

**Health-Related Quality of Life:
Comparison following
Fusion for Lumbar Degenerative Spondylolisthesis
with Hip & Knee Joint Replacement Surgery
& with Population norms**

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“Never let anyone touch your back”

- Certain surgical procedures are well regarded:
 - in the community
 - by health regulators
- Comparisons to other surgeries:
 - Rampersuad YR et al. *NASS 2007 Best Paper*
 - Polly DW et al. *Spine 2007*

Objectives

1. Measure the Quality of Life of patients (HRQL) :
 - common & specific spinal disorder,
 - specific decompression and fusion technique,
 - generic measurement instrument
2. Compare these HRQL measurements with:
 - hip or knee surgery
 - total joint arthroplasty,
 - population norms
 - published, age-matched.

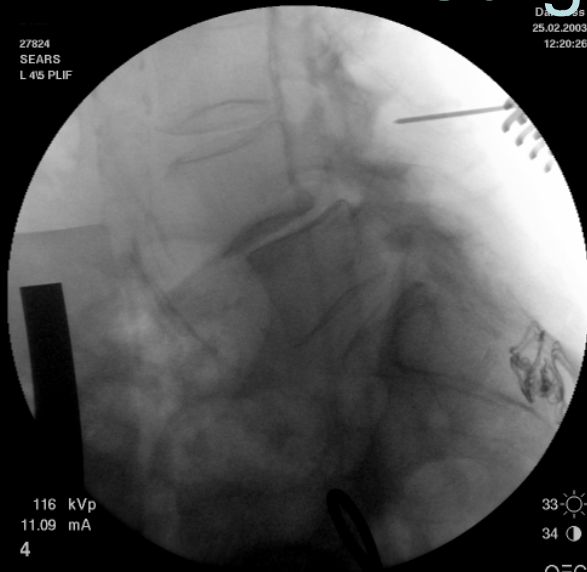
Methods

- Study design:
 - Prospective
 - Consecutive case series
 - 2 independent surgeons
 - Comparison with published literature (Hips, Knees, Norms)
- Inclusion Criteria:
 - Clinical:
 - neurogenic claudication
 - no previous surgery
 - failed conservative management
 - Radiological:
 - single level, lumbar spinal stenosis
 - ‘unstable’ degenerative spondylolisthesis

Female 56 yrs



Surgical Technique



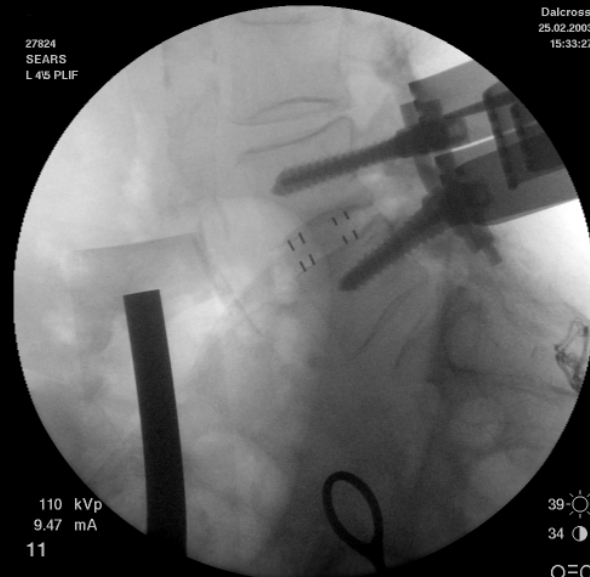
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Methods

- Data Collection:
 - Baseline demographics
 - SF-12
 - Physical Component Summary score (PCS-12)
 - Mental Component Summary score (MCS-12)
 - Follow-up:
 - 3, 6, 12, 24 months & last known (minimum - 12 months)

SF12

- Generic HRQoL measure
 - Physical (PCS-12) & Mental (MCS-12) components
 - Allows comparison of health status of different conditions
- A 5 point or greater score change is clinically important*

* Bozic KJ et al. *J Bone Joint Surg Am* 2003

Copay AG et al. *Spine J*, In press

Methods

- Data Collection:
 - SF-12
 - Physical Component Summary score (PCS-12)
 - Mental Component Summary score (MCS-12)
 - Follow-up:
 - 3, 6, 12, 24 months & last known (minimum - 12 months)
- Systematic literature review:
 - 1950 to March 2008
 - MeSH terms:
 - “Arthroplasty, Replacement, Hip” or “Arthroplasty, Replacement, Knee”
 - Keyword: “SF-12”.
 - Means and 95% CI’s
- Population Norms:
 - South Australian, *Avery et al, 2004*.
 - Age-matched (IQR)

Methods

- Data analysis:
 - Descriptive statistics: means and 95%CI's
 - Participant demographics
 - Pre-, post-operative & change PCS-12 and MCS-12 scores.
 - Wilcoxon signed-rank test:
 - Comparison of pre- and post-operative scores.
 - Group comparisons
 - Overlapping 95% CIs
 - T test (unequal numbers, unequal variance assumed)
 - XLSTAT version 7.5.3 software

Results

Baseline demographics

	Spine	Hip	Knee	Population norms
Studies		2	3	1
Number	98	276	791	455
Females (%)	73*	44	59	51
Age (mean, range)	67 (46-90)	62 (22-89)	69 (29-83)	55-74
Pre-op PCS-12 (mean, 95%CI)	28 (27-30)	30 (28-31)	30 (29-31)	44 (42-45)
Pre-op MCS-12 (mean, 95%CI)	48 (46-50)	47 (46-49)	53 (52-54)	54 (53-54)

* p<0.001 compared with all other groups

Results

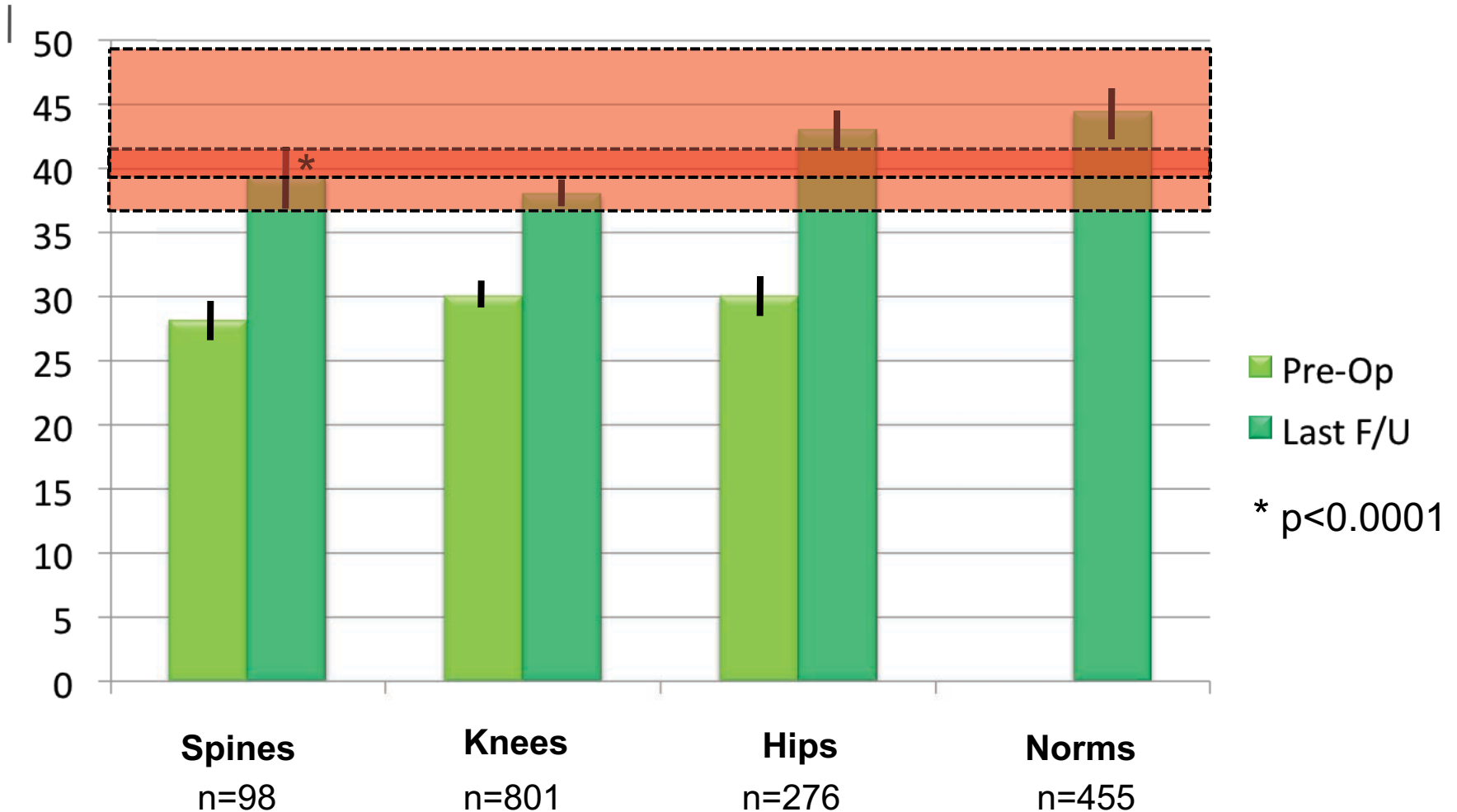
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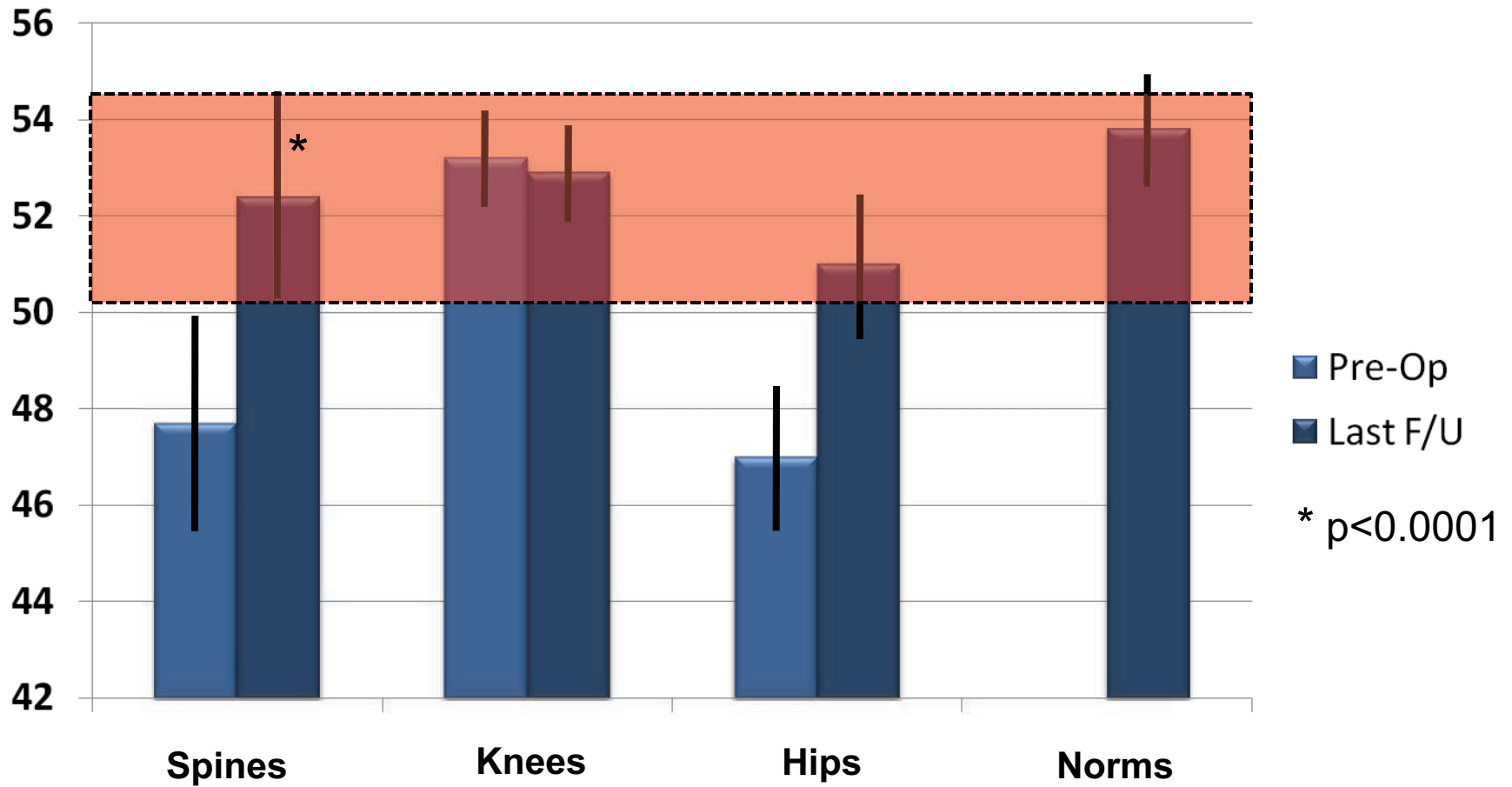
Results

PCS-12 (means \pm detectable difference)



Results

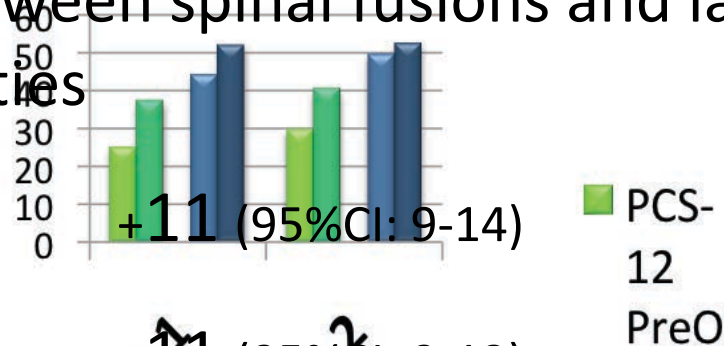
MCS – 12 (means, 95% CI)



Discussion

- PCS-12 change scores:
 - No difference between spine surgeons: +12 vs. +11
 - Similar between spinal fusions and large joint arthroplasties

- Spines:



- Hips:

- Knees:

Conclusion

- \uparrow Quality of Life *Spine* = \uparrow Quality of Life *Knee & Hips*
- \uparrow Quality of Life *Spine* \approx Quality of Life *Norms*

References:

– Spine surgery:

- Polly DW et al. SF-36 PCS Benefit-Cost Ratio of Lumbar Fusion Comparison to Other Surgical Interventions A Thought Experiment *Spine* 2007
- Rampersuad YR et al. Assessment of Health-Related Quality of Life following surgical treatment of focal symptomatic spinal stenosis compared to osteoarthritis of the hip or knee. *Spine J*, 2008

– THR:

- Ostendorf et al. *JBJS (Br)* 2004
- Danesh-Clough. *J Arthroplasty* 2007

– TKR:

- Hartley et al. *JBJS* 2002
- Muller et al. *JBJS (Br)* 2006
- Bourne et al. *Clin Orth* 2007

– Population norms:

- Avery et al. Quality of Life in South Australia measured by SF-12. *Population Research & Outcome Studies Unit, Dept Human Services, South Australia, 2004*