

# Gender Inequalities in Aortic and Mitral Valve Replacement and Repair Procedures in Germany

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## Objective

Gender disparities in cardiovascular interventions persist, but few studies have examined long-term trends in procedural access. We evaluated gender differences in aortic valve replacement (AVR) and mitral valve replacement or repair (MVR) procedures in Germany from 2006 to 2023.

## Methods

We used publicly available data from the Federal Statistical Office in Germany. MVR and AVR procedures were identified for patients aged 60+. AVRs were further stratified as surgical (SAVR) or transcatheter (TAVR). MVR was stratified as surgical (SMVR) and mitral valve transcatheter edge-to-edge repair (MTEER). TAVR was first reported in 2008 and MTEER in 2011. Data were stratified by gender. We calculated annual gender proportions for each procedure and analyzed trends.

## Results

The trend of TAVR procedures is increasing, while SAVR is slightly decreasing. In 2023, TAVR represented 73.9% of all AVR procedures in Germany (Figure 1). From 2006 to 2023, the proportion of male SAVR recipients increased from 55.3% to 72.3%, and TAVR male distribution increased from 40.2% (in 2008) to 54.1% (in 2023). The proportion of women in AVR slightly decreased from 44.7% to 41.2% (Figure 2). The number of SMVRs increased from 3,262 in 2006 to 3,841 in 2023 and MTEER grew rapidly from 2011 to 8,918 cases in 2023, representing 69.9% of all MVR procedures (Figure 3). The gender gap in SMVR changed over time, male recipients of SMVR grew from 45.4% in 2006 to 54.7% in 2023 and decreased in MTEER from 58.4% in 2011 to 51.3% in 2023. Overall, female representation in MVR decreased from 54.6% to 47.7% (Figure 4).

Figure 1: Number of AVR procedures

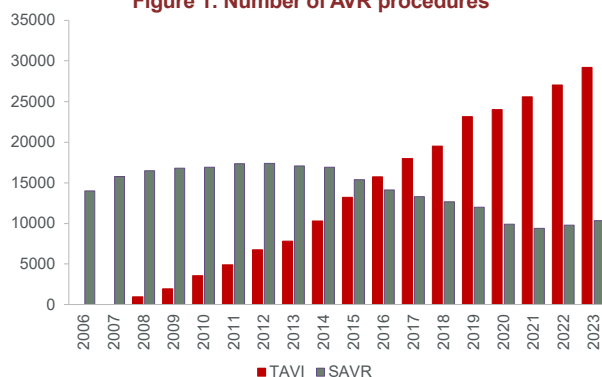


Figure 3: Number of MVR procedures

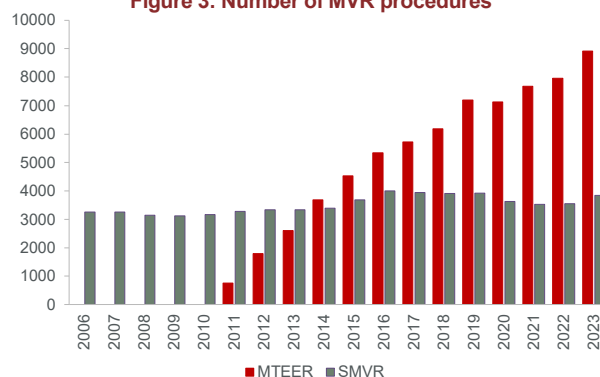


Figure 2: Percentage of AVR, SAVR and TAVI by year and gender

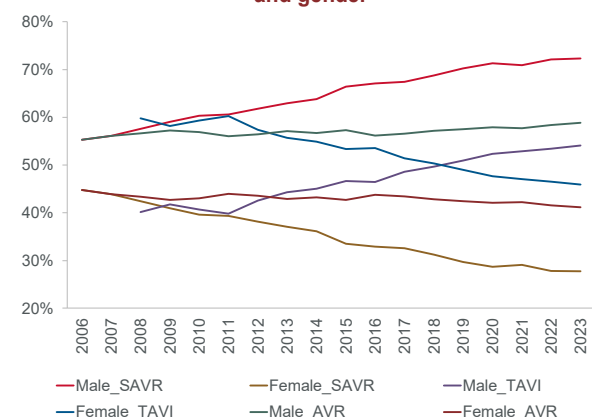
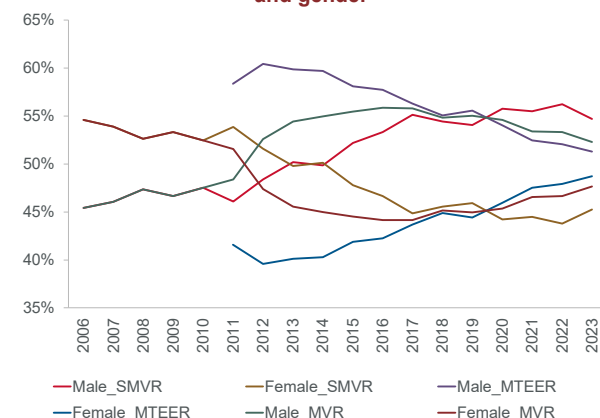


Figure 4: Percentage of MVR, SMVR and MTEER by year and gender



## Conclusion

- Male patients treated with AVR and MVR increased from 2006 to 2023.
- TAVR started with more female recipients; by 2023, males predominated.
- Only MTEER saw a rise in female recipients.
- Reasons for these gender disparities deserve additional insights. The true gap in gender inequalities to access AVR and MVR treatments should be further explored combining information about referral patterns, patients diagnosed and treated.