



Pain: Measuring Intensity

Pain intensity (or intensity of other symptoms) is commonly used as an outcome measure to track the course of a patient's condition while under treatment. A variety of tools can be used: an oral pain scale (OPS),* a faces pain scale (FPS)/Wong Baker Scale Faces (WBS), or a visual analogue scale (VAS) which is sometimes added to questionnaires like the Oswestry. In addition a variety of pain parameters can be measured.

Pain Parameters

- Current pain
- Usual/average pain
- Peak/worst pain
- Least pain
- Triple pain scale (3 of the above)
- Pain related activity scale
- Number of peak pain events
- Unpleasantness

The visual analogue scale is a 10 cm line with no numbers. The patient places a mark somewhere between the two anchor terms. The intensity is measured with a ruler.

No pain

Worst pain imaginable

When using the OPS method, the patient is asked to rate his/her pain on a scale of 0 to 10, where 0 represents no pain and 10 is the worst imaginable. A scale of 0-10 can also be used to rate the intensity of other symptoms as well, such as nausea, stiffness or dizziness.

The OPS is also appropriate for children (8-17 years) in acute pain, has good test retest reliability and compares well with a VAS. (Bailey 2010)

* Other abbreviations in the literature include numeric rating scale (NRS) and numerical pain rating scale (NPRS).

As these measures are repeated, it is important not to change the anchor terms (e.g., sometimes indicating that 10 represents the *worst pain imaginable*, which is the preferred wording, and other times inadvertently indicating that 10 represents the *worst pain that the patient has ever had*). It is also important to note that pain values can only be compared when using the same measuring method, that is, OPS and OPS or VAS and VAS.

Patients are asked to assess current pain (at the time of the visit) or usual pain, which pertains to their pain in general between visits. **Note:** In chronic pain cases, there is evidence to suggest that “usual” rather than “current” pain is more strongly associated with the actual pain levels the patient is generally experiencing. (Jensen 1999, Bolton 1998, Scrimshaw 2001).

Triple Pain Scale

In chronic cases or cases which may have a more prolonged treatment time, an option is to use a triple pain scale.

A triple pain scale is based on asking three separate questions:

- 1) how the patient is feeling at the time of the current office visit,
- 2) the usual/average pain since the last visit (or at time of intake, since the condition first began), and
- 3) the peak/worst pain since the last visit (or at time of intake, since the condition first began).

All three numbers can be recorded in the chart. For worst pain, a minimal clinically important difference (MCID) of 3 is suggested. (Farrar 2009)

Note: Instructions for “usual” pain should be as simple as possible; complex questions such as “change of lifestyle caused by pain” appear to carry a higher failure rate. There is some evidence that “current” pain may routinely be reported as less intense than “usual” pain as an artifact of memory. Slight improvements should be interpreted with caution and may not reflect therapeutic benefit.

In the case of chronic pain, one option is to record the “least pain” experienced instead of the peak pain. Patients may be able to recall “least pain” more accurately than “usual pain” or “worst pain.” For least pain, an MCID of 2 is suggested.

Minimal Clinically Important Difference (MCID)

When using the OPS to measure pain in children an MCID of 1 has been reported. (Bailey 2010)

For musculoskeletal pain in general, an MCID between 2-3 is commonly recommended.

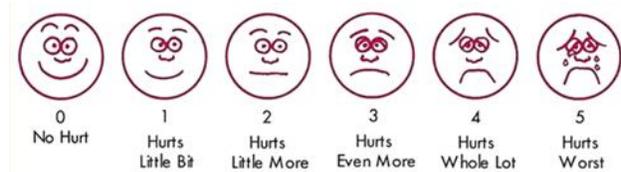
It has been suggested that for patients with low back pain who have a baseline score of 5 or more, a change of at least 2 points is necessary to denote a minimal clinically important difference (MCID). When the baseline score is below 5, a change would need to be 1 point or more.

Condition & circumstances	MCID
Children (8–17 years)	1
LBP (baseline score ≤ 5)	1
LBP (baseline score ≥ 5)	2
“Least pain”	2
“Worst pain”	3
Musculoskeletal care in general	2–3

Faces Pain Scale (FPS)

A visual pain scale with faces can also be used. A number of versions are available (ranging from 3-10 faces). The Faces Pain Scale (FPS) scored 0-6, Faces Pain Scale-Revised (FPS-R) scored 1-10, the Oucher pain scale scored 0-10 and the Wong-Baker Faces Pain Scale (WBS) usually scored 0-5) have been the most studied. (Tomlinson 2010),

Below is the Wong-Baker Scale (WBS).



The International Association for the Study of Pain (IASP) suggests standardizing the questions as follows (say whichever word “Hurt” or “Pain,” seems more appropriate):

“These faces show how much something can hurt. This face [point to left-most face] shows no pain. The faces show more and more pain [point to each from left to right] up to this one. [point to right-most face] It shows very much pain. Point to the face that shows how much you hurt [right now].”

Although in general there does not appear to be sufficient evidence to switch from one scale to another (Tomlinson 2010), Quinn (2014) suggests that in the case of children the inclusion of a smiling face may result in the overestimation of pain. The IASP, therefore, suggests the following scale.¹



¹ No permission is required for clinical, educational, or research use of the FPS-R, provided that it is not modified or altered in any way. International Association for the Study of Pain (IASP)

The provider scores the chosen face 0, 2, 4, 6, 8, or 10, counting left to right, so "0" equals "No pain" and "10" equals "Very much pain." Do not use words like "happy" and "sad."

The faces pain scale was initially designed for use in children and then extended to the cognitive and communication impaired and the very old. (Dogan 2012). However, there is evidence that it may also be appropriate for post-stroke assessment in adults (Chuang 2014), postoperative adults having undergone orthopedic surgery (Van Giang 2015) and shoulder pain (Dogan 2012). Ferreira-Valente (2011) provided additional evidence for the validity of the FPS in adults, supporting its use in both clinical and research settings.

Measuring Unpleasantness

Occasionally, the degree of "unpleasantness" of the patient's complaint may be measured in addition to, or instead of, pain intensity.

The unpleasantness of pain represents a different dimension of the pain experience. Although the intensity of pain may remain unchanged, the patient's pain tolerance may improve. This is captured by the "unpleasantness" question. An analogy may be the difference between a measure of the volume of music and the measure of the degree that one finds it unpleasant. Even when the volume remains the same, a variety of circumstances can influence one's reaction to it (e.g., the selection of music, one's mood, state of fatigue). Pain unpleasantness may be a good choice for patients with chronic, debilitating pain. The

unpleasantness rating may improve before the pain intensity rating does.

Additional Options

- **Pain-related activity scale (PRAS).** In musculoskeletal cases, another option is to ask the patient to also rate his/her pain when engaged in activity (or even a *particular* activity which is known to exacerbate the symptoms).

Patients may still be able to perform all of their normal activities, but only "*under duress*." In those cases, one can have them grade the pain-related activity on a 0-10 scale. This is not to be confused with the Patient Specific Functional Scale (PSFS) which measures the ability to perform activities, not the pain experienced.

- **Frequency of peak pain.** Patients with chronic pain will often have episodes of exacerbation. Record the *number of instances* of peak pain. For example, a patient may report that their low back pain reaches a level of 6/10 (OPS) *5 times a week*. Changes in the frequency in these episodes represent another method of monitoring progress.

Charting

The results are recorded in the patient history on the first visit and in the Progress Notes thereafter (under "S" in a SOAP format). For example, the entry would be recorded as pain intensity "2/5 (WBS)," "5/10 (OPS)" or "5/10 (VAS)." ** In some electronic systems they can also be entered in a flow sheet to enable convenient tracking over time (e.g., in a Vitals section).

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