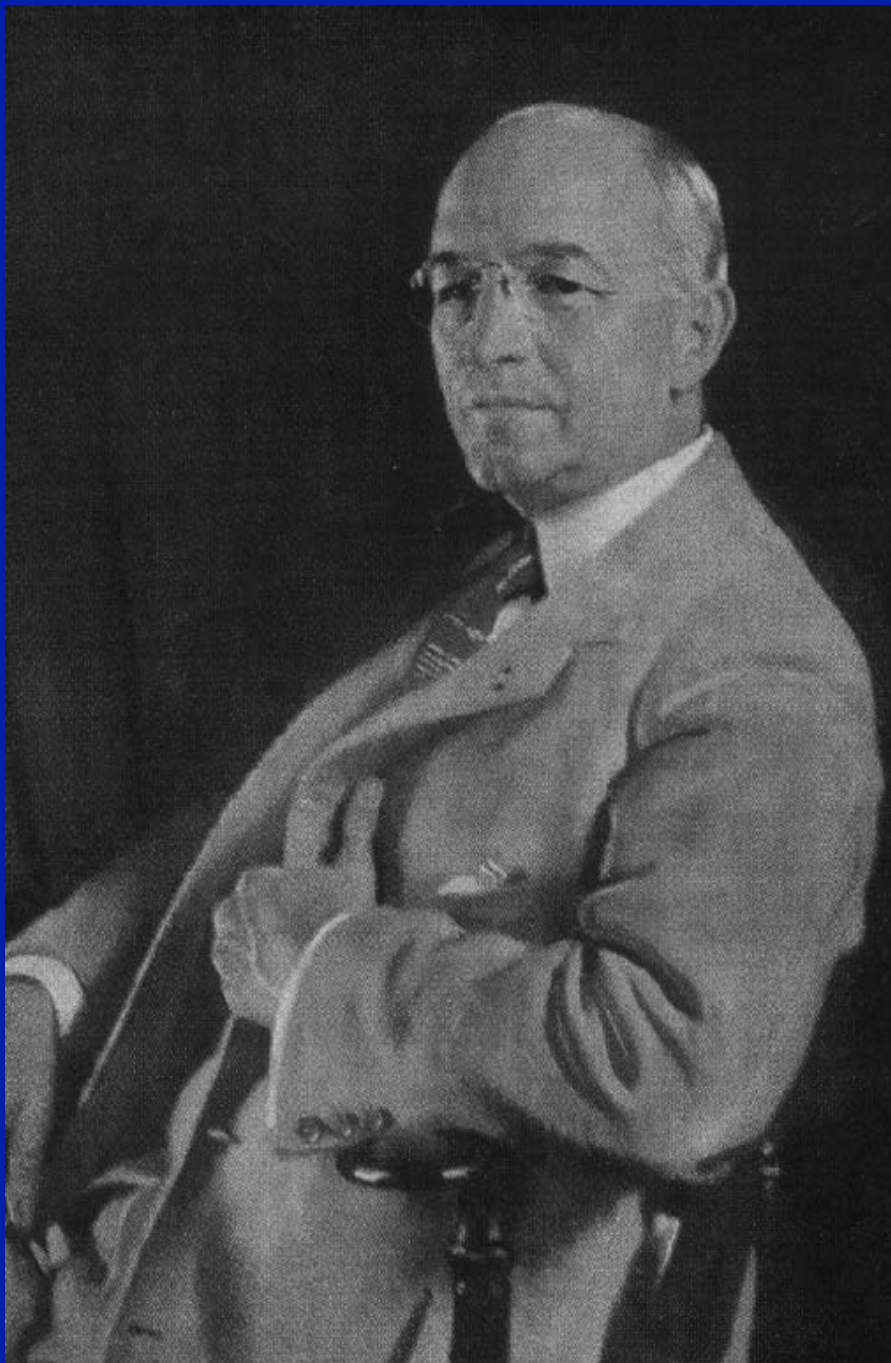


# LDR Prostate Brachytherapy: The Chicago Experience



Brian J. Moran, MD  
Chicago Prostate Center



Hugh Hampton  
Young  
1913



# 1993-1996 Hospital Based Program

- Many Problems
  - Scheduling
  - Documentation
  - Accurate Billing
  - Radiation Safety
  - Procedure Uniqueness
  - Limited Availability
- Despite efforts, program was not optimal
  - Patients/ Physicians/ Hospital



# Concept: Center of Excellence

- Not just offer service
- Do only one thing and “MASTER IT”
- Premium Outcome: Lowest Cost



# Focused Facility

**Regina Herzlinger, PhD, Harvard Business School, Boston, in her book “Market-Driven Health Care” (Addison-Wesley, 1999)**

- Organizations that specialize in performing a specific function in a world-class fashion
- Next trend in health care
- Team members who work together on one procedure work more fluidly and efficiently, are less likely to make mistakes

# Focused Facility

- Generate useful clinical outcome data for both payers and the public
- Benefit the public sector by shrinking the number of inefficient and expensive programs
- Advantage of economies of scale, best practice analysis, and flexibility
- **End Result:** High quality, low costs





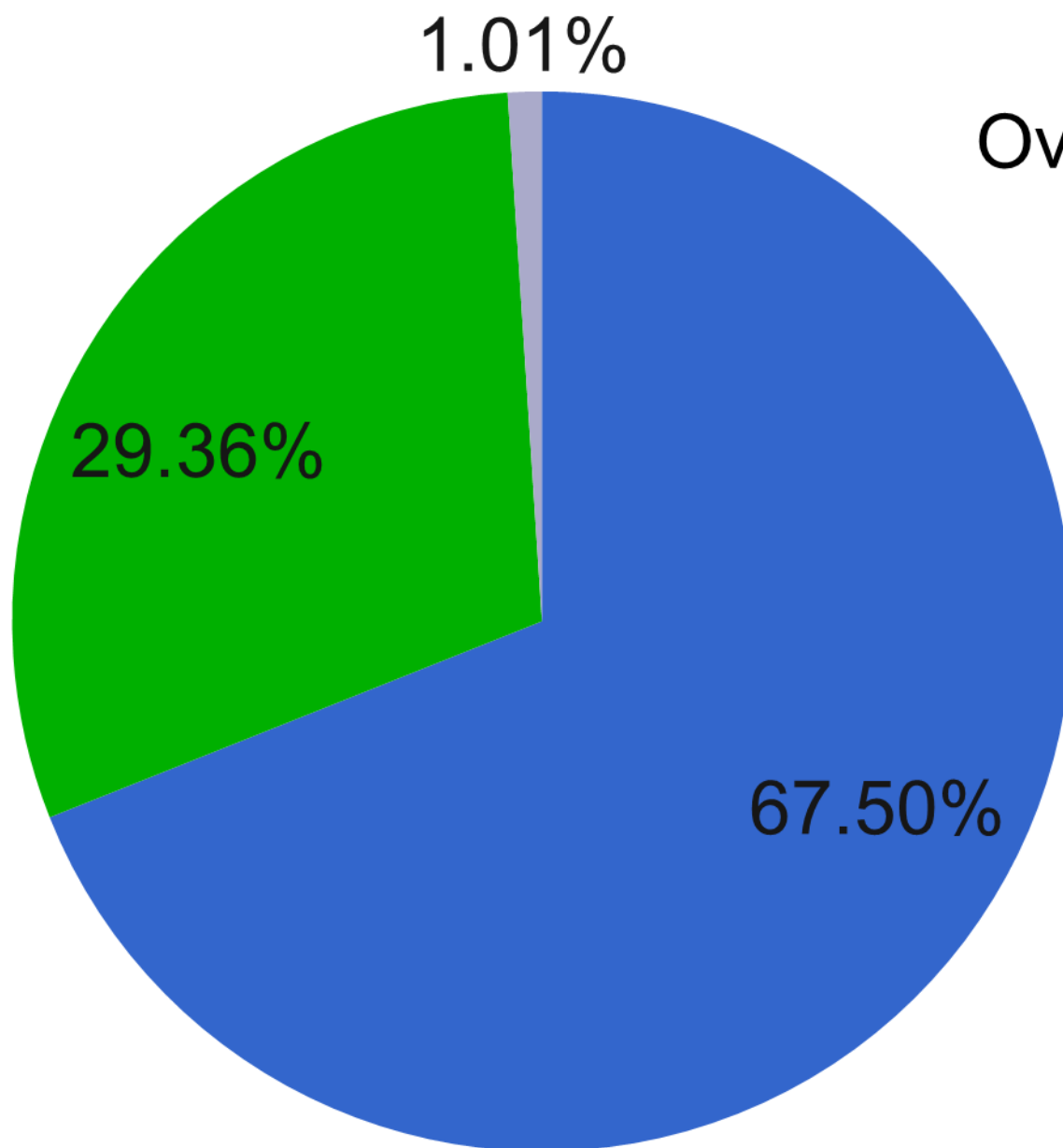




# Chicago Experience

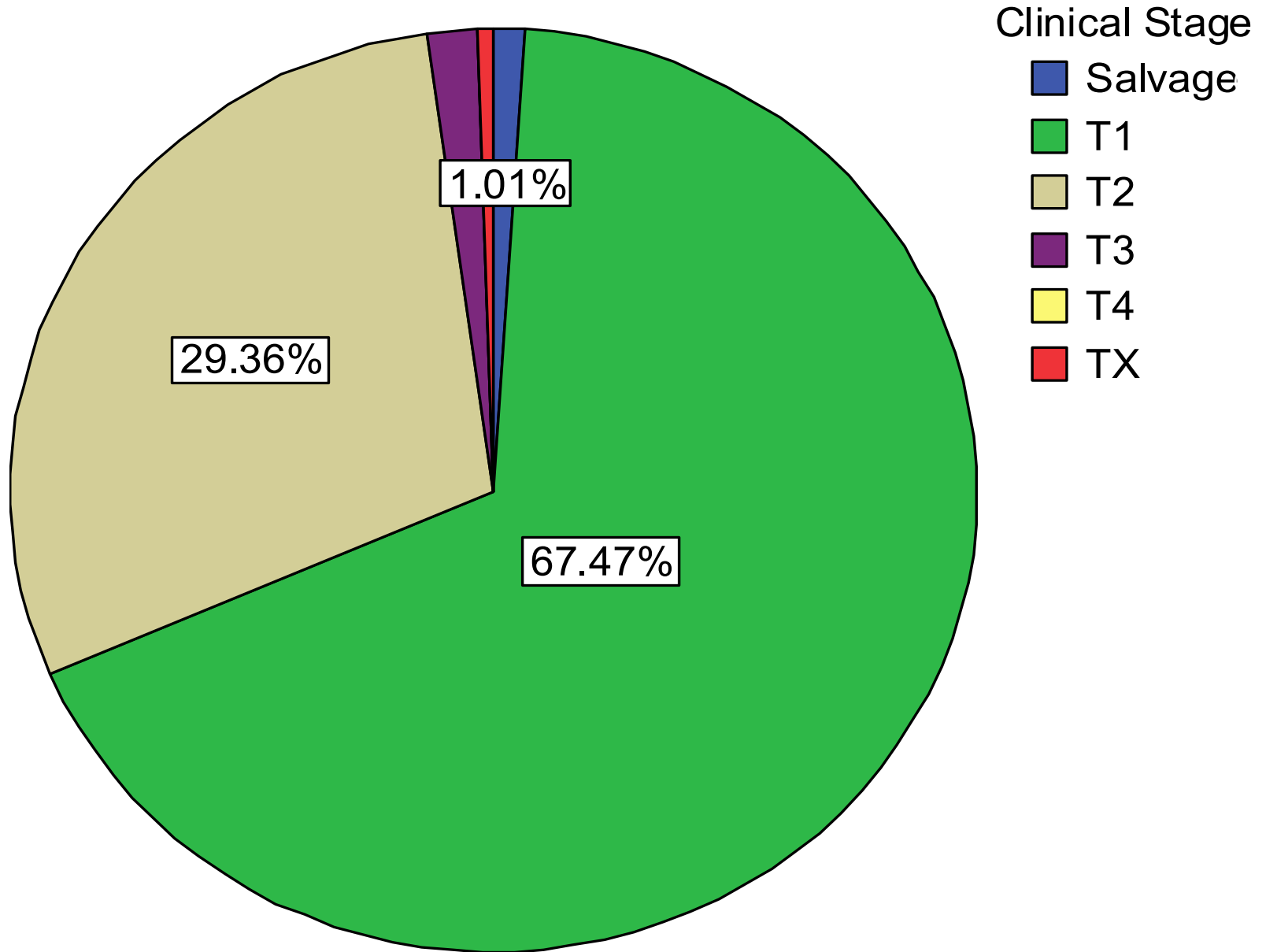
- 15,000+ implants since October 1997
- 89.5% Monotherapy
- 10.5% EBRT + Implant

# Overall Risk Groups (D'Amico)



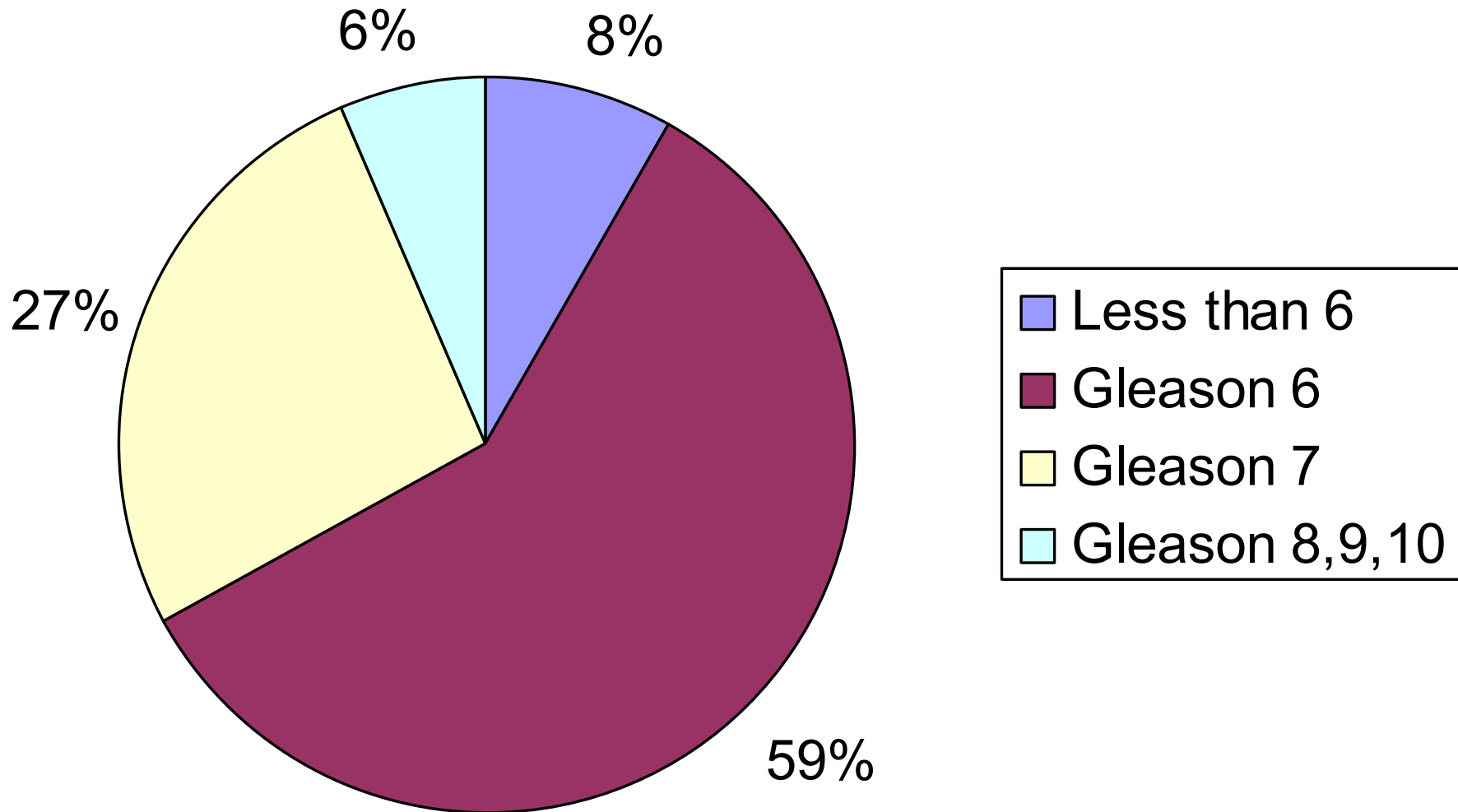
- Low
- Intermediate
- High

## Patient Population by Clinical Stage





# Overall Gleason Scores



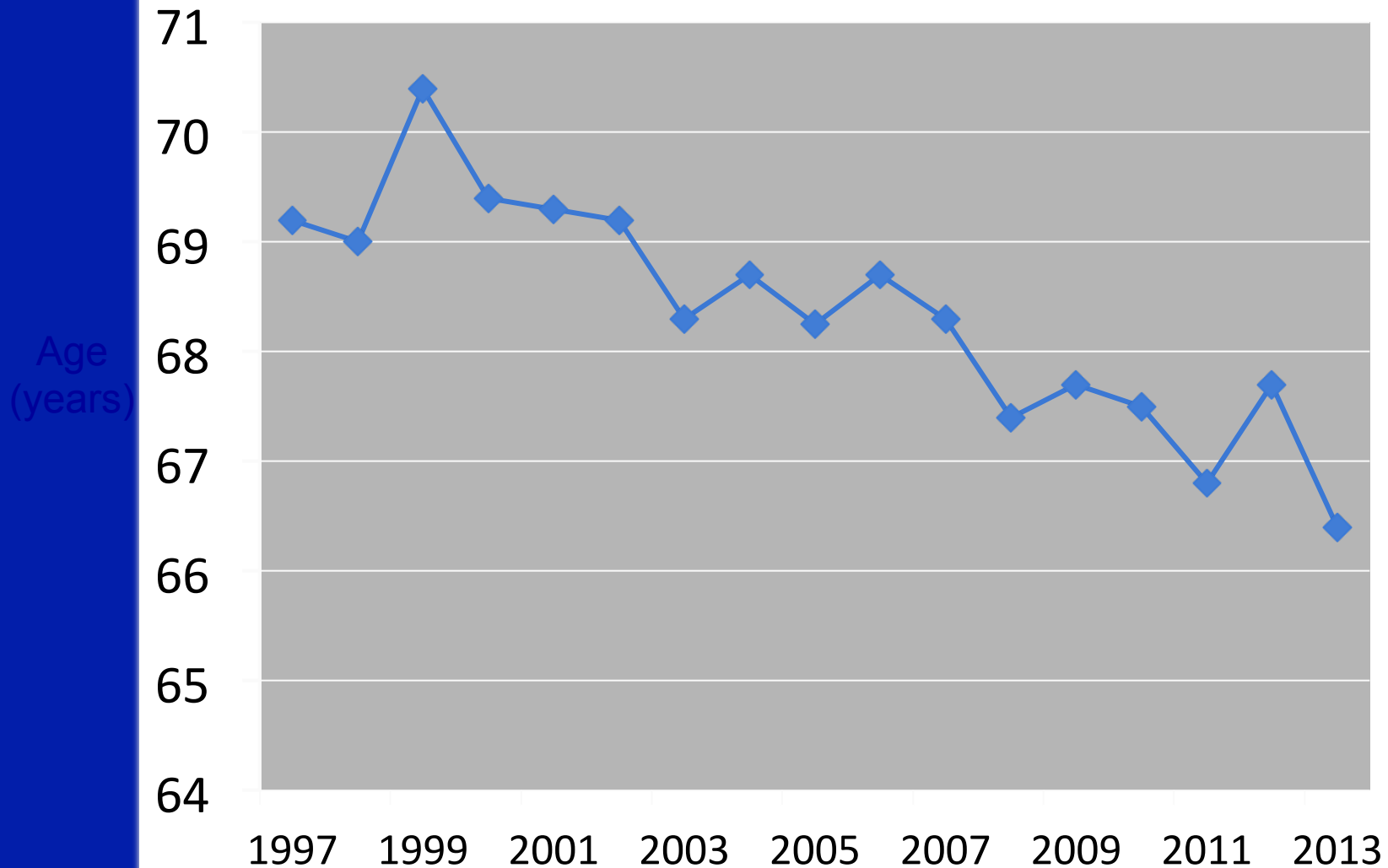
**Note: 19.2% Gleason 3+4=7, 7.5% Gleason 4+3=7 for total 27% Gleason 7**

# Isotope Use

## OVERALL

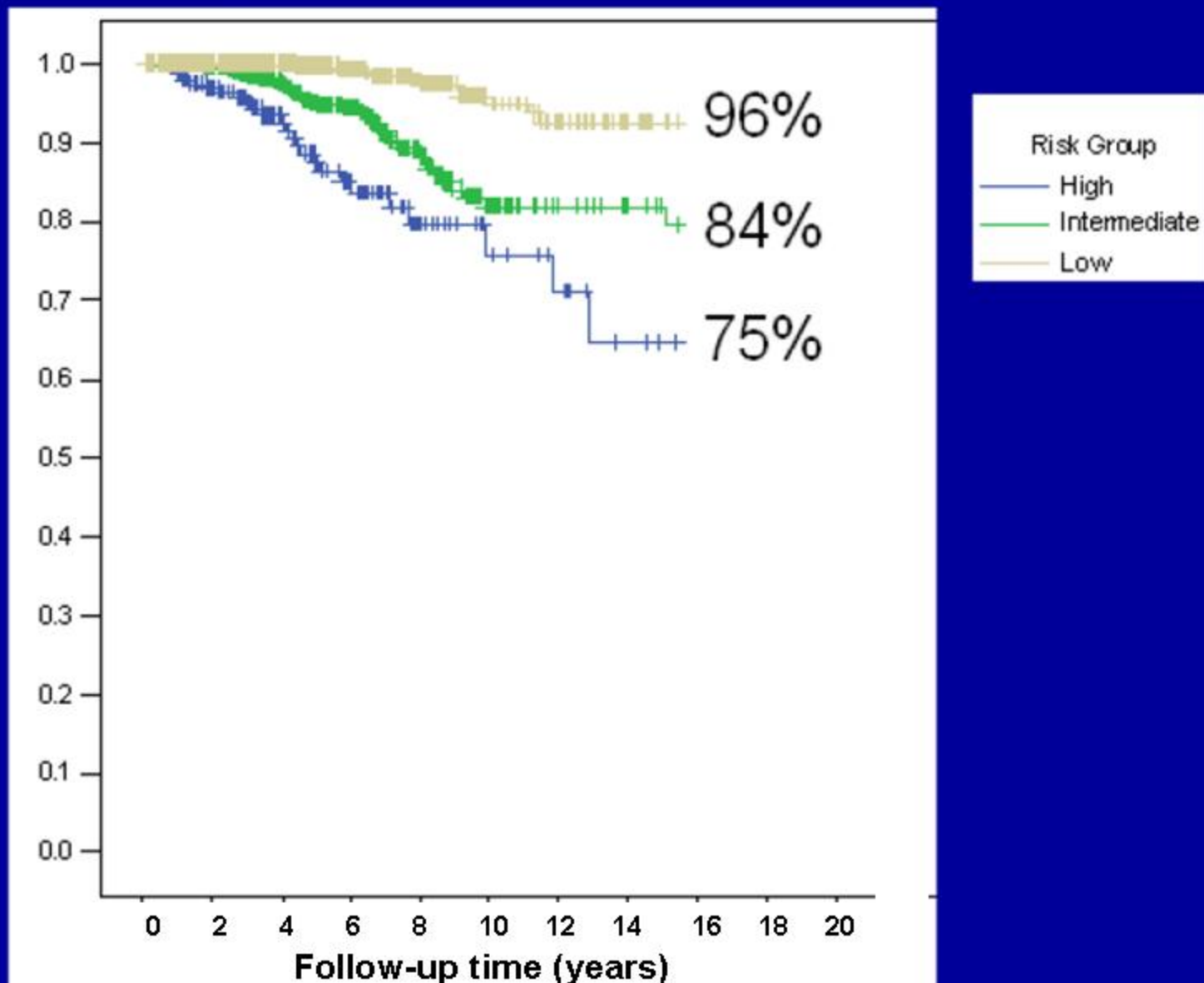
- 81.6% Iodine<sup>125</sup>
- 13.4% Palladium<sup>103</sup>
- 4.9% Cesium<sup>131</sup>

# Mean Age by Year



# CHICAGO PROSTATE CANCER CENTER

## PSA Disease Free Survival





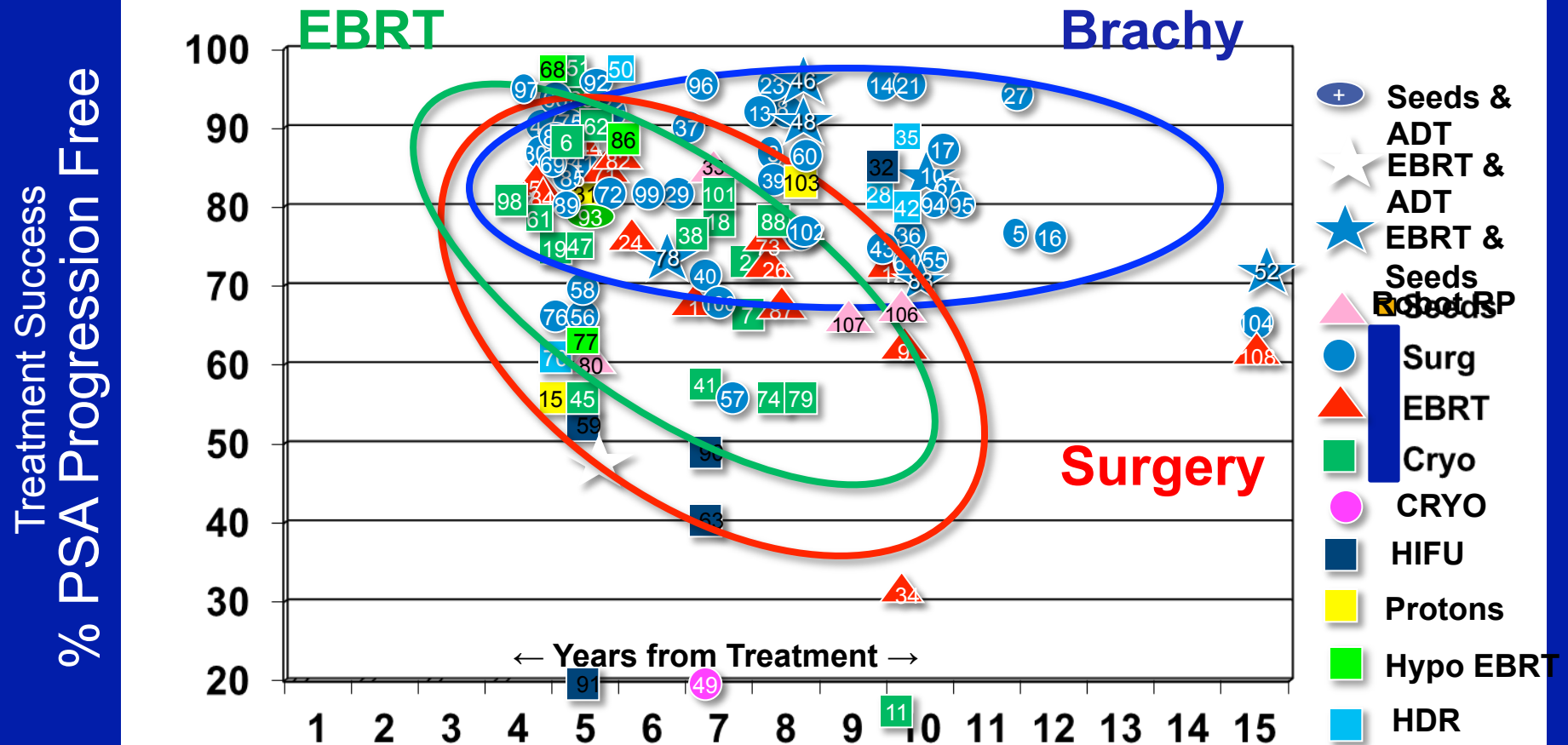
# Comparative analysis of prostate-specific antigen free survival outcomes for patients with low, intermediate and high risk prostate cancer treatment by radical therapy. Results from the Prostate Cancer Results Study Group

Peter Grimm<sup>1</sup>, Ignace Billiet<sup>2</sup>, David Bostwick<sup>3</sup>, Adam P. Dicker<sup>4</sup>, Steven Frank<sup>5</sup>, Jos Immerzeel<sup>6</sup>, Mira Keyes<sup>7</sup>, Patrick Kupelian<sup>8</sup>, W. Robert Lee<sup>9</sup>, Stefan Machtens<sup>10</sup>, Jyoti Mayadev<sup>11</sup>, Brian J. Moran<sup>12</sup>, Gregory Merrick<sup>13</sup>, Jeremy Millar<sup>14</sup>, Mack Roach<sup>15</sup>, Richard Stock<sup>16</sup>, Katsuto Shinohara<sup>15</sup>, Mark Scholz<sup>17</sup>, Ed Weber<sup>18</sup>, Anthony Zietman<sup>19</sup>, Michael Zelefsky<sup>20</sup>, Jason Wong<sup>21</sup>, Stacy Wentworth<sup>22</sup>, Robyn Vera<sup>23</sup> and Stephen Langley<sup>24</sup>

# LOW RISK RESULTS

Weighted

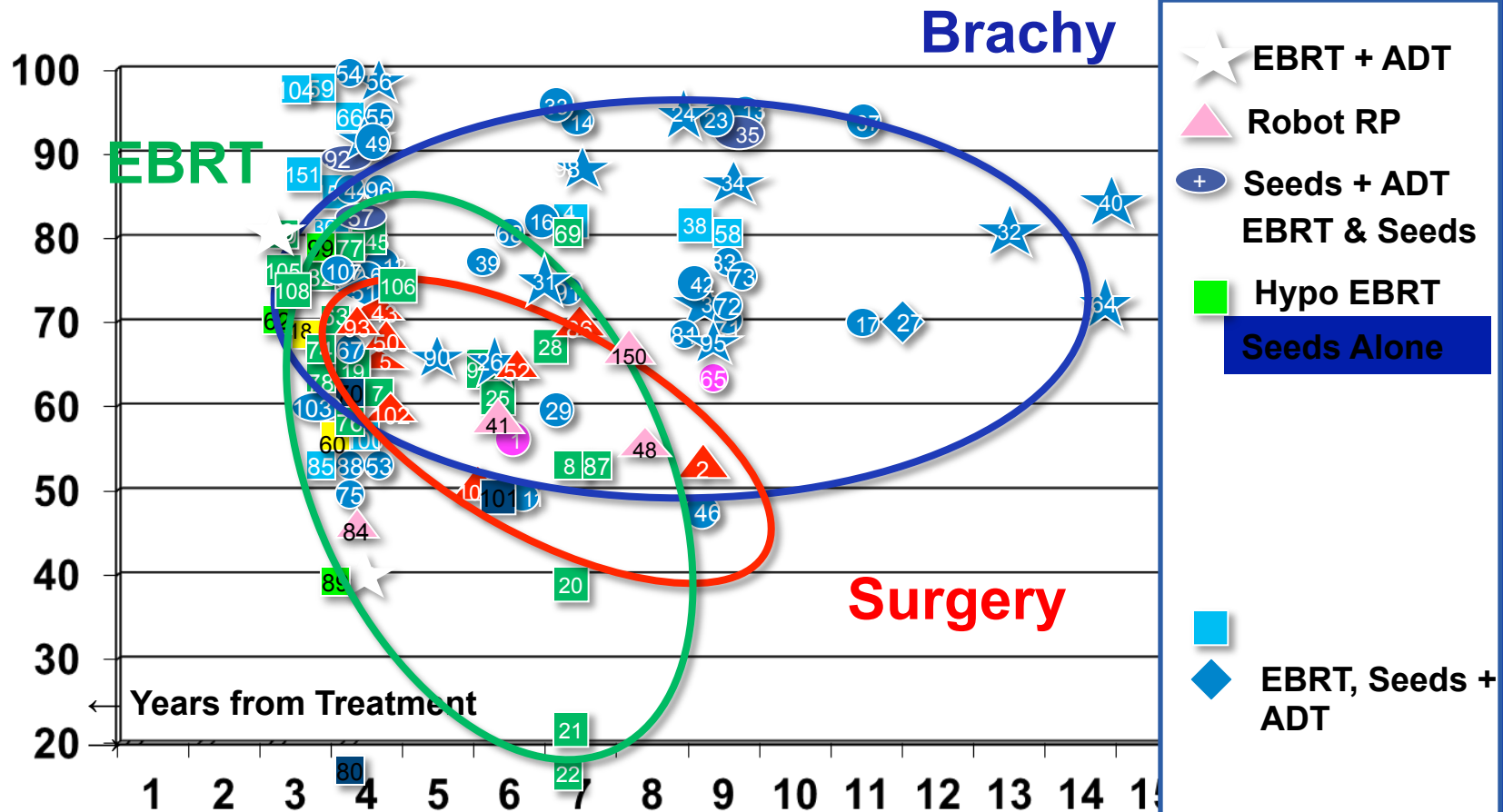
>40 months follow-up or less than 100 patients



# INTERMEDIATE RISK RESULTS weighted

>40 months follow-up or less than 100 patients

Treatment Success  
% PSA Progression Free

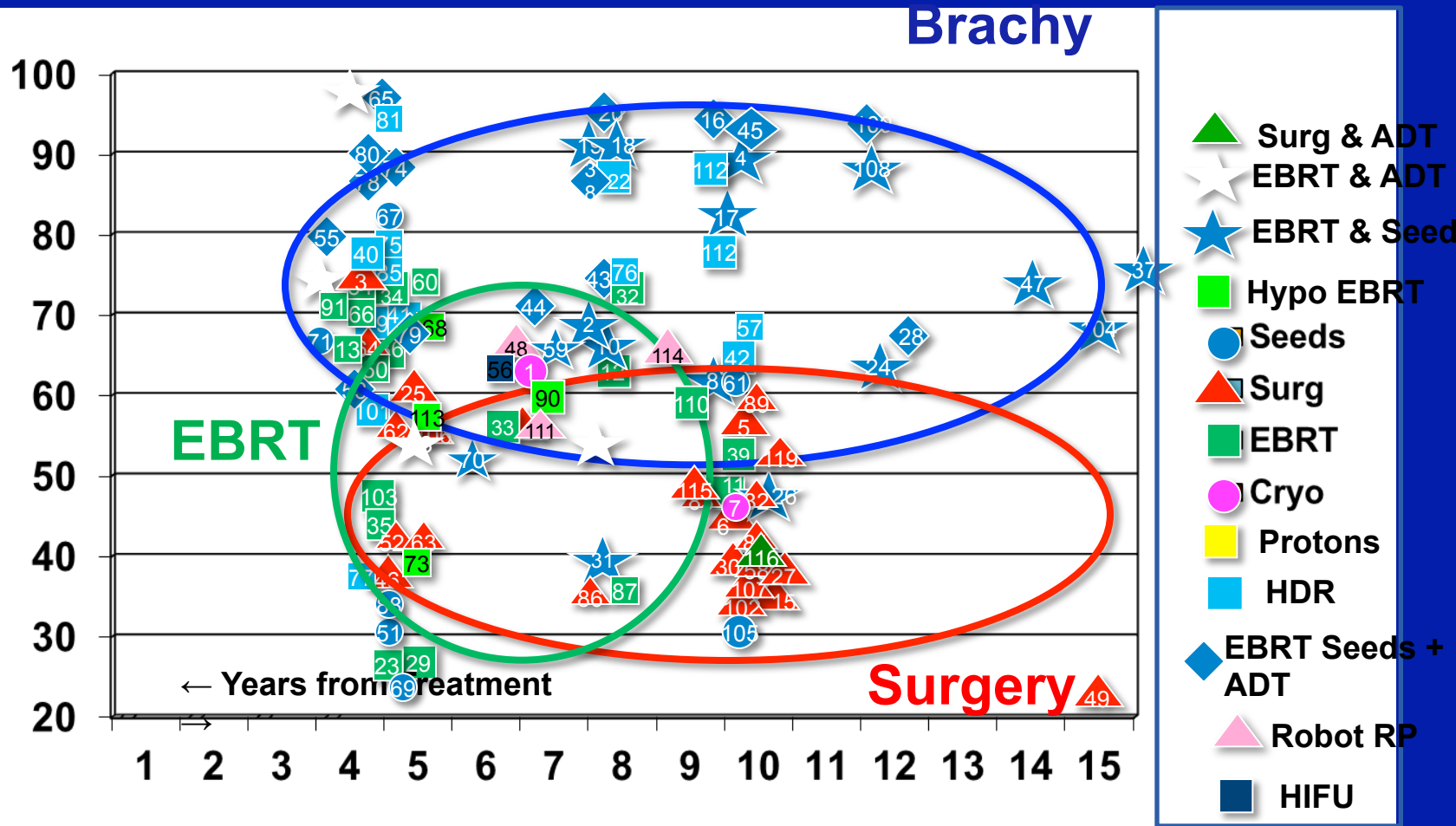


# HIGH RISK RESULTS

>40 months follow-up or less than 100 patients

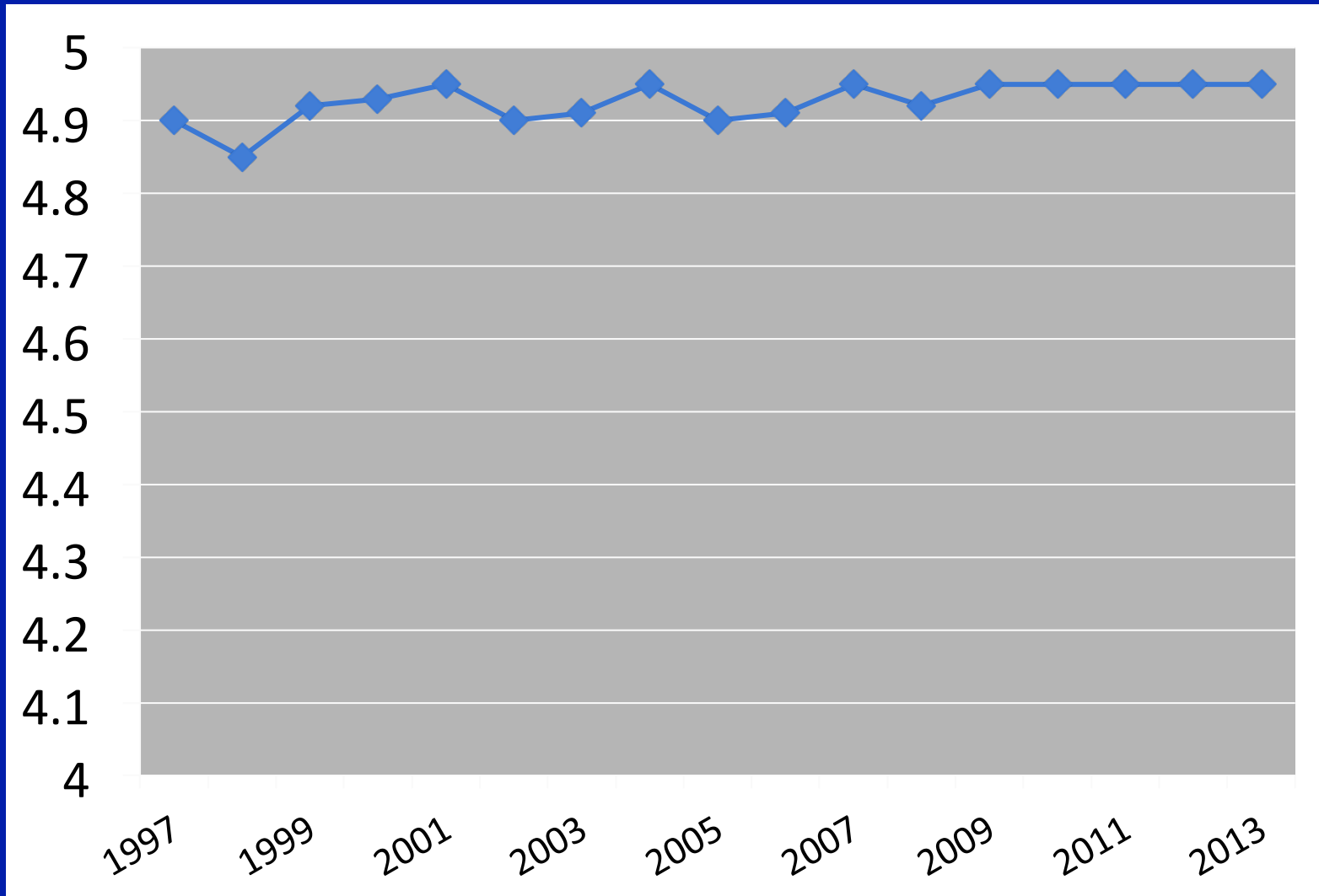
Weighted

Treatment Success  
% PSA Progression Free





# CPC Patient Satisfaction

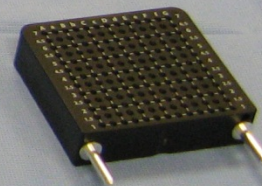
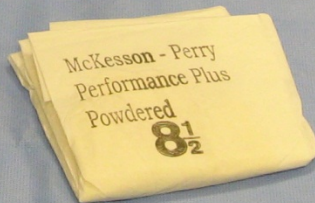
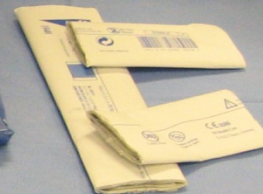
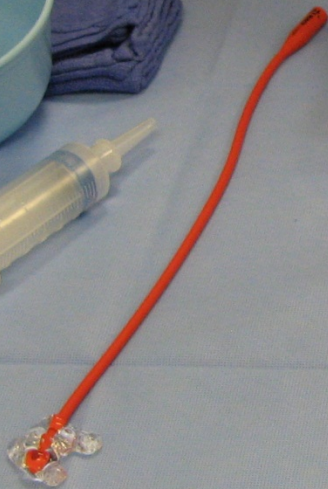


# Chicago Style Implants

- Outpatient
- 3 total visits
- General Anesthesia
  - Propofol only
  - No benzodiazapenes, Fentanyl
- Simple setup
- All-in technique
- Fill pull flow
- Day 0 CT
- Discharge







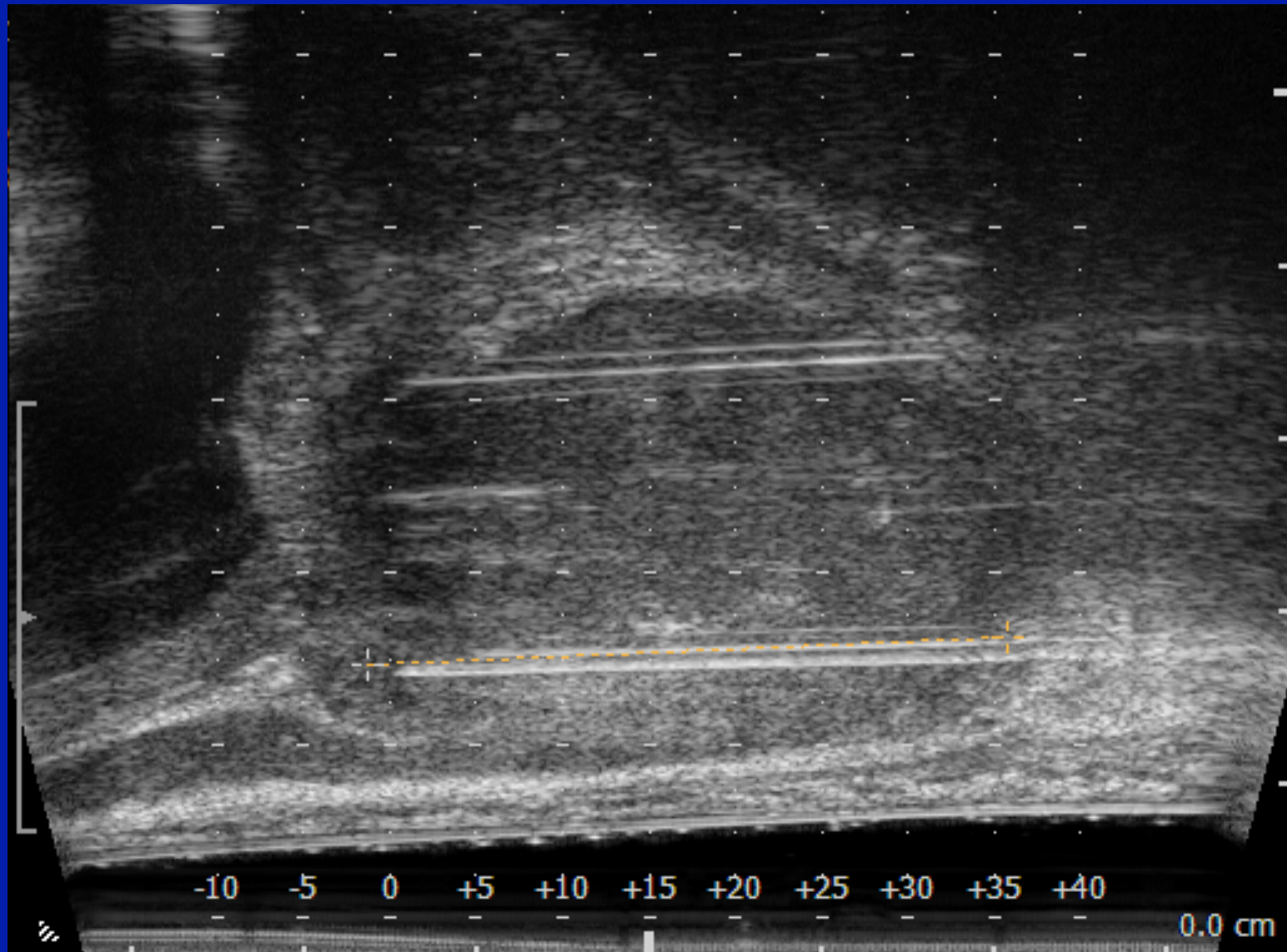
# All-In Technique

- Sequential placement of needles
- It offers an additional QA step
- It stabilizes the gland for subsequent needle placement
- Seed deposition is more uniform
- Dosimetry is very reproducible



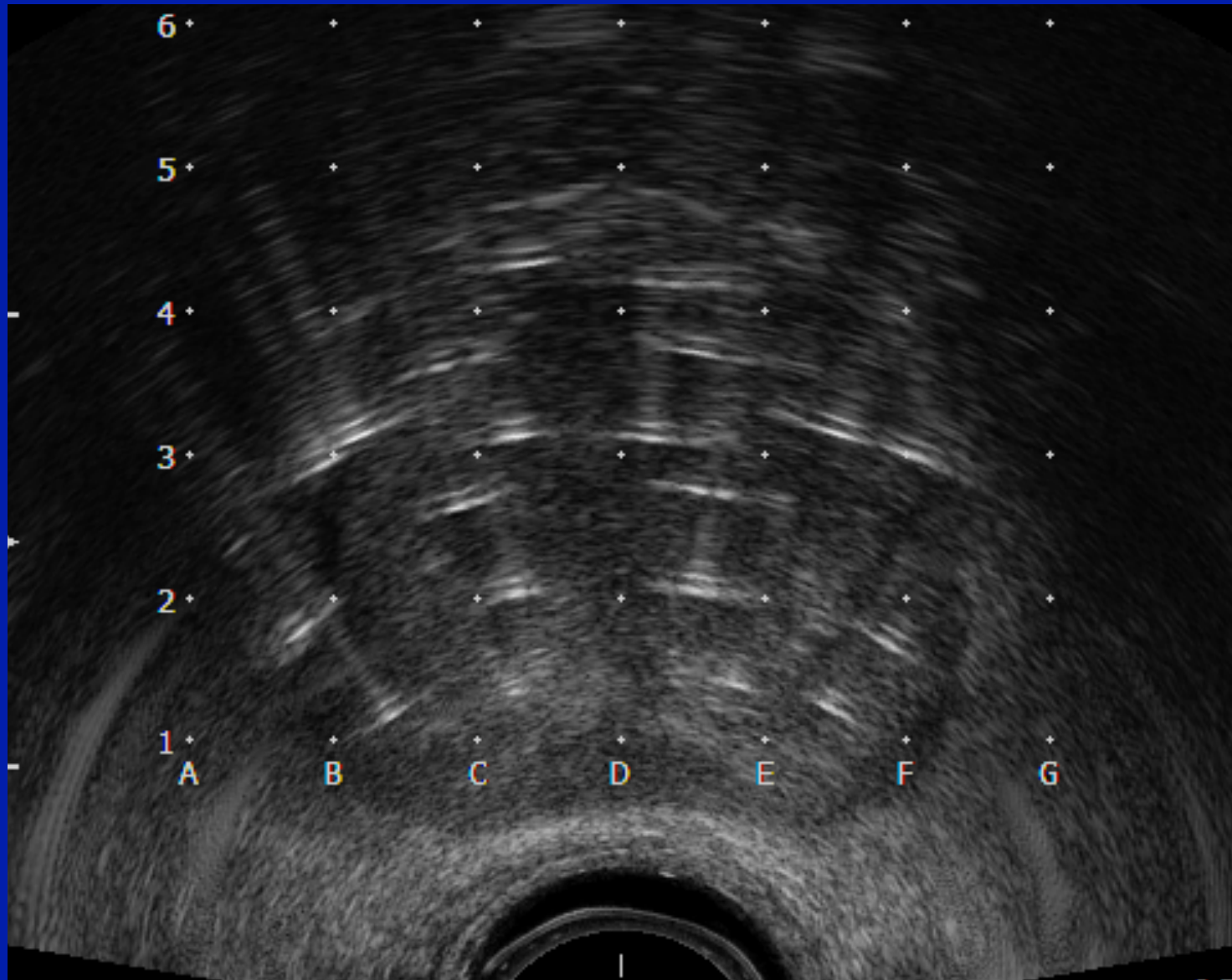


# Pitch Check





# Pre-Drop Q.A.



# Fill Pull Flow



# PPAD



# Thin Strand Study

- Single institution, balanced, prospective randomized, non-blinded, dual arm interventional study
- 240 total patients
- Pre-plan/pre-loaded technique
- IRB approved

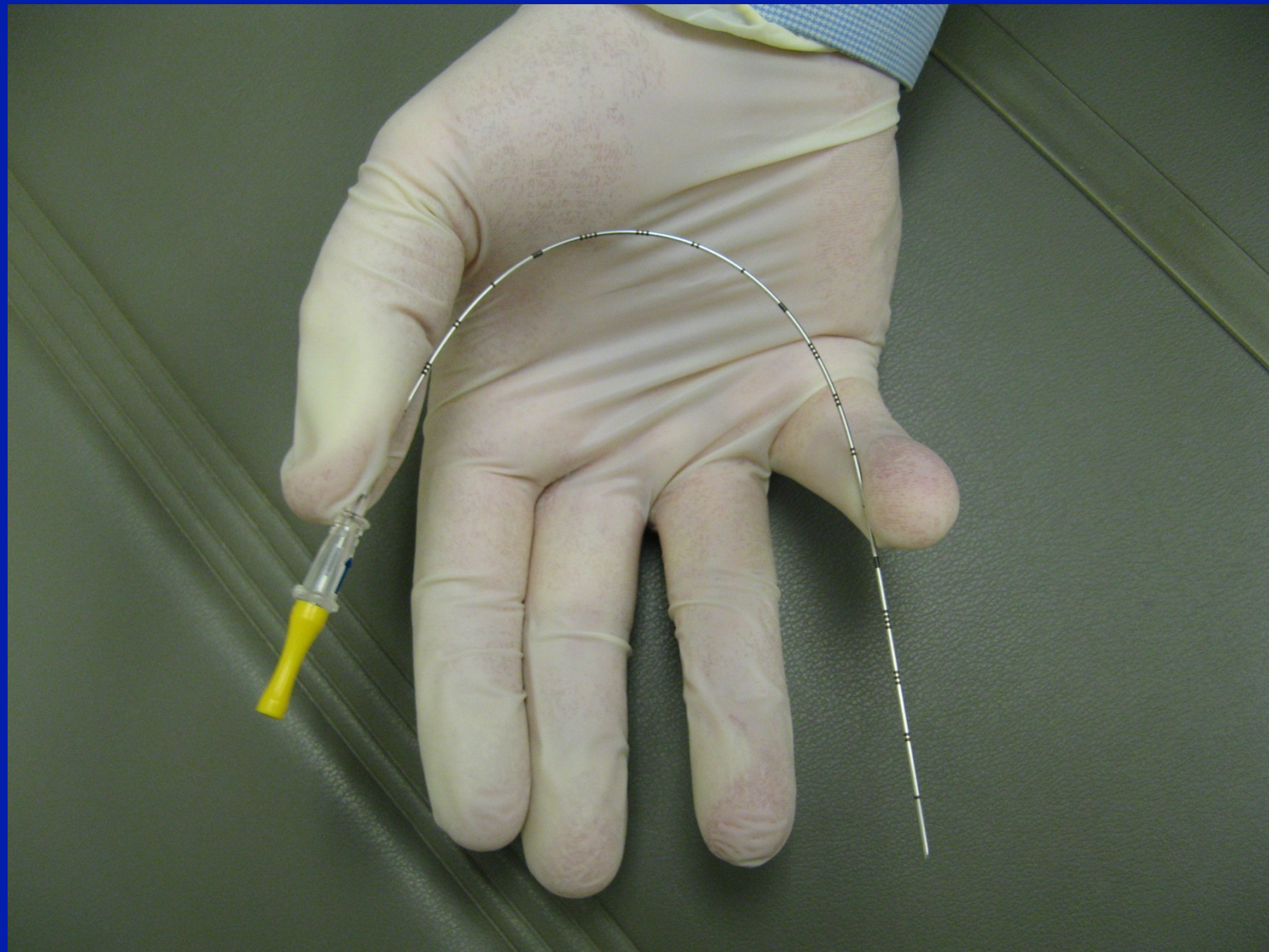


# 18 vs. 20 gauge





# Flexible, not Fragile





# Bleeding



20 gauge



18 gauge

# Conclusion

- No significant difference at any given time period specific to the urinary, bowel or sexual function and bother domains
- However, 6/110 (5.5%) of 18g patients and 0/130 (0%) patients in 20g patients required foley catheterization secondary to acute urinary retention, demonstrating a significant difference ( $p=0.003$ )



# Iodine<sup>125</sup> vs. Cesium<sup>131</sup> Prospective Randomized Trial

- Purpose: Assess urinary morbidity
- 142 patients between 3/2007 and 5/2008
  - Iodine<sup>125</sup> n= 71
    - MPD: 145 Gy
  - Cesium<sup>131</sup> n= 71
    - MPD: 115 Gy
- Follow-up
  - Physical exam: 6, 12, 18, 24 months post treatment
  - EPIC: 2, 6, 12, 18, 24 months post treatment
  - PSA: 2, 6, 12, 18, 24 months post treatment

# Conclusions

- Both patient groups demonstrated slight decreases in EPIC score at 2 months, with a trend toward resolution by 6 months
- There were no statistically significant differences at any time point between the two isotopes.

# What have I learned?

- Avoid 'One Size Fits All'
- Respect Co-morbidities
- Maintain Quality of Life
- LESS IS MORE

