



## **NanoPass Makes its MicronJet Technology Available to Increase Global Supply of Pandemic Influenza Vaccines**

Intradermal delivery of vaccines can provide significant dose sparing urgently required in the swine H1N1 pandemic.

Nes Ziona, Israel, August 11, 2009 - Following the World Health Organization (WHO) declaration of a swine flu pandemic,<sup>1</sup> NanoPass Technologies Ltd. (NanoPass) announced today that it has successfully developed a microneedle-based injection device that could dramatically enhance both the effectiveness and supply of pandemic flu vaccines.

"As declared by WHO on June 11<sup>th</sup>, 2009", said Dr Yotam Levin, the Company's CEO, "the novel A H1N1 influenza has become a phase 6 global pandemic. There is an imminent need of developing countries, as well as that of many developed countries, for an adequate supply of pandemic flu vaccines. Since global capacity is limited and production yield is reported to be low, novel approaches for vaccine enhancement are of great need". Dr Ofer Sharon, the Company's Medical Director added, "NanoPass has proven in a randomized clinical trial, recently published in *Vaccine*,<sup>2</sup> that it can reduce the dose of a seasonal flu vaccine by 80% while preserving its efficacy. This effect is thought to be achieved by targeting the potent specialized immune cells that reside in the skin. This means that health authorities can use the same amount of vaccine they have sourced, to vaccinate at least double, if not triple, the number of subjects, with the same vaccine purchase." NanoPass is designing clinical studies to demonstrate this significant effect for swine H1N1.

The major global public threat posed by the new H1N1 flu strain demands close coordination among vaccine manufacturers, governments, technology developers and global health authorities to manage the supply of vaccines and to ensure there are enough doses for everyone.

### **About NanoPass's MicronJet Device**

MicronJet is a microneedle-based device for intradermal delivery of vaccines. The device allows for consistent, reliable, and simple delivery of the vaccine directly into the skin. It has been shown in multiple clinical trials,<sup>3,4</sup> that injecting a seasonal influenza vaccine directly into the skin harnesses this very potent immune organ, and allows for both the reduction of the dose required for the same immune response ("dose sparing"), as well as the ability to actually potentiate this response, with the use of equivalent doses ("increased immunogenicity").<sup>5</sup>

This approach is being tested for a variety of major diseases that do not yet have an effective vaccine, such as malaria, HIV and tuberculosis.

### **NanoPass - Transforming device innovation into global health solutions**

NanoPass, founded by Dr Shuki Yeshurun, is an Israeli based private company developing an innovative delivery device for the enhancement of vaccines and other large

molecules. The Company has proven efficacy and safety in multiple applications including seasonal flu, insulin delivery and lidocaine for local anesthesia. MicronJet is approved for marketing in the EU (please see [www.nanopass.com](http://www.nanopass.com) for more information), and is about to be registered in additional markets. The MicronJet is approved for use by health care professionals for intradermal delivery of drugs and medicinal products that are approved for intradermal delivery.

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<sup>1</sup> [http://www.who.int/mediacentre/news/statements/2009/h1n1\\_pandemic\\_phase6\\_20090611/en/index.html](http://www.who.int/mediacentre/news/statements/2009/h1n1_pandemic_phase6_20090611/en/index.html)

<sup>2</sup> Van Damme P, Oosterhuis-Kafeja F, Van der Wielen M, Almagor Y, Sharon O and Levin Y. Safety and efficacy of a novel microneedle device for dose sparing intradermal influenza vaccination in healthy adults. *Vaccine*. 2009 Jan 14;27(3):454-9.

<sup>3</sup> Belshe RB, Newman, FK et al. Serum Antibody Responses after Intradermal Vaccination against Influenza. *N Engl J Med* 2004;351:2286-94.

<sup>4</sup> Kenney RT, Frech SA et al. Dose sparing with intradermal injection of influenza vaccine. *N Engl J Med*. 2004 Nov 25;351(22):2295-301. Epub 2004 Nov 3.

<sup>5</sup> Holland D, Booy R et al. Intradermal influenza vaccine administered using a new microinjection system produces superior immunogenicity in elderly adults: a randomized controlled trial. *JID* 2008; 198:650-58.