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The Next Generation of Medical Implants

An innovative platform technology enables surface modification of medical implants right before implantation, and improves the success rate / **Nimrod Gazit**

Nova plasma was formed in 2012 by Chen Porat, Amnon Ronen Lam - three entrepreneurs with extensive experience in the building, development and commercialization of start-up companies. The company is developing a unique and innovative platform technology, which enables the surface modification of implantable devices, via cold plasma, on-site, just prior to implantation.

By using cold plasma, the company's technology modifies the implant surface, changing it from hydrophobic ("water-hating") to hydrophilic ("water-loving") right before implantation. This change improves fixation, and prevents infections.

The technology is relevant to a broad range of applications such as dental implants, orthopedics, spine, bone grafts, and breast silicone implant.

During the first two years of operation, the Company focused on the development of a proprietary technology for on-site surface modification of dental implants, making them highly hydrophilic just prior to implantation. Studies have shown that highly hydrophilic implants improve osseointegration, secondary fixation, and early loading. The dental implant product (Active+™) has been recently licensed to a leading international dental implant manufacturer.

Following the successful commercialization of Active+™ for dental implants, the Company's current focus is to develop a proprietary and innovative product that mitigates the Capsular Contracture of breast implants, a significant post-surgery issue with prevalence of over 30% (!). Nova is planning to apply its proprietary surface modification technology, referred to as the Active Si™, to silicone breast implants, making them immediately super hydrophilic just prior to being dipped in antibiotic solution, a usual and customary step preceding implantation. Initial tests show that this method completely eliminates biofilm formation on silicone. The product is currently in extensive pre-clinical studies in large animals.

In addition to its dental and breast implant applications, Nova has recently started the development of new applications for orthopedics and spine, a \$ 25 billion market. Preliminary tests indicate that the technology may improve healing time and fixation of orthopedic implants, and reduce infections. This will result in shorter hospitalization and cost saving. In addition, the technology may reduce or even eliminate the need for adhesive materials (Cement) which are now considered a major problem in joint replacement. The company is recruiting leading physicians which will help with applications development, defining market needs.

Nova is currently raising 10 Million Shekel from existing and new investors, for the orthopedic and spine applications.