The Visual Analogue Scale as an Outcome Assessment Tool

Outcome assessments (OA) are tools that evaluate patient status and progress. They have been used for years in research and in private settings. OAs have become much more widely used in recent years as doctors are challenged by their peers, and carriers to support their management recommendations and opinions regarding function and outcome.

A review of the literature identifies over 28 different scoring systems just for lower back pain. The AMA Guides now recommends the use of OAs when performing permanent impairment evaluations. Despite the large number of OA tools available, no particular OA tool has consistently been proven to be more valid, reliable or clinically sensitive than any other. In other words, while all OA tools have gone through validity testing none are necessarily better than others, despite claims made by the researchers themselves or by parties with interests of their own.

Probably the oldest and most well known OA tool is the visual analogue scale (VAS). The visual analogue scale is a line, usually 10 cm long, with each end-point clearly marked and described. Patients are asked to pick a number on the line that represents their pain level or intensity. This numeric value provides a quantitative variable that can be inserted into standard statistical tests for research or used clinically as a data point for follow-up assessments.

Many attorneys have questioned the simplicity of the tool and the value in their client’s documentation. You should know that the VAS is an accepted OA tool that has been repeatedly validated in the research. In fact, many other OA tools are validated against the VAS as a standard. It is a statistically reproducible method for scoring patient outcomes, particularly when used serially throughout a patient’s care to show improvement or lack thereof.

Other OAs have recently been suggested as being the gold standard. These include the DASH for upper extremity evaluations, Roland-Morris for back pain, Neck Pain Disability Index for neck pain, Oswestry for function, SCL-90R, etc. However, few of these have been validated for gender, ethnic, language or cultural bias. In some of the populations we attend to these are very real considerations. As an example, under-educated populations or people with language barriers are unable to consistently complete complex and sophisticated OA questionnaires which can be many pages long and confusing. For these populations, a simple VAS diagram is sufficient to determine pain intensity and demonstrate a trend towards improvement or stationary status. When needed, more sophisticated OAs can be utilized to define other more specific functional limitations but as a guide to treatment efficacy the VAS tool is more than sufficient.

Below and attached is a sample of the VAS that we use in our practices. We have added a color scale and bilingual verbiage to add a multimodal experience for our patients and to improve its accuracy. In the end, it is the doctors experience with the patient over many encounters and time that ultimately defines the efficacy of treatment and the outcome of the patient. Until one OA demonstrates significant superiority over all others you should be comfortable knowing that the VAS scale can accomplish the same clinical and documentation benefit as almost any other OA tool. Your feedback and comments about our newsletters are always welcome and appreciated. Dr.Shaw@ShawChiropractic.com
List of Common Outcome Assessment Tools

ABC (Activities-specific Balance Confidence Scale)
ASES (American Shoulder and Elbow Surgeons Score)
Back illness pain and disability nine-item scale
Back pain functional scale
Back pain interference scale
Bournemouth questionnaire
Canadian Occupational Performance Model – (COPM)
Chronic Pain Scale
Clinical back pain questionnaire
Croft Disability Questionnaire
Dallas pain questionnaire
DASH (Disabilities of arm, shoulder & hand) Score
Disability rating index
Distress and Risk Assessment Method (DRAM)
FABQ (Fear Avoidance Beliefs Questionnaire)
Fear-Avoidance Beliefs Questionnaire
Fugl-Meyer Assessment
Functional outcomes questionnaire for spinal disorders
Functional rating index
General function score
Goal Attainment Scale
Human Activity Profile
Jan van Breemen functional scale
Knee Injury and Osteoarthritis Outcome Score (KOOS)
LEFS (Lower Extremity Functional Scale)
Low back outcome score
Low back pain rating scale
Lower Extremity Functional Scale
Lysholm Score
McGill Pain Questionnaire
Million visual analogue scale
Modified Work Apgar
NASS lumbar spine outcome assessment instrument
NDI (Neck Disability Index)
Neck Disability Index
NPRS (Numeric Pain Rating Scale)
Numeric Rating Scale
Occupational role questionnaire
Orebro Musculoskeletal Pain Questionnaire (OMPQ)
Oswestry disability index
Outcome measure in lumbar spinal stenosis
Outcome Rating Scale
Pain Beliefs & Perceptions Inventory
Pain Catastrophising Scale (PCS)
Pain Disability Questionnaire
Pain response to activity and position questionnaire
Pain Self-Efficacy Questionnaire (PSEQ)
Patient-specific functional scale
Patient-Specific Functional Scale
Penn Shoulder Score
Physical impairment scale
PI-NRS (Pain Intensity Numerical Rating Scale)
POMA (Performance Oriented Mobility Assessment)
Quadruple Visual Analog Scale
Quebec Back Pain Disability Scale
Quebec Back Pain Disability Scale
Quick DASH
Resumption of activities of daily living scale
Roland–Morris disability questionnaire
Short Form 36 Bodily Pain Scale (SF-36 BPS)
Short Form McGill Pain Questionnaire
Shoulder Pain and Disability Index
SPADI (Shoulder Pain and Disability Index)
Spinal pain independence measure
SPPB (Short Physical Performance Battery)
Symptom Check List 90R
Upper Extremity Functional Index
Vernon & Mior Cervical Spine Score
Waddell disability index
West Haven-Yale Multidimensional Pain Inventory
Whiplash Disability Questionnaire
WOMAC (Western Ontario and McMaster Universities Osteoarthritis Index)