

Fig. E-1
Mean weekly patient-reported UCLA activity score in the first eight weeks after surgery in the QS and MPPA groups. The error bars indicate the standard deviation.

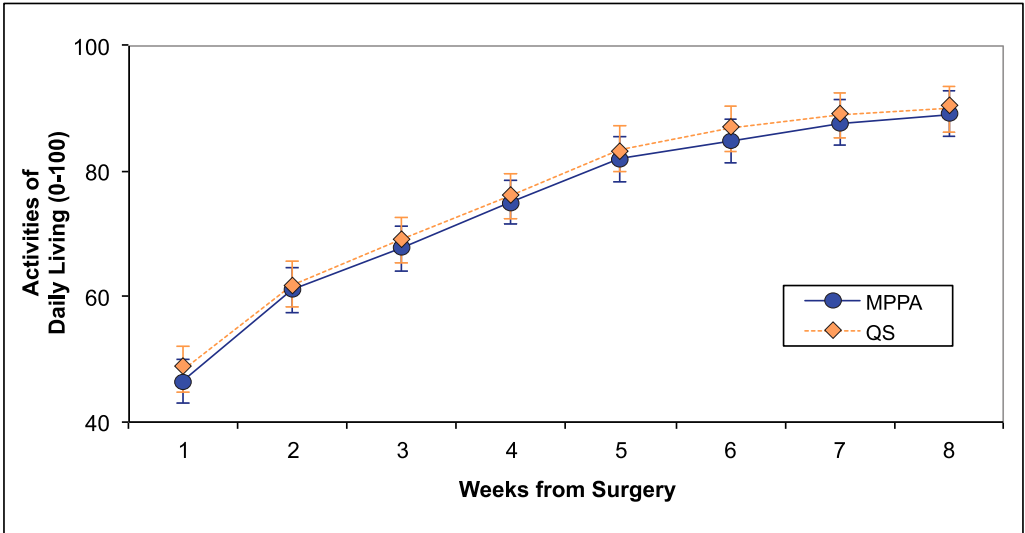


Fig. E-2
Mean scaled score indicating the ability to perform selected activities of daily living and activities of self-care after surgery in the QS and MPPA groups. The error bars indicate the standard deviation.

TABLE E-1 Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Diagnosis of knee osteoarthritis and failure of nonoperative treatment	Skeletal immaturity
ASA* class 1, 2, or 3	Valgus or varus deformity of $>10^\circ$ (as measured on a weight-bearing long-leg anteroposterior alignment radiograph)
Ability and willingness to actively participate in postoperative rehabilitation program	Active knee flexion $<95^\circ$
Ability to walk independently (with or without ambulatory devices)	Patient considering a bilateral procedure because of bilateral knee osteoarthritis
Age ≤ 85 yr	Bone or ligament deficiency requiring the use of augments or constrained implants
	Daily preoperative use of narcotic pain medication
	Prior ipsilateral knee arthroplasty

*ASA = American Society of Anesthesiologists.

TABLE E-2 Conversions of Opioids to Oral Morphine Equivalents*

	IV or IM to PO Morphine	PO to PO Morphine
Oxycodone	NA	Oxycodone $\times 1.5$
Codeine	Codeine $\times (1/13) \times 3$	Codeine $\times 0.15$
Hydromorphone	Hydromorphone $\times (10/1.5) \times 3$	Hydromorphone $\times 4$
Hydrocodone	NA	Hydrocodone $\times 1$
Meperidine	Meperidine $\times (2/15) \times 3$	Meperidine $\times 0.1$
Fentanyl	Fentanyl $\times 100 \times 3$	NA

*IV = intravenous, IM = intramuscular, PO = by mouth, and NA = not applicable.

TABLE E-3 Estimated Reliability of Outcomes*

Outcome	Weeks 1 to 4		Weeks 5 to 8		Weeks 1 to 8	
	ICC(3,1)	95% CI	ICC(3,1)	95% CI	ICC(3,1)	95% CI
IADS, home	0.679	0.608 to 0.746	0.874	0.838 to 0.904	0.639	0.574 to 0.704
IADS, outside	0.631	0.553 to 0.705	0.779	0.723 to 0.828	0.578	0.509 to 0.649
UCLA activity score	0.685	0.614 to 0.751	0.839	0.795 to 0.876	0.700	0.641 to 0.757
ADL score	0.774	0.717 to 0.824	0.864	0.827 to 0.896	0.730	0.675 to 0.783

*ICC(3,1) is the intraclass correlation coefficient according to the Shrout and Fleiss convention¹⁵; (3,1) indicates case 3, in which the time intervals are considered fixed effects, and 1 indicates that the estimate is of the reliability of the score for any given week. CI = confidence interval, and ADL = activities of daily living.

TABLE E-4 Daily Patient Self-Assessment of Dependence on Ambulatory Assistive Devices, Used to Calculate the IADS*

Dates:		_/_/_		_/_/_		_/_/_	
		Day 1		Day 2		Day 3	
Walking with assistance	Please check any you used at home:	<input type="checkbox"/> Wheelchair	<input type="checkbox"/> Crutches	<input type="checkbox"/> Wheelchair	<input type="checkbox"/> Crutches	<input type="checkbox"/> Wheelchair	<input type="checkbox"/> Crutches
		<input type="checkbox"/> Walker	<input type="checkbox"/> 1 Crutch	<input type="checkbox"/> Walker	<input type="checkbox"/> 1 Crutch	<input type="checkbox"/> Walker	<input type="checkbox"/> 1 Crutch
		<input type="checkbox"/> None	<input type="checkbox"/> 1 Cane	<input type="checkbox"/> None	<input type="checkbox"/> 1 Cane	<input type="checkbox"/> None	<input type="checkbox"/> 1 Cane
		<input type="checkbox"/> N/A	<input type="checkbox"/> 2 Canes	<input type="checkbox"/> N/A	<input type="checkbox"/> 2 Canes	<input type="checkbox"/> N/A	<input type="checkbox"/> 2 Canes
	Please check any you used outside the home:	<input type="checkbox"/> Wheelchair	<input type="checkbox"/> Crutches	<input type="checkbox"/> Wheelchair	<input type="checkbox"/> Crutches	<input type="checkbox"/> Wheelchair	<input type="checkbox"/> Crutches
		<input type="checkbox"/> Walker	<input type="checkbox"/> 1 Crutch	<input type="checkbox"/> Walker	<input type="checkbox"/> 1 Crutch	<input type="checkbox"/> Walker	<input type="checkbox"/> 1 Crutch
		<input type="checkbox"/> None	<input type="checkbox"/> 1 Cane	<input type="checkbox"/> None	<input type="checkbox"/> 1 Cane	<input type="checkbox"/> None	<input type="checkbox"/> 1 Cane
		<input type="checkbox"/> N/A	<input type="checkbox"/> 2 Canes	<input type="checkbox"/> N/A	<input type="checkbox"/> 2 Canes	<input type="checkbox"/> N/A	<input type="checkbox"/> 2 Canes

*N/A = not applicable.

TABLE E-5 Sample Calculation of the Weekly IADS from Patient Diary Data*

Assistive Devices	Scaling Value	Days/Week	Weighting	Contribution to Score
Not moving around (bed bound)	0	0	0	0
Wheelchair	0.5	0	0	0
Walker	1	7	0.58333	0.58333
2 crutches	2	0	0	0
2 canes	3	0	0	0
1 crutch	5	0	0	0
1 cane	8	0	0	0
No device	10	5	0.41667	4.16667
				Sum = 4.75

*In this example, the patient moved about with a walker at least once on all seven days of the week and also moved about unassisted at least once on five of the days; this information has been entered in the Days/Week column. In step 1 of the IADS calculation, the entries in the Weighting column are calculated: the sum of the values in the Days/Week column is divided by seven (or by the sum if the sum is less than seven), and the weighting for each patient entry is then determined by multiplying the entry by this factor. In the example shown, each patient entry in the Days/Week column is divided by $5 + 7 = 12$. In step 2, each contribution to the score is calculated by multiplying the entry in the Weighting column by the corresponding entry in the Scaling Value column. These contributions are then summed to yield the IADS.

TABLE E-6 The UCLA Leisure Activity Score*

Score	Response	Definition/Example
1	I am completely inactive	Dependent on others; cannot leave residence
2	I am mostly inactive	Very restricted to minimum activities of daily living
3	I sometimes participate in mild activities	Walking, limited housework, and limited shopping
4	I regularly participate in mild activities	Walking, limited housework, and limited shopping
5	I sometimes participate in moderate activities	Swimming, and unlimited housework or shopping
6	I regularly participate in moderate activities	Swimming, and unlimited housework or shopping
7	I regularly participate in active events	Bicycling
8	I regularly participate in very active events	Bowling or golf
9	I sometimes participate in impact sports	Jogging, tennis, skiing, acrobatics, ballet, heavy labor, or backpacking
10	I regularly participate in impact sports	Jogging, tennis, skiing, acrobatics, ballet, heavy labor, or backpacking

*As distributed to the study subjects in the patient diary, which specified that they should record their activity daily. A weekly score for each patient was derived by calculating the mean of the daily patient-reported scores.

TABLE E-7 Daily Patient Self-Assessment of Activities of Self-Care*

	Did Not Try	Tried but Could Not Do	Very Difficult	Somewhat Difficult	A Little Difficult	Not at All Difficult
Day 1	Bathe					
	Dress					
	Cook					
	Drive					
	Take stairs					
	Get into or out of bed					
	Get into or out of chair					

*The first of the seven days of the weekly patient diary is shown. The possible score ranged from 0 for “did not try” to 5 for “not at all difficult.”