

**EFFECTIVE  
& GENTLE**



*lat. Capsicum annuum*

## RED CHILI PEPPERS – OR THE SECRET OF THE SOOTHING EFFECT OF MODERN SHOCK WAVE THERAPY WITH THE ORIGINAL SWISS DOLORCLAST® METHOD →

- > Red chili peppers contain capsaicin. At first this substance overwhelms the so-called C nerve fibers responsible for transmitting pain but then disables them for an extended period of time. Everybody knows the feeling – first, the mouth is on fire, then it feels completely numb
- > Research has indicated that shock wave therapy works the same way.<sup>1</sup> When activated, the C nerve fibers release a specific substance (substance P) in the tissue as well as in the spinal cord. This substance is responsible for causing slight discomfort during and after shock wave treatment. However, with prolonged activation, C nerve fibers become incapable for some time of releasing substance P and causing pain<sup>2</sup>
- > Less substance P in the tissue leads to reduced pain. But there is more: less substance P also causes so-called neurogenic inflammation to decline<sup>3</sup>
- > A decline in neurogenic inflammation may in turn smooth the way to healing – together with the release of growth factors and the activation of stem cells in the treated tissue<sup>4</sup>

<sup>1</sup> Maier et al., Clin Orthop Relat Res 2003; (406):237–245

<sup>2</sup> In addition, shock waves activate the so-called A $\delta$  nerve fibers (sensory afferences from the periphery) via receptors in the tissue. According to the gate control theory of Melzack and Wall (Science 1965; 150:971–979) these activated A $\delta$  fibers then suppress the conduction of pain in the second-order neuron of the sensory pathway in the dorsal horn of the spinal cord.

<sup>3</sup> The release of substance P, CGRP (calcitonin gene-related peptide) and other inflammation mediators from afferent nerve fibers is generally referred to as “neurogenic inflammation” (Richardson and Vasko, J Pharmacol Exp Ther 2002; 302:839–845). It is also linked to the pathogenesis of tendinopathies such as tennis elbow and plantar fasciitis (Roetert et al., Clin Sports Med 1995; 14:47–57; LeMelle et al., Clin Podiatr Med Surg 1990; 7:385–389). Shock wave treatment causes a drop in substance P and CGRP in the tissue (Maier et al., 2003; Takahashi et al., Auton Neurosci 2003; 107:81–84).

<sup>4</sup> Shock waves lead in the treated tissue to a stronger expression of growth factors such as BMP (bone morphogenetic protein), eNOS (endothelial nitric oxide synthase), VEGF (vascular endothelial growth factor) and PCNA (proliferating cell nuclear antigen) as well as to an activation of stem cells (Wang CJ, ISMST Newsletter 2006 Vol 1 Issue 1; Hofmann et al., J Trauma 2008; 65:1402–1410).

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# SWISS DOLORCLAST® CLASSIC

→ RADIAL SHOCK WAVE THERAPY

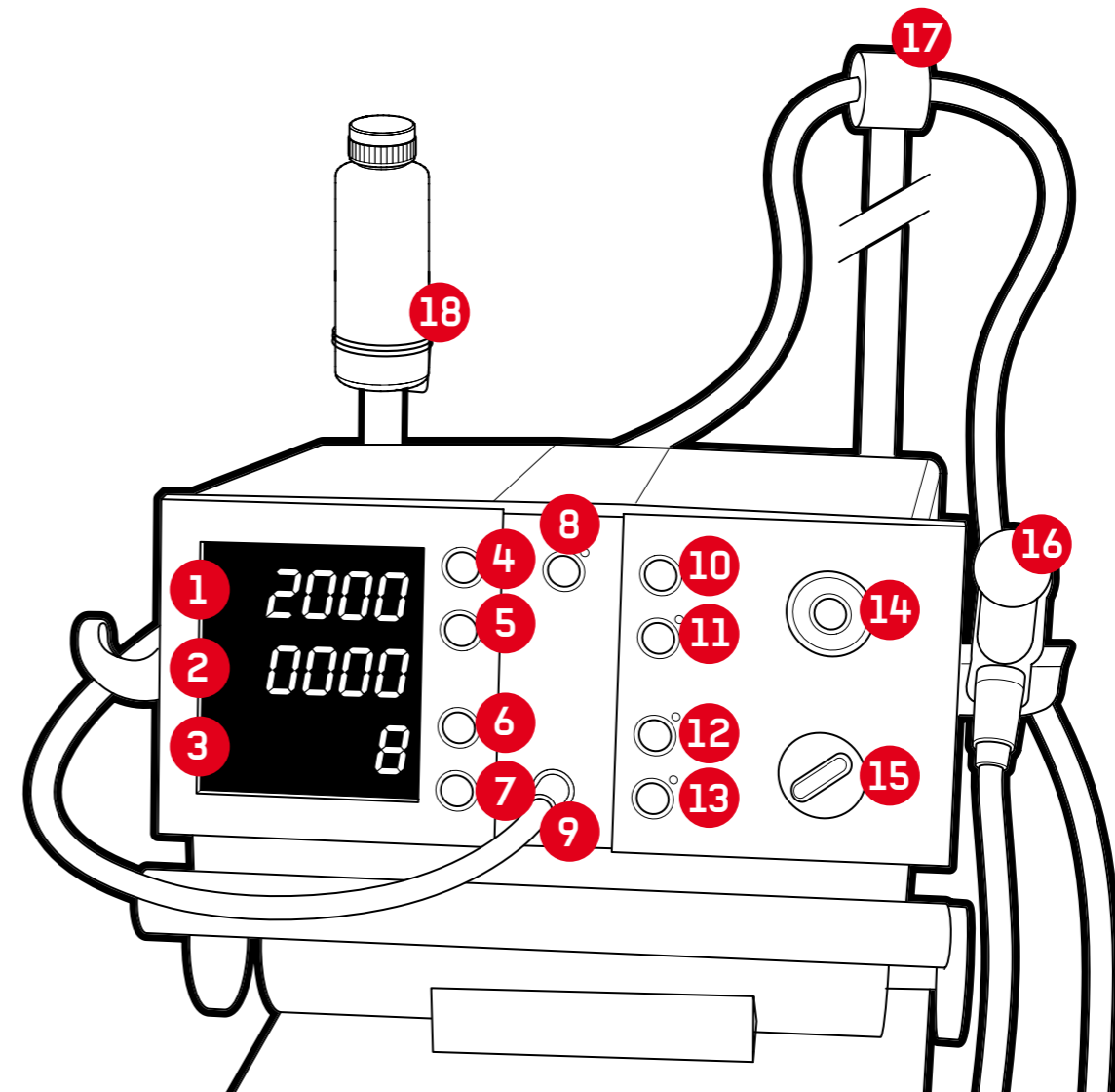


**ORIGINAL  
METHOD**

**EMS**<sup>+</sup>  
ELECTRO MEDICAL SYSTEMS

# SWISS DOLORCLAST® CLASSIC

- 1 Display desired impulse count per treatment
- 2 Display current impulse count
- 3 Display operating frequency
- 4 Increase impulse count per treatment
- 5 Reduce impulse count per treatment
- 6 Increase operating frequency
- 7 Reduce operating frequency
- 8 "On/Off" with indicator light
- 9 Handpiece connection
- 10 "Select" to activate change in preset impulse count
- 11 "Validate" to confirm setting
- 12 Push button for single-impulse operation with indicator light
- 13 Push button for continuous impulse operation with indicator light
- 14 Manometer for operating pressure
- 15 Operating pressure control
- 16 Handpiece
- 17 Cable holder
- 18 Bottle holder (gel)



## SWISS DOLORCLAST® HANDPIECES

> High-energy (red) or low-energy (blue) radial shock waves with variable penetration depth from 1 to 45 mm



## RADIAL AND FOCUSED

> Swiss DolorClast® and Swiss PiezoClast® – a perfect modular match