

1 **Poor Scientific Quality of Bido et al. article in the *Journal of Shoulder and Elbow Surgery***

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4 Generic health-related quality of life (HRQoL) measures are useful for comparing different
5 chronic conditions to one another.³ The PROMIS global health items are an example of a
6 generic measure that yields a “bottom-line” picture of health.⁴ Condition-targeted HRQoL
7 measures assess aspects of HRQoL that are relevant to people with the condition, and have the
8 potential to be more sensitive to differences than generic measures. For example, a study of men
9 treated for localized prostate cancer showed no differences in the generic SF-36 measure by
10 treatment (surgery, radiation, watchful waiting) but prostate-targeted measures of sexual, urinary
11 and bowel function and distress were worse in the radiation and surgery groups.⁶

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13 Bido et al.¹ concluded that the PROMIS Global-10 performed poorly in patients undergoing total
14 shoulder arthroplasty for glenohumeral arthritis compared to legacy measures: The Standardized
15 Shoulder Assessment Form (ASES), Single Assessment Numeric Evaluation (SANE), and the
16 Shoulder Activity Scale (SAS). Bido et al. did not distinguish between changes expected on
17 different types of HRQoL measures. The content of the ASES, SANE and SAS items is slanted
18 toward activities affected by shoulder arthritis. A surgery designed to improve shoulder function
19 should improve performance of these activities. These improvements may result in more
20 positive perceptions of global health. Wilson and Cleary⁷ suggested more than 25 years ago
21 directional effects from biological and physiological variables to symptoms, functional status,
22 general health perceptions and overall quality of life. The change in the PROMIS global
23 physical health scale was statistically significant and clinically important (3 T-score points).

24 Because the intervention targeted physical functioning, it is not surprising that the PROMIS
25 global mental health scale change was trivial and not quite statistically significant from baseline
26 to follow-up.

27

28 Spearman correlations of the PROMIS global health scale and the condition-targeted legacy
29 measures ranged from 0.31 to 0.5 at the postoperative assessment. Bido et al. used ad-hoc rules
30 of thumb to classify 2 of these 3 correlations as poor, but the article cited to justify this has no
31 relevant information. In contrast, translating the 0.20, 0.50, and 0.80 effect size (d) rules of
32 thumb adopted by the authors to evaluate responsiveness into correlations ($r = d / \sqrt{(d*d) +$
33 $4)$ suggests $r = 0.100$ as small, 0.243 as medium, and 0.371 as large.

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35 The authors suggest that the PROMIS global health measure is equivalent to the SF-36 and SF-
36 12, but it is more like the Medical Outcomes Study general health perceptions scale. The
37 PROMIS-29 v2.1 instrument^{2,5} is more like the SF-36. Finally, Table 2 shows the PROMIS
38 global health T-score as ranging from 0-100 but these scores do not have a 0-100 possible range.

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References

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