AORTIC VALVE REPLACEMENT

Ross Procedure

UCSF Health is a major referral and destination center for complex cardiac surgery, including the Ross procedure for aortic valve replacement.

BEST HOSPITALS U.S.News & WORLD REPORT HEART & VASCULAR 2024-2025

UCSF Health is one of the nation's best hospitals for cardiology and heart & vascular surgery, according to U.S. News & World Report's 2024-25 Best Hospitals rankings.

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Optimal Results for Younger Patients with Aortic Valve Disease

- The UCSF Cardiac Surgery Program offers durable, long-lasting valve replacement options, including the Ross procedure, expanding treatment possibilities for younger patients with aortic valve disease.
- Our dedicated team of surgeons, cardiologists, anesthesiologists, nurses, perfusionists and ICU physicians has specialized training in the Ross procedure and is committed to delivering top-level cardiac care.

INFORMATION / REFERRALS

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Ross Procedure for Aortic Valve Replacement

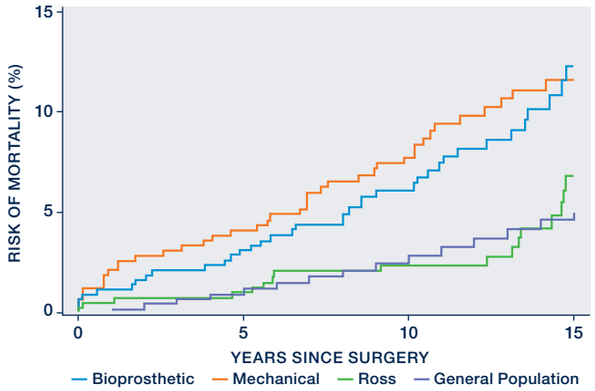
Ross Procedure for Aortic Valve Replacement

The Ross procedure provides optimal outcomes for younger patients with aortic valve disease when performed safely, with consistently reliable results, in high-volume centers. In traditional aortic valve replacement (AVR), the surgeon uses either a bioprosthetic or mechanical valve to replace the patient's diseased aortic valve. In the Ross procedure, the surgeon replaces the aortic valve with the patient's own healthy pulmonary valve. The pulmonary valve then adopts the form of a native aortic valve, and a donor valve replaces the harvested pulmonary valve.

Restored long-term survival for younger patients

Traditional AVR uses a bioprosthetic or mechanical valve. This generally works well for older patients, nearly restoring their life expectancy. However, traditional AVR exposes younger patients with a longer life expectancy to a number of valve-related complications. Mechanical valves require the lifelong use of blood thinners, which can cause bleeding, and tissue valves deteriorate over time. The Ross procedure is the only aortic valve replacement that has reliably been shown to restore normal life expectancy in patients age 60 and under.

Long-term cumulative incidence of all-cause mortality with the matched U.S. general population



Number at Risk				
Bioprosthetic	434	386	290	113
Mechanical	434	369	287	131
Ross	434	376	298	129

At 15 years, the cumulative incidence of all-cause mortality is significantly lower after the Ross procedure **(green)** compared with biological aortic valve replacement **(blue)** (HR: 0.42; *P*=0.003) or mechanical aortic valve replacement **(orange)** (HR: 0.45; *P*=0.006). Survival after the Ross procedure is equivalent to that of the age-, sex-, and race-matched U.S. general population **(purple)**.

El-Hamamsy I, Toyoda N, Itagaki S et al. Propensity-matched comparison of the Ross procedure and prosthetic aortic valve replacement in adults. J AM Coll Cardiol. 2022;79(8). doi:10.1016/j.jacc.2021.11.057.

Benefits of the Ross procedure

Because the Ross procedure involves a living aortic valve substitute, it offers many benefits over traditional prosthetic AVR for younger patients, including:

- Restored normal life expectancy for patients age 60 and under
- No need for blood thinners
- Lower rates of stroke, valve infection, bleeding and clotting
- Reduced need for reintervention
- A valve that is more durable than a bioprosthetic valve
- Superior hemodynamic performance
- Potential for somatic growth in pediatric patients

Who is a candidate for the Ross procedure?

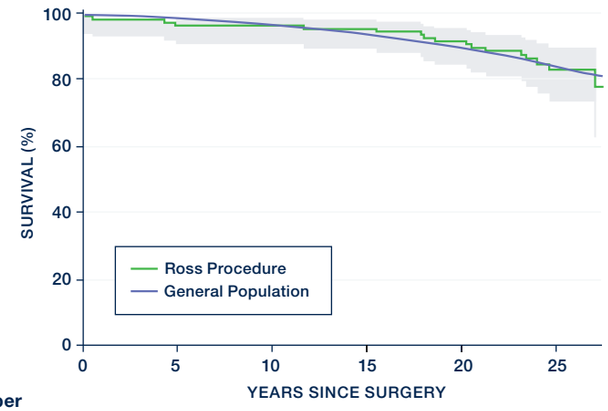
Those who may benefit from the Ross procedure include:

- Patients 60 and under with aortic valve disease and no significant comorbidities (e.g., liver, kidney or lung disease)
- Patients planning pregnancy
- Patients with a failed previous aortic valve replacement
- Patients with a very small aortic valve that needs replacement

How will I be informed about my patient's progress?

We believe collaboration with the referring physician at every step of treatment is key to a successful outcome. Our team will communicate with you before and after surgery, and patients are advised to follow up with their referring physician after the procedure.

Long-term survival after the Ross procedure compared with age-, country of origin-, and sex-matched general population



Number at Risk						
Ross	108	104	102	99	95	45

Notenboom ML, Melina G, Veen KM et al. Long-term clinical and echocardiographic outcomes following the Ross procedure: a post hoc analysis of a randomized clinical trial. JAMA Cardiol. 2024;9(1):6–14. doi:10.1001/jamacardio.2023.4090.

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