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**Pain during botulinum toxin injections in spastic adults: Influence of patients’ clinical characteristics**  
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**Keywords:** Spasticity; Pain; Botulinum toxin; Sensory disorders; Muscles

**Background:** To specify the influence of clinical characteristics of patients on the pain intensity during botulinum toxin injections in spasticity treatment.

**Methods:** Observational study on 46 patients (19M/27W, 60.5 ± 16 years) evaluated without analgesia during botulinum toxin type A injections, 6.5 years after stroke. Pain was evaluated by numeric verbal scale (0–10) after needle insertion, electric stimulation, toxin injection and needle withdrawal. The needle type was accounted for. Data is presented in median values [25 and 75th percentiles].

**Results:** The most painful time was during stimulation (4 [2.6–5.3]; P < 0.001) followed by needle insertion (3.1 [1.3–4.1]; P < 0.01). The pain resulting from toxin injection was not negligible (1 [0.12–2.3]; P < 0.01), superior to the pain resulting from needle withdrawal (0 [0–0.3]; P < 0.05). The form of toxin used, the number of injections and the injected volume per muscle had no influence on the pain. The intensity of pain resulting from needle insertion and stimulation was influenced by the length and the diameter of needles.

**Conclusions:** The stimulation for muscle identification can be very painful. The needle choice influences the pain intensity. This data advocates for procedure adaptation in order to reduce pain.

http://dx.doi.org/10.1016/j.rehab.2014.03.182

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**Influence of botulinum toxin in injection in gait velocity of patients with lower limb spasticity**  
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**Keywords:** Botulinum toxin; Stroke; Gait; Spasticity

**Background:** To evaluate through pedobarogramm, the influence of botulinum toxin type A in gait velocity of post-stroke patients with lower limb spasticity.

**Methods:** Seven post-stroke patients with hemiplegia and lower limb spasticity were studied. The measurements included: time for the patient to cover 10m distance; percentage of load in the rear part of the hemiplegic foot during stance and gait; change in the length of gait after botulinum toxin injection. The measurements took place before the injection and two weeks and one month after.

**Results:** Gait velocity, magnitude of stride and the load in the rear part of the foot were improved significantly after the injection of botulinum toxin.

http://dx.doi.org/10.1016/j.rehab.2014.03.186