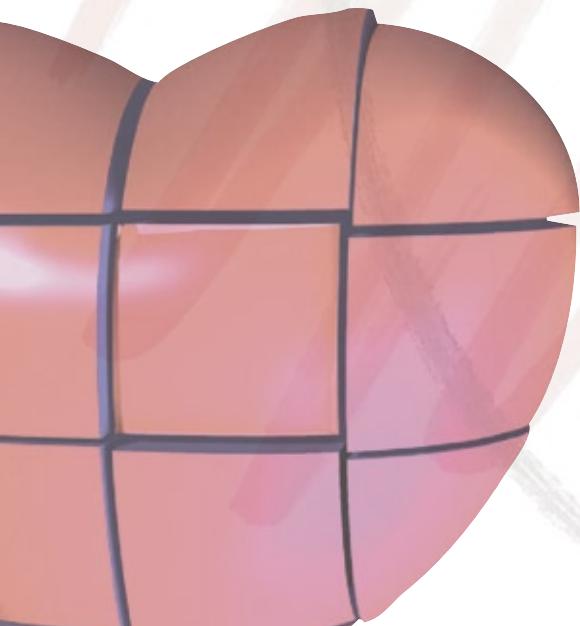


Did you know that...?

Of all risk factors, hypertension, smoking, dyslipemia and diabetes are the most determinant or important in the development of CVD. Therefore, they are named major and modifiable cardiovascular risk factors.

Advise: if you recognize any of these risk factors; look for medical or pharmaceutical help to control them!

You can “work” yourself to obtain a good state of health and quality of life. The basic measurements to manage to control your cardiovascular risk factors are to maintain healthy lifestyles, to take your medicines as your doctor indicated you, and to control periodically your risk factors.



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HYPERTENSION ("high blood pressure")

Hypertension is a cardiovascular risk factor, which favors the appearance of CVD.

A person has hypertension when the doctor establishes that his blood pressure levels are over 140/90 mmHg, at least in three measurements separated in time.

Hypertension is a **chronic disease** ("it is forever"). Because of this, as soon as the doctor has prescribed you the medicines to treat it, it is very important that you use them during the period of time established by the doctor and in the indicated way.

If you are hypertense, you should know that ...

- ▶ Hypertension is known as the "silent killer", because without causing any symptoms, your life seems to pass normally, though the blood pressure levels are over 140/90 mmHg.
- ▶ Hypertension increases the probability of enduring CVD, other heart diseases (Example: arrhythmia) and kidney or eye problems. This could be happening without you perceiving it.
- ▶ Therefore, it is essential that you know and control your blood pressure levels.

Which are the adequate blood pressure levels?

- ▶ If you are diabetic, suffer from renal disease, stroke, angina pectoris or heart attack: under 130/80 mmHg.
- ▶ If you do not suffer from any of these problems: under 140/90 mmHg.
- ▶ The ideal would be that your blood pressure levels were under 120/80 mmHg.



Did you know that...?

To consider that your blood pressure is controlled, the levels must be under the indicated levels for every case at any time during the day.

In case of not having your blood pressure controlled or if you have any doubt, ask your doctor or look for your pharmacist's counselling.

What can you do to prevent or to control the high blood pressure?

- ▶ Though there is no cure, hypertension can be controlled. The best way of doing it, is with healthy lifestyles (to exercise, to reduce salt and alcoholic drinks consumption and to maintain a healthy weight).
- ▶ It is essential that you do not stop taking your medicines. There are many alternatives, and different medicine combinations, which are easy to take and can lead to find the desire of having a good health.
- ▶ Finally, control periodically your blood pressure to know exactly how it is.



3 DYSLIPIDEMIA ("lipids in blood")

Cholesterol and tryglicerides are both principal types of "fats in blood ". A blood test must be done to know if they are controlled or not, this is very important to improve your cardiovascular health.

Did you know that...?

There are different types of cholesterol in the blood. The sum of all of them, is the total cholesterol.

As the levels of total cholesterol increase, higher is the possibility of suffering a cardiovascular disease.

How are your total cholesterol levels?

Desirable levels	Under 200mg/dL	If you are diabetic, have high CVR, stroke or heart attack, or angina pectoris, the desirable levels are under 175 mg/dL.
Moderately high	Between 200 and 240mg/dL	
High	Over 240mg/dL	

Which are the most important types of cholesterol?

- ▶ HDL-Cholesterol or " good cholesterol ", because it protects you against the appearance of CVD. Ideally, HDL-Cholesterol levels should be between 40 and 60 mg/dL.
- ▶ The LDL-cholesterol or " bad cholesterol ", because it is the one that influences more in the appearance of CVD.

Which are the LDL-cholesterol adequate levels?

- ▶ If you have suffered a CVD, you are diabetic or have high CVR: under 100 mg/dL.
- ▶ If you have 2 or more of main and modifiable risk factors or a moderate CVR: under 130 mg/dL.
- ▶ If you only have one of the main and modifiable risk factors or a low CVR: under 160 mg/dL.

Are trygliceride levels important for the CVR?

High trygliceride levels (hypertriglyceridemia) increase the risk of suffering a CVD, independently of the cholesterol blood levels.

FAQ (Frequently Asked Questions):

Which are the trygliceride adequate levels?

- ▶ Ideally: under 150 mg/dL.
- ▶ High: over 200 mg/dL (hypertriglyceridemia)
- ▶ Very high: over 500 mg/dL (it aggravates the problem).



Why can your trygliceride levels be elevated?

- ▶ For the presence and / or lack of control of other cardiovascular risk factors: smoking, physical inactivity, overweight, and diabetes.
- ▶ For maintaining unhealthy lifestyles: to eat a big amount of fat and sugar, and a high alcohol consumption.

What can you do to control your cholesterol and trygliceride levels ?

- ▶ To maintain healthy lifestyles (less fat consumption, do physical activity, maintain a healthy weight, do not smoke).
- ▶ Take your medicines correctly, exactly as your doctor indicated you.
- ▶ To control periodically your cholesterol and trygliceride levels.

Advise: read carefully the recommendations that this document carries on healthy lifestyles and you will know how easy can be to improve your cholesterol levels



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DIABETES

("excess of glucose or sugar in blood")

Diabetic patients are considered to have a high CVR, and therefore, they present a higher probability of suffering a CVD than those who are not diabetic.

As hypertension, diabetes is a **chronic disease** and "it is forever".

To use your medicines correctly, exactly as your doctor indicated you, to eat healthy and to do physical activity, are the three basics to manage to control and to improve your diabetes.

If you are diabetic you should know that...

The risk of suffering a CVD or of developing other complications caused by diabetes is related to a result that can be obtained in a blood tests.

Such a result is the **glycosylated hemoglobin** (HbA1c). Levels under 7 % are related to a less possibility of suffering a cardiovascular disease or other complications caused by diabetes. Over this levels the risk increases.

Glycosylated hemoglobin levels, depend on blood glucose levels during the whole day.

The best way of controlling this, is to have a glucose measurement device at home, so you can control yourself the blood glucose levels throughout the day; or at least in the mornings.

Which are the desirable blood glucose levels ?

degree of glucose control	origin of the blood for the analysis		
	venous blood (arm...)	capillary blood (tip of finger...)	
	fasting levels	fasting levels	2h. after eating
ideal (mg/dL)	between 70-110	70 - 90	between 70-90
acceptable (mg/dL)	up to 125	up to 120	up to 120
lack of control (ask your doctor or pharmacist) (mg/dL)	over 125	over 160	over 120

- ▶ When blood glucose levels remain over the recommended ones, a higher probability exists for the glycosylated hemoglobin to be over 7 % and, therefore, a higher possibility of suffering a CVD or developing other complications caused by diabetes.
- ▶ The brusque changes in blood glucose levels throughout the day also influences in the value of glycosylated hemoglobin. This is why it is so important to measure the blood glucose levels several times throughout the day and to observe their variation.
- ▶ The glycemie measurements will be done less frequently when your blood glucose levels and glycosylated hemoglobin levels are controlled.

Advise: ask your doctor about your last blood test and ask him to show you your glycosylated hemoglobin levels.



5 HEALTHY LIFESTYLES

The modification or the maintenance of healthy lifestyles are the basis to treat and to control the cardiovascular risk factors and to obtain the maximum possible benefit from the medicines you are taking.

!!!DO NOT SMOKE!!!

Tobacco, itself, is the most important cardiovascular risk factor and the easiest to avoid; you just have to give it up !

The possibility of suffering a heart attack is three times higher in smokers than in non smokers.



Did you know that...?

Giving up smoking has benefits on the control of other cardiovascular risk factors: it decreases LDL-cholesterol (" bad cholesterol ") and trygliceride levels, increases HDL-cholesterol (" good or protective cholesterol ") levels, and favors blood pressure control.

You will also breath better, taste your meals better, smell better, rest better...

!!!WATCH YOUR WEIGHT!!!

It is demonstrated that obese patients present more cardiovascular diseases than normal-weighted persons.

Did you know that...?

Besides, overweight can alter other cardiovascular risk factors:

- ▶ Increases total cholesterol, LDL-cholesterol ("bad cholesterol") and trygliceride levels and also decreases HDL-cholesterol ("good or protective cholesterol") levels.
- ▶ Makes more difficult to control the blood pressure levels.
- ▶ Makes more difficult to control the blood glucose levels and therefore, the diabetes control.

To control your weight, and this way to avoid these problems, many types of help exist. The diet and the exercise will be the main elements to achieve it. Do not be in a hurry to lose weight, you will get it little by little.



How do you calculate your ideal weight ?

To do so, you must calculate your Body Mass Index (BMI). This simple calculation allows you to obtain a relationship between your weight and your height:

1. Weight yourself: *Example: 85 Kg.*
2. Find out how tall you are: *Example: 1.60 m.*
3. Then, multiply the value of your height by itself, what is to say, height x height *Example: $1.60 \times 1.60 = 2.56$*
4. Divide the weight by the previously obtained value. *Example: $BMI = 85/2.6 = 33.2$*
5. See in the following table the overweight degree you have:

SITUACIÓN	IMC
Normal weight	18,5-24,9
Overweight (a bit more than suitab)	25-29,9
Obesity degree I (excessive)	30-34,9
Obesity degree II (very excesive)	35-39,9
Obesity degree III (extreme obesity))	40 or more

The ideal situation is to manage to be in normoweight, though a good outcome is having your BMI between 19 and 27.



!!!DO EXERCISE!!!

Physical inactivity, is a cardiovascular risk factor that influences in an important way to the appearance of CVD.

Why is exercise good for you?

- ▶ Decreases and helps to control blood pressure levels.
- ▶ Improves the control of blood glucose levels in diabetics and even it can delay the appearance of such disease in biased persons.
- ▶ Increases “ good cholesterol “ (HDL-cholesterol) and decreases “ bad cholesterol “ (LDL - cholesterol) and trygliceride levels.
- ▶ It helps to lose or maintain your weight.
- ▶ It strengthens your heart.



Do you practice enough exercise?

- ▶ Exercise should be practiced from **30 to 45 minutes a day**, at least **3 or 4 times a week**.
- ▶ Swimming, cycling, running, skiing, skating, rowing, skipping rope or simply walking slightly and in a constant pace are recommended. Begin slowly and increase your activity little by little.
- ▶ Do not think that you are not able to do exercise: **just adapt it to your daily life or to your own characteristics** (age, physical limitations, work conditions ...): Distribute the exercise throughout the day, walk to work, get off the bus before arriving at your destination, walk up the stairs instead of using the elevator, dance to the rhythm of your favorite music... Look for any solution with the intention of increasing your daily activity!

Advise: if you are over 40 and you are not trained or you have any CVD, before doing any exercise you must consult your doctor; he will advise you on the type and the duration of the exercise that is more suitable for you.

The physical activity must be carried out with an intensity accorded to your age and physical condition. The way of knowing the intensity of the exercise is measuring your heart rate. Ask your doctor or pharmacist to teach you to measure your heart rate.

Advise: In any case, during the physical activity, the heart rate should not be over the 85 % of your maximum heart rate, which is obtained as a result of subtracting to 220 your age in complete years.

HEALTHY AND BALANCED DIET

Diet, within physical activity, are the basis from which it is necessary to start to control the cardiovascular risk factors.

Did you know that...?

Cholesterol, blood pressure, blood glucose levels or your weight can be modified depending on the type of food you eat or how you cook it.

It is necessary to identify the wrong alimentary habits to be able to correct them.

Do you know how is a balanced and healthy diet ? What are the benefits that it contributes to your cardiovascular health ?

Divide the diet in 5-6 meals a day and follow regular food schedules, this way the need of eating between meals will decrease and you will be able to obtain a better control of your blood glucose levels.



Preparing your meals:
cook to the steam, boil your meals, cook them in the oven, or grill them. Avoid cooking with oils, stews, fritters, muffled, bread and sauces. They add fats and calories in excess.



Did you know that...?

It is recommended to consume 2 or 3 daily portions of the following aliments: fruits, vegetables, and whole foods.

Their content in fibre will help you to have the blood glucose levels stable, to control the total cholesterol, LDL-cholesterol and trygliceride levels. Besides, fibre can help you to eat less and it produces satiety sensation.

The consumption of fruits and vegetables also favours the blood pressure control.

Limit fatty food ingestion, aliments with a high content in cholesterol and calories. Probably, you need to avoid some of the following types of food according to your state of health:

- ▶ Full milk, hard and fatty cheeses, cream, ice creams
- ▶ Butter, margarine, lard of pork, palm an coconut oil
- ▶ Oily appetizers (croquettes, small pies, potatoe chips, snacks, ...)
- ▶ Precooked plates (caneloni, pizza, lasagne, ...) and fast food dehydrated aliments (soups, pasta, mashes and creams)
- ▶ Fatty meats (veal, ox, lamb, pork, ...), delicatessen in general (sausage), other processed meats (hamburgers, sausages, meatballs) and entrails (brains, liver, kidneys, ...)

- ▶ industrial bakery and pies: they increase blood glucose levels, total cholesterol and LDL-cholesterol levels and provide many calories.

Did you know that...?

To replace the consumption of fatty meats (veal, ox, lamb, pork, ...) for others with a lower fat content (poultry without skin and rabbit) and fish, is recommended.

Limit the fatty meat consumption to 3 times a week. The poultry meat (turkey, chicken) and rabbit can be consumed daily.

Consume fish, at least 3 times a week. White fish has less fat and calories than meat. On the other hand, blue fish has **omega-3 fatty acids**, which have protective qualities of CVD.

Take **skimmed milk** and fresh cheeses or low fat cottage cheeses. Nonfat or semi-skimmed dairy products also should be taken.

Use **olive oil** to cook and to spice your meals: it has positive effects in the control of diabetes and lipids in blood.

Reduce salt consumption ... it is the basis for the blood pressure control !

Buy " low-salt " or " no-salt added" products, reduce tinned and fried food (soups, concentrated broth, salty fish, commercial sauces), **use other strategies**



such as natural spices, spices and aromatic herbs to make your meals more tasty and to make the restrictions more bearable.

Avoid alcohol consumption to improve your blood pressure levels !

If you are diabetic avoid sugar added foods (example: sodas, candies): they increase your blood glucose levels.

6 ABOUT YOUR MEDICINES...

- ▶ Know which are the medicines you take to control your cardiovascular risk factors and the expected effect.
- ▶ Follow the instructions given by your doctor, about: what to take, how, how often, and how much.
- ▶ Do not stop taking any medicine, or reduce the dose without consulting your doctor. The risk factors control will depend largely on the correct use of your medicines.
- ▶ If you notice any side effect as a consequence of any of your medicines, tell your doctor or pharmacist. It is necessary to find another medicine that do not causes any problem which allows to control your disease.



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