

Supplementary Online Content

Douglas PS, Leon MB, Mack MJ, et al; the PARTNER Trial Investigators. Longitudinal hemodynamics of transcatheter and surgical aortic valves in the PARTNER Trial. *JAMA Cardiol*. Published online September 27, 2017. doi:10.1001/jamacardio.2017.3306

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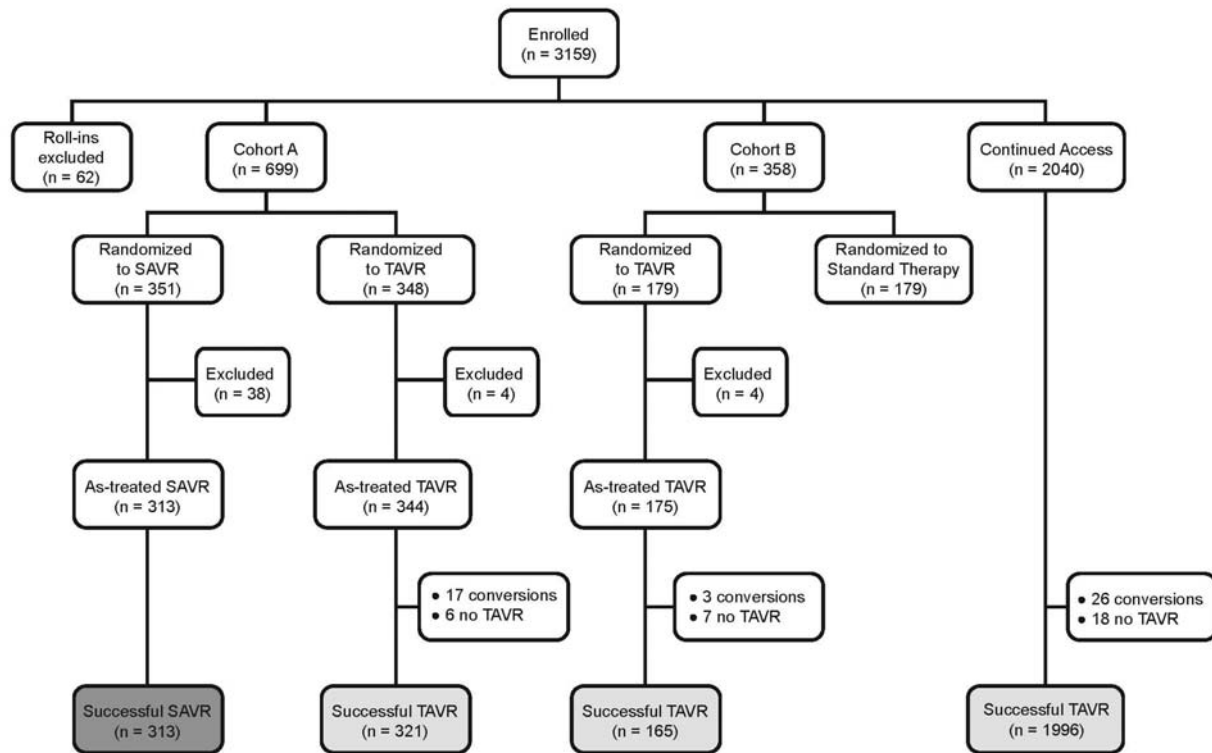
This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Institutional review board approval

Institution	IRB Affiliation
Division of Cardiology, Barnes-Jewish Hospital, Washington University School of Medicine	Washington University Institutional Review Board
Division of Cardiac Surgery, Brigham and Women’s Hospital	Partners Human Research Office Institutional Review Board
Cedars-Sinai Medical Center	Cedars-Sinai Medical Center Institutional Review Boards
The Cleveland Clinic Foundation Cardiovascular Medicine	Cleveland Clinic Foundation Institutional Review Board
Interventional Cardiology Center for Interventional Vascular Therapy, Columbia University Medical Center	Columbia University Medical Center Institutional Review Board
Cornell University	Cornell University Institutional Review Board
Emory University	Emory University Institutional Review Board
NorthShore University Health System	Northshore University Health System Research Institute
Evanston Hospital, Northwestern University	Northwestern University Human Subject Protection Program
Intermountain Medical Center	Intermountain Healthcare Institutional Review Board
Laval Hospital, Institut de Cardiologie du Quebec	Institut Universitaire de Cardiologie et de Pneumologie Research Ethics Board
Klinik für Herzchirurgie Leipzig - Zentrum klinische Studien Strümpellstr	Medical Faculty University of Leipzig Research Ethics Board
Massachusetts General Hospital	Partners Human Research Office Institutional Review Board
Mayo Clinic	Mayo Clinic Institutional Review Board
Medical City Dallas Hospital	North Texas Institutional Review Board at Medical City
Ochsner Clinic Foundation	Ochsner Clinic Foundation Institutional Review Board
Scripps Green Hospital	Scripps Office for the Protection of Research Subjects

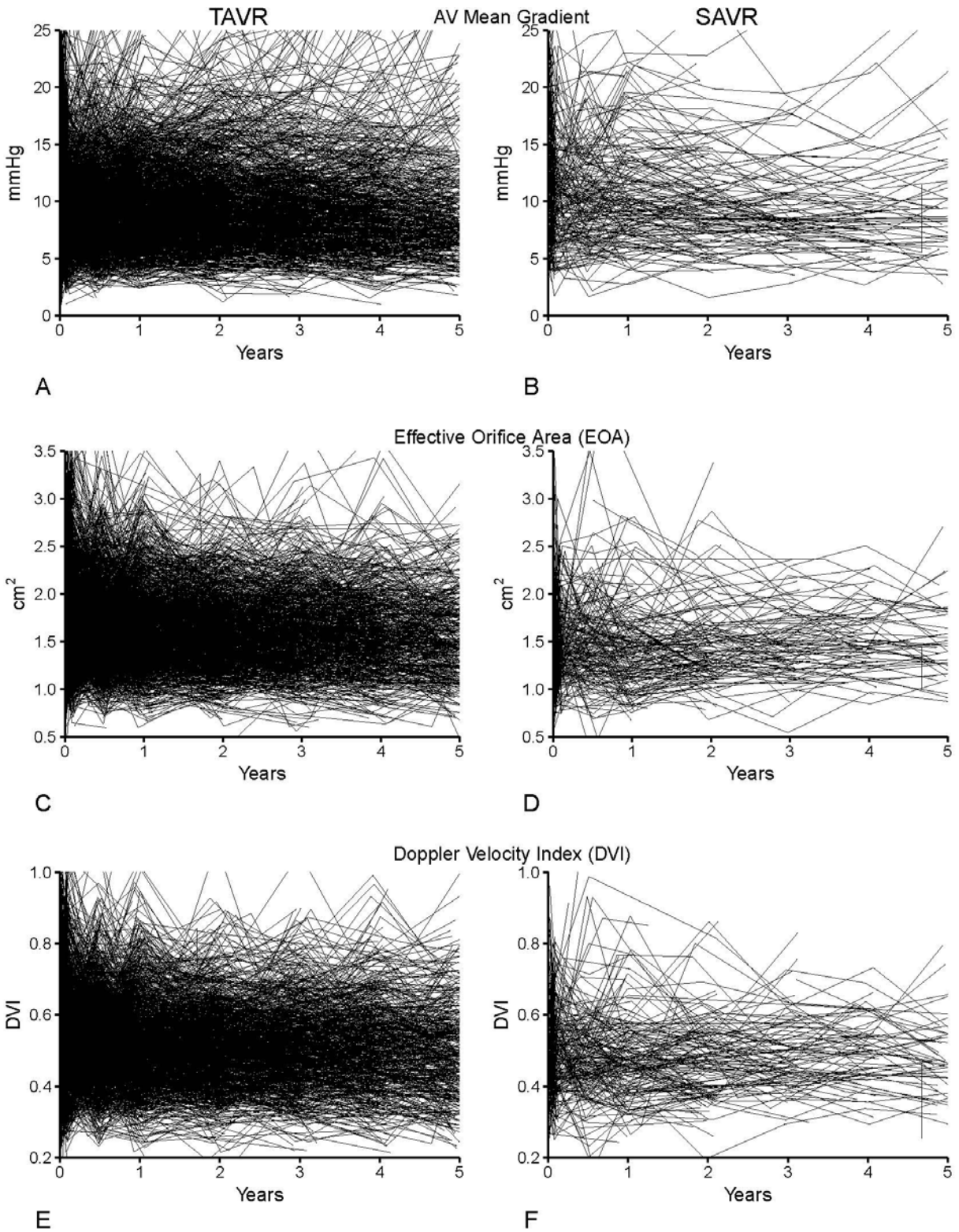
Institution	IRB Affiliation
Division of Cardiovascular Diseases, Scripps Memorial Hospital	Scripps Memorial Hospital Institutional Review Board
St. Luke's Hospital/Mid-America Heart Institute	St. Luke's Hospital Institutional Review Board
St. Paul's Hospital	Providence Health Care Research Institute Research Ethics Board
Stanford University Medical Center	Stanford Institutional Review Board
University of Miami Hospital	University of Miami Institutional Review Board
University of Pennsylvania	University of Pennsylvania Institutional Review Board
Department of Surgery, University of Virginia	University of Virginia Institutional Review Board for Health Sciences Research
University of Washington	University of Washington Institutional Review Board
Washington Hospital Center	MedStar Health Research Institute-Georgetown University Oncology Institutional Review Board

eFigure 1. CONSORT diagram showing patient flow



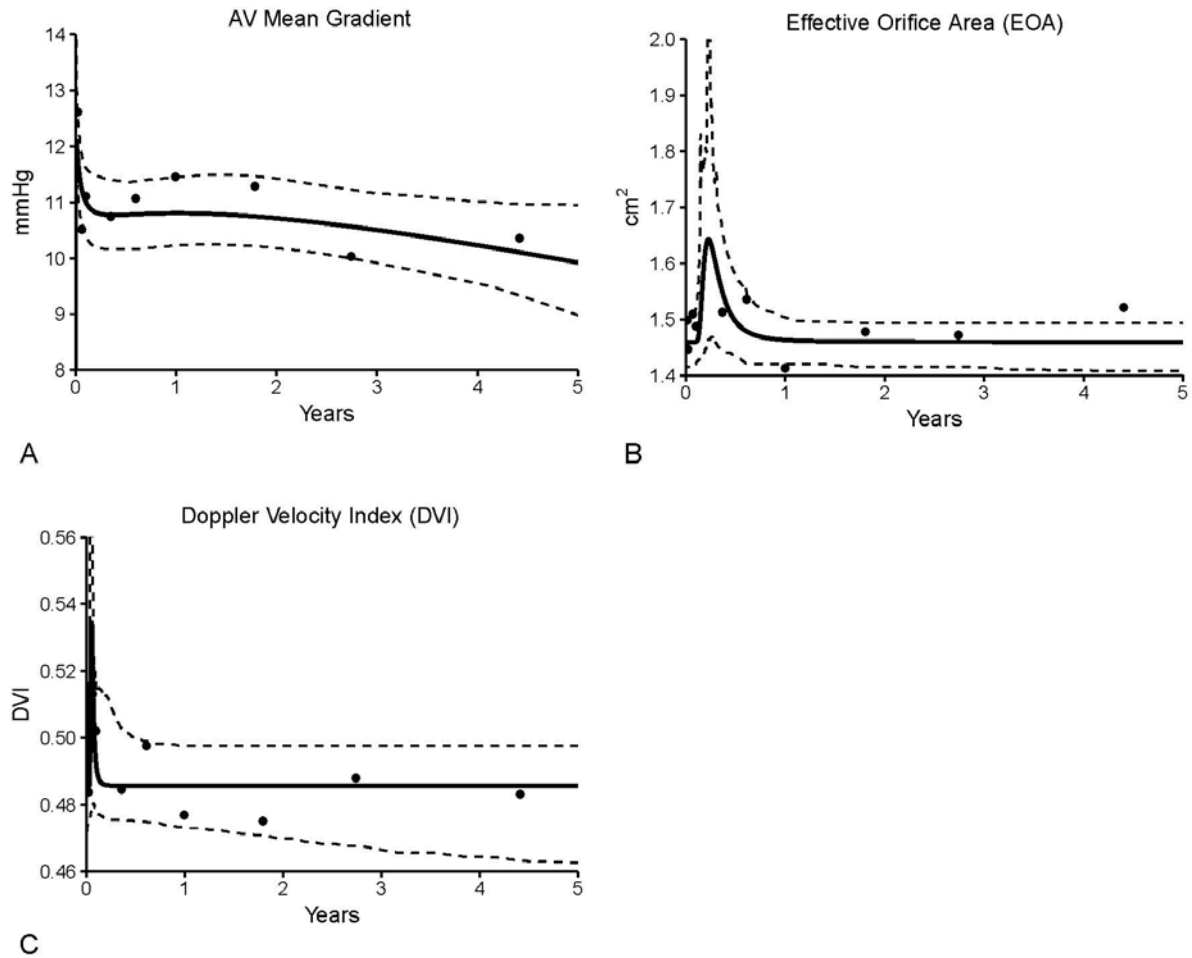
Analyses were conducted on the valve implant population, defined as all patients who received and retained the valve to which they were randomized, or assigned in the case of continued access.

eFigure 2. Hemodynamic data



Lines represent observed patient profiles.

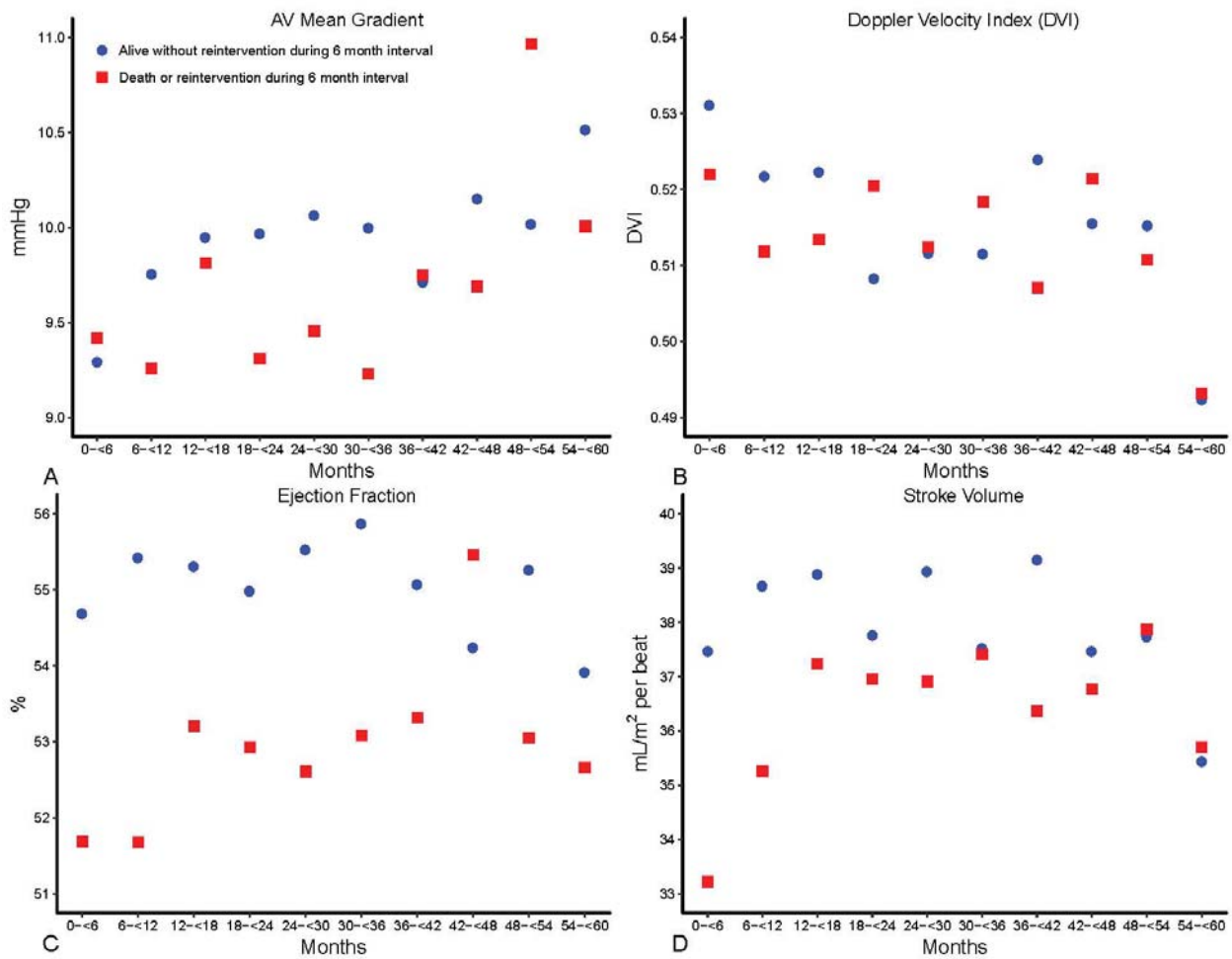
eFigure 3. Temporal trends in surgical aortic valve replacement



Solid line represents the parametric estimate of the temporal trend after procedure, enclosed within 95% confidence bands. Filled circles represent grouped data without regard to the repeated measurements based on time intervals, provided here as a crude verification of the model fit.

- A: Aortic valve (AV) mean gradient
- B: Effective orifice area (EOA)
- C: Doppler velocity index (DVI)

eFigure 4. Associations between last mean gradient, Doppler velocity index (DVI), ejection fraction (EF) and stroke volume index (SVI) by vital status/reintervention during each 6 month interval of follow-up



- A. Last mean gradient by vital status/reintervention
- B. DVI by vital status/reintervention
- C. EF by vital status/reintervention
- D. SVI by vital status/reintervention

eTable 1. Surgical aortic valve replacement patients with available paired echocardiographic data at baseline, first postimplantation, and 5 years

		Pre implant	First post implant (FPI)	5 years	P value
	N*	N (%) or Mean ± SD	N (%) or Mean ± SD	N (%) or Mean ± SD	FPI vs 5y
LV diameter (Diastolic) (cm)	28	4.64 ± 0.80	4.63 ± 0.81	4.30 ± 0.80	0.13
LV diameter (Systolic) (cm)	26	3.27 ± 0.96	3.46 ± 0.90	3.26 ± 0.85	0.41
LV mass (gm)	28	280 ± 85.4	279 ± 97.2	211 ± 57.8	0.0069
Ejection fraction (%)	41	52.8 ± 13.2	52.8 ± 11.2	54.5 ± 9.41	0.50
Stroke volume (mL)	37	68.4 ± 16.0	62.6 ± 18.3	66.2 ± 19.5	0.51
Stroke volume index (mL/m ²)	37	36.4 ± 11.0	33.2 ± 10.8	34.2 ± 8.62	0.50
Peak AV gradient (mmHg)	42	76.4 ± 21.8	23.9 ± 10.4	19.2 ± 9.85	0.0097
Mean AV gradient (mmHg)	42	45.2 ± 13.2	12.4 ± 5.16	10.7 ± 5.79	0.040
AV area (cm ²)	37	0.65 ± 0.15	1.57 ± 0.43	1.48 ± 0.35	0.30
Doppler Velocity Index (m/s)	40	0.20 ± 0.05	0.50 ± 0.12	0.48 ± 0.10	0.44
Prosthesis-patient mismatch (moderate), Y/N	38	N/A	8 (21)	19 (50)	0.031
Prosthesis-patient mismatch (severe), Y/N	38	N/A	11 (29)	7 (18)	0.031
Total aortic regurgitation (moderate or severe)	40	5 (13)	0 (0)	0 (0)	>0.9
Paravalvular regurgitation (moderate or severe)	40	N/A	0 (0)	0 (0)	>0.9
Transvalvular regurgitation (moderate or severe)	41	N/A	0 (0)	0 (0)	>0.9

eTable 2. Incidence of VARC-2 and other selected cut points for severe aortic stenosis

VARC-2 criterion	Absolute value on any post implant echo						Change between subsequent echos			
	Mean gradient (N=2,404)	Effective Orifice Area (EOA) (N=2,392)	Doppler Velocity index (DVI) (N=2,396)	Transvalvular AR (N=2,418)		Paravalvular AR (N=2,416)		Mean gradient (N=2,229)	Effective Orifice Area (EOA) (N=2,196)	Doppler Velocity index (DVI) (N=2,206)
	≥20 mmHg	≤ 1.1 cm ²	<0.35	Moderate AR	Severe AR	Moderate AR	Severe AR	↑ > 10 mmHg	↓ > 0.4 cm ²	↓ > 0.13
TAVR	192 (8.0%)	605 (25%)	493 (21%)	89 (3.7%)	6 (0.25%)	419 (17%)	40 (1.7%)	77 (3.5%)	1074 (49%)	935 (42%)
VARC-2 criterion	Mean gradient (N=292)	EOA (N=290)	DVI (N=292)	Transvalvular AR (N=293)		Paravalvular AR (N=291)		Mean gradient (N=247)	EOA (N=242)	DVI (N=243)
	≥20 mmHg	≤ 1.1 cm ²	<0.35	Moderate AR	Severe AR	Moderate AR	Severe AR	↑ > 10 mmHg	↓ > 0.4 cm ²	↓ > 0.13
SAVR	38 (13%)	122 (42%)	76 (26%)	2 (0.68%)	0 (0.0%)	3 (1.0%)	0 (0.0%)	4 (1.6%)	110 (45%)	83 (34%)

Note: For some variables, the VARC-2 cut points specify a range of values. In each of these cases we selected the most restrictive bound.