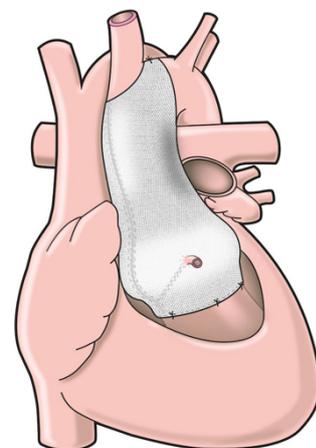


# ExoVasc<sup>®</sup> Personalised External Aortic Root Support (PEARS)



**The new approach to surgical management of the dilated aorta**

## **The condition: aortic dilation and dissection**

One of the features of Marfan syndrome and related genetic conditions is enlargement or dilatation of the aorta – the main vessel carrying blood from the heart to the body. People affected by this are at risk of aortic dissection, which can be fatal.

## **The conventional approach: replacement of the aorta**

The current standard surgical means of preventing aortic dissection is to replace the ascending aorta, with or without replacement of the aortic valve. During surgery, the ascending aorta and aortic valve are removed and replaced by an artificial graft. To prevent blood clots forming on the replaced valve, the patient must take anticoagulant drugs for the rest of his or her life. Alternatively, a valve sparing procedure can be done in which the patient's aortic valve is retained and fixed within the external mesh of an artificial tubular graft material that replaces the weakened aorta. An advantage of this approach is that anticoagulant therapy is not required, but the drawback is that further surgery may be required in the future. Both approaches are major surgical procedures.

## **The new approach: the ExoVasc<sup>®</sup> Personalised External Aortic Root Support – retaining the aorta and valve**

The ExoVasc<sup>®</sup> Personalised External Aortic Root Support provides an alternative to aortic root replacement. A custom-made external support is manufactured to exactly match the shape of the patient's aorta. This mesh is placed around the ascending aorta, which remains in place. Since the vessel and the valve remain intact, the surgery takes less time and there is no need for the patient to take anticoagulant drugs.

## **Patient benefits**

By leaving the patient's own aorta and valve intact, fitting the ExoVasc<sup>®</sup> Personalised External Aortic Root Support is a less invasive procedure. Although open chest surgery is required, the benefits to the patient are significant and include:

- a shorter operation (typically a couple of hours rather than 5-6)
- usually no requirement for cardiopulmonary bypass (heart-lung machine) during surgery

- there is no requirement for lifetime anticoagulant therapy
- the reinforced aorta reverts to a structure similar to normal, the patient's own valve is supported and further surgery is unlikely to be necessary



This picture shows the soft textile of the ExoVasc® Personalised External Aortic Root Support fitted on the former used to give it shape during manufacture.

The former is produced by 3-D printing from a computer model generated from the data on each individual patient's aorta taken from a CT scan.

By following this approach, the ExoVasc® support is personalised to match the exact shape of the patient's own aorta, thus providing close support to the ascending aorta including the aortic valve.

During surgery, the textile support is placed around patient's own aorta and valve; both of which remain intact.

## What is the experience to date?

Over 200 patients have now received this external support to their aorta. The first patient received their support over 15 years ago, the total patient experience has exceeded 600 patient years, and the ExoVasc® support has proven successful in every case in which it has been implanted.

## Where is the surgery available?

If you believe that you or a family member may be a candidate for this procedure, you can be referred by your GP to one of the centres currently performing the PEARS operation. This surgery is available at hospitals in Bristol, Edinburgh, Glasgow, London, Oxford and Belfast in the UK, Dublin in Ireland, Leuven in Belgium, Amsterdam in the Netherlands, Prague, Brno, Olomouc and Hradec Kralove in the Czech Republic, Melbourne and Brisbane in Australia and Hamilton in New Zealand. You can find contact details for these centres on the Exstent website at [www.exstent.com/centres.html](http://www.exstent.com/centres.html).

## How can I learn more about the ExoVasc® approach?

You can find more information on the ExoVasc® Personalised External Aortic Root Support by visiting the Exstent website at [www.exstent.com](http://www.exstent.com) or by visiting the advice site at [www.marfanaorticrootsupport.org](http://www.marfanaorticrootsupport.org). On both sites you will find reports from patients on their experience, and copies of the published clinical papers describing this approach. Alternatively, you can get in touch with us directly using the contact page on the Exstent website or using the information at the foot of this page.