

# Donating bone marrow:



**decide  
today,  
commit  
yourself  
for a long time.**



# Bone marrow and bone marrow transplantation

## What is bone marrow?

The bone marrow is a soft tissue found inside bones. It is different from bone located in the spine. The bone marrow produces hematopoietic stem cells, that is to say cells that generate blood cells.

They are:

- red cells carrying oxygen;
- white cells fending off infections;
- platelets stopping bleeding.

Hematopoietic stems cell are found in:

- the bone marrow ;
- the placental blood;
- the blood following certain treatments.

*Bone-marrow transplantation is aimed at reconstituting the immune system and the cure of severe diseases, sometimes fatal.*

## “Thanks...”

Since doctors diagnosed leukaemia in Sara, our two-year old girl, she has received many presents. But none of them as precious as the bone marrow offered by an unrelated donor. Thanks to that unknown hero who has given us the chance to see our beautiful little girl enjoying life again.

**Pierre and Laetitia**

Bone-marrow diseases may in certain cases justify transplantation:

- either autologous transplantation, using the patient's own bone marrow;
- or an allotransplantation (or allogeneic transplantation) calling for a related or unrelated donor.

**This leaflet only deals with allogeneic bone-marrow transplantation.**

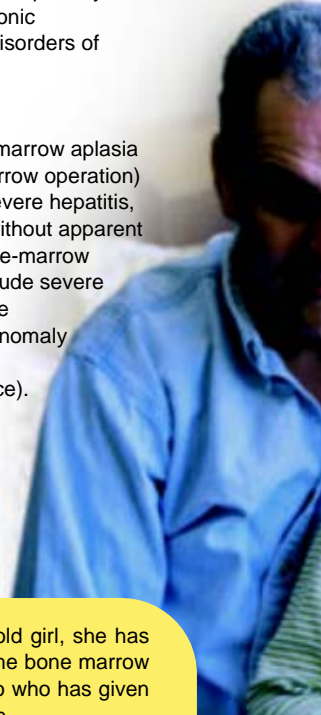
## Two types of indications for a transplant

### 1 Malignant diseases (80% of cases)

The bone marrow is sick especially in the case of acute or chronic leukaemia and certain disorders of lymph-node system.

### 2 Bone-marrow failure

This may include bone-marrow aplasia (depression in bone-marrow operation) acquired after certain severe hepatitis, chemical poisoning or without apparent cause or congenital bone-marrow aplasia. It may also include severe immune deficiency of the newborn or hereditary anomaly in red cell production (thalassemia, for instance).



# How to organize a bone marrow harvest?

One day, the donor centre where you are registered, gives you a call: a patient with whom you are compatible needs you. You will devote about two days to that patient you have never met.

## Preliminary tests

As much as for your own health as for that of the patient's, clinical and biological tests should be made. Doctors will also ask you about your health in general and about your way of life that may impact on your health.

## A puncture In the pelvic bone

Your bone marrow is harvested through a puncture into the hip bone under general anaesthesia.

The harvest volume is based on your weight and that of the patient.

Your bone marrow is a living tissue that will be rapidly regenerated.

Apart from the risks related to all forms of anaesthesia evaluated before the donation, under exceptional circumstances, infectious and traumatic risks in the puncture points, bone marrow donation carries no danger.

Laws provide for bearing the costs resulting from the harvesting by the health care institution in charge of harvesting and transplant (travelling and accommodation expenses, tests and prescribed treatments and indemnification for the loss or compensation borne by the donor).

## The transplant

Before transplantation, the recipient's bone marrow should be destroyed by the chemotherapy and/or radiotherapy.

The patient is no longer able to produce vital blood cells and then becomes extremely vulnerable. Transplantation should be carried out quickly. The donor's bone marrow is given to the patient by intravenous injection as if it were a transfusion.

***“Two days of my life...***

***To save one life”*** I have been discharged after two days of benign hospitalisation. Any health problem? Not at all. I went to donate my bone marrow. General anaesthesia, preliminary health tests... yes, it requires a great deal of motivation to do it. For me, it was simple. On the other hand, there are patients of all ages who need a bone-marrow transplant to keep on living. So giving up these two days it was an easy decision.

**Marc, 35 years old**



# The indispensable donor / patient compatibility

Compatibility is determined based on the genetic markers called humane histocompatibility antigens (HLA), which constitute a very complex polymorphic system.

The most compatible donor is a sibling having the same parental antigens.

If the probability of finding a HLA donor compatible among siblings is slightly over 1 to 4, this probability could plummet to 1 to 1,000,000, indeed less, when compatibility is sought between two individuals taken at random.

Certain patients in the HLA group very rarely do not have or will never have a totally identical donor.


The HLA group has nothing to do with the blood group.

## The French Registry of unrelated bone- marrow donors a national Registry in the heart of a worldwide network of donor registries.

In the current state, only 25% to 30% of patients with an identical HLA donor among his/her siblings will soon be able to benefit from a hematopoietic stem-cell transplant.

The others will have to rely only on the unrelated donor's, hematopoietic stem cells. This explains the whole importance of this donation.

The national Registry, "France Greffe de Moelle", records all voluntary bone-marrow donors. Today it allows managing the requests related to national or international patients and conveying to the transplanting doctors the possible replies related to donors, after a consultation with the French Registry and international Registries.



**"An unrelated bone marrow donor is sought in almost 75% of cases. Think about it!"**

# Donating bone marrow: to be useful for patients

A doctor may request the national Registry to seek a bone-marrow donor from a national or international file, which gather over 10 million volunteers in 56 countries. About 140,000 volunteers are currently registered with the French file.

At present, this file contains more women than men and the average age is a bit high. It is then important register men less than forty years of age to rebalance it.

Too few people, offspring of immigrant families, having different genetic characteristics are registered with the French registry. This is why recruitment seeks to integrate them first and foremost.

**Think about  
donating bone marrow  
and the value  
of this commitment...  
and contact us!**

## Other possibilities of the donation...

### ■ Donating peripheral stem cells

In certain cases, in the patient's interest, the doctor may request the donor to give stem cells intravenously.

In this case, the donor receives a treatment by injection stimulating the production of bone-marrow stem cells and making them go into the bloodstream where they are collected by means of cytopheresis\*.

### ■ Donating lymphocytes

In order to prevent or treat a relapse of the patient's disease, his/her donor may be called to donate cells called lymphocytes. These cells should absolutely come from the same donor. This donation, in general within two years following the donation of bone marrow (variable term), consists of harvesting blood cells.

This harvesting by cytopheresis does not require anaesthesia or medication and takes about three hours.

*\* Cytapheresis: Technique to harvest cells, drawn selectively from blood that goes through a machine (cell sorter or separator). Drawn cells constitute the graft, the remaining blood elements are injected back into the donor. This technique is commonly used by Etablissement Français du Sang for harvesting, for example, platelets.*

# Becoming a volunteer to donate bone marrow

## A long-time commitment

To become a voluntary bone-marrow donor is to commit oneself for a long time to help a patient whom you will never meet.

### Key criteria and stages

#### ■ Minimum conditions

1. To be older than 18 and younger than 51.
2. To be in good health.
3. To answer a health questionnaire.
4. To pass biological tests that will especially allow determining the HLA group.
5. To accept, as required by law, anonymity of both donor and patient.
6. To report to the bone-marrow collecting centre any significant change related to your health condition or place of residence.
7. Registration valid: until you turn 60 years old.

#### ■ Health questionnaire

To ensure the maximum patient's and bone-marrow's donor safety, the doctor at the donor centre will ask you about:

- your recent or past health condition,
- your personal life.

One of the key for the patient's safety is the straightforwardness during the interview with the doctor who will carry out the bone-marrow collection.

#### ■ Clinical and biological tests

Performed starting by taking a blood sample, they are routine tests:

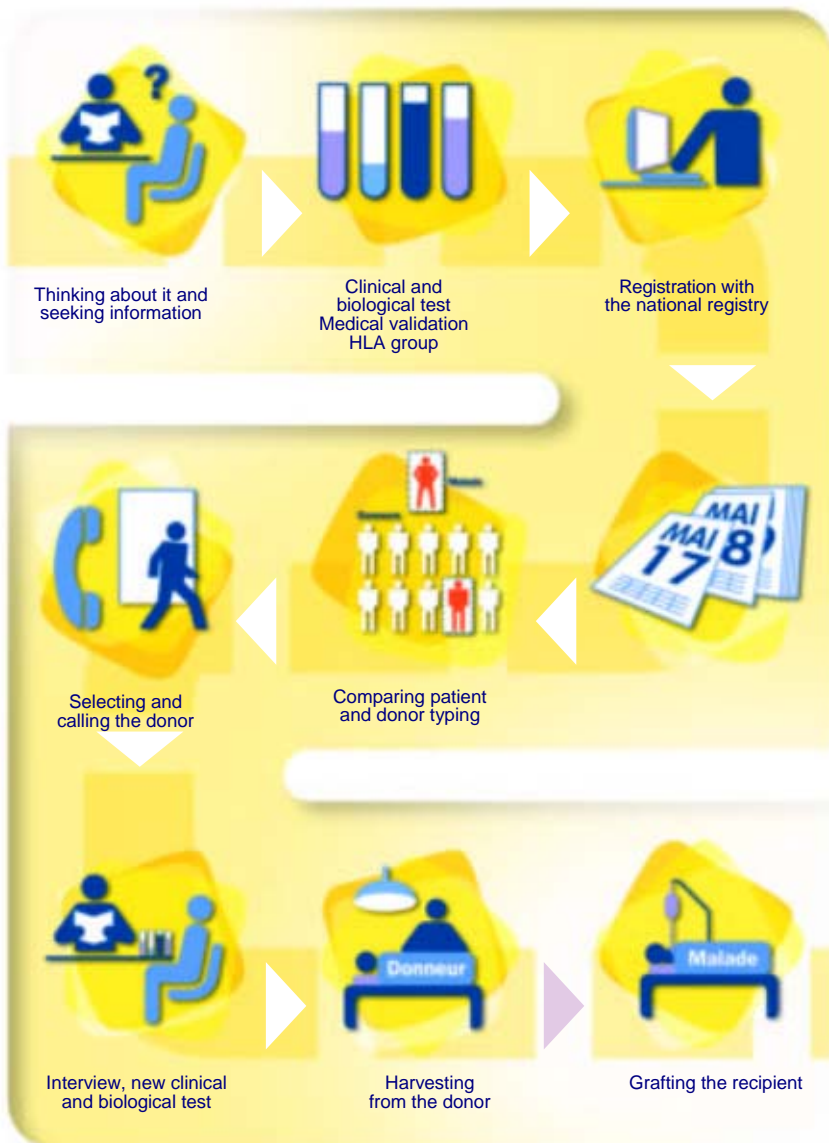
- HLA group, viral serology,
- blood group ABO and rhesus.

■ **The donor's commitment may be revoked at any time**

### Main contra-indications

Heart disorders, arterial hypertension, breathing disorders, nervous system diseases, malignant disorders, metabolic disorders (diabetes, liver failure), anti coagulant treatments, phlebitis or pulmonary embolism history, neuron-muscular disorders and certain allergies, significant weight increase.

## The main steps to become a bone-marrow donor.



[www.dondemoelleosseuse.fr](http://www.dondemoelleosseuse.fr)

If you are considering becoming a bone-marrow donor, you may directly contact: **Agence de la biomédecine**  
**Registre France Greffe de Moelle - 1 avenue du Stade de France**  
**93212 SAINT-DENIS LA PLAINE CEDEX - Tél. : +33-1 55 93 65 34**

# Agence de la biomédecine

The Agence de la biomédecine which has taken over the Etablissement français des Greffes, is a state-owned institution created by the bioethical law of August 6, 2004. It carries out activities related to collecting and grafting organs, tissues and cells, as well as the procreation of human embryology and genetics.

The Agence de la biomédecine does its best so that each patient receives the care he or she requires within health safety, ethical and equitable rules. Its cross-disciplinary role allows it.

Due to its expertise, it is the benchmark authority on medical, scientific and ethical considerations related to these issues.

Regarding bone marrow collections and grafts, the Agence:

1. Chooses quantitative and qualitative objectives to recruit unrelated donors and collecting and preserving placental blood.
2. Manages, through, "Registre France Greffe de Moelle", the national file of voluntary bone-marrow donors. Registers volunteers and requests for information from the group of national and international donor registries and placental blood banks for grafting doctors.
3. Carries out evaluation of medical activities,
4. Contributes towards improving these activities by training professionals and informing the general public.

Finally, it is in charge of developing information on donating, harvesting and grafting cells, organs and tissues.



**National headquarter:**

Agence de la biomédecine  
1 avenue du Stade de France  
93212 SAINT-DENIS LA PLAINE CEDEX  
Tél. : +33-1 55 93 65 50

[www.agence-biomedecine.fr](http://www.agence-biomedecine.fr)

 **N° Vert 0800 20 22 24**

APPEL GRATUIT DEPUIS UN POSTE FIXE



# How to reach donor centres

Agence de la biomédecine  
Registre France Greffe de Moelle

Tél. : +33-1 55 93 65 34 (donors department)

Fax : +33-1 49 98 37 14

e-mail : fgm@biomedecine.fr

## PROVINCE

City	Telephone	Fax
ANGERS	+33-2 41 72 44 44	+33-2 41 72 44 51
BESANCON	+33-3 81 61 56 93	+33-3 81 61 56 32
BORDEAUX	+33-5 56 90 83 70	+33-5 56 90 83 72
BREST	+33-2 98 44 45 95	+33-2 98 43 05 55
CAEN	+33-2 31 53 53 20	+33-2 31 53 53 19
CLERMONT-FERRAND	+33-4 73 15 20 29	+33-4 73 15 20 26
DIJON	+33-3 80 70 60 12	+33-3 80 70 60 20
GRENOBLE	+33-4 76 42 94 30	+33-4 76 42 94 49
LILLE	+33-8 20 80 22 22	+33-3 20 44 43 89
LIMOGES	+33-5 55 05 61 84	+33-5 55 05 80 54
LYON	+33-4 72 71 17 38	+33-4 72 71 17 62
LA MARTINIQUE	+33-5 96 55 24 24 or 12	+33-5 96 75 36 69
MARSEILLE	+33-4 91 18 95 71 or 72	+33-4 91 48 16 02
MONTPELLIER	+33-4 67 33 75 85 or 74 56	+33-4 67 33 71 29
NANCY	+33-3 83 15 48 66	+33-3 83 15 48 67
NANTES	+33-2 40 12 33 00	+33-2 40 12 33 33
NICE	+33-4 92 03 55 02	+33-4 92 03 54 70
POITIERS	+33-5 49 61 57 29	+33-5 49 61 57 81
REIMS	+33-3 26 78 77 58	+33-3 26 78 41 34
RENNES	+33-2 99 54 42 22	+33-2 99 54 83 20
ROUEN	+33-2 32 88 02 23	+33-2 35 70 31 54
LA RÉUNION	+33-2 62 90 63 00	+33-2 62 90 63 08
SAINT-ETIENNE	+33-4 77 81 42 42	+33-4 77 81 43 74
STRASBOURG	+33-3 88 21 25 07	+33-3 88 21 25 44
TOULOUSE	+33-5 61 31 20 50 or 53	+33-5 61 31 20 51
TOURS	+33-2 47 36 01 08	+33-2 47 36 01 21
VALENCE	+33-4 75 82 44 00	+33-4 75 43 04 97

## PARIS – GREATER PARIS

City	Telephone	Fax
CLAMART (Centre de Transfusion Sanguine des Armées)	+33-1 41 46 72 50	+33-1 46 38 82 87
CRÉTEIL	+33-1 56 72 76 74 or 76	+33-1 56 72 76 99
ÉVRY	+33-1 60 78 08 18	+33-1 60 78 12 72
PARIS/LA PITIÉ	+33-1 42 16 02 52	+33-1 45 82 98 81
PARIS/SAINT-ANTOINE	+33-1 53 02 92 00	+33-1 43 44 85 15
PARIS/SAINT-LOUIS	+33-1 42 49 95 40	+33-1 42 49 92 15
PONTOISE	+33-1 30 17 33 35	+33-1 30 38 60 43
VERSAILLES	+33-1 39 23 45 38	+33-1 39 23 45 80
SURESNES/FOCH	+33-1 46 25 27 48	+33-1 46 25 25 48

 agence de la  
biomédecine

**National headquarter:**

Agence de la biomédecine  
1 avenue du Stade de France  
93212 SAINT-DENIS LA PLAINE CEDEX  
Tél. : +33-1 55 93 65 50

[www.agence-biomedecine.fr](http://www.agence-biomedecine.fr)

 **N° Vert 0800 20 22 24**

APPEL GRATUIT DEPUIS UN POSTE FIXE