



Information on body donation to the Swiss Human Institute of Forensic Taphonomy (SHIFT) at the University Centre of Legal Medicine Lausanne-Geneva (CURML)

Funeral Biocomposting Project

The following information, organised in the form of questions and answers, is intended for anyone wishing to donate their body to the Swiss Human Institute of Forensic Taphonomy (SHIFT) at the University Center of Legal Medicine Lausanne-Geneva (CURML) of the University Hospital of Vaud (CHUV). It is intended to answer specific questions that may arise regarding body donation in the context of the "Funeral Biocomposting" project, particularly with regard to the process and use of donated bodies. This information accompanies the body donation registration form.

The "Funeral Biocomposting" project has been approved by the Ethics Committee of the Canton of Vaud (CER-VD).

Why set up a "Funeral Biocomposting" Project?

In order to reduce the environmental impact, occupational exposure risks and societal, ethical and legal issues associated with current methods of burial (burial and cremation), the SHIFT is conducting a "Funeral Biocomposting" project to improve the treatment of bodies, supported by the Department of Health and Social Affairs (DSAS) of the Canton of Vaud.

Both burial and cremation have disadvantages in terms of environmental impact (soil contamination, environmental emissions, etc.), occupational health (exposure of employees, poor decomposition of buried bodies, etc.), ethics and law (what to do with bodies that have not decomposed by the end of the legal burial period).

Solutions to improve these processes exist in order to reduce their environmental impact, and incentives can be put in place, but these will only partially solve the problem. Cases of excess mortality (e.g. the COVID-19 pandemic), energy dependence (geopolitical context) or even technological dependence (in the case of crematoria), urban and land use developments, changing attitudes of the population, increasingly shared ecological values and evolving religious/spiritual principles are prompting a search for alternatives to burial and cremation.

What is funeral biocomposting?

This process involves transforming the organic matter that makes up the body of the deceased into humus and, at the end of the process, grinding the bone remains as after a traditional cremation. This notably allows any biomedical devices, dental amalgams, prostheses, etc. that do not decompose to be recovered before final cremation. One of the main aims is to perform the decomposition of bodies, as it does not occur properly underground in most of our cemeteries on the surface.

A distinction is made between natural funeral biocomposting, where the process is similar to open-air composting under a pile of shredded plant matter, and controlled funeral biocomposting, where the same process is carried out in thermostat-controlled metal sarcophagi to ensure efficient decomposition and the safety of the remains.



What is the "Funeral Biocomposting" Project?

The "Funeral Biocomposting" Project aims to characterise natural funeral biocomposting as a means of transforming the bodies of the deceased. Controlled funeral biocomposting, which is authorised in many places in the United States and in Germany, requires energy to complete decomposition. We would like to study natural funeral biocomposting as an alternative to other processes, as it is the most natural way of treating bodies.

Natural funeral biocomposting therefore involves a decomposition time of several months (4 to 9 months), while controlled funeral biocomposting accelerates the process to two months.

This project will help authorities in their decisions to implement alternative methods of treating the bodies of the deceased to traditional burial methods such as cremation and burial, which are increasingly failing to meet the socio-economic, demographic and cultural requirements of the population, as well as the professional expectations of municipal cemetery services.

The SHIFT offers all the necessary professional expertise as well as safety and project management guarantees for the completion of such taphonomic studies.

How is the body taken care of after death?

When someone registered in our records for body donation passes away, their relatives immediately notify the SHIFT. In a hospital setting, the attending physician or a medical referral can also contact us. When death occurs in Western Switzerland, the SHIFT assists the relatives by directing them to the funeral parlour, which will transport the body to the SHIFT. Beyond a certain distance (100 km) and in the event of death abroad, the SHIFT reserves the right to refuse a body when the transport costs become too high.

Chronology of events:

- On the day of death or the following day: Notify the SHIFT of the death as soon as possible, and we will contact the funeral parlour we work with. The funeral parlour is responsible for notifying the civil registry of the death and completing the administrative procedures related to this notification.
- Up to 4 days after death (for the canton of Vaud): The family may agree on a period of mourning or a wake with the funeral director in accordance with the legislation in force and the sanitary conditions for the preservation of the body.
- After a maximum of 4 days (for the canton of Vaud): The funeral parlour (or SHIFT staff) will organise the removal of the body upon receipt of a copy of the death certificate and its transfer to the funeral biocomposting site.
- After a maximum of 4 or 5 days (for the canton of Vaud): The body is undressed and placed in a mesh bag, which is then laid on a bed of plant shavings and covered with sawdust and wood chips. The clothing and personal effects worn by the deceased can be returned to the relatives if they wish.

The body entrusted to the SHIFT is given a code upon receipt, which allows it to be recorded in SHIFT's body donation database, accessible only to authorised staff. A second independent database, which does not contain the donor's identity (only their SHIFT code), is then created for the "Funeral Biocomposting" project, accessible only to staff involved in and authorised by the research project. This internal procedure ensures the security of donor data and allows the SHIFT staff to trace the identity of the body and, at the end of the process, return the remains to the next of kin upon request. Between the receipt of a body and the return of the remains, the preparation and reduction process can take several months.

The anonymity of the donor is guaranteed at all times. However, after death, we need to be able to collect information about certain aspects of the donor's medical history, which is



necessary in the first instance to determine whether the body donation can be accepted or not, and subsequently to make the best use of the body in the context of understanding its decomposition. Bodies that cannot be accepted are returned to the relatives, who are responsible for organising the funeral.

How will the bodies be used in the "Funeral Biocomposting" Project?

Body donation is an altruistic and selfless act that advances scientific knowledge and benefits present and future generations.

Our bodies belong to us. Therefore, during our lifetime, we can decide what will happen to our physical remains through body donation. We are fully aware of what body donation entails and we are committed to carrying out this work with the utmost respect and to proving ourselves worthy of such a gift to science.

The natural funeral biocomposting practice we wish to carry out consists of surface burials with a mound made of plant material in order to produce compost/humus that will allow the body to decompose within a maximum of one year.

The bodies are simply wrapped, placed in a very fine mesh screen and laid on a bed of sawdust and plant matter. The bodies are then covered with plant matter so that they are insulated from the outside by a layer of more than 40 cm. The piles thus formed are then watered and covered with a tarpaulin (optional, depending on weather conditions). The progress of the funeral biocomposting is monitored periodically by biophysical and chemical analyses (temperature, humidity, O₍₂₎- and CO₍₂₎-levels).

After the thermophilic decomposition phase, the remains are exhumed and sorted to remove any non-natural elements (prostheses, etc.). The bones are assessed by a SHIFT anthropologist to certify the progress of decomposition. Depending on the state of decomposition, the bones may be accepted for the next stage of grinding in order to be reincorporated into the pile, which is reconstituted for a second maturation, or left *in situ* after reconstitution of the mound until decomposition allows grinding (absence of soft tissue). Grinding is carried out after drying the remains in an oven at 70°C for at least 12 hours.

The second maturation process is longer and will require several months of biocomposting. In total, the natural funeral biocomposting process should not exceed one year (expected duration between 6 months and 12 months maximum).

The bodies will be handled by certified SHIFT and CURML staff who are accustomed to working with this type of material in their forensic routine (anthropologists, archaeologists, forensic pathologists and scientists, etc.) to ensure that the dignity of the deceased and the bereaved is respected at all stages of the process.

Our capacity allows us to carry out the funeral biocomposting of up to five bodies per year. The "Funeral Biocomposting" project plans to include a minimum of six bodies, ideally ten.

How do I register to donate my body?



The body donation consent form can be requested from the SHIFT secretariat by calling: **079 556 84 72**



The body donation consent form is also available from the SHIFT secretariat by email: shift@chuv.ch



A written request is also possible:



Body Donation

**Swiss Human Institute of Forensic Taphonomy (SHIFT)
Centre Universitaire Romand de Médecine Légale
Chemin de la Vulliette 4
CH-1000 Lausanne 25
Switzerland**

The original form must be sent to the SHIFT to open the file. A copy is intended for the donor's personal files. We also recommend sending a copy of this form to the donor's family doctor or attending physician, as well as to his or her next of kin. We insist on this because we would like to verify if the donor's decision is understood and accepted by the next of kin. This is why the donation form must also be signed by two contact persons, who will be contacted when the donation is made.

Only this form is legally acceptable and binding in the eyes of the SHIFT. Any other document, even a testamentary will, is insufficient.

There is no obligation or requirement to donate a body. Donors choose to donate their bodies freely and in full awareness of their actions.

When death occurs in Western Switzerland, the SHIFT assists the relatives by directing them to the funeral parlour, which will transport the body to the SHIFT. Beyond a certain distance (100 km), the SHIFT reserves the right to refuse a body when the transport costs become too high.

Can a body donation to the "Funeral Biocomposting" project be refused?

In principle, the SHIFT does not refuse a body and endeavours to honour the wishes of the deceased as far as possible. However, the SHIFT is under no obligation to accept a body and reserves the right to refuse it.

The natural funeral biocomposting process thermally stabilises the transformation of the body, as temperatures of 60°C are reached. Most pathogens are thereby destroyed. However, certain pathogens (prions, etc.) or contaminants (in cases of bodies that have undergone embalming for instance) are not destroyed by this process.

Therefore, for administrative reasons and in order to protect public health and to ensure that the condition of the body is compatible with funeral biocomposting activities, the SHIFT cannot accept the donation of a body when:

- the body donation form has not been submitted to the SHIFT,
- the body donation concerns a non-adult,
- the deceased had a serious contagious disease or an infectious pathogen,
- the SHIFT's capacity to receive bodies is exceeded,
- the body has undergone embalming,
- in the event of extreme weather conditions.

What happens to the body once the funeral biocomposting process is complete at SHIFT?

The natural funeral biocomposting process means that the donor's body is not available to the relatives for 12 months. During this time, it is also not possible to physically visit the place where the body is resting for reasons of safety and confidentiality.



During the project, in the absence of any guarantee regarding the safety of the humus produced, we will not be able to return this material to the next of kin. We will therefore collect 10 litres of humus, which will then be cremated in order to return some of the deceased's remains to their next of kin, as notified in the consent form.

Thus, after use at the SHIFT's facilities, the remains, identified thanks to their code, will be sent to the funeral parlour for cremation in a crematorium in the Canton of Vaud. In accordance with the wishes of the deceased, the ashes will be made available to relatives at the crematorium for six months. If the contact persons identified in the body donation consent form have not come forward after this period, the ashes will be scattered in the crematorium's Garden of Remembrance.

What are the costs associated with body donation?

Once accepted, all costs associated with the care of the body until the remains are handed over will be covered by the SHIFT. No financial compensation is provided for the donor or their relatives. It should be noted that once the body has been transported to our premises, it is no longer accessible to relatives.

Other costs related to the death (ceremony, death notices, etc.) are the responsibility of the relatives, if applicable, and are not covered by the SHIFT.

All costs related to body donation for the "Funeral Biocomposting" project are covered by the SHIFT, which also covers the transport of the body to the cemetery after its use, the cremation costs, and the costs of scattering the ashes in the crematorium's Garden of Remembrance, if applicable.

When death occurs in Western Switzerland, the SHIFT assists the relatives by directing them to a funeral parlour, which will transport the body to the SHIFT. Beyond a certain distance (100 km) and in the event of death abroad, the SHIFT reserves the right to refuse a body when the costs of transporting the body become too high.