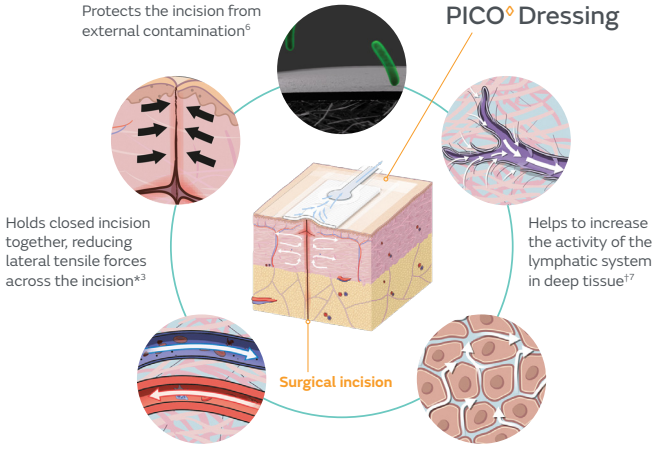
Mechanism of action for closed incision wounds

Smith+Nephew

Negative pressure wound therapy (NPWT)

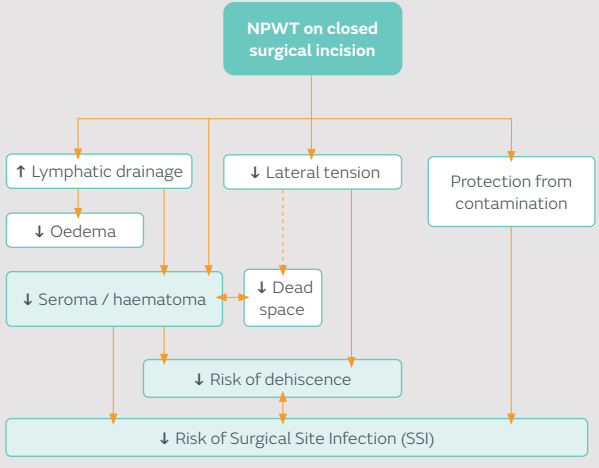
NPWT has **multiple mechanisms of action** which may help promote incisional wound healing and **reduce the odds of Surgical Site Complications (SSCs)**[1-6]



Maintains an efficient blood supply to the wound (perfusion), which helps to support the immune response[4,8,9]

Has been shown to increase the efficiency of functional lymph vessels helping to reduce oedema[10-12]

*As demonstrated in biomechanical modelling †As demonstrated in vivo



This pathway is adapted from the WUWHS guidelines document and it shows how NPWT can help reduce SSCs and lateral tension while increasing lymphatic drainage. This effect is likely to contribute to faster and stronger healing, and a reduced risk of infection and dehiscence[13]

For detailed product information, including indications for use, contraindications, precautions and warnings, please consult the product's applicable Instructions for Use (IFU) prior to use.

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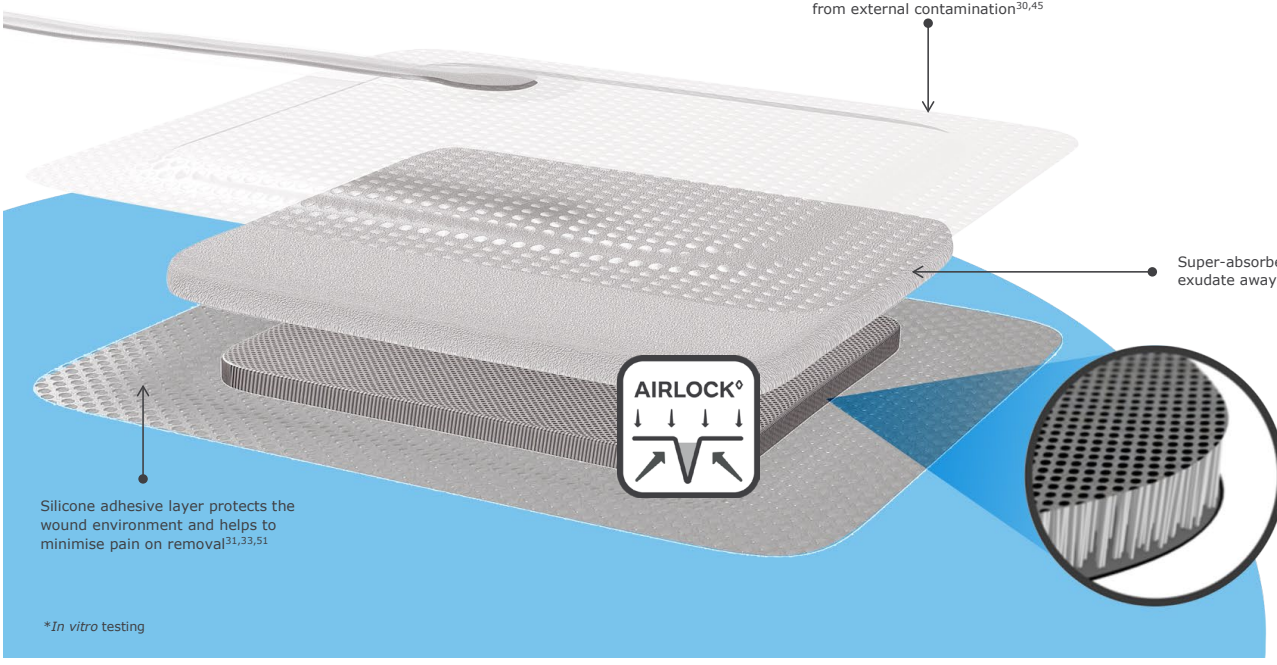
References 1. Canonico S, Campitiello F, Della Corte A. Therapeutic possibilities of portable NPWT. Acta Vulnologica 10 (2012): 57–64. **2.** Hyldig N, Birke-Sorensen H, Kruse M, Vinter C, Joergensen JS, Sorensen JA, Mogensen O, Lamont RF, Bille C. Meta-analysis of negative-pressure wound therapy for closed surgical incisions. Britis Journal of Surgery. 2016 Apr;103(5):477–86. **3.** Loveluck J, Copeland T, Hill J, Hunt A, Martin R. Biomechanical modeling of the forces applied to closed incisions during singleuse negative pressure wound therapy. ePlasty. 2016;16. **4.** Malmsjo M, Huddleston E, Martin R. Biological effects of a disposable, canisterless negative pressure wound therapy system. ePlasty. 2014;14. **5.** Pellino G, Sciaudone G, Candilio G, Campitiello F, Selvaggi F, Canonico S. Effects of a new pocket device for negative pressure wound therapy on surgical wounds of patients affected with Crohn's disease: a pilot trial. Surgical innovation. 2014 Apr;21(2):204–12. **6.** Smith+Nephew 2020. Bacterial barrier testing of the PICO dressing. Internal Report. 2001002. **7.** Kilpadi DV, Cunningham MR. Evaluation of closed incision management with negative pressure wound therapy (CIM): hematoma/seroma and involvement of the lymphatic system. Wound Repair Regen. 2011;19(5):588–596. **8.** Ma Z, Shou K, Li Z, et al. Negative pressure wound therapy promotes vessel destabilization and maturation at various stages of wound healing and thus influences wound prognosis. Exp Ther Med. 2016;11(4):1307–1317. **9.** Xia CY, Yu AX, Qi B, et al. Analysis of blood flow and local expression of angiogenesis associated growth factors in infected wounds treated with negative pressure wound therapy. Mol Med Rep. 2014;9(5):1749–1754. **10.** Birke-Sorensen H, Malmsjo M, Rome P, et al. Evidence-based recommendations for negative pressure wound therapy: treatment variables (pressure levels, wound filler and contact layer)–steps towards an international consensus. J Plast Reconstr Aesthet Surg. 2011;64 Suppl:S1–16. **11.** Scalise A, Calamita R, Tartaglione C, et al. Improving wound healing and preventing surgical site complications of closed surgical incisions: a possible role of Incisional Negative Pressure Wound Therapy. A systematic review of the literature. Int Wound J. 2016;13(6):1260–1281. **12.** Shim HS, Choi JS, Kim SW. A Role for Postoperative Negative Pressure Wound Therapy in Multitissue Hand Injuries. Biomed Res Int. 2018. **13.** World Union of Wound Healing Societies (WUWHS) Consensus Document. Closed surgical incision management: understanding the role of NPWT. Wounds International, 2016.

Only PICO◇ sNPWT dressings have AIRLOCK◇ Technology

Wide delivery. Constant pressure. **Optimal outcomes.**



Top film layer has a high moisture vapour transmission rate and protects the wounds from external contamination[30,45]

Super-absorbent core locks exudate away from wound[52*]

Silicone adhesive layer protects the wound environment and helps to minimise pain on removal[31,33,51]

The PICO System with **AIRLOCK** Technology allows the delivery of negative pressure across the entire dressing to ensure that treatment is delivered to a wider zone beyond the wound itself.[53,54]

**In vitro* testing