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## Islet transplantation: Input of biomaterials for islet survival

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Islet transplantation is a promising and minimally invasive therapy to restore normoglycaemia in brittle type 1 diabetic patients. However, the procedure is pancreas consuming since 2 to 3 pancreas are needed for a single patient. Therefore, efforts in research are focusing on improvement of islet survival during the process to decrease pancreas requirement. The stressful event of islet/exocrine separation deprives cells from extracellular matrix contact and oxygen supply; which are two of the major reasons of the loss of approximately 60% of islets. Interest had risen over the last couple of years in biomaterials in islet transplantation regarding transplantation, but also for the culture steps. The uses of biomaterials to create an artificial environment for islets post isolation increase their survival and improve transplantation outcome. In the same way, oxygen provider arouses enthusiasm of the community, and numerous teams tested the beneficial effect of oxygen supply from the pancreas retrieval to islet implantation step. The combination of both agents showed a real benefit for islet viability and function *in vitro*, providing more robust islet for sustaining the transplantation event. *In vivo* study highlighted several problems with transplantation sites, the liver. Indeed depending upon the material used, the inflammatory reaction is triggered. Therefore, alternative sites are investigated today; with, in particular, the omental pouch which gives the opportunity to keep matrices post implantation.

### Biography

Elisa Maillard has completed her PhD from Strasbourg and Post-doctoral studies from Oxford University. She has worked on both basic research and clinical islet isolation and culture. She is the Lab Manager of the European Center of Diabetes Study. She has published 13 articles in reputed journal such as *Biomaterials*.

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