

# Standardized Evaluation of Pain (StEP) **Neuropathic Pain**

Patient's name: .....

Patient ID .....

Date of birth: \_\_\_\_ / \_\_\_\_ / .....

Examiner's name: .....

Date of the examination: \_\_\_\_ / \_\_\_\_ / .....

## **Introduction** (please read to the patient)

To get a better understanding of what causes your pain, we would like to ask you a few questions. For example, we would like to know where your pain is located and how long it lasts. Please answer these questions by describing the pain that you have felt **during the last 24 hours**.

We will also perform a small number of tests. For example, we will test your response to touch or warm and cold temperatures. If these tests produce a painful sensation, we will ask you to describe the intensity of this pain using a scale from 0 (zero) to 10 (ten). An intensity of 0 means no pain; an intensity of 10 means pain as bad as you can imagine. Please rate your pain by indicating the number that best describes your pain.

INTERVIEW

1. **Location**

- 1.1 Is your pain superficial, e.g. located in the skin? Yes  No   
 1.2 Is your pain deep, e.g. in muscles, bones or internal organs? Yes  No

2. **Temporal characteristics**

- 2.1 Does your pain come and go in episodes that last for minutes or hours, with a pain-free period between these episodes? Yes  No   
 2.2 What is the intensity of your pain during these episodes? NRS   
Enter 0 (zero) if the pain does not manifest in episodes.  
 Yes  No   
 2.3 Do you feel pain all the time?  
 2.4 What is the intensity of this ongoing pain? NRS   
Enter 0 (zero) if there is no ongoing pain.

3. **Quality**

Which of the following words would you choose to describe your pain?

- |  |  |  |
|--|--|--|
| 3.1 <input type="checkbox"/> Burning   | 3.6 <input type="checkbox"/> Stabbing                  | 3.11 <input type="checkbox"/> Cold                   |
| 3.2 <input type="checkbox"/> Cramping  | 3.7 <input type="checkbox"/> Shooting                  | 3.12 <input type="checkbox"/> Stinging               |
| 3.3 <input type="checkbox"/> Throbbing | 3.8 <input type="checkbox"/> Squeezing                 | 3.13 <input type="checkbox"/> Like an electric shock |
| 3.4 <input type="checkbox"/> Sharp     | 3.9 <input type="checkbox"/> Dull                      | 3.14 <input type="checkbox"/> Tender                 |
| 3.5 <input type="checkbox"/> Pulling   | 3.10 <input type="checkbox"/> Painful pins and needles | 3.15 <input type="checkbox"/> Spreading              |

4. **Pain evoked by activity or body position**

- 4.1 Is your pain caused by activity, e.g. when you are moving an arm or a leg, turning or bending your back, when you are walking, coughing or chewing? Yes  No   
 4.2 Is your pain caused by a particular position of your body, e.g. when you are sitting or lying flat? Yes  No

5. **Nonpainful sensations**

Do you suffer from unpleasant **nonpainful** sensations that are ...

- 5.1 Tingling, like pins and needles? Yes  No   
 5.2 Itching? Yes  No   
 5.3 Warm or cold? Yes  No

6. **Current pain**

- 6.1 Are you in pain right now? Yes  No   
 6.2 What is the intensity of your pain now? NRS   
Enter 0 (zero) if the patient is free of pain.

PHYSICAL EXAMINATION

7. **Skin**

- 7.1 Swelling Yes  No   
 Skin color change:  
 7.2 Reddening Yes  No   
 7.3 Bluish skin color Yes  No   
 7.4 Abnormal paleness Yes  No   
 7.5 Abnormally dry skin Yes  No   
 7.6 Excessive sweating Yes  No   
 7.7 Trophic changes of the skin, hair or nails; or muscular atrophy that is not explained by denervation Yes  No

8. **Touch**

- 8.1 Decreased response to stimulation with the low-strength von Frey filament Yes  No   
 8.2 Pain evoked by stimulation with the low-strength von Frey filament Yes  No   
 8.3 What is the intensity of pain evoked by the stimulation with the low-strength von Frey filament? NRS

Here and in the following tests enter 0 (zero) if pain is not evoked.

- 8.1 Decreased response to stimulation with the high-strength von Frey filament Yes  No   
 8.2 Pain evoked by stimulation with the high-strength von Frey filament Yes  No   
 8.3 What is the intensity of pain evoked by the stimulation with the high-strength von Frey filament? NRS

9. **Blunt pressure**

- 9.1 Decreased response to blunt pressure Yes  No   
 9.2 Pressure-evoked pain Yes  No   
 9.3 What is the intensity of the pressure-evoked pain? NRS

10. **Brush movement**

- 10.1 Decreased response to brush movement Yes  No   
 10.2 Brush movement-evoked pain Yes  No   
 10.3 What is the intensity of the brush movement-evoked pain? NRS

11. **Vibration**

- 11.1 Decreased response to vibration Yes  No

12. **Pinprick**

- 12.1 Decreased response to pinprick Yes  No   
 12.2 Excess pinprick-evoked pain Yes  No   
 12.3 What is the intensity of the pinprick-evoked pain? NRS

13. **Warm temperature**

- 13.1 Decreased response to warm temperature Yes  No   
 13.2 Warm-evoked pain Yes  No   
 13.3 What is the intensity of the warm-evoked pain? NRS

14. **Cold temperature**

- 14.1 Decreased response to cold temperature Yes  No   
 14.2 Cold-evoked pain Yes  No   
 14.3 What is the intensity of the cold-evoked pain? NRS

15. **Temporal summation**

- 15.1 An initially nonpainful response turns into pain during repeated stimulation Yes  No   
 15.2 An initial painful response increases in intensity during repeated stimulation Yes  No

16. **Straight-leg-raising test**

Should only be performed in patients with back pain or pain in the lower extremities.

- 16.1 Radicular pain produced by the straight-leg raising test Yes  No

# Standardized Evaluation of Pain (StEP) **Neuropathic Pain**

## Instructions to examiners

### General instructions

Use the standardized questions for the interview and follow the instructions given below for the physical examination. Examine the patient in a relaxed supine position on a firm, level couch. Perform each physical test in the painful area but demonstrate the procedure first in a neighboring or contralateral reference area free of pain.

### Equipment

Two von Frey filaments, strength 2 g and 26 g

Pencil with a smooth-edged, nonmetal end

Make-up powder brush, width 1 cm

Standard tuning fork (128 Hz)

Safety pin

Two brass bars, diameter 10-15 mm

These brass bars will be needed for cold and warm stimulation. Keep the bars in two thermos vacuum flasks filled with water of **20°C** (68°F) and **40°C** (104°F) temperature, respectively. Check the water temperature before each test. Wipe the bars before use.

Alternatively, you can use a cylindrical Peltier thermode with a circular flat tip (diameter 10-15 mm) and set the temperature of the thermode to 20°C (68°F) for cold and 40°C (104°F) for warm stimulation.

### Introduction

Read the introduction to the patient to explain the purpose and the structure of the pain assessment.

### Interview and physical examination

#### INTERVIEW

1. **Location**

If the patient describes a pain that is both superficial and deep, mark "Yes" for each location.

2. **Temporal characteristics**

The essential distinction here is between intermittent pain episodes that are separated by intervals free of pain as opposed to ongoing pain during the last 24 hours. The duration of pain attacks may vary, e.g. from 1 or 2 minutes, as in *tics douloureux* in a patient with trigeminal neuralgia, up to several hours.

3. **Quality**

Descriptions of more than one pain quality are allowed.

4. **Pain evoked by activity or body position**

Distinguish between pain that is ...

4.1 provoked by active movement.

4.2 elicited by passive maintenance of a particular body position.

5. **Nonpainful sensations**

It is important to differentiate unpleasant nonpainful sensations (dysesthesiae) from pain, although patients may describe these sensations by using similar words, e.g. pins and needles.

6. **Current pain**

This is an assessment of the patient's current pain prior to the physical examination.

#### PHYSICAL EXAMINATION

7. **Skin**

7.7 Trophic changes include abnormally thin or thick skin, hair loss or abnormal hair growth, thick or brittle nails, and muscular atrophy that is not explained by denervation.

8. **Touch**

Use two von Frey filaments, of 2 g and 26 g strength, and apply each filament 4 times.

- 8.1 Consider the sense of touch intact (no decrease), when 3 out of 4 stimulations with a filament produce a normal response.
- 8.2 Record touch-evoked pain, when 3 out of 4 stimulations with a filament provoke pain.

9. **Blunt pressure**

Press the blunt eraser end of a pencil (diameter 5-8 mm) onto the skin so as just to indent the skin. Hold the pencil in this position for 10 seconds. The end of the pencil must not be made of metal to avoid the sensation of cold.

10. **Brush movement**

Move a make-up powder brush (width 1 cm) 3 times lightly over the skin, at 3-5 cm per second in a constant direction.

- 10.1 Record a decreased response to brush movement, when it is reproduced in 2 of the 3 movements.
- 10.2 Record brush movement-evoked pain, when pain is elicited by 2 out of the 3 movements.

11. **Vibration**

Place a standard tuning fork (128 Hz) **with** and **without** vibration on a prominent bone in the body area affected by the pain.

- 11.1 Response to vibration is decreased when the patient cannot differentiate between a vibrating and a nonvibrating tuning fork.

12. **Pinprick**

Use a medium-size safety pin and indent the skin with enough pressure to elicit a painful response on normal skin without leaving a mark.

- 12.1 The response to pinprick is decreased, when the patient describes only touch without a pricking sensation or no sensation at all in 3 out of 4 stimulations.
- 12.2 Record the intensity of the pain if it exceeds the intensity of the normal painful response to pinprick in the reference area in 3 out of 4 stimulations.

13. **Warm temperature**

Apply a warm stimulus by holding a brass bar or a thermode (diameter 10-15 mm) of 40°C (104°F) temperature onto the skin for 10 seconds. Do not apply pressure.

14. **Cold temperature**

Hold a brass bar or a thermode (diameter 10-15 mm) of 20°C temperature onto the skin for 10 seconds. Do not use pressure.

15. **Temporal summation**

Apply the stronger von Frey filament (26 g) repetitively on the skin at a rate of 1-2 times per second for 30 seconds.

Two positive outcomes are possible:

- 15.1 Although the first stimulus does not produce pain, pain occurs during repeated stimulation.
- 15.2 A painful response evoked by the first stimulus **increases in intensity** during repeated stimulation. Record a negative test result if the pain intensity does not increase beyond the intensity of the initial painful response.

16. **Straight-leg-raising test**

This test should only be performed in patients with back pain or pain in the lower extremities.

- 16.1 Raise the affected leg extended at the knee to a 90° angle unless elevation is limited by pain. Repeat the test, this time elevating the affected leg flexed at the knee. Reproduce the symptoms by raising the affected leg once again extended at the knee.

Consider only pain in a radicular distribution as a positive result, i.e. pain projecting into a leg dermatome (above or below the knee) when the leg is elevated extended at the knee. Pain caused by a radiculopathy usually decreases or is absent when the affected leg is raised with the knee flexed.