

Aug 04, 2025

The Nociceptive Withdrawal Reflex

DOI

<https://dx.doi.org/10.17504/protocols.io.j8nlkrxb1v5r/v1>

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PRECISION Human Pain ...



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Protocol Citation: Oumie Thorell, Dorota Persson 2025. The Nociceptive Withdrawal Reflex. **protocols.io**
<https://dx.doi.org/10.17504/protocols.io.j8nlkrxb1v5r/v1>

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Protocol status: Working

We use this protocol and it's working

Created: June 03, 2025

Last Modified: August 04, 2025

Protocol Integer ID: 219473

Keywords: Nociceptive withdrawal reflex, nociceptive withdrawal reflex clinical protocol, nociceptive withdrawal reflex threshold, nociceptive withdrawal reflex, clinical technique

Abstract

Clinical protocol to evoke the nociceptive withdrawal reflex. This protocol describes how to define nociceptive withdrawal reflex thresholds, following the clinical technique and guidelines from Linköping University Hospital.

Attachments



ClinicalNociceptiveW...

62KB

Materials

EDX Base Unit, Natus Neurology Incorporated, Middletown, USA.

Natus Elite - Synergy. Version 22.4.1.123. 2020. Natus Medical Incorporated. Middletown, USA.

Neruoline Ground electrode. Ambu Sdn. Bhd. Penang, Malaysia

Neurology surface electrodes. AMBU neuroline 700, AMBU sdn. Bhd. Penang, Malaysia

Disc electrode, GVB-gelIMED, Germany.

Safety warnings

 This protocol describes the use of electrical current applied to the skin of individuals. Approved equipment intended for electrical use on humans should be used in this protocol. The equipment should be handled by trained personnel only to ensure the safety of the individuals who are exposed to the electrical currents.

Ethics statement

The original ethics application with file number 2024-01267-01 was approved on 03/04/2024 by the Swedish Ethical Review Authority. The application for amendment was received by the Ethics Review Authority on July 8, 2024, and became valid on July 11, 2024.

The Nociceptive Withdrawal Reflex

- 1 Start Natus Elite - Synergy EMG software program.
- 2 Choose the "NWR" protocol. Choose side (right foot).
- 3 Subject should be placed in a comfortable seated position, with the legs hanging freely and feet above the ground. Place the ground electrode on the ankle.
- 4 Place the anode and cathode on the tibial anterior muscle, separated by 3cm.
- 5 Place the stimulating electrode under the foot sole, at the medial plantar dermatome, just under the head of metatarsal I.
- 6 To electrically stimulate, press the "Switch" button.
- 7 Start at a low stimulus intensity of 2mA and slowly increase in 3mA increments until a nociceptive withdrawal reflex can be visualized. Wait randomly for at least 10s in-between stimuli to evoke a surprising effect.
- 8 Repeat the stimulus at reflex intensity 3 times.
- 9 The stimulus intensity at which a reflex can be successfully evoked 3 times, is taken as the Nociceptive withdrawal reflex threshold.
- 10 Mark latency onset.