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MUSCULOSKELETAL INNOVATIONS

Using technology to monitor the effect of educating patients about the value of mobility

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Low levels of post-surgery physical activity found in earlier study (Birch)

Importance of weight-bearing exercise for long-term bone health in a Sedentary Population

Opportunity for accurate measurement of Physical Activity using Wearable Devices

Objectives

1. Evaluate the Fitbit Flex as a tool for measuring Mobility in Spine Patients.
2. Test whether Patient Education and Daily Mobility Goals can change behavior after surgery.
3. Test whether increased mobility improves surgical outcomes.

Technology Assessment 1

Data Collection

- Reproducible Results
- Granularity – Steps in 5 min intervals
- Qualitative measures – high/medium/low intensity
- “Active Minutes” - 3 METs

Technology Assessment 2

Ease of Use

Sources:

- Heath e-Heart Study (from Flex to Charge)
- Neuro Spine Study (Patient compliance)
- Pew Research (17% of patients 65+)

Key Patient Issues:

- In person training
- Motivation to participate
- Smart Phone use
- Minimizing Setup requirements

Protocol Changes

Patient Recruitment by Phone

Consent after surgery

Fitbit training after surgery on the ward

Smart Phone / Tablet

Status Update

- First 12 Patients recruited by phone
- Age range 48 – 75 (Ave 64.8)
- 7 women, 5 men
- Most have a Smart Phone or Tablet
- All appear motivated to participate

Questions?

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PROPRIETARY INFORMATION