

CLINICALLY PROVEN RESULTS: THE PEDro¹

- > 30/45 of the randomized controlled trials (RCTs)² on rESWT listed in the PEDro database³, ⁴ were performed with the Swiss DolorClast®
- > In 80% of these studies, the Swiss DolorClast® resulted in better clinical outcome than the control group
- > In the remaining 20% of these studies either not enough energy was applied⁵ or patients with indications not approved for the Swiss DolorClast® were included



INDICATION	STUDY	PS ⁶	O ⁶	DEVICE	ED ⁵	S ⁶	I ⁶	IMPULSES	COMMENTS
Calcifying tendonitis of the shoulder	Kvalvaag et al. (2017)	9	+ ⁷	Swiss DolorClast® (EMS)	Up to 0.24 (ED+) ⁸	4	7	2000	The study by Kvalvaag et al. (2017) was performed with the Power+ handpiece, and the study by Kolk et al. (2013) with the Swiss DolorClast® Radial handpiece. The much higher energy applied by Kvalvaag et al. (2017) compared to Kolk et al. (2013) may explain the different outcome of these studies.
	Cacchio et al. (2006)	9	+	Physio SW Therapy (Pagani)	0.10 (ED+)	4	7	2500	
	Kolk et al. (2013)	7	-	Swiss DolorClast® (EMS)	0.11 (ED+)	3	12	200	
Subacromial pain	Engelbrechtsen et al. (2009)	8	-	Swiss DolorClast® (EMS)	0.1 - 0.16 (ED+)	4-6	7	2000	In these studies also patients with rotator cuff rupture were included. However, the latter is not an indication for the Swiss DolorClast®.
	Engelbrechtsen et al. (2011)	7	-	Swiss DolorClast® (EMS)	0.1 - 0.16 (ED+)	3	5	2000	
Adhesive capsulitis of the shoulder	Hussein & Donatelli (2016)	9	+	Swiss DolorClast® (EMS)	0.16 (ED+)	4	7	2000	
Primary long bicipital tenosynovitis	Liu et al. (2012)	5	+	Swiss DolorClast® (EMS)	0.12 (ED+)	4	7	1500	
Lateral epicondylitis	Spacca et al. (2005)	8	+	Physio SW Therapy (Pagani)	"1.2 bar" and "1.0 bar"	4	7	2000	
	Gündüz et al. (2012)	7	+	Not specified	"1.4 bar"	10	1	500	
	Yang et al. (2017)	7	+	Swiss DolorClast® (EMS)	"2-3.5 bar" ⁹	3	1	2000	
	Capan et al. (2016)	6	-	ShockMaster 500 (Gymna)	"1.8 bar"	3	7	2000	
	Sarkar et al. (2013)	5	+	Masterpuls MP 100 (Storz)	0.06 (?)	3	7	2000	
	Lee et al. (2012)	5	+	Swiss DolorClast® (EMS)	0.06 - 0.12 (ED+)	3	7	2000	
	Mehra et al. (2003)	4	+	Swiss DolorClast® (EMS)	0.10 (ED+)	3	14	2000	
Carpal tunnel syndrome	Wu et al. (2016)	7	+	Physio SW Therapy (Pagani)	"4 bar"	3	7	2000	A similar RCT with the Swiss DolorClast® is currently ongoing.
Coccydynia	Lin et al. (2016)	6	+	BTL-5000 (BTL)	"3 to 4 bar"	4	7	2000	
Proximal hamstring tendinopathy	Cacchio et al. (2011)	8	+	Swiss DolorClast® (EMS)	0.18 (ED+)	4	7	2500	
Greater trochanteric pain syndrome	Weckström et al. (2016)	6	(+)	Masterpuls MP 100 (Storz)	0.1-0.4 (EDtotal) (2-4 bar)	3	7	3200	
	Rompe et al. (2009b)	5	+	Swiss DolorClast® (EMS)	0.12 (ED+)	3	7	2000	
Knee osteoarthritis	Imamura et al. (2017)	9	-	Swiss DolorClast® (EMS)	Up to 0.16 (ED+) ⁸	3	7	2000	Another RCT performed with the Swiss DolorClast® and the Power+ handpiece (not yet listed in the PEDro database) showed positive outcome when treating knee osteoarthritis (Zhao et al., 2013).
	Li et al. (2015)	4	+	Swiss DolorClast® (EMS)	0.04-0.16 (ED+)	7	?	600 ⁹	
Achilles tendinopathy	Rompe et al. (2007)	8	+	Swiss DolorClast® (EMS)	0.10 (ED+)	3	7	2000	
	Rompe et al. (2008)	8	+	Swiss DolorClast® (EMS)	0.12 (ED+)	3	7	2000	
	Rompe et al. (2009a)	8	+	Swiss DolorClast® (EMS)	0.10 (ED+)	3	7	2000	
Plantar fasciopathy	Gerdesmeyer et al. (2008)	9	+	Swiss DolorClast® (EMS)	0.16 (ED+)	3	14	2000	In this study by Rompe et al. (2010a) on newly diagnosed plantar fasciopathy a certain plantar fascia-specific stretching program resulted in better clinical outcome than rESWT using the Swiss DolorClast®.
	Ibrahim et al. (2010)	9	+	Swiss DolorClast® (EMS)	0.16 (ED+)	2	7	2000	
	Rompe et al. (2010)	8	-	Swiss DolorClast® (EMS)	0.16 (ED+)	3	7	2000	
	Lohrer et al. (2010)	8	+	Duolith SD 1 radial part (Storz)	0.17 (EDtotal)	3	7	2000	
	Chow and Cheing (2007)	7	+	Swiss DolorClast® (EMS)	0.05 - max. tolerable ED+	3	7	1000	
	Rompe et al. (2015)	7	+	Swiss DolorClast® (EMS)	0.16 (ED+)	3	7	2000	
	Eslamian et al. (2016)	7	+	Swiss DolorClast® (EMS)	0.2 (?) (ED+)	5	3	2000	
	Shaheen (2010)	6	+	Swiss DolorClast® (EMS)	0.06 - 0.14 (ED+)	3	7	2000	
	Konjen et al. (2015)	6	+	Swiss DolorClast® (EMS)	0.08 (ED+)	6	7	2000	
	Ulusoy et al. (2017)	6	(+)	BTL-5000 (BTL)	"2.5 bar"	3	7	2000	
	Grecco et al. (2013)	5	+	Swiss DolorClast® (EMS)	0.12 (ED+)	3	7	2000	
	Greve et al. (2009)	5	+	Swiss DolorClast® (EMS)	0.12 (ED+)	3	7	2000	
	Marks et al. (2008)	5	-	Swiss DolorClast® (EMS)	0.16 (ED+)	3	3	2000	
Akinoglu et al. (2017)	5	+	Swiss DolorClast® (EMS)	"0.2 and 0.3 mJ/mm ² " ¹⁰	3	7	2000		
Mehra et al. (2003)	4	+	Swiss DolorClast® (EMS)	0.10 (ED+)	3	14	2000		
Krukowska et al. (2016)	4	+	BTL-5000 (BTL)	"2.5 bar"	4	3.5	2000		
Trigger points / myofascial pain syndrome	Cho et al. (2012)	5	+	JEST-2000 (Joeunmedical)	0.12 (?)	1	-	1000	RCTs on trigger points / myofascial pain syndrome using the Swiss DolorClast® are currently ongoing.
	Damian & Zalpour (2011)	4	+	Masterpuls MP 200 (Storz)	Not specified	5.5	7	?	
	Lee and Han (2013)	4	-	JEST-2000 (Joeunmedical)	Not specified	1	-	1000	
Spasticity	Dymarek et al. (2016)	6	+	BTL-5000 (BTL)	0.030 (?)	1	-	1500	
	Vidal et al. (2011)	4	+	Swiss DolorClast® (EMS)	0.10 (ED+)	3	7	2000	

¹ The PEDro database (www.pedro.org.au) is a freely available database of over 37,000 randomized controlled trials (RCTs), ² Evidence Based Medicine Level 1. ³ As of September 09, 2017 systematic reviews and clinical practice guidelines in physical and rehabilitation medicine. For each RCT, review or guideline, the PEDro database provides the citation details, the abstract, and a link to the full text, where possible. All RCTs listed in the PEDro database are independently assessed for quality (the assessment criteria are summarized in Schmitz et al., 2015). All but two of the PEDro scale items are based on the Delphi list (Verhagen et al., 1998). PEDro is currently the largest independent database on topics related to physical and rehabilitation medicine. It was developed by The George Institute for Global Health affiliated with the University of Sydney, Australia. ⁵ See Schmitz et al. (2015) for details. ⁶ Abbreviations: PS, PEDro score (explained in detail in Schmitz et al., 2015); O, outcome; +, rESWT significantly better statistically than either placebo or alternative treatment modalities; -, rESWT not significantly better statistically than either placebo or alternative treatment modalities; ED, energy density; ED+, positive ED; EDtotal, total ED; (?) not specified whether ED+ or EDtotal; S, number of treatment sessions; I, interval between treatment sessions [days]. ⁷ Positive outcome in a subgroup of n=46 patients with calcifying tendonitis of the shoulder. ⁸ Depending on what the patient tolerated. ⁹ 600 impulses per acupuncture point. ¹⁰ 500 impulses at "0.2 mJ/mm²" followed by 1500 impulses at "0.3 mJ/mm²" (most probably EDtotal provided in this study).