

Assessing Person-Centered Health Outcomes in Orthopaedic Surgery Patients

These recommendations are offered as a starting point for consideration. They are not necessarily the best choices for every application and do not substitute for a comprehensive literature review.

Key Domains to Consider in Orthopaedic Surgery

Orthopaedic surgery is often aimed at improving a patient's **physical functioning** (e.g., walking, dressing) and **pain** (e.g., intensity, degree of disruption in usual activities from pain). Consequently, these are two areas of self-reported health that are routinely recommended for assessment by orthopaedic surgery registries, professional organizations, insurance providers, and patients themselves. Other relevant person-centered outcomes are **sleep disturbance**, **ability to engage in usual social and recreational activities**, **emotional distress**, and **symptoms specific to the problematic area** (e.g., clicking or catching in the affected joint). A **global assessment of overall physical and mental health** is also important.

Suggested HealthMeasures for Primary Domains in Orthopaedic Surgery

Physical Function

The Patient-Reported Outcomes Measurement Information System® (PROMIS®) offers many useful self-report measures for this setting. We recommend assessing Physical Function (in pediatric patients, this is split into Upper Extremity Function and Mobility) for those having surgery on a lower extremity (e.g., trauma, total hip or knee arthroplasty), spine treatment, as well as upper extremity surgery (e.g., shoulder replacement). PROMIS Upper Extremity Function is a useful addition for patients who have concerns specific to the upper body (e.g., hand, wrist, shoulder, and elbow). Because of the potential to have patients with very low functioning and patients with high functioning in the same clinic or study, a computer adaptive test (CAT) is recommended. This allows for maximizing the precision of the score for the most possible patients while minimizing how many questions a patient has to answer. The NIH Toolbox for Assessment of Neurological and Behavioral Function® (NIH Toolbox®) provides measures administered by a trained proctor to evaluate motor function. The full battery takes about 30 minutes and assesses dexterity, muscle strength, balance, locomotion, and endurance.

Pain

PROMIS Pain Interference measures are well suited for patients receiving orthopaedic surgery because this enables the assessment of decrements in function due to pain. Separating the assessment of pain from function is useful as the two domains are not perfectly correlated with one another across patients and may warrant different interventions or referrals. Pain Interference assesses the consequences of pain on relevant aspects of a person's life including impact on social, cognitive, emotional, physical, and recreational activities as well as enjoyment in life. Tracking the degree to which pain is disruptive accommodates cases where pain cannot be completely eradicated. Pain Interference can improve through

Summary

- Measures of physical function and pain are relevant in evaluating orthopaedic surgery patients. Other areas of self-reported health may also be useful.
- HealthMeasures offers brief, psychometrically sound measures for these domains.
- Evaluating patients both pre- and post-intervention is most useful.

treatment targeting the source of pain, interventions aimed at modifying behaviors that trigger or exacerbate pain (e.g., training on techniques for getting in and out of a car), or interventions to manage the experience of pain (e.g., relaxation breathing). The PROMIS Pain Interference CAT or 6-item short form (6a) is recommended for adults. The PROMIS Pediatric Pain Interference CAT or 8-item short form (8a) is recommended for children ages 8-17.

Suggested HealthMeasures for Secondary Domains in Orthopaedic Surgery

Because of the impact of Orthopaedic Surgery on a patient's physical functioning, other health status domains can also be compromised. Thus, we recommend secondary domains that may be important to include in a comprehensive assessment of health outcomes.

Secondary HealthMeasures	Description
PROMIS Ability to Participate in Social Roles and Activities CAT or 8-item short form (adult only)	Perceived ability to perform one's usual social roles and activities (e.g., "I have to limit my regular family activities")
PROMIS Depression CAT or 8-item short form (adult and peds)	Negative mood, negative views of self, negative social cognition, decreased positive affect and engagement.
PROMIS Global Health Scale (adult and peds)	Global ratings of general health. For adults, 10 items produce physical health and mental health scores. For pediatrics, 9 items produce an overall health, fatigue, and pain interference scores.

Assessment Times

Ideally, a pre-surgery or pre-intervention assessment would be captured to serve as a reference point for monitoring response to treatment. The benefits of surgery are not typically seen immediately, so a follow-up assessment should be outside of the post-operative recovery period.

Additional Information

The www.HealthMeasures.net website includes more information about measurement selection, data collection tools, scoring, and interpretation. Its Search for Measures tool includes access to all HealthMeasures described here. A Forum on the site allows for questions and responses from the HealthMeasures community. The HealthMeasures team is also available for collaboration or consultation for clinical research, clinical practice, and information technology at help@healthmeasures.net.

Primary HealthMeasures for Orthopaedic Surgery Patients

- PROMIS Physical Function Computer Adaptive Test (CAT) **or** PROMIS Physical Function Short form 10a for adults.
- For pediatric patients, PROMIS Upper Extremity Function **or** Mobility CAT or their corresponding 8 item short forms.
- NIH Toolbox Motor Battery (ages 7+)
- PROMIS Pain Interference CAT (adult and ped) **or** PROMIS Pain Interference 6a short form (adult) **or** PROMIS Pediatric Pain Interference 8a short form (ped)
- PROMIS Upper Extremity CAT (adult) for patients with concerns isolated to the upper body.

Learn More!

You can read about CATs and watch a video tutorial at the HealthMeasures.net website [here!](#)