

# Making Treatment Decisions; What Do You Do Without Evidence?

SickKids



# Definition of Evidence-based Medicine

“the conscientious, explicit, judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual expertise with the best available external clinical evidence from systematic research,” *while considering patient preferences.*

Sackett 1996

# Levels of Evidence

- Level I: Randomized trial
- Level II: Non-randomized with control group
- Level III: Case-control studies
- Level IV: Case series
- Level V: Expert opinion



CLINT EASTWOOD

THE GOOD  
THE BAD  
AND THE UGLY

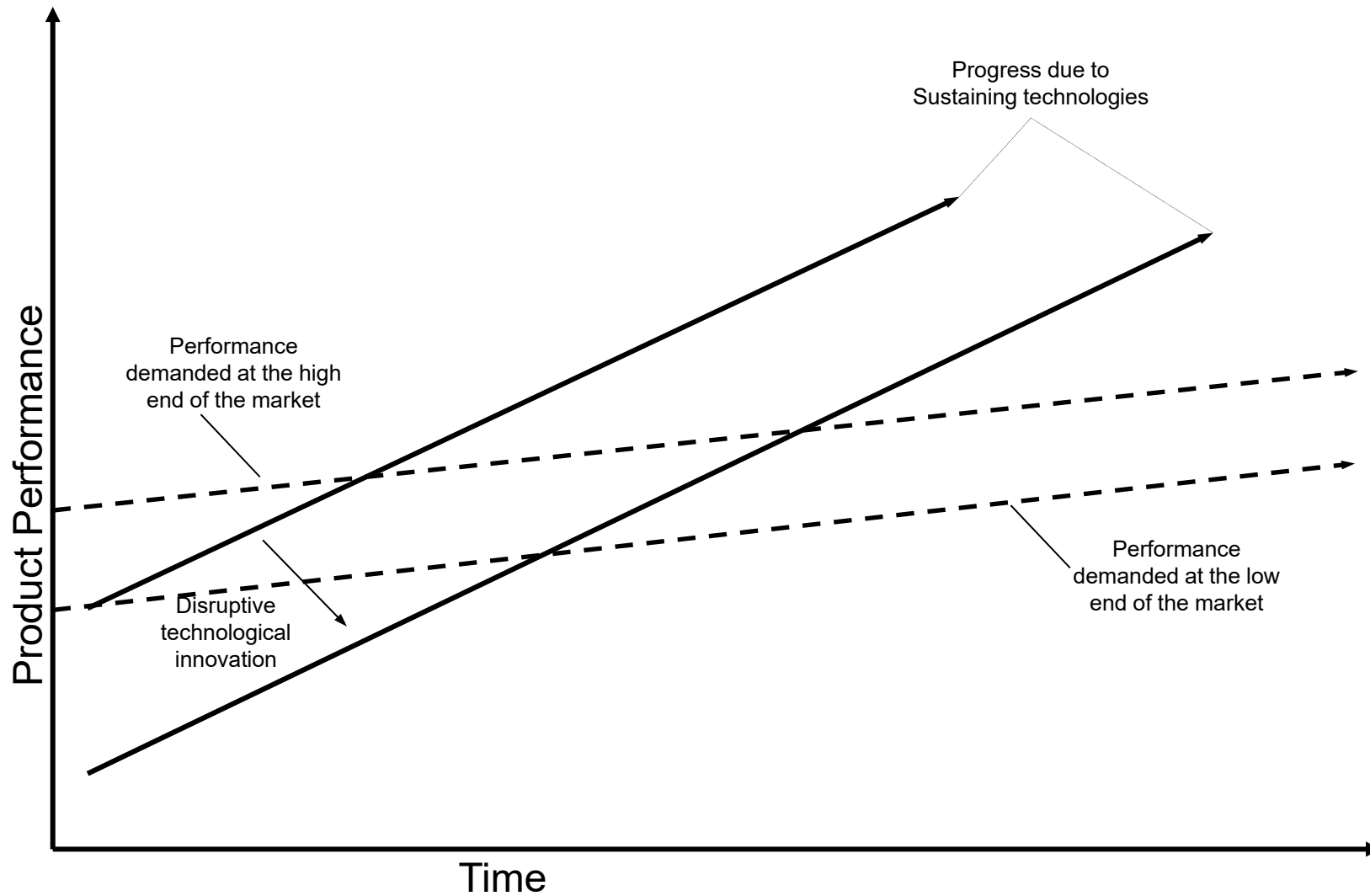
A BILINGUAL COLLECTION 7 SET

# Innovation

(C. Christensen)

- Sustaining
- Disruptive

# The Impact of Sustaining and Disruptive Technological Change



Source: C. Christensen, *The Innovator's Dilemma*

# When the Fruit is Low Pick It

- Case series
- Cross sectional studies
- Consensus

# When Is Level 4 Case Series Helpful

- Outcome is clear
- Outcome is bad

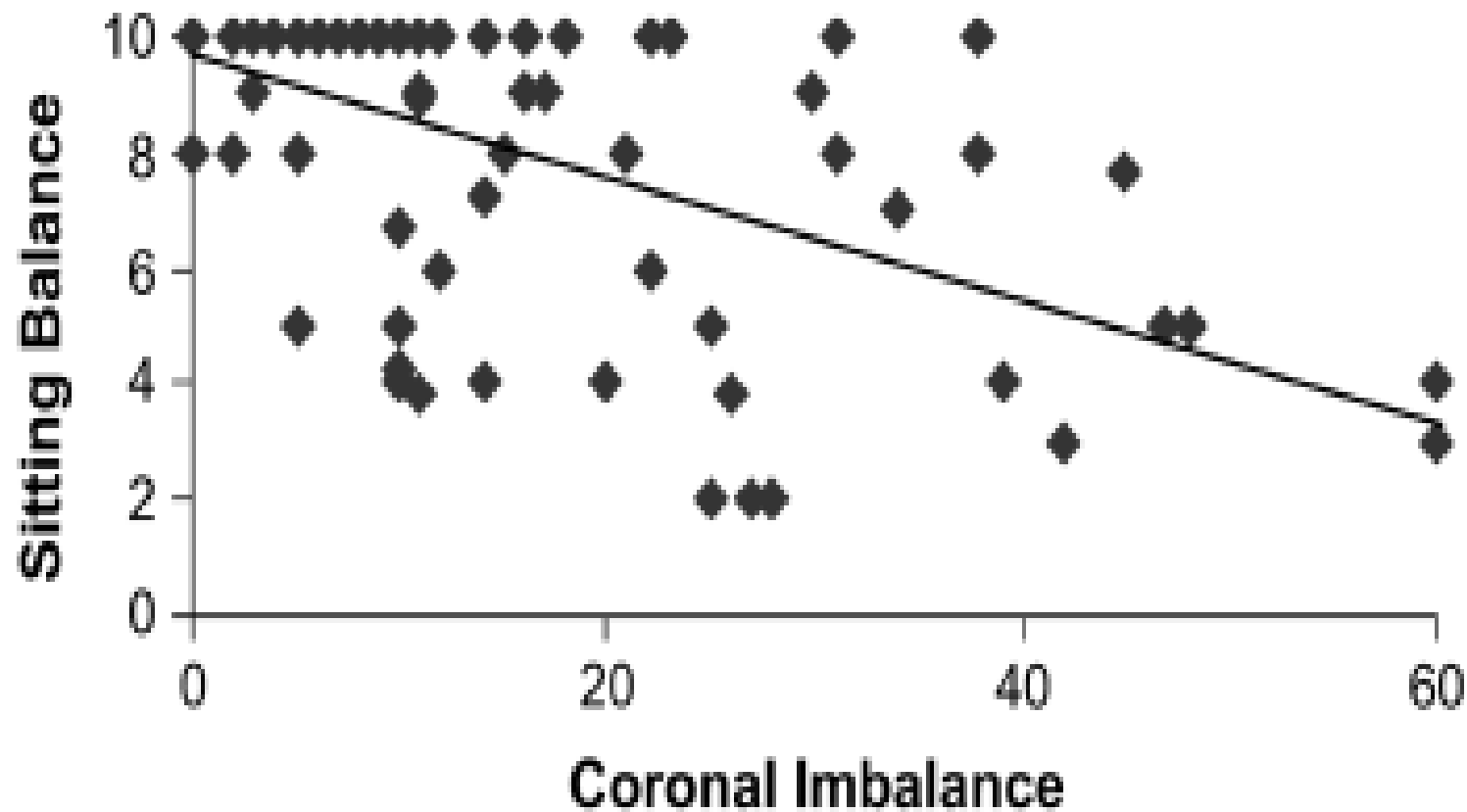


# Surgical Innovations From Level 4 Studies

- Total hip
- Internal fixation fractures
- Instrumentation of spine
- Ponseti

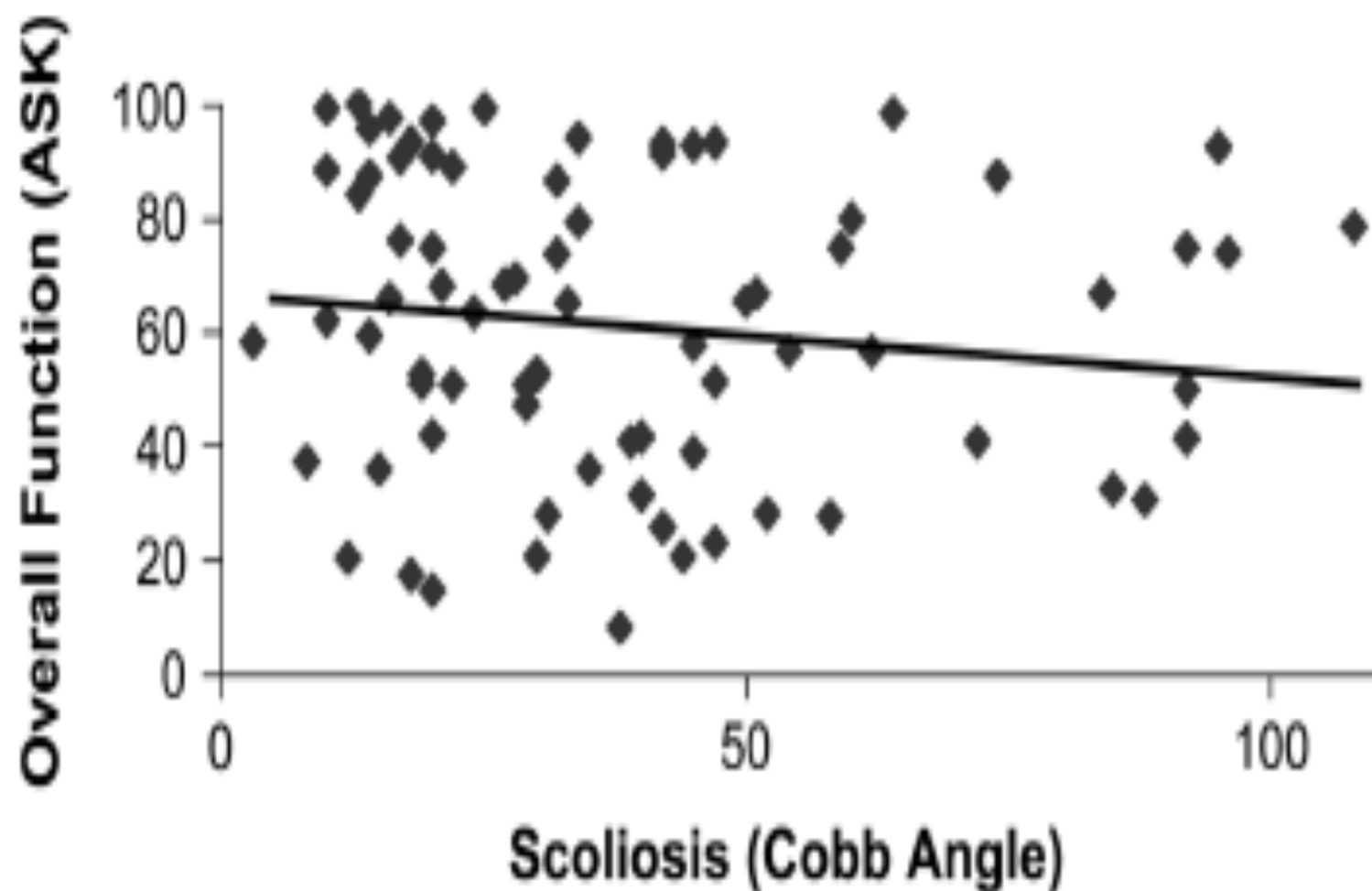
# Cross Sectional Studies

- Examine the relationship between structure and function
- Correlation leads to likely important relationships
- Lack of correlation argues strongly against causation



Unadjusted Pearsons Correlation Coefficient  $R = 0.49$ ,  $P = 0.0001$

**FIGURE 3.** Relationship of sitting balance with coronal imbalance.



Unadjusted Pearsons Correlation Coefficient  $R = 0.1$ ,  $P = 0.39$

**FIGURE 2.** Relationship of overall function (ASK) with scoliosis.

# Consensus

- Experts sit together and come to agreement
- Formal better than informal methods of consensus

# Conclusions

- Simple designs early in the understanding of disease likely to lead to important leaps in care
- Lots of room for innovation in EOS