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## Press communiqué

### Organ transplants: What are the research options?

*An Inserm collective expertise*

**Despite the considerable progress made in the past, much still needs to be done to improve the removal of organs and to ensure the long-term success of transplants. How best to solve the problem of the shortage of donors? How best to optimise the heavy and insufficiently specific immunosuppressive treatments? Is there a chance of reducing or avoiding the multiple post-transplant complications?**

In 2007, over 275,000 persons in Europe were living with a transplanted organ and thousands were waiting for a transplant. In France, the number of transplants has increased by 44% since the year 2000. In 2008, almost 13,800 person needed an organ transplant and 222 patients died as a result of not receiving one in time. The waiting list increases by 4% each year.

Where transplants are concerned, there have been major advances in surgery, medicine and research over the last twenty years. Despite the undeniable success achieved in the short run, the transplanted patients have to contend with the risk of chronic rejection and with complications over the long term. With the increase of chronic illnesses and the ageing of the population, transplants are becoming more and more frequent and are resulting in a shortage of transplants. In these circumstances, it is important to draw up a list of what has been achieved and to set out the research options that need to be promoted.

At the request of the Agence de la biomédecine (Biomedicine Agency), Inserm has brought together a group of experts specialising in different fields of transplantation with a view to conducting a review, according to the collective expertise procedure, of scientific and medical knowledge on the transplantation of solid organs (kidney, liver, heart, lung).

This expertise analyses the priority spheres for improving the quantitative and quantitative results of the implant. The conditions in which the organ is removed, its preservation and its implantation in the recipient play a crucial role in the success of the implant.

The group of experts therefore recommends as follows:

- To define the possibilities for enlarging the profile of donors such as donors deceased following heart attack, living donors; to establish the scores of risks for the recipient
- To gain a better knowledge of the damage to the transplant linked to removal and to implantation in the recipient; to develop new generations of more protective preservation solutions of transplants

- To reach a better understanding of the mechanisms of tolerance, acute rejection and chronic rejection with the development of new markers for monitoring the immune status of the transplant
- To develop new immunosuppressive strategies that take into account the genetic variability of the response to the immunosuppressive treatment; to encourage the development of new immunosuppressants which do not have a toxic effect on the kidney, which do not favour the occurrence of cancer and which are likely to induce tolerance
- To obtain a better control of complications by means of an evaluation of infectious, metabolic and cancer risk; to educate patients and train transplant teams in these complications

The experts draw attention to the particularly multidisciplinary dimension of transplantation research, and insist on the development of a structured research programme in the context of a networked organisation of the different transplant centres and research laboratories.

**A summary of the expertise is available on the Inserm website: [www.inserm.fr: http://ist.inserm.fr/basisrapports/transplantation/transplantation\\_synthese.pdf](http://ist.inserm.fr/basisrapports/transplantation/transplantation_synthese.pdf)**

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