

Complete Revascularization Is Important

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**Disclosures: No relevant financial relationships
to declare with commercial entities**

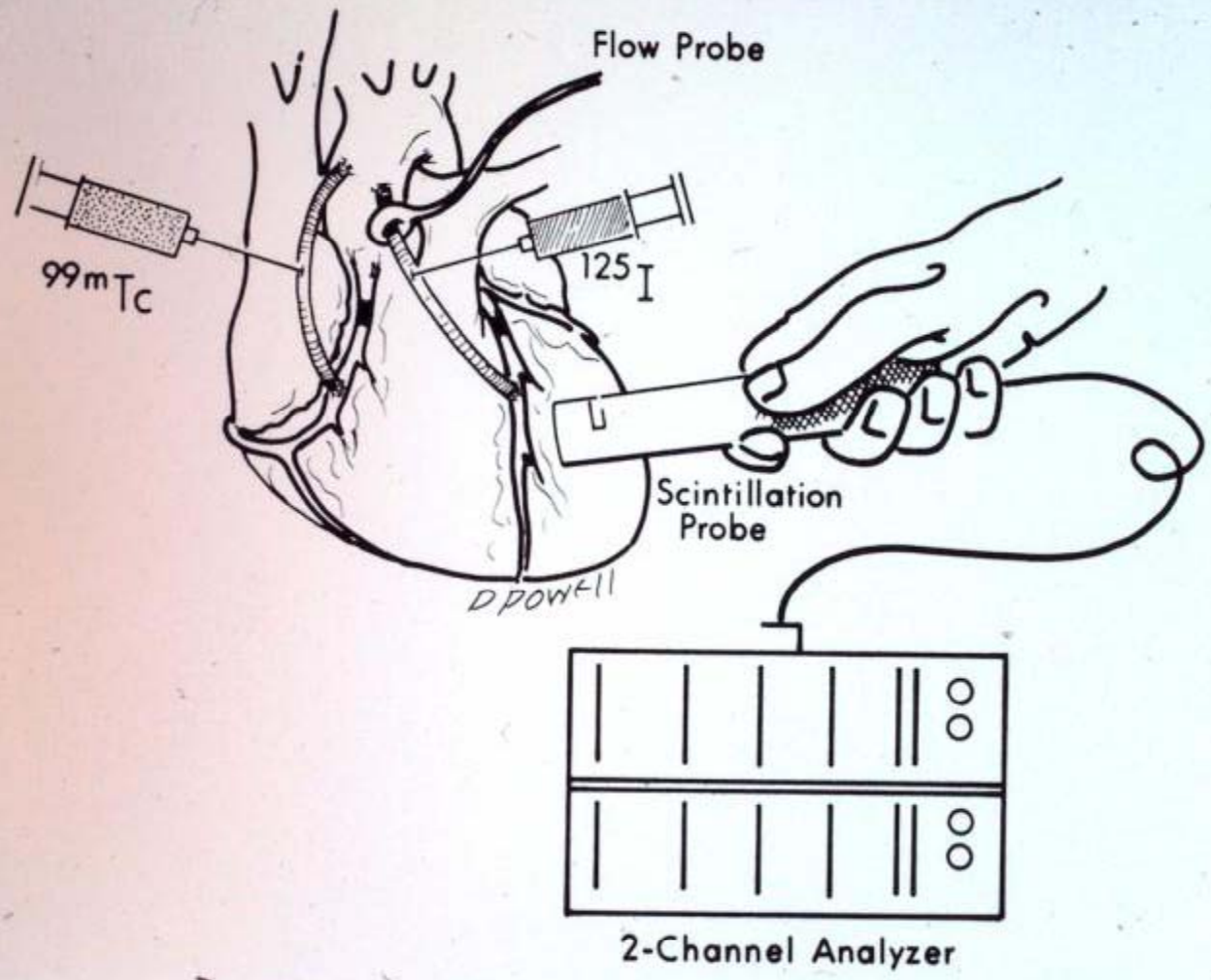
Intraoperative relationships between regional myocardial distribution of bypass graft flow and the coronary collateral circulation

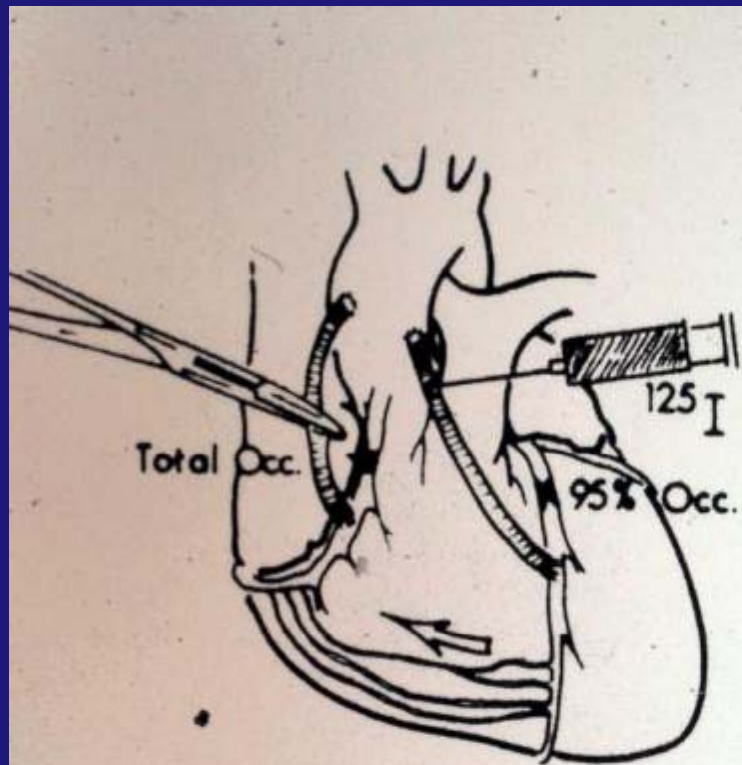
H. Newland Oldham, Jr., M.D., Robert H. Jones, M.D. (by invitation),

C. Craig Harris, M.S. (by invitation), W. Robin Howe, M.D. (by invitation),

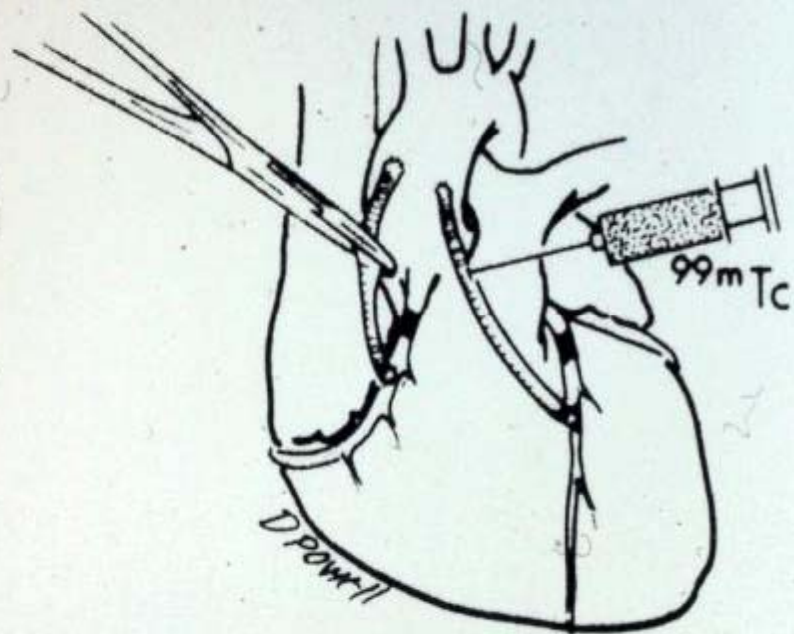
Jack K. Goodrich, M.D. (by invitation), and David C. Sabiston, Jr., M.D., *Durham, N. C.*

J Thorac Cardiovasc Surg 1979;77:32-38

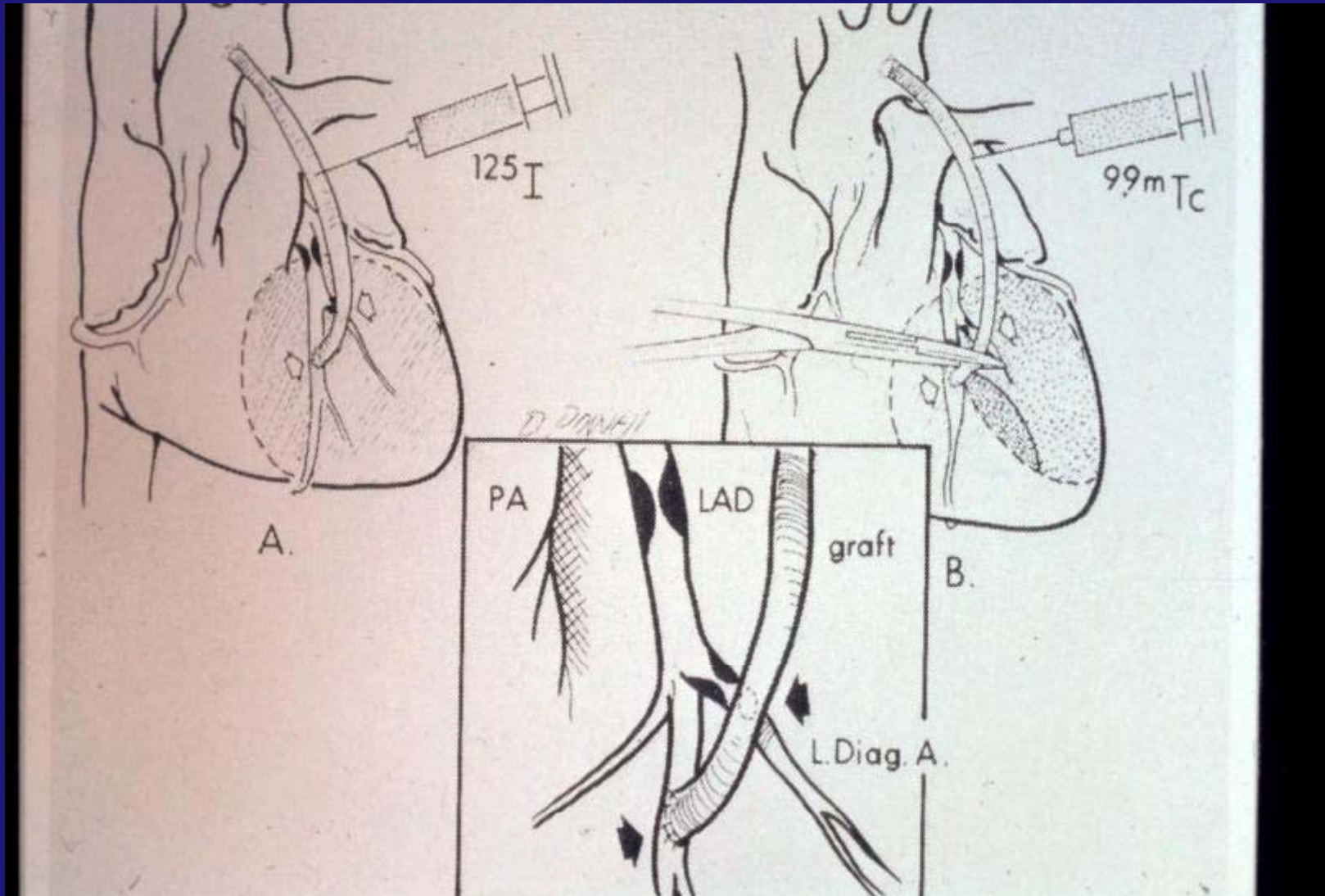




CONTROL FLOW
30 ml/min



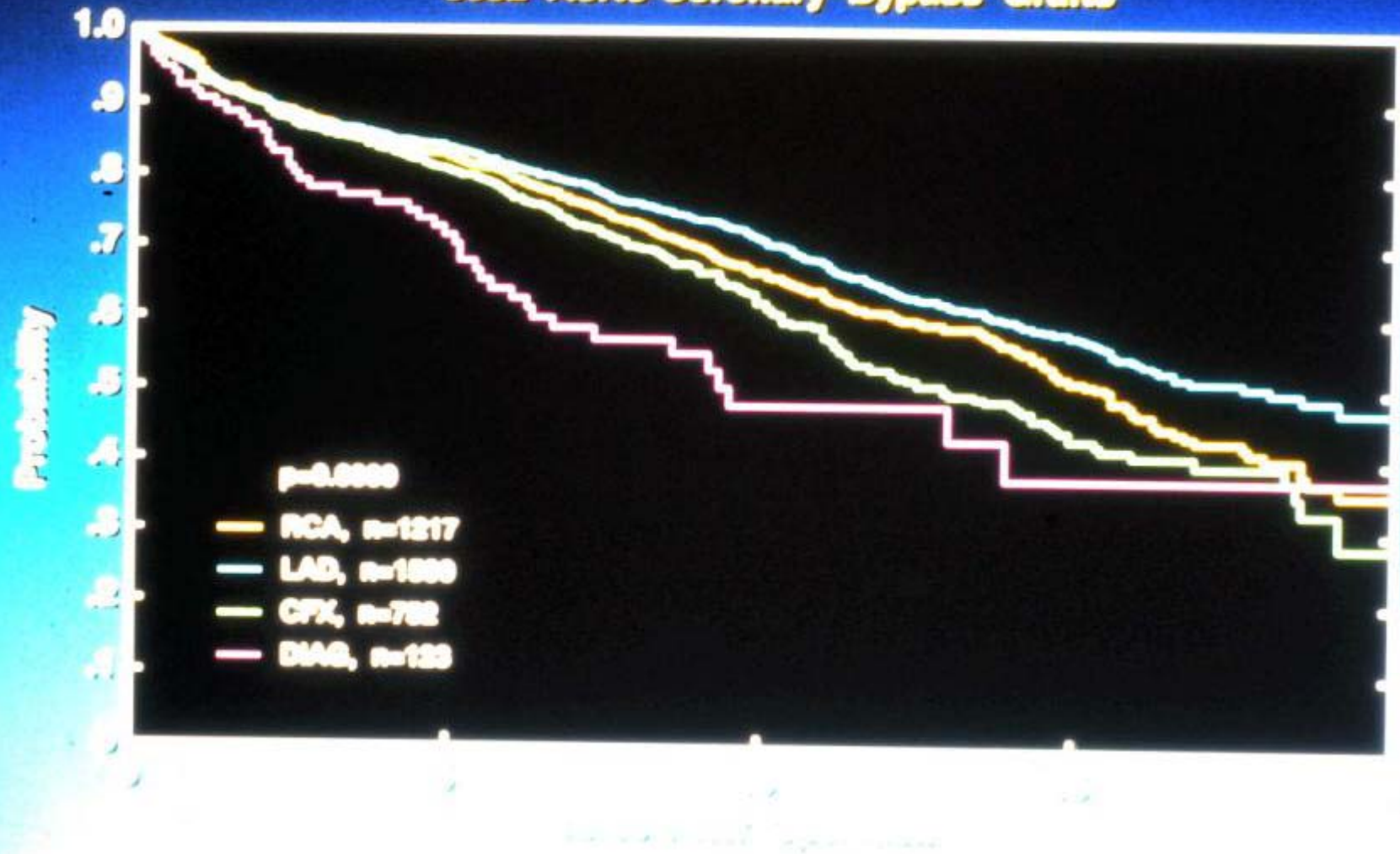
REACTIVE HYPEREMIA
90 ml/min



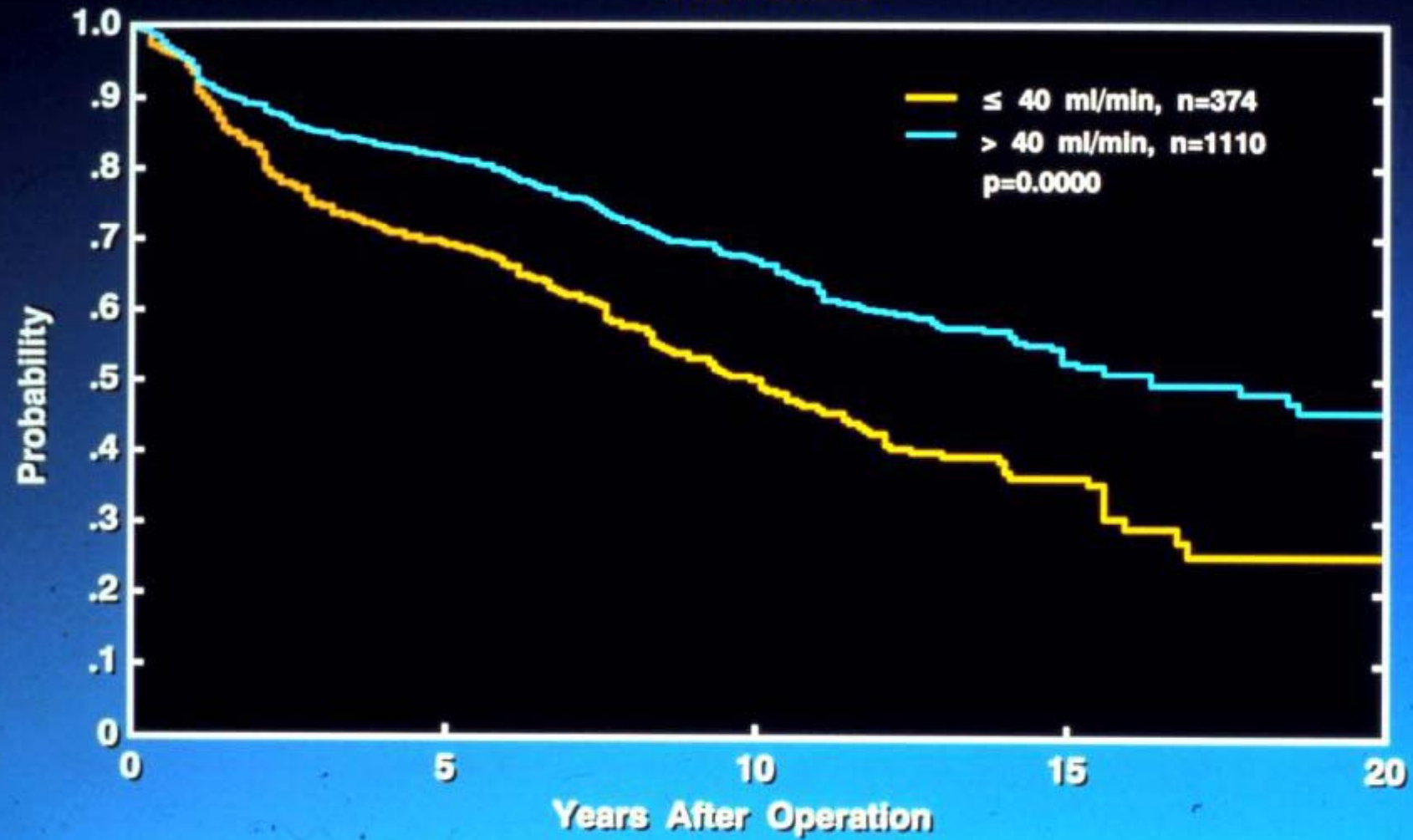
Predictors of Graft Occlusion or Stenosis
Results of Cox Regression
1664 Coronary Artery Bypass Patients

| Factor | Rel Risk | p-value |
|---------------------------------|-------------------------|----------------|
| No. Grafts Placed | 1.43 (1.30-1.57) | 0.0000 |
| Male Sex | 0.78 (0.66-0.91) | 0.0021 |
| Two-Vessel Disease | 1.21 (1.06-1.40) | 0.0061 |
| Diabetes | 1.23 (1.02-1.48) | 0.0289 |
| Lt. Ventricular Aneurysm | 0.23 (0.06-0.91) | 0.0386 |
| Smoking | 1.15 (1.00-1.31) | 0.0469 |

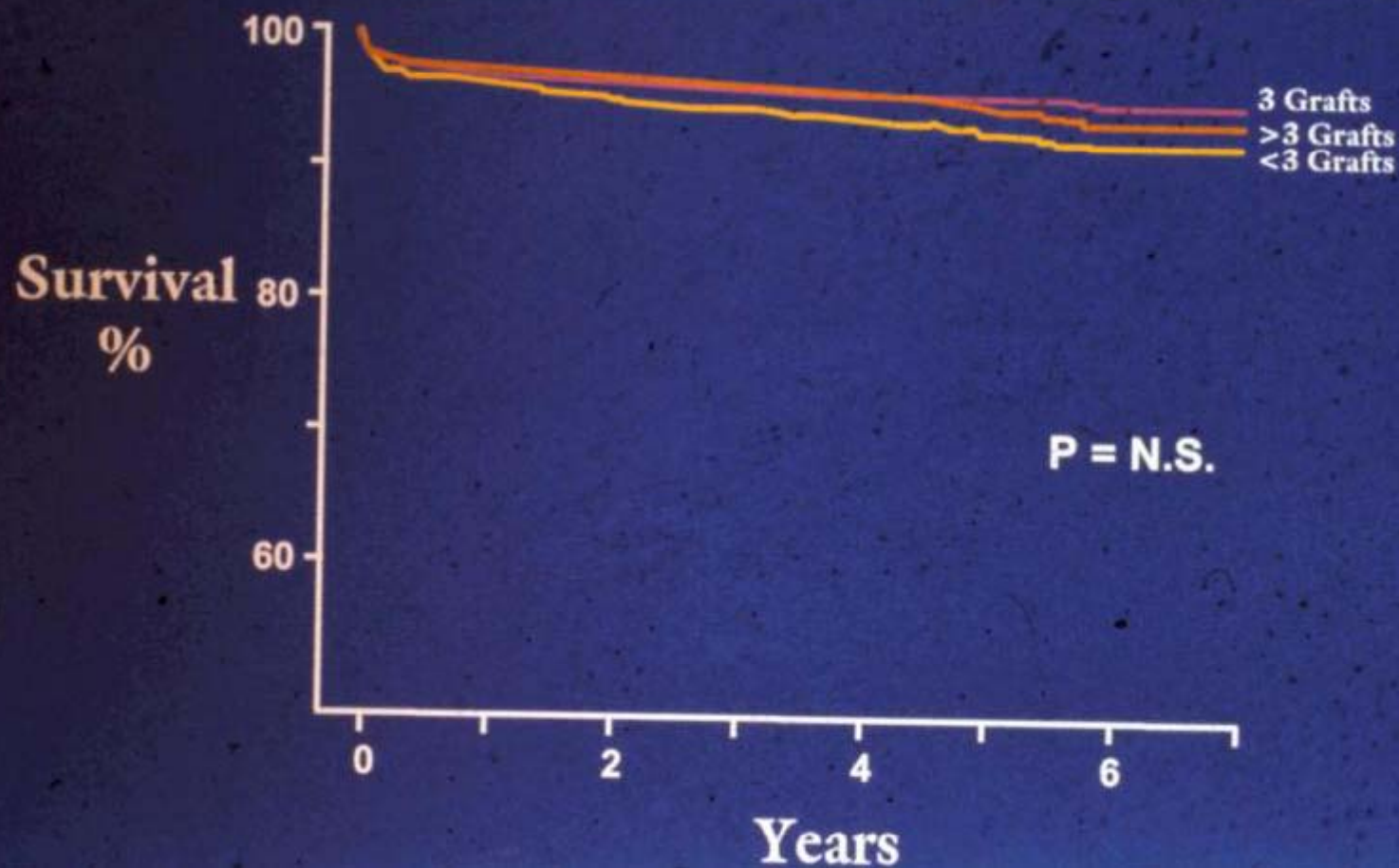
Overall Freedom from Occlusion by Vessel Grafted 3682 Aorto-Coronary Bypass Grafts



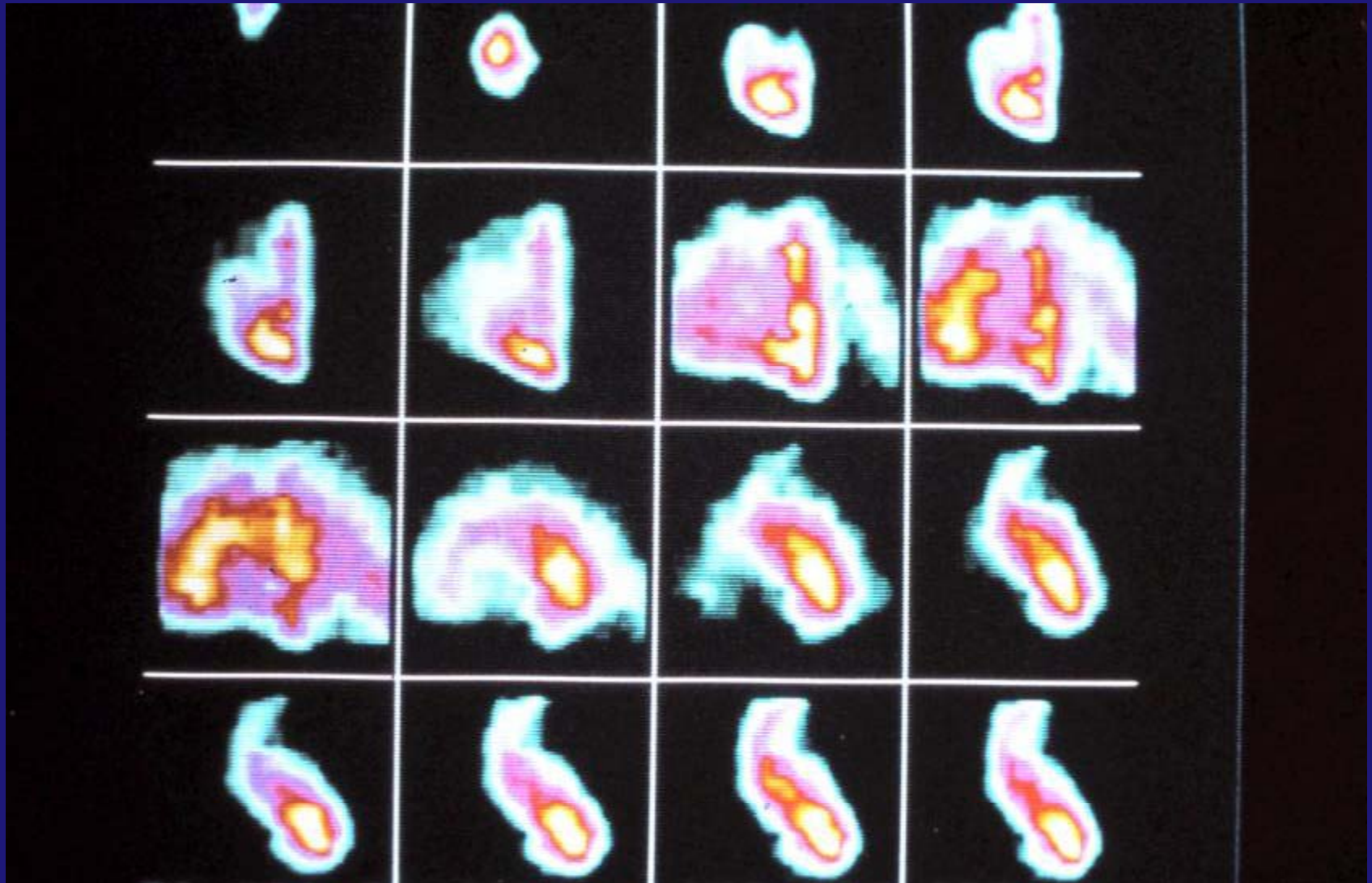
**Effect of flow rate ≤ 40 ml/min on freedom from occlusion
1484 Grafts**



Influence of Number of Grafts in 1900 Patients with CABG for 3 Vessel Disease









PATIENT WITH LAD STENOSIS
BEFORE DILATION

REST
EF=.67

EXERCISE
EF=.34

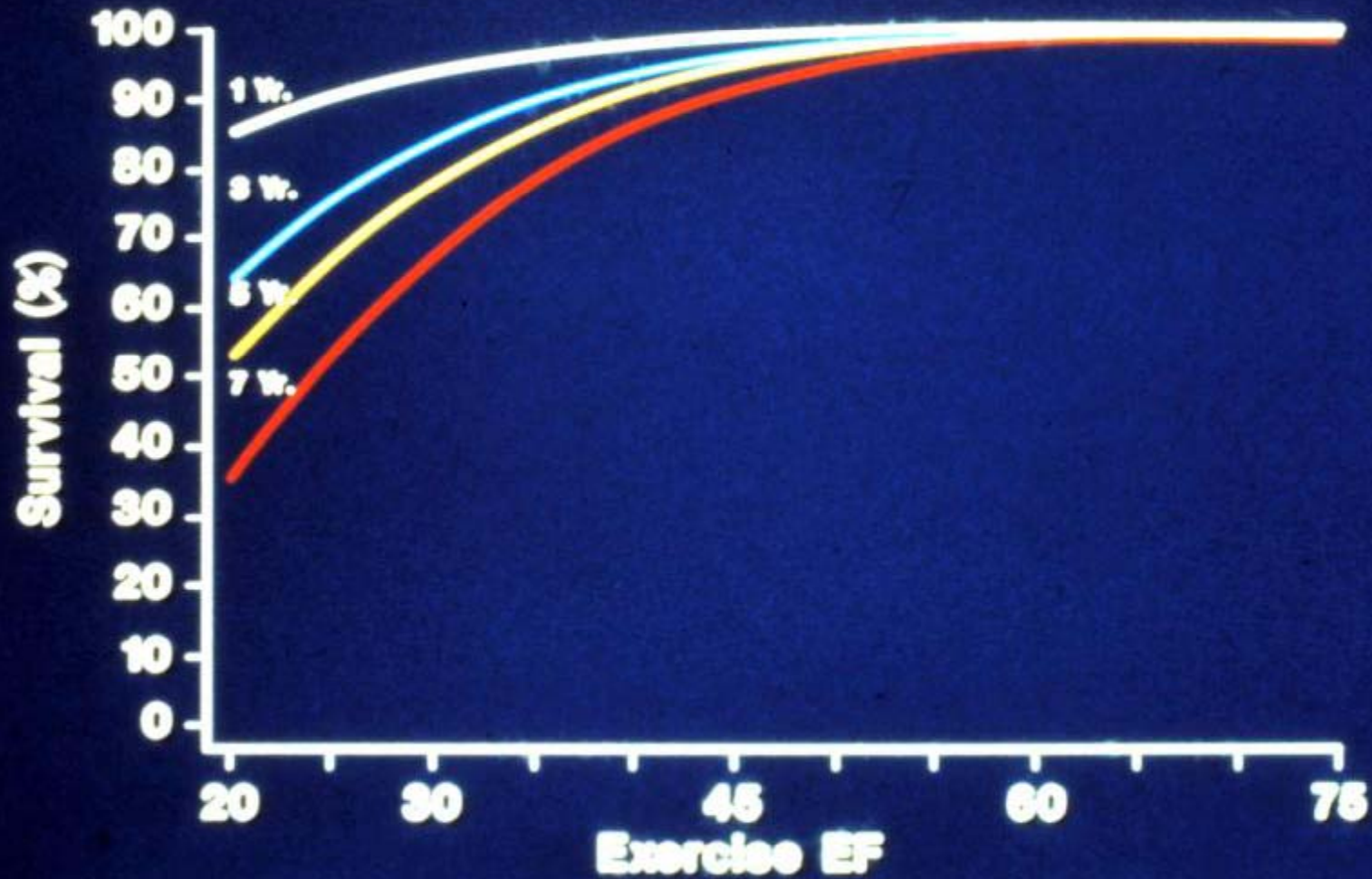


PATIENT WITH LAD STENOSIS
11 DAYS AFTER DILATION

EXER. #1
EF=.77

EXER. #2
EF=.80

Survival VS. Exercise EF



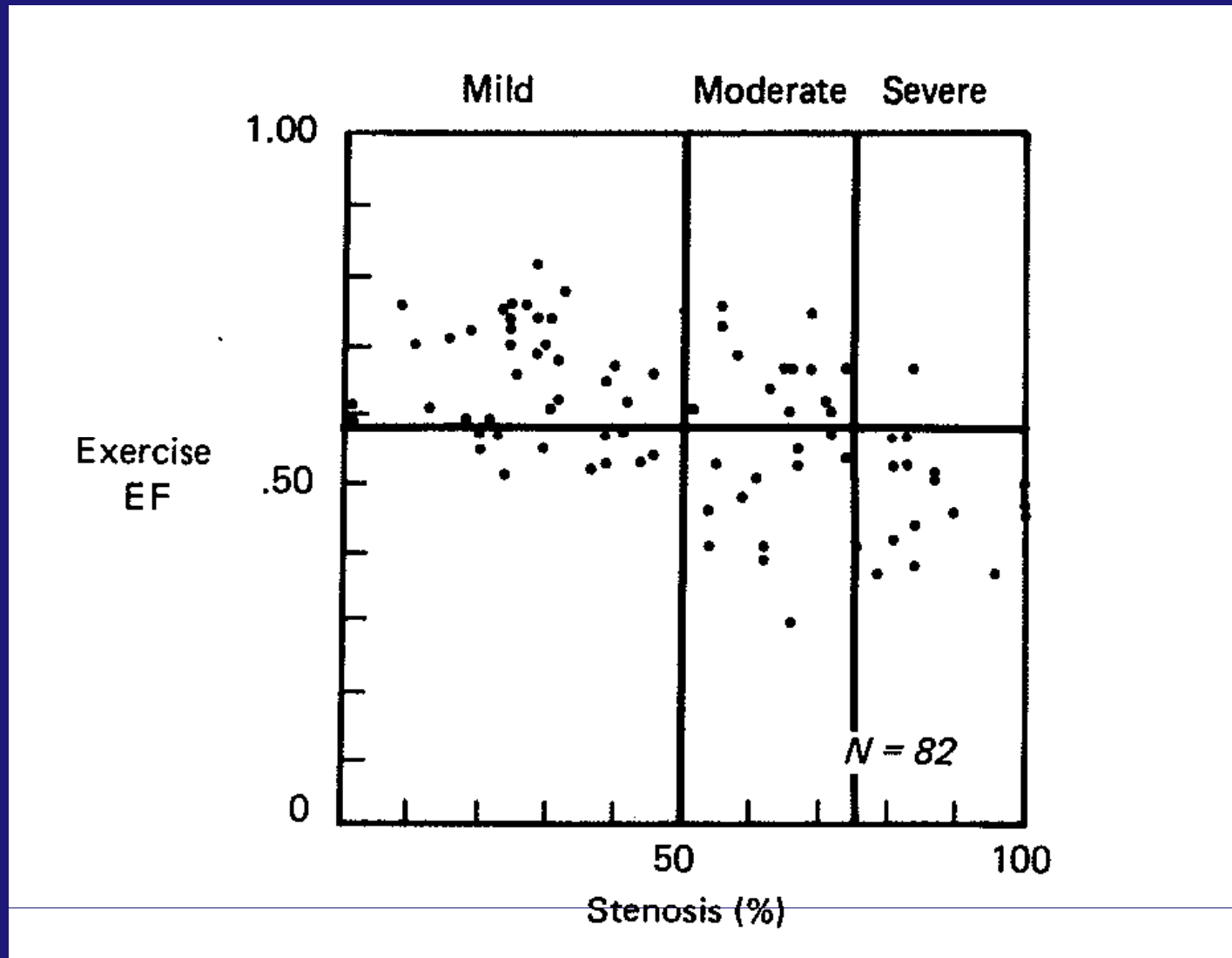
Relation of Coronary Artery Stenosis and Pressure Gradient to Exercise-Induced Ischemia Before and After Coronary Angioplasty

RICHARD J. PETERSON, MD,* SPENCER B. KING III, MD, FACC,‡ WILLIAM A. FAJMAN, MD,‡
JOHN S. DOUGLAS, JR., MD, FACC,‡ ANDREAS R. GRÜNTZIG, MD, FACC,†
DAVID W. ORIAS, BA,‡ ROBERT H. JONES, MD, FACC*

Durham, North Carolina and Atlanta, Georgia

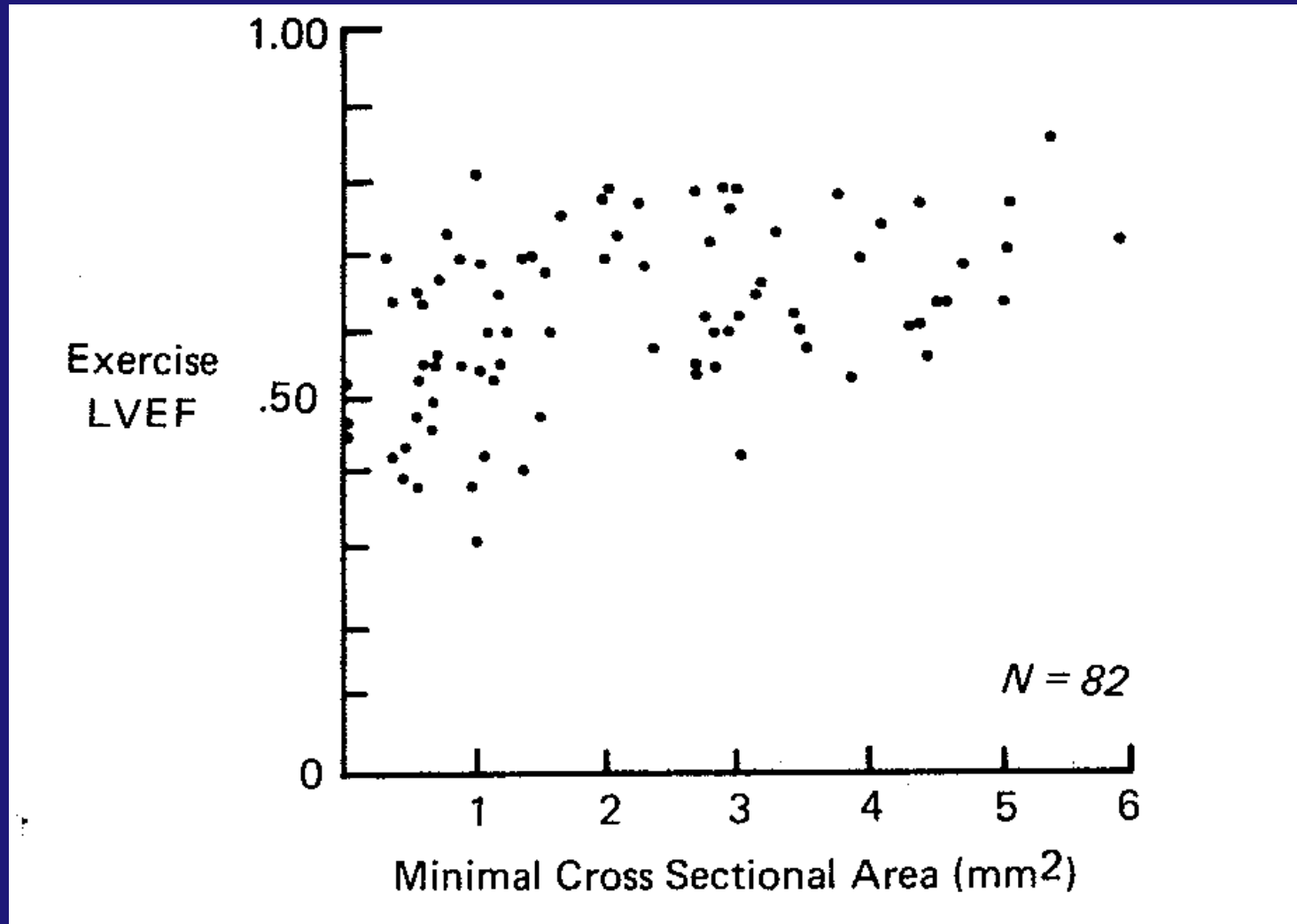
J Am Coll Cardiol 1987;10:253-260

Individual Comparisons of Stenosis Severity and Exercise Left Ventricular Ejection Fraction



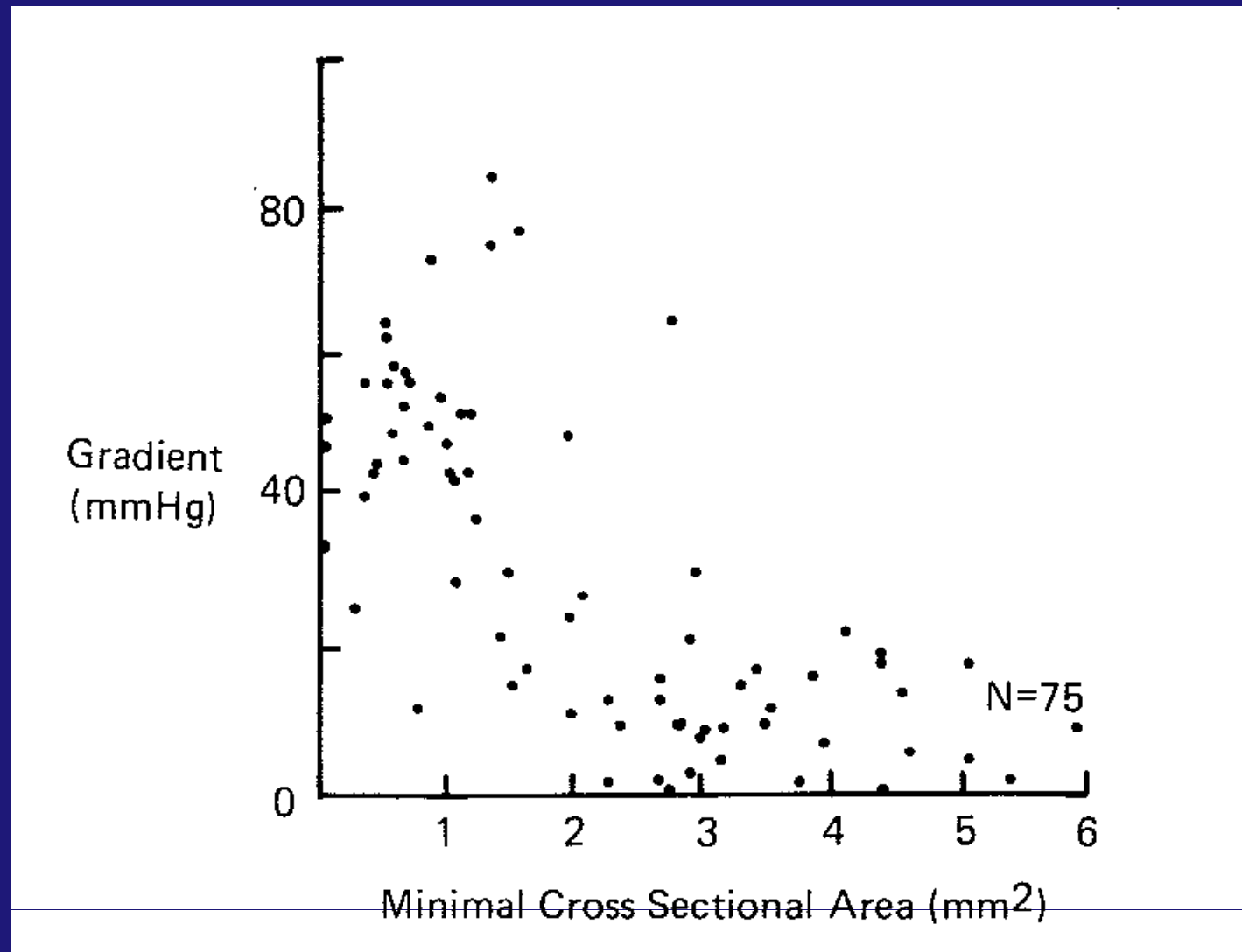
From Peterson, et al. *JACC* 1987;10:253-260

Individual Comparisons of Minimal Cross-sectional Area and Exercise LV Ejection Fraction



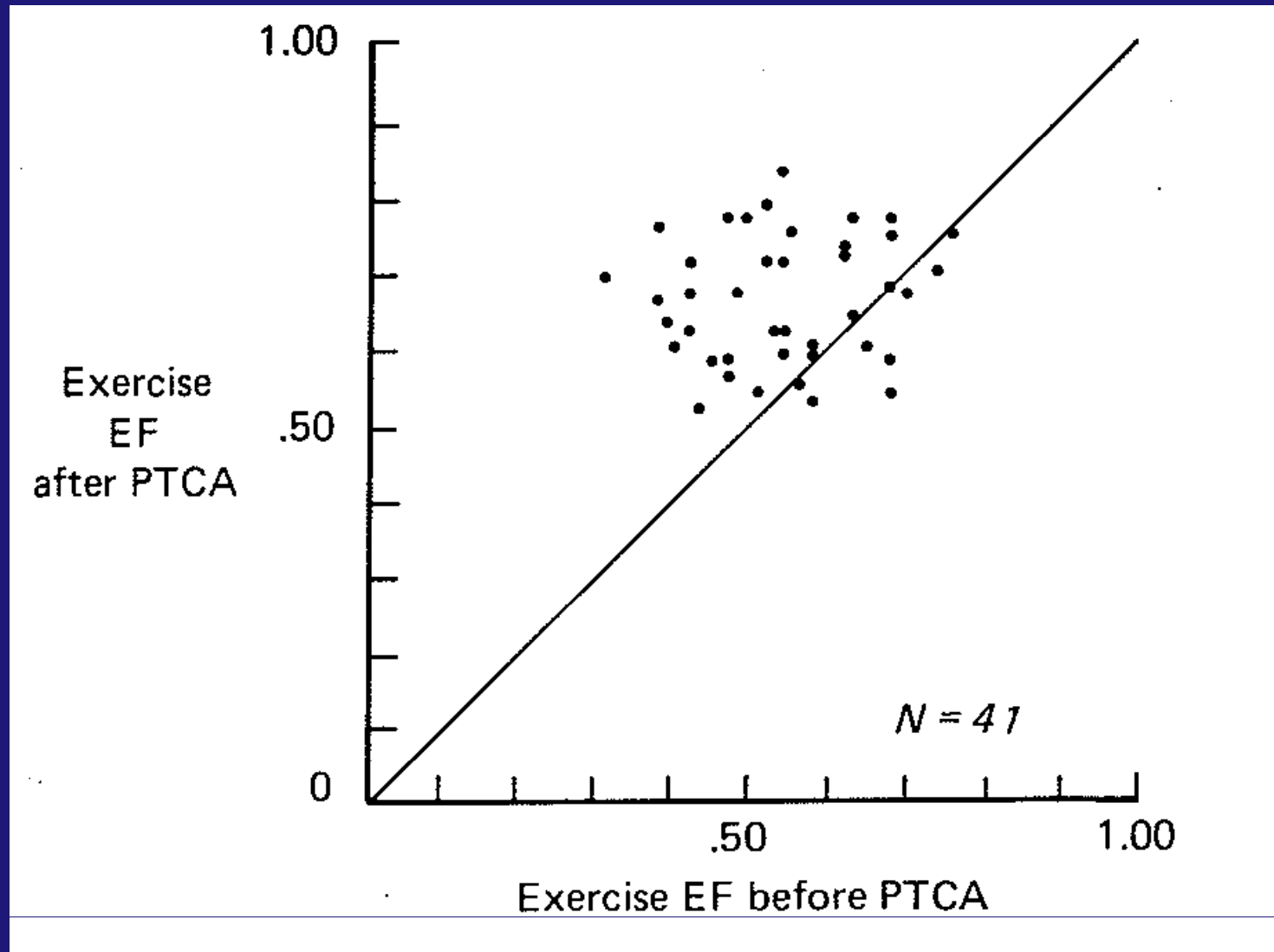
From Peterson, et al. JACC 1987;10:253-260

Individual Comparisons of Gradient Severity and Minimal Stenosis Cross-sectional Area



From Peterson, et al. JACC 1987;10:253-260

Comparison of Exercise LVEF Measured Before and After PCI in 41 Patients



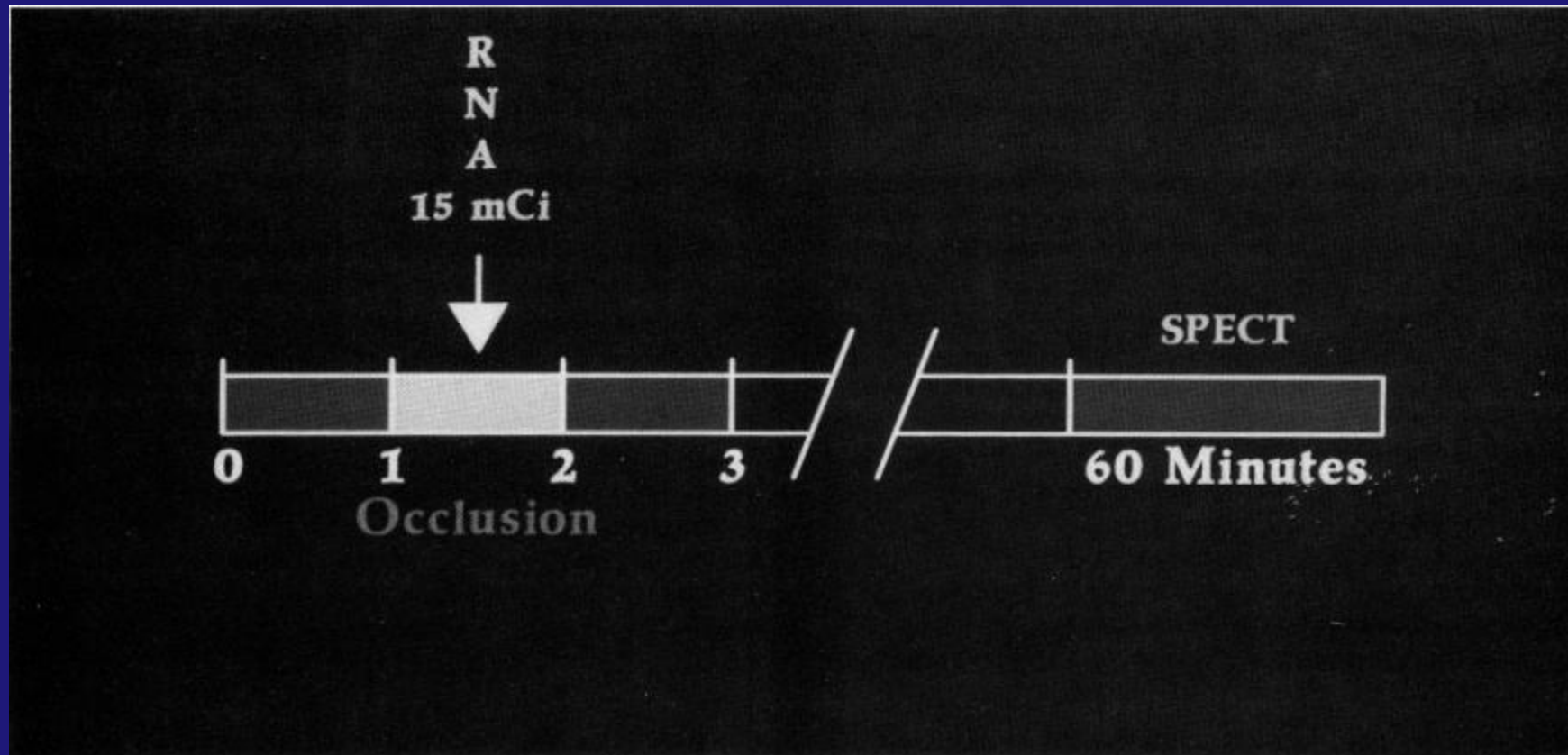
From Peterson, et al. JACC 1987;10:253-260

**Myocardial perfusion and ventricular function measurements
during total coronary artery occlusion in humans.
A comparison with rest and exercise radionuclide studies**

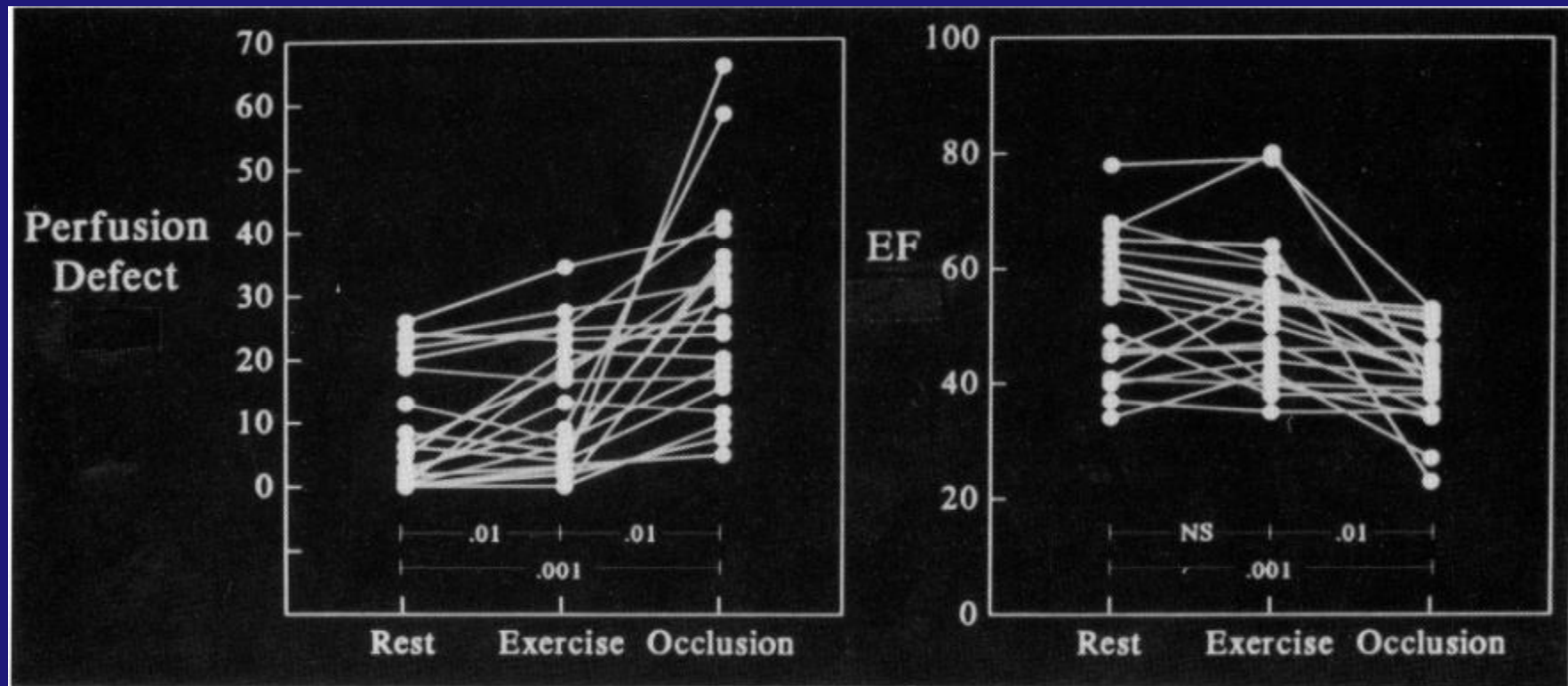
Salvador Borges-Neto, MD; Joseph Puma, DO;
Robert H. Jones, MD; Michael H. Sketch, Jr, Richard Stack, MD;
Michael W. Hanson and R. Edward Coleman

Circulation 1994;89:278-284

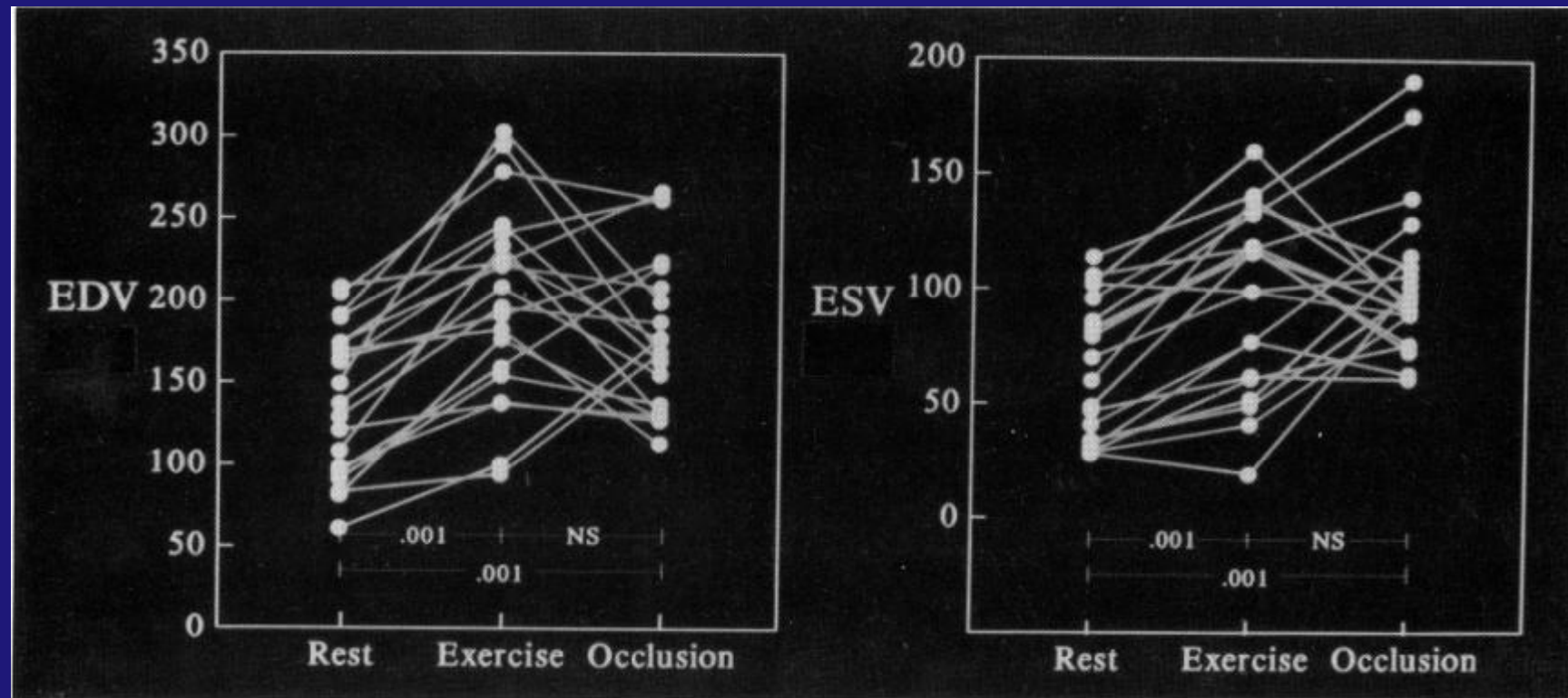
Perfusion and Function Studies During Total Coronary Artery Occlusion



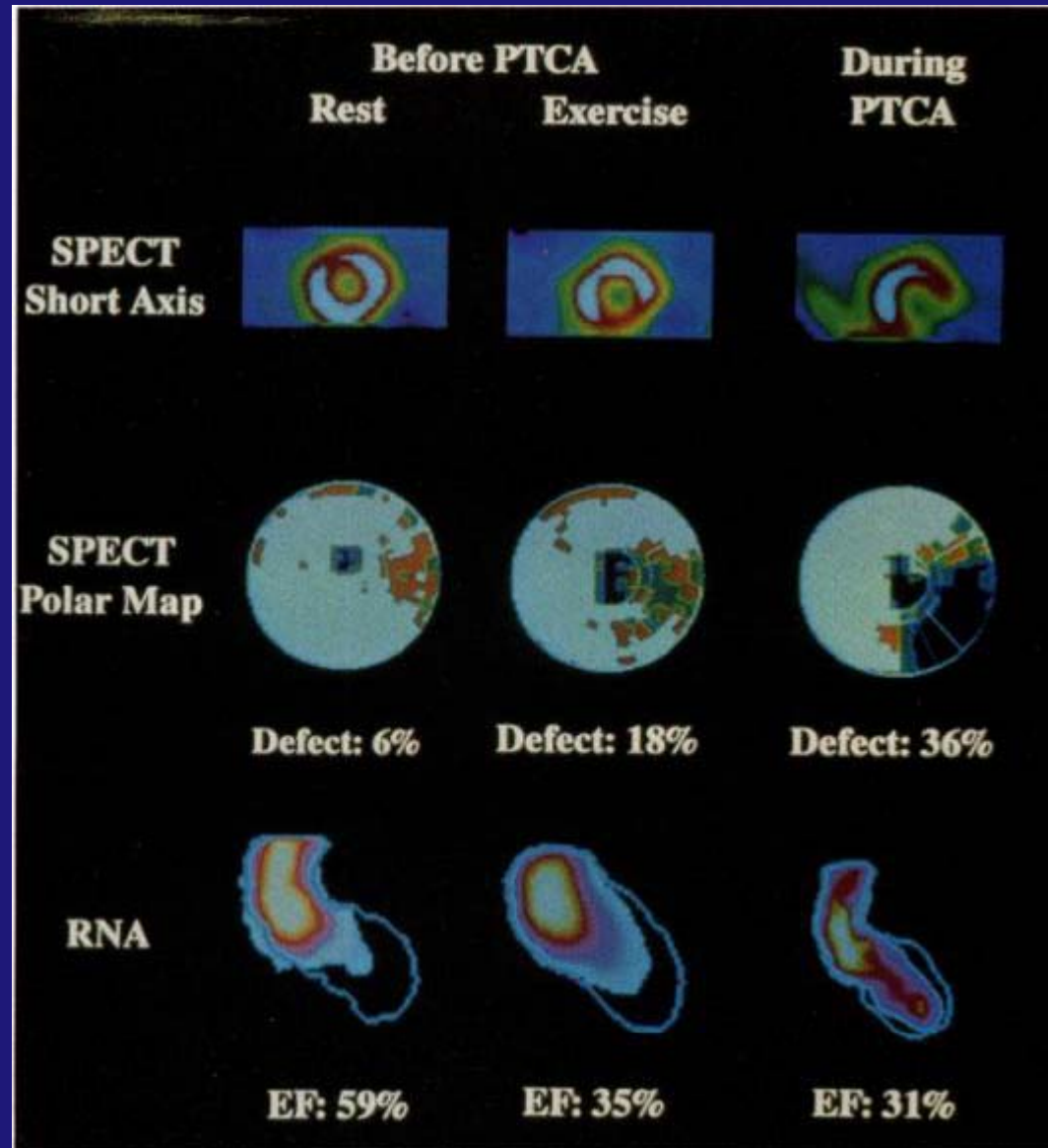
Comparison of Perfusion Defect and EF Measurements at Rest, During Exercise, and During Total Coronary Artery Occlusion



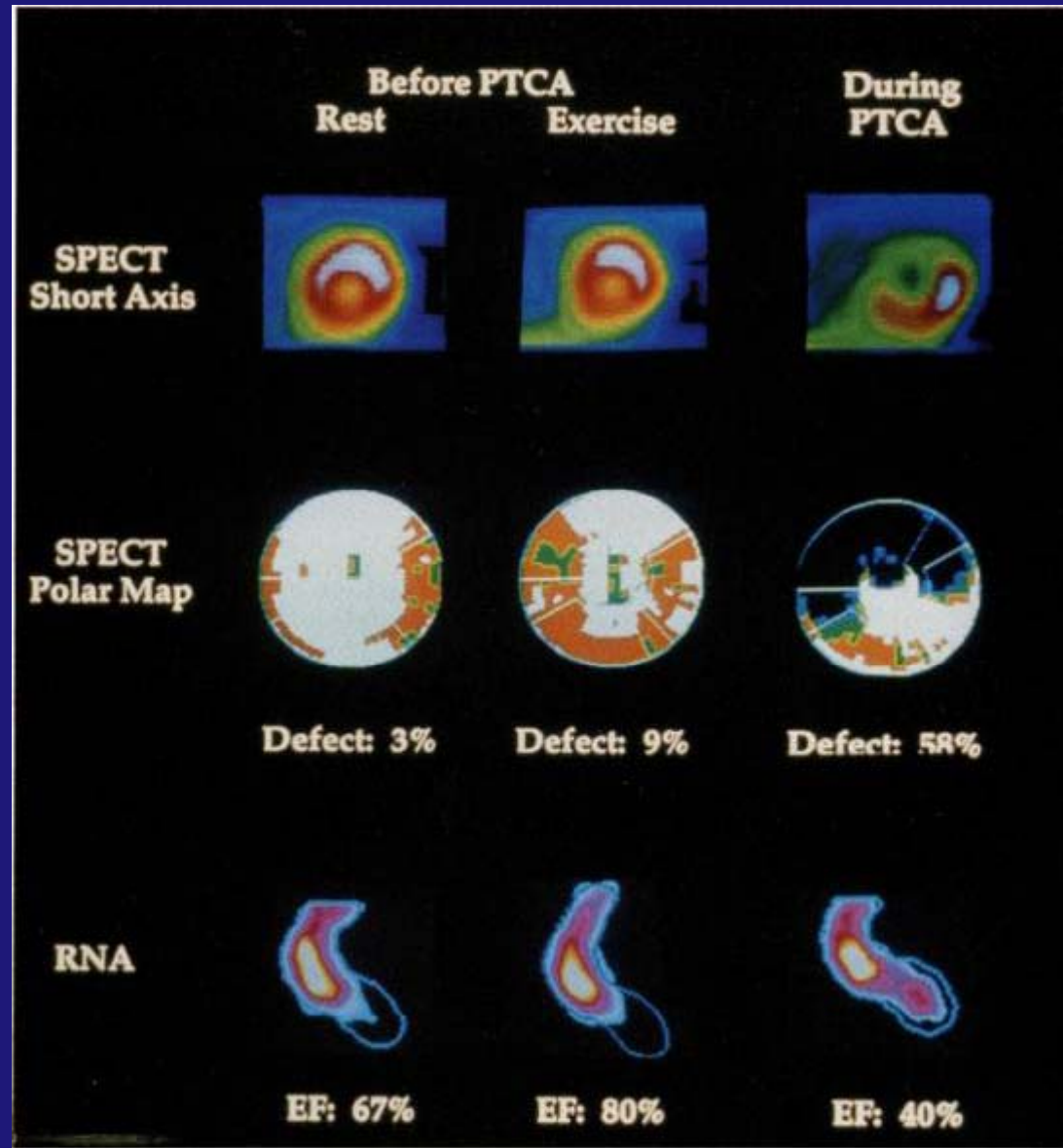
Comparison of LV Volume Measurements at Rest, During Exercise, and During Coronary Artery Occlusion



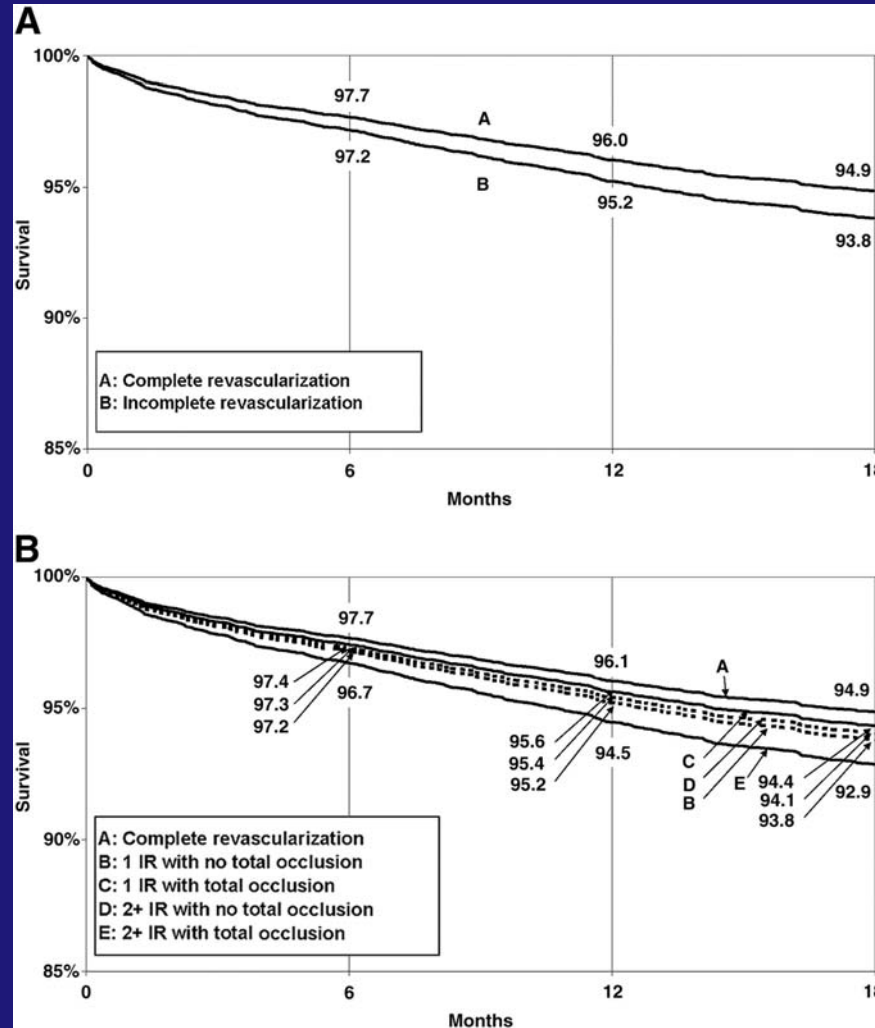
Myocardial Perfusion and LV Function at Rest, Exercise, and Coronary Artery Occlusion in Patient with >50% Stenosis in RCA



Myocardial Perfusion and LV Function at Rest, Exercise, and Coronary Artery Occlusion in Patient with >50% Stenosis in LAD



Adjusted 18-Month Survival Curves



Hannan, E. L. et al. J Am Coll Cardiol Intv 2009;2:17-25