



# Marfan Syndrome:

## Surgery to Repair the Aortic Root

Dilation of the aortic root is when a segment of the aorta closest to the heart is enlarged. This is a serious problem and common for people with Marfan syndrome. Surgery is often the treatment when the aortic root gets to be a certain size and emergency surgery is required if the aortic root tears (aortic dissection).

Here are facts about the three different types of surgery the National Marfan Foundation (NMF) recommends for repair of the aortic root. Each type of surgery has advantages (how it helps) and disadvantages (problems it may cause). The NMF recommends you use a surgeon who has experience with Marfan aortic root surgery. Talk with your surgeon about which surgery is best for you.

### COMPOSITE GRAFT SURGERY (BENTALL PROCEDURE)

In this surgery, the dilated (enlarged) part of aorta and aortic valve are removed. They are replaced with a woven cloth tube that has a mechanical aortic valve sewn to one end. This surgery has been used for more than 30 years. Results last a long time and historically, this has been the most common way to repair the aortic root in people with Marfan syndrome.

#### **Advantages of composite graft surgery:**

- Surgeons have a lot of experience with this type of surgery
- There are few complications after surgery
- This repair is very durable, meaning that it usually lasts a person's lifetime

#### **Disadvantages of composite graft surgery:**

- People need to take blood-thinning medication (anticoagulants) for the rest of their lives (and are at risk of bleeding).
- After surgery, people need blood tests (to check blood-thinning medication levels) every week or two. This may happen less often once test results are the same for a while.
- The mechanical valve is at risk for forming harmful clots and endocarditis (infection of the heart valve).

### VALVE-SPARING SURGERY

In this surgery, the dilated part of the aorta is taken out and replaced with a woven tube. The person's own aortic valve is spared (left in place) and sewn into the end of the tube. This surgery is newer than composite graft surgery.

#### **Advantages of valve-sparing surgery:**

- People do not need to take blood-thinning medication.
- There is no risk of forming harmful clots and the risk of endocarditis (valve infection) is much less than with a mechanical valve.
- There are fewer concerns if a woman becomes pregnant after having this surgery.



National Marfan Foundation

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of people with  
Marfan syndrome  
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**Disadvantages of valve-sparing surgery:**

- This surgery is a newer procedure and doctors do not yet know how long the repair will last and how long the spared valve will work properly.
- A person may need more surgery if the aortic valve fails (develops severe leaking).
- This type of surgery may not be available in all parts of the country. It needs to be done by a surgeon who has had training and experience doing it in people with Marfan syndrome
- This surgery is not an option for everyone. Whether a person can have it depends on aorta size, whether there is damage to the aortic valve, and amount of leaking from the aortic valve. A surgeon's expertise is very important in this surgery.

**BIOPROSTHETIC (TISSUE) VALVE SURGERY**

In this type of surgery, the aortic valve is replaced with a bioprosthetic (tissue) valve that has been specially prepared.

**Advantages of tissue valve surgery:**

- People do not need to take blood-thinning medication.
- Surgeons have a lot of experience with this type of surgery.
- There are several kinds of tissue valves surgeons can choose from.
- There is no clicking sound from the tissue valve.

**Disadvantages of pig valve surgery:**

- Tissue valves do not last as long as mechanical valves (typically last 10-20 years, depending upon many factors)
- Tissue valves may develop structural problems after 10-20 years and may require additional surgery to replace them.

**WAYS TO LEARN MORE:**

- Call the National Marfan Foundation (NMF) Resource Center at 1-800-862-7326 ext. 26. You will speak with a nurse who can answer your questions and mail you information. She can also suggest articles you and your doctor can read about aortic surgery.
- Talk with your doctor. Sometimes it helps to use the information you have from the NMF when you speak with your doctor.
- Visit the NMF website at <http://www.marfan.org>. You can ask questions online by clicking: "Support Services: Ask a Question."