



# Primary TKA - Cemented vs Cementless Fixation

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Can cementless TKA be as durable  
as cemented?

# Literature Review:

- Randomized Clinical Trials
  - Ideal setting
  - Account for confounders
- Registry Data
  - Real-world setting
  - Confounders not accounted for

# Randomized Clinical Trial: Tibial Component



Contents lists available at [ScienceDirect](#)

The Journal of Arthroplasty

journal homepage: [www.arthroplastyjournal.org](http://www.arthroplastyjournal.org)

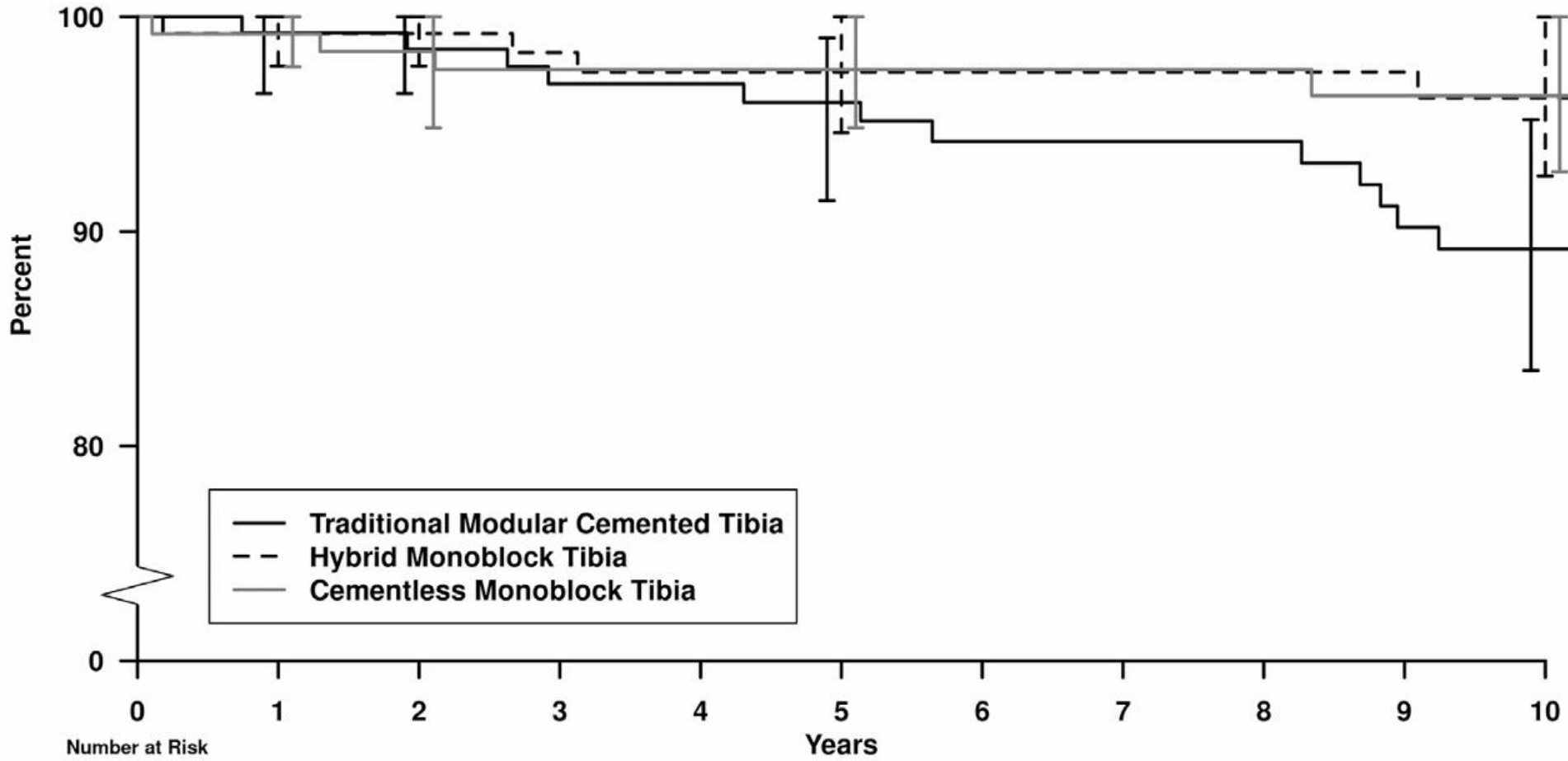
2023 Knee Society Award

**John N. Insall Award: Randomized Clinical Trial of Cementless Versus Cemented Tibial Components: Durable and Reliable at a Mean 10-Years Follow-Up**

Emmanuel Gibon, MD, PhD, David G. Lewallen, MD, Dirk R. Larson, MS, Michael J. Stuart, MD, Mark W. Pagnano, MD, Matthew P. Abdel, MD \*



# Survivorship Free of Any Revision



# Randomized Clinical Trial: Femoral Component



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Primary Knee

## Cemented vs Uncemented Femoral Components: A Randomized, Controlled Trial at 10 Years Minimum Follow-Up

Cécile Batailler, MD <sup>a,\*</sup>, Yves Malemo, MD <sup>a</sup>, Guillaume Demey, MD <sup>a,b</sup>,  
Raymond Kenney, MD <sup>a,c</sup>, Sébastien Lustig, MD, PhD <sup>a,d</sup>, Elvire Servien, MD, PhD <sup>a,e</sup>



Uncemented femoral  
component: 98%  
survival at 14 years



Cemented femoral  
component: 98%  
survival at 14 years



# Patellar component: Retrospective cohort



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Proceedings of The Knee Society 2022

## Cementless Metal-Backed Patellar Components in Primary Total Knee Arthroplasty: An Average 10-Year Follow-Up

Alex C. Joufflas, MD <sup>a</sup>, Arun C. Nadar, MBA <sup>b</sup>, Brett W. Royster, BS <sup>b</sup>,  
Langan S. Smith, BS <sup>c</sup>, Michael J. Ziegele, MD <sup>c</sup>, Madhusudhan R. Yakkanti, MD <sup>d</sup>,  
Arthur L. Malkani, MD <sup>c,\*</sup>

# Results

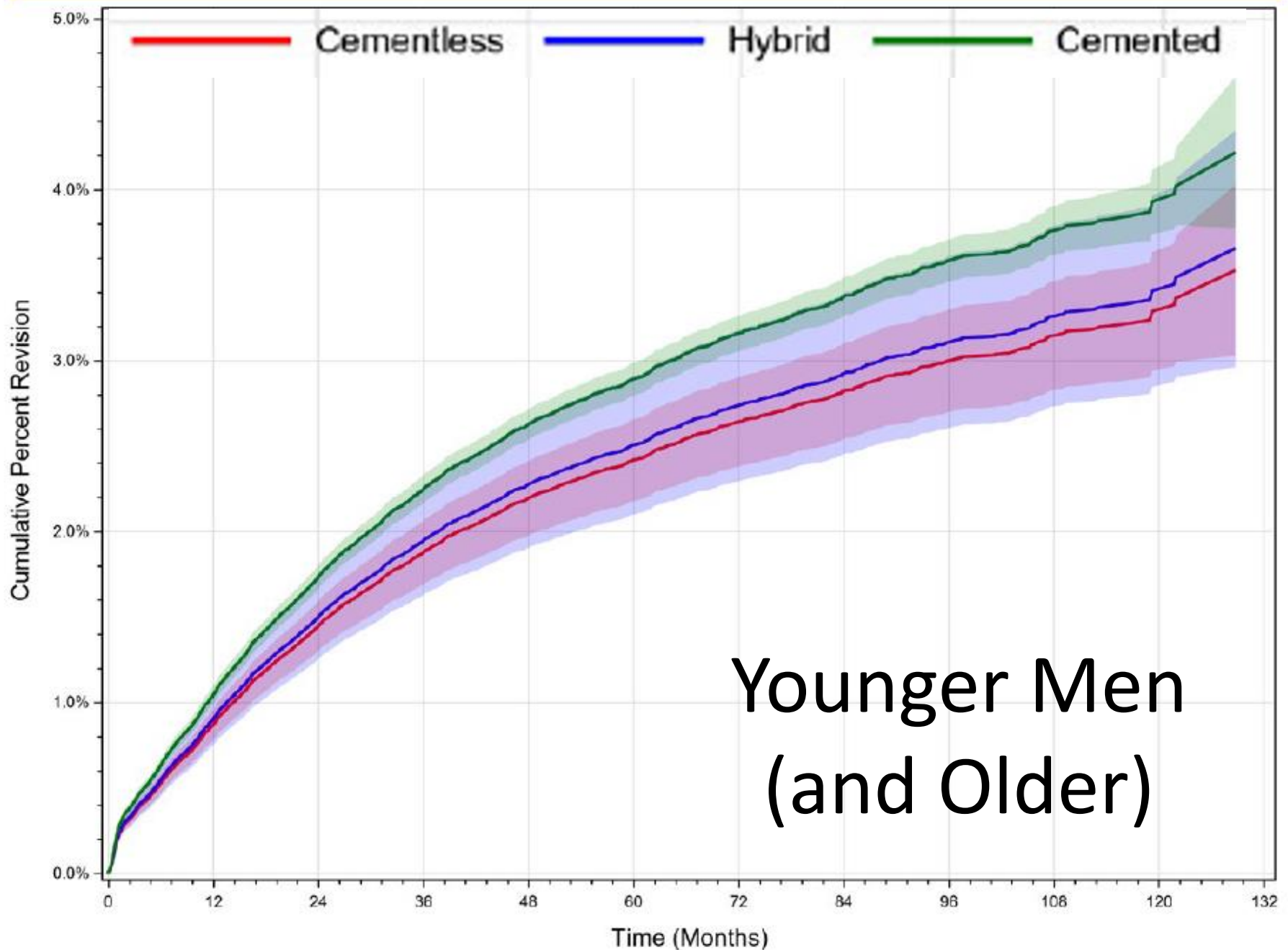
- 136 uncemented and 183 cemented patellae
- Patients with uncemented implants were younger, heavier, and with more men
- 10-year patellar failure rate 3.6% for uncemented and 1.1% for cemented (P = 0.15)

# Registry Data: American Joint Replacement Registry

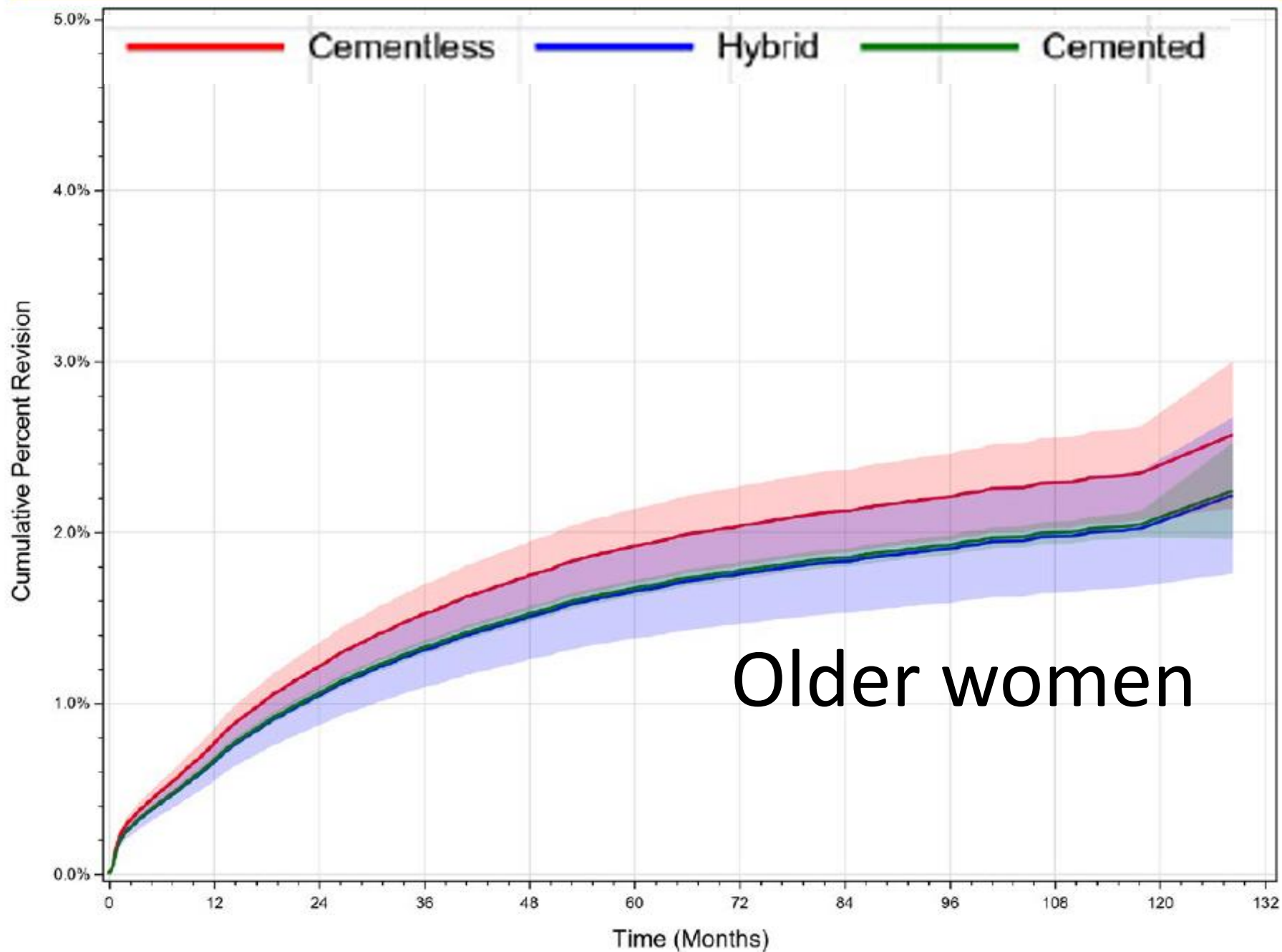


Registry results do not account for numerous potential confounders

**Figure 3.13** Cumulative Percent Revision for Cemented Versus Cementless Fixation Primary Total Knee Arthroplasty in Male Patients less than 65 Years of Age with Primary Osteoarthritis in AJRR Only, 2012-2022



**Figure 3.12** Cumulative Percent Revision for Cemented Versus Cementless Fixation Primary Total Knee Arthroplasty in Female Medicare Patients 65 Years of Age and older with Primary Osteoarthritis, 2012-2022



# Conclusion

- Uncemented TKA can be equally or more successful than cemented TKA in the right patient, with the right technology, and the right technique.

# Case Discussion



# Implant-specific revision rates

**Table 3.5** Unadjusted Cumulative Percent Revision of Cementless Knee Arthroplasty Construct Combinations for Primary Total Knee Arthroplasty in Patients ≥65 Years of Age with Primary Osteoarthritis, 2012-2022

Femoral Component	Tibial Component	N Total	N Revised	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Triathlon CR	Triathlon	36,559	436	0.78 (0.69, 0.88)	1.31 (1.19, 1.45)	1.55 (1.39, 1.72)	1.73 (1.53, 1.95)	1.73 (1.53, 1.95)
Triathlon PS	Triathlon	7,075	130	1.13 (0.90, 1.40)	1.96 (1.63, 2.34)	2.24 (1.86, 2.68)	2.50 (2.03, 3.05)	2.50 (2.03, 3.05)
Persona CR	Persona	2,296	36	1.02 (0.67, 1.51)	2.05 (1.38, 2.94)	3.09 (1.42, 5.85)	3.09 (1.42, 5.85)	—
Attune PS	Attune	1,033	8	0.61 (0.26, 1.28)	0.94 (0.44, 1.83)	—	—	—
Attune CR	Attune	699	12	1.46 (0.75, 2.59)	1.76 (0.91, 3.11)	2.87 (1.11, 6.06)	—	—
Natural-Knee II GS CR	Natural-Knee II	690	9	0.43 (0.12, 1.21)	1.08 (0.48, 2.13)	1.52 (0.74, 2.79)	1.52 (0.74, 2.79)	1.52 (0.74, 2.79)
Vanguard CR	Regenerex	523	7	0.76 (0.26, 1.85)	1.34 (0.60, 2.63)	1.34 (0.60, 2.63)	1.34 (0.60, 2.63)	1.34 (0.60, 2.63)
Sigma CR	MBT	505	4	0.40 (0.08, 1.35)	0.84 (0.28, 2.04)	0.84 (0.28, 2.04)	0.84 (0.28, 2.04)	0.84 (0.28, 2.04)
Overall	—	49,380	642	0.84 (0.76, 0.92)	1.43 (1.32, 1.55)	1.68 (1.54, 1.83)	1.86 (1.69, 2.05)	1.92 (1.71, 2.14)