

# Approaches for Estimating Minimally Important Differences

**Ron D. Hays, Ph.D.**

---

January 12, 2004 (8:50-9:10am)

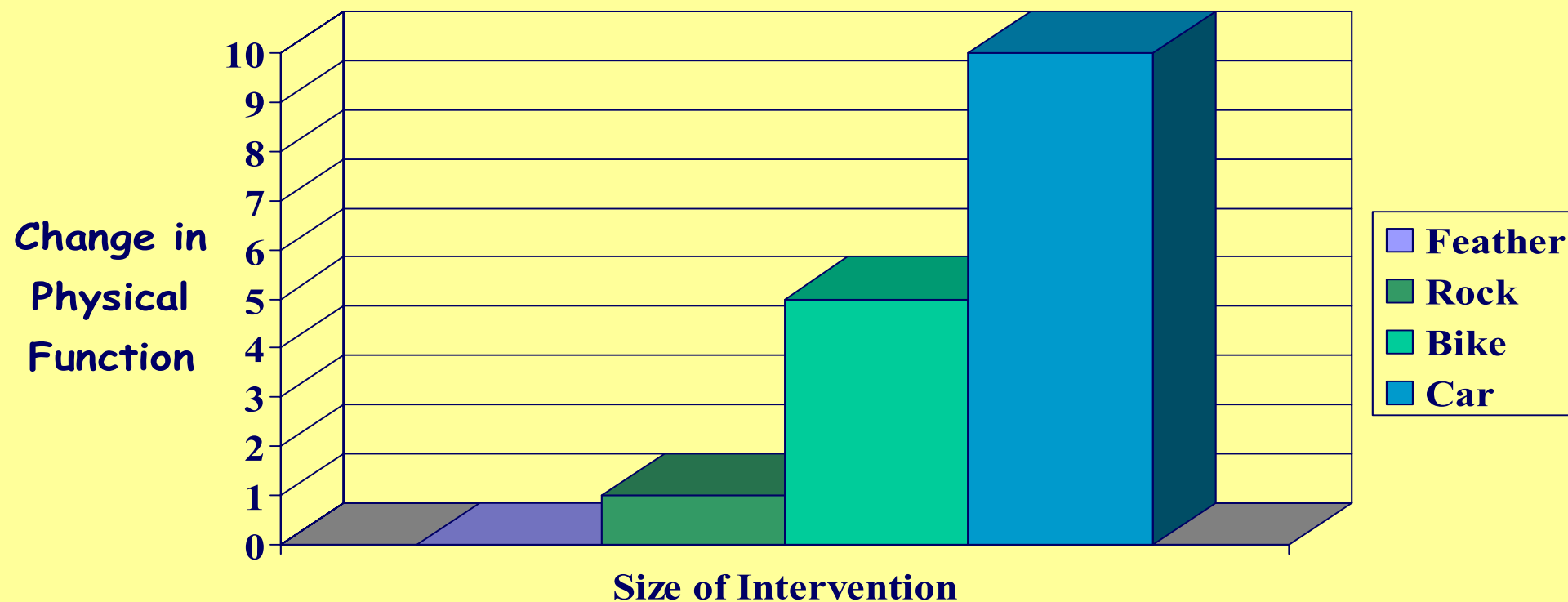
Minimal Clinically Important Differences in COPD

Beach House, Bal Harbor, Florida

National Jewish Medical and Research Center

# Magnitude of HRQOL Change Should Parallel Underlying Change

---



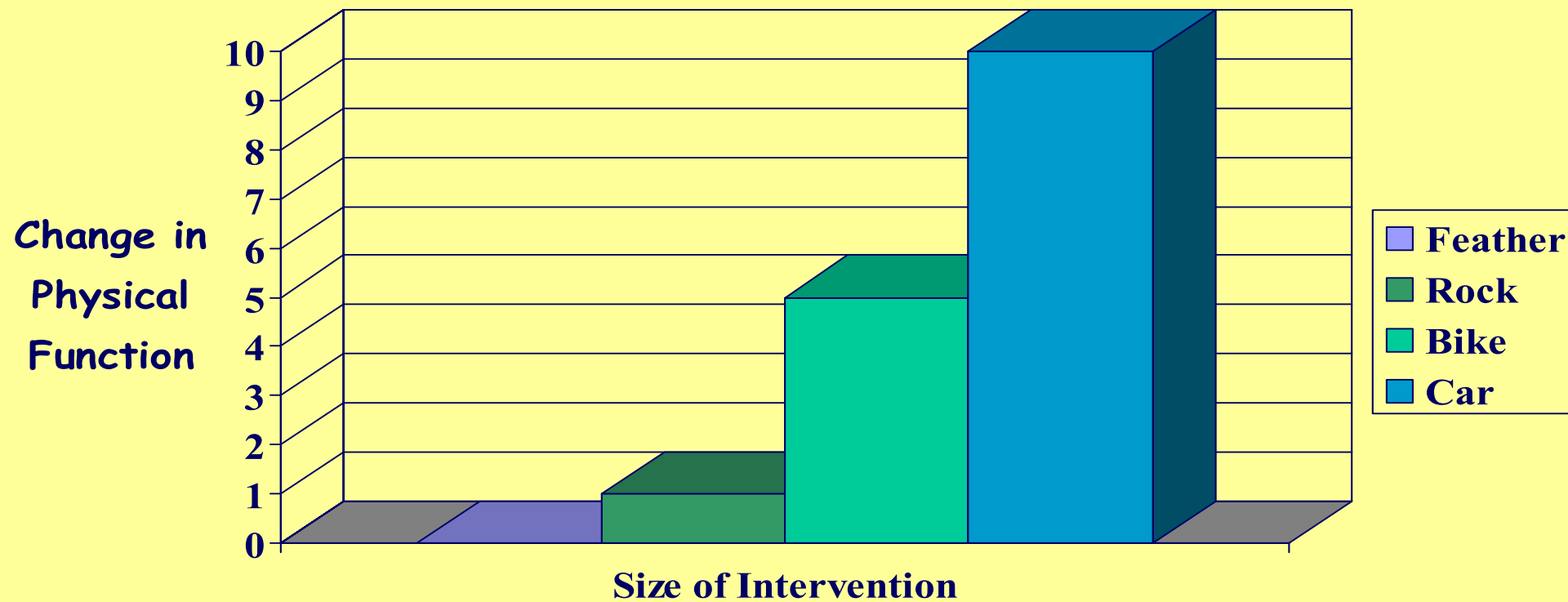
# How Evaluated

---

- ◆ External anchor to determine there has been “minimal” change
  - Self-report
  - Provider report
  - Clinical measure
  - Intervention
- ◆ Estimate change in HRQOL among those with minimal change on anchor

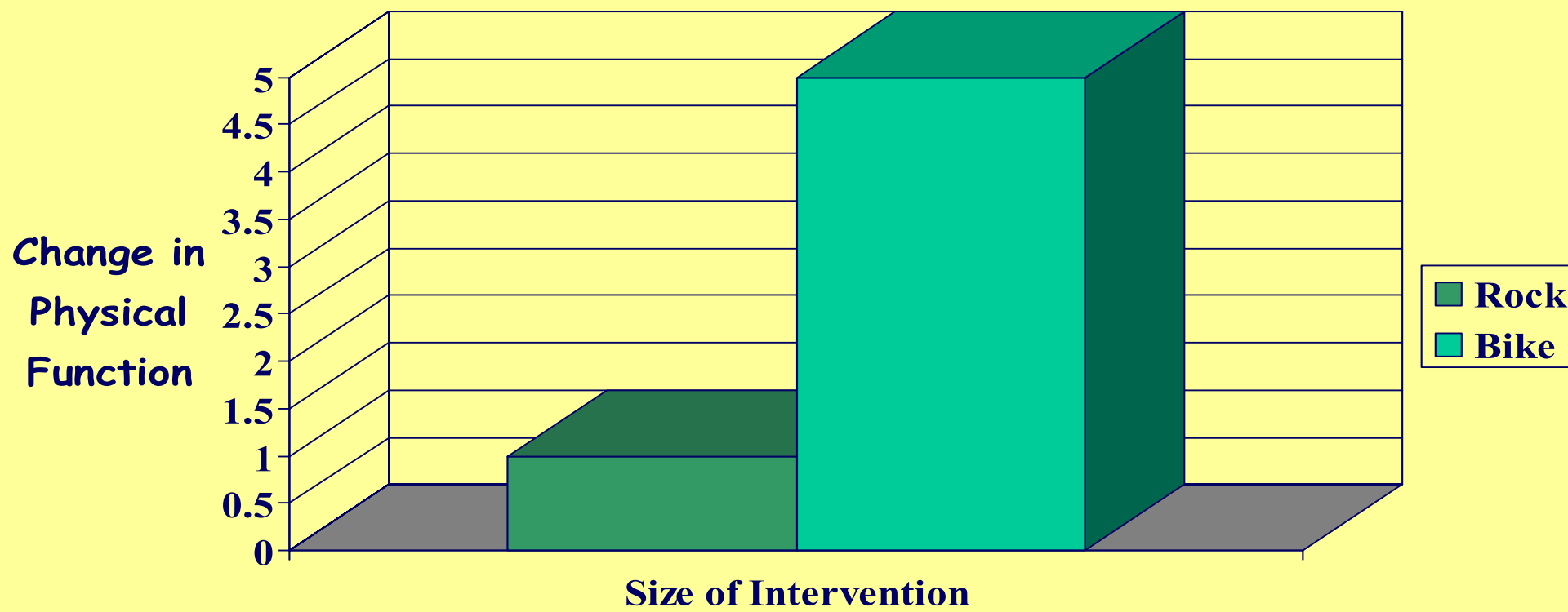
# Change in Physical Function by Size of Intervention

---



# Some Anchors are Better than Others for MID Estimation

---



# Self-Report Anchor

---

- ◆ People who report a “minimal” change
- ◆ How is your physical health now compared to 4 weeks ago?
  - ◆ *Much improved; Moderately Improved;*
  - ◆ *Minimally Improved;*
  - ◆ *No Change;*
  - ◆ *Minimally Worse;*
  - ◆ *Moderately Worse; Much Worse*

# Example Use of Self-Report Anchor in COPD

---

- ◆ Compared to Jack, my ability to walk is:
  - Much better; Somewhat better; A little bit better; About the same; A little bit worse; Somewhat worse; Much worse
- ◆ Determined how much actual walking distance had to differ, on average, for patients to rate themselves as walking either *a little bit better* or “*a little bit worse*.”

Redelmeier, D. A. et al., 1997, Am J Respir Crit Care Med

# Example with Multiple Anchors

---

- ◆ 693 RA clinical trial participants evaluated at baseline and 6-weeks post-treatment.
- ◆ Five anchors:
  - 1) patient global self-report;
  - 2) physician global report;
  - 3) pain self-report;
  - 4) joint swelling;
  - 5) joint tenderness

Kosinski, M. et al. (2000). Determining minimally important changes in generic and disease-specific health-related quality of life questionnaires in clinical trials of rheumatoid arthritis. Arthritis and Rheumatism, 43, 1478-1487.

# Patient and Physician global reports

---

- ◆ How the patient is doing, considering all the ways that RA affects him/herself?

**Very good** (asymptomatic and no limitation of normal activities)

**Good** (mild symptoms and no limitation of normal activities)

**Fair** (moderate symptoms and limitation of normal activities)

**Poor** (severe symptoms and inability to carry out most normal activities)

**Very poor** (very severe symptoms that are intolerable and inability to carry out normal activities)

# Pain self-report

---

- ◆ 10 centimeter visual analog scale
- ◆ 0 = no pain, 10 = severe pain

# Threshold on Self-Report and Physician Report Anchors Used for MID estimation

---

- ◆ Patient and physician global reports
  - Improvement of 1 level over time.
- ◆ Pain self-report
  - Improvement of 1-20% over time.

# Joint swelling and tenderness anchors

---

- ◆ Number of swollen and tender joints
- ◆ Threshold for MID estimation = 1-20% improvement over time

# Recommendations

---

- ◆ Use multiple anchors
- ◆ Use anchors that represent minimal change
- ◆ Report average across anchors and studies, range, and SD
- ◆ Consider that it can be easier to conclude that a difference is clearly or obviously important than it is to say one is always unimportant (grey area).

# Resource Centers for Minority Aging Research



**Preparation of materials for this presentation was supported in part by funding from the UCLA/DREW Project EXPORT, National Institutes of Health, National Center on Minority Health & Health Disparities, (P20-MD00148-01) and the UCLA Center for Health Improvement in Minority Elders / Resource Centers for Minority Aging Research, National Institutes of Health, National Institute on Aging, (AG-02-004).**

# Appendix: Terminology

---

- ◆ Minimally Important Difference (MID)
- ◆ Minimal difference (MD)
- ◆ Minimally Detectable Difference (MDD)
- ◆ Clinically Important Difference (CID)