

For more information about thoracic aortic surgery at Duke University Medical Center, or to refer a patient, please call **919-668-0903**.

The Duke Consultation and Referral Center provides physicians and other health care professionals convenient, toll-free access to all Duke physicians and services, including thoracic aortic surgery. Call **1-800-MED-DUKE (633-3853)** Monday-Friday, 7:30 a.m.-6 p.m. EST.

Emergency coverage is provided nights, weekends, and holidays. Call 1-800-MED-DUKE and press "0" to be transferred to the Life Flight staff.

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DUKE THORACIC AORTIC SURGERY



DUKE UNIVERSITY MEDICAL CENTER

Cardiovascular & Thoracic Surgery

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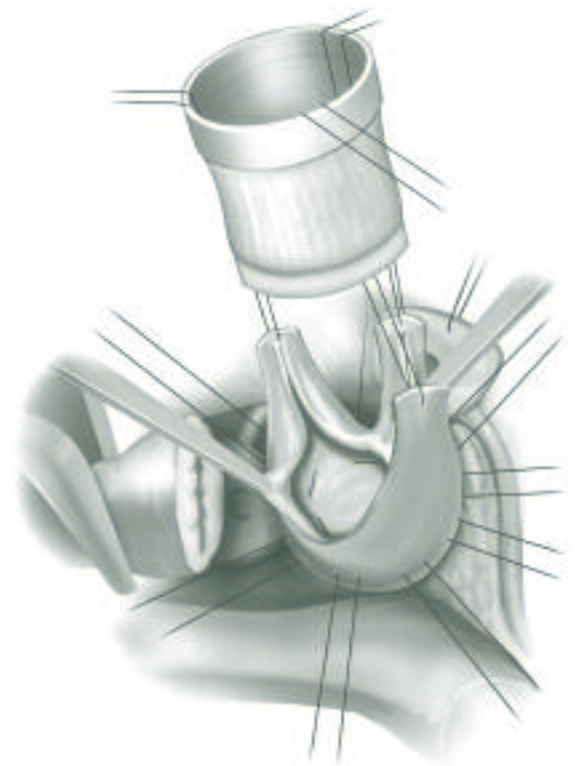
U.S. News & World Report

DUKE

Thoracic Aortic Surgery

PROGRAM

EXPERT SURGICAL TREATMENT
OF THORACIC AORTIC DISEASES



DUKE UNIVERSITY MEDICAL CENTER

Cardiovascular & Thoracic Surgery

Thoracic Aortic Surgery: The Duke Difference

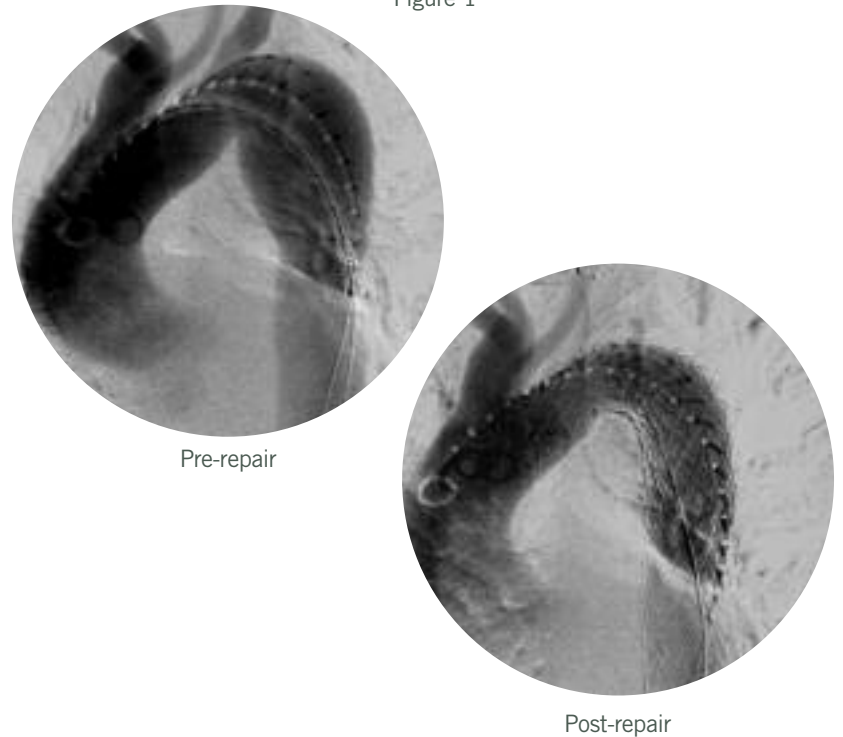
There are numerous diseases of the thoracic aorta that can benefit from surgical treatment, including aneurysms, pseudoaneurysms, aortic dissections, penetrating atherosclerotic ulcers, and intramural hematomas, as well as congenital abnormalities such as coarctation of the aorta. Duke's experienced surgeons offer sub-specialty expertise in the treatment of these conditions within a high-volume medical center.

Duke offers multidisciplinary care to minimize the risk of neurologic injury, historically the most common problem associated with thoracic aortic surgery. Neurologists with Duke's Neurophysiologic Monitoring Service are present in the operating room during all procedures to immediately detect any problems as they arise, offering optimal protection against adverse outcomes.

Duke is the only medical center in the Southeast to use online central nervous system monitoring with EEG to guide cooling and perfusion strategies during operations on the ascending aorta, aortic arch, and descending aorta requiring the use of deep hypothermic circulatory arrest (DHCA)—ensuring protection of the central nervous system while allowing complete repair of the defect. For descending thoracic and thoracoabdominal aortic operations, somatosensory (SSEPs) and motor evoked potentials (MEPs) are used to immediately detect problems related to the spinal cord. As with EEG, Duke is the only center in the Southeast employing online spinal cord monitoring with MEPs and SSEPs during all open and endovascular thoracic and thoracoabdominal aortic procedures.

Endovascular Repair Descending Thoracic Aneurysm

Figure 1

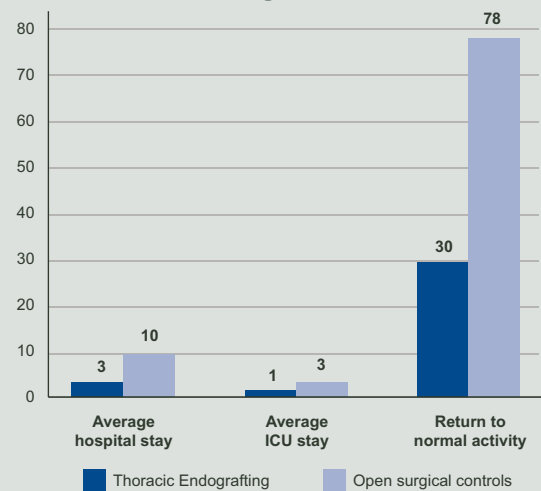


The Latest Surgical Techniques

- For selected **aneurysms of the aortic root**, especially those associated with the **Marfan syndrome**, valve-sparing root replacement techniques are used to preserve the native aortic valve while removing the diseased aorta (cover illustration). Valve-sparing procedures help patients avoid problems associated with prosthetic valves, such as endocarditis and the need for anti-coagulation. For all elective aortic root replacements performed at Duke since 1990, there is a 3 percent 30-day mortality rate.¹
- **Aneurysms of the aortic arch** are now routinely repaired using DHCA. Duke represents a high-volume center offering expertise in arch surgery. In addition, selected aneurysms of the distal arch may be repaired using “hybrid” procedures combining open and endovascular techniques to minimize patient morbidity.
- The majority of **descending thoracic aneurysms** can be repaired with endovascular techniques. Duke is pioneering this area of minimally invasive cardiovascular medicine by participating in several major stent graft clinical trials. (Figures 1 & 2)
- **Aneurysms of the thoracoabdominal aorta** represent a significant surgical challenge; their successful treatment is limited to large referral centers such as Duke. In addition to SSEPs and MEPs, adjuncts such as neuroprotective pharmacologic agents, CSF drainage, distal aortic perfusion, mild hypothermia, and intercostal artery re-implantation are utilized to maximize positive neurologic outcomes.

Benefits of Thoracic Endografting²

Figure 2



- More than 60 cases of **acute aortic dissection** are expertly managed at Duke each year. This condition is classified as either Type A (dissection involving the ascending aorta and a surgical emergency) or Type B (involving the descending aorta and requiring surgery in the event of complications). Duke Life Flight allows emergency air transport of these critically ill patients for surgical intervention.

(1) Lima B, Hughes GC, Lemaire A, et al. Ann Thorac Surg. In press.
(2) Makaroun MS, Dillavou ED, Kee ST, et al. J Vasc Surg. 2005; 41:1-9. MCOC-4361

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THORACIC AORTIC POCKET REFERENCE CARD

- CONDITIONS TREATED**
- Aneurysms, including those related to Marfan syndrome
 - Aortic dissections
 - Pseudoaneurysms
 - Penetrating atherosclerotic ulcers
 - Intramural hematomas
 - Congenital abnormalities