

JumpStart® Dressing

Advanced Microcurrent Healing

Electric fields exist naturally in the skin, creating surface energy potential (voltage) known as transepithelial potential (TEP).



Electricity Is Essential to Wound-Healing

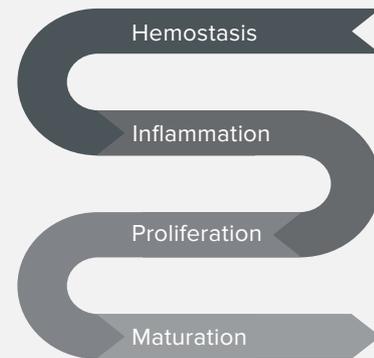
- › TEP is disrupted when the skin is wounded.¹⁻³
- › TEP disruption induces an electric field directed toward the middle of a wound.³
- › This initiates cell migration and re-epithelialization.¹⁻³
- › Microcurrents are created at the edges of healthy skin (called the “current of injury”) and extend ~3 mm into a wound, healing it from the outside edges.^{1,2,4}
- › TEP is restored once skin regeneration is complete.⁵

	Voltage	Microcurrents
Intact skin ¹⁻³	0.010-0.060 V	—
Wounded skin ^{3,6}	0.1-0.2 V mm ⁻¹	10-100 µA cm ⁻²
JumpStart antimicrobial dressing powered by V.Dox® technology ^{6,7}	0.2-1.0 V	10-50 µA

Note: V.Dox technology powers the only antimicrobial wound dressing designed to mimic the skin’s electrical energy, operating within the same physiological range as the skin’s current of injury at a depth of ~3 mm.^{4,8}

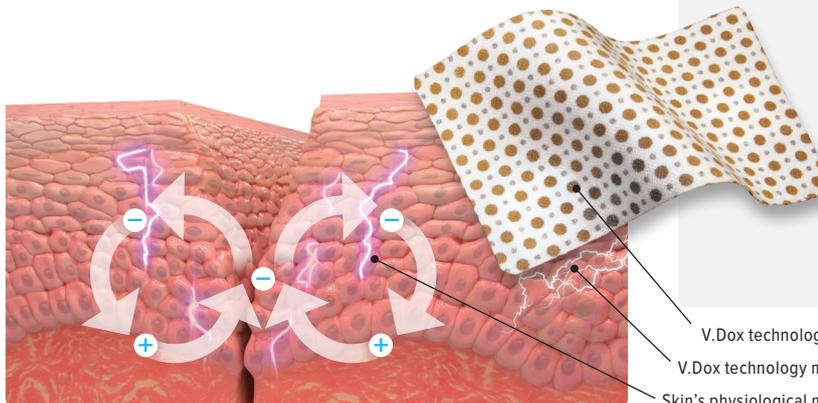
Electrical fields regulate fundamental cell behavior throughout the human body^{8,9}

Wound-Healing Cascade



Electrical fields:

- › Govern cell proliferation, migration, and differentiation
- › Impact wound healing at the cellular and systemic levels during hemostasis, inflammation, proliferation, and maturation



V.Dox technology moisture-activated microcell batteries

V.Dox technology microcurrent

Skin’s physiological microcurrent

References

1. Zhao M. *Semin Cell Dev Biol.* 2009;20(6):674-682. doi:10.1016/j.semcdb.2008.12.009
2. Foulds IS, et al. *Br J Dermatol.* 1983;109(5):515-522. doi:10.1111/j.1365-2133.1983.tb07673.x
3. Dubé J, et al. *Tissue Eng Part A.* 2010;16(10):3055-3063. doi:10.1089/ten.TEA.2010.0030
4. Khona DK, et al. *Bioelectrochemistry.* 2021;142:107921. doi:10.1016/j.bioelechem.2021.107921
5. Moulin VJ, et al. *Adv Wound Care (New Rochelle).* 2012;1(2):81-87. doi:10.1089/wound.2011.0318
6. Farboud B, et al. *Exp Eye Res.* 2000;70(5):667-673. doi:10.1006/exer.2000.0830
7. Whitcomb E, et al. *J Am Coll Clin Wound Spec.* 2013;4(2):32-39. doi:10.1016/j.jccw.2013.07.001
8. Banerjee J, et al. *PLoS One.* 2014;9(3):e89239. doi:10.1371/journal.pone.0089239
9. McCaig CD, et al. *Physiol Rev.* 2005;85(3):943-978. doi:10.1152/physrev.00020.2004