

At Our Core: Real-time Collaboration

Textile Construction for Bony and Soft Tissue Stabilization Developed with Rapid and Iterative Prototyping

Recently, while working with a customer on an orthopedic product, word of Cortland Biomedical's quick response times and rapid prototyping capabilities piqued the interest of another project team. This team engaged Cortland about development of a robust woven tape that could provide mechanical support for initial tissue repair following an injury, but ultimately encourage the patient's native tissue to regenerate and grow into the implant. The end goal would be for the implant to provide structural support during the tissue regeneration process. For this type of application, understanding the resorption profile—the behavior of the product during and after the resorbable polymer has fully dissolved—is very important.

Cortland Biomedical invited the customer's product team to its state-of-the-art facility to work together in real-time to create the ideal solution. It was determined that a structure that is partially resorbable would be best, so that over time half of the construction dissolves and creates void spaces to encourage native tissue growth. The focus of the visit was to observe the manufacturing process in action so the customer could see the equipment and more tangibly understand the requirements for manufacturing. The customer spent several days at Cortland and had full access to its development engineers and facility resources, including testing equipment, lab space, etc.

Following a facility tour, the bulk of the time was spent conducting mechanical testing on prototypes that were being made in real-time based on design inputs and feedback from the customer. Together, the Cortland Biomedical team and the customer would create one design iteration, test it, analyze results, make design changes, and then start over. This method of collaborative, in-person development is very unique and significantly accelerated the design and development process for this project—saving up to two weeks of development time across eight to 10 iterations.

Ultimately, the rapid and iterative prototyping session helped to hone in on the most practical and utile design. The customer ended up with a sleeker and smaller profile textile construction than what was initially prototyped. Cortland Biomedical engineers were also able to personally see and study other device components that would interface with the textile, allowing them to better identify design constraints. Additionally, Cortland was able to make design changes to optimize the strength of the construction after resorption based on in-person testing that was conducted.

As development of this product continues to move forward, the customer has already expanded their relationship with Cortland Biomedical to now encompass three different project platforms. This decision was largely based on their satisfaction with Cortland's unique and highly collaborative processes—which facilitate increased innovation and optimal results in a truncated timeline.



Custom Critical Component Design

Cortland Biomedical was engaged about development of a robust woven tape that could provide mechanical support for initial tissue repair following an injury.



Real-Time Collaboration

Cortland Biomedical invited the product team to its state-of-the-art facility to work together in real-time to create the ideal solution.



Rapid and Iterative Prototyping

The rapid and iterative prototyping session helped to hone in on the most practical and utile design.

Want to learn more? Call us at (607) 218-3542 or email info@cortlandbiomedical.com