

 BIODIGITAL

Mastering Medical Device Education

Case Study

About the Customer



Company:

Johnson & Johnson is a global medical device and pharmaceutical manufacturing company.

Industry:

Medical Device



Key Challenges



The biomechanics of surgery are challenging to learn using 2D static images and written descriptions.



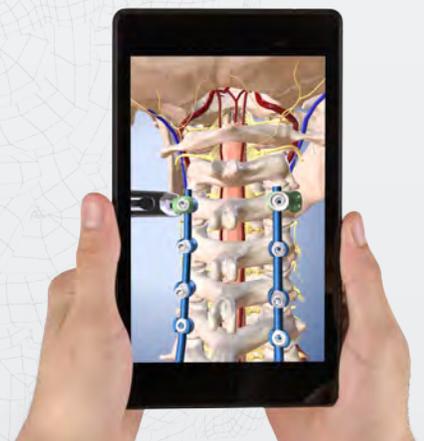
PowerPoint presentations do not enable immersive learning to engage surgeons in interactive anatomical learning.



Traditional solutions have been difficult for global executives to scale cost-effectively.

Solution

BioDigital's immersive learning solution captured surgeons' attention with an interactive 3D format. It enables them to interact with and customize their learning experiences, and present evidence-based claims in an unprecedentedly enriched format. BioDigital also made scaling global education programs more efficient and cost-effective.



Results Clinicians can now:



Apply the biomechanics of surgery and understand which motor skills are required to execute.



See the implant process from various critical angles.



Animate, annotate, or label images to align with their learning and teaching requirements.



Identify the key structures and comprehend the spatial relationships of the procedure to prepare themselves to focus on the motor skills required to execute it.

A Medical Sales Trailblazer

As the Senior Manager of Worldwide Professional Education at Johnson & Johnson MedTech, Joanna Talis leads global education strategy for spinal orthopedic devices. A passionate education innovator, Joanna partners with global strategic marketing, product development, and regional professional education teams that leverage cutting-edge technologies to create immersive learning experiences for spine surgeons. Her team has always prioritized the patient journey, seeking innovative education solutions to drive better outcomes.

Joanna was leading training for the launch of a next-generation medical device with the potential to elevate orthopedic surgery for complex spinal conditions. She and her team were tasked with creating concise and customizable educational content to demonstrate the mechanics of the device before teaching surgeons how to use it.

“SYMPHONY is our most complex innovation for the spine space in years,” Joanna explains. The DePuy Synthes Spine SYMPHONY™ Occipito- Cervico-Thoracic (OCT) System is an enhanced set of instruments and implants, including polyaxial screws, rods, hooks, and connectors designed to address unmet needs in fixation, alignment, targeting, and extension (FATE) for posterior stabilization of the upper spine. These intricate implants provide the flexibility required to accommodate variations in patient anatomy.



The Problem:

Reaching Beyond the Brochure

Joanna has been observing surgeons in traditional medical device training for years. They're accustomed to meeting in a large learning environment, listening to a speaker's medical device presentation, participating in panel discussions, then proceeding to hands-on training. She's also seen plenty of audience members focused on their cell phones instead of the faculty presenter's PowerPoint screen. That screen is typically laden with data, graphs, conceptual terminology, and static images – with not much complimentary education beyond the device brochure.

Why is this a problem?

“When faculty presenters share valuable case discussions, they describe what happened when a device was ‘in my hands’ and how it performed in my experience,” Joanna explains. For an audience that has yet to see and touch the medical device itself, such valuable real-world applications can be difficult to visualize and viscerally comprehend.

This type of traditional one-way communication can become dry and difficult to follow. After all, terms like “biomechanics” and “force distribution” must be manually experienced to be fully appreciated. Not to mention the fact that surgeons with diverse learning curves come to training sessions with disparate levels of product and procedure knowledge. One clinician may be ready to jump into hands-on application, while another is still reviewing the device's basic functions. Despite this learning curve diversity, they are all advanced from the schematic stage to the application stage at the same time and pace – not the most efficient device education format.

Learning to use a new medical device in the human body requires a surgeon to attend in-person training. A large portion of that training is typically dedicated to demonstrating the mechanics of the device itself before instructing surgeons how to use it in the human body with agility and flexibility.

That kind of in-body function flexibility is difficult to demonstrate with 2D images and written instructions. When SYMPHONY first launched, Joanna had only a PDF document with which to educate surgeons. She knew there had to be a more immersive way for them to visualize the SYMPHONY system – and a more scalable way to educate surgeons on its use and function.

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Joanna Talis
Sr. Manager of Worldwide
Professional Education



The Alternatives:

The Training Lags Behind the Tech

Before she discovered BioDigital, Joanna developed training content by collaborating with medical education agencies. Any medical device executive knows that launching in each new market across the globe often requires translating and updating the material in each educational asset. An investment in agency creative would yield her (at best) a beautiful brochure, dynamic UX design, or well-produced instructional videos – all two dimensional, non-customizable solutions.

Joanna's team has also leveraged 2D static images, including photos taken by HCPs with smartphones during surgery. But these visuals simply didn't dynamically demonstrate the SYMPHONY system or engage surgeons in the SYMPHONY experience. They did not generate the degree of confidence or enable device-use proficiency and 3D spatial appreciation of the device.

The uniquely complex set of screws and connectors in this multi-point posterior cervical implant allows surgeons to reach the back of the head from highly strategic angles. Because it supersedes previous posterior cervical systems, fully appreciating its capabilities and understanding how to insert the screws into the connectors effectively requires three-dimensional views from a wide range of angles.

Seeing the angle and the translucent layer of each screw insertion relative to other screws in the spinal implant is not always easy during surgery – especially when blood and limited positions in the operating room impede visibility. Videos and static images with descriptions allowed surgeons to see only one plane – which is often blocked by blood, reflections, or surgeons' movements. Those written descriptions also need to be translated every time the team presents in a new country. Finally, scaling these two-dimensional assets is expensive and time-consuming.

Before BioDigital

- Assemble the handle to the Drill Guide C1 DTS Sleeve by pulling the "pull to release" plunger and inserting the handle attachment post as shown in Fig. 86a, b
- Set the depth of the Drill Guide by pushing the Adjustment knob toward the distal tip and turning clockwise, each rotation represents a 2mm adjustment. The depth will appear in the window. (Fig. 87)
- Dock the Drill Guide C1 DTS Sleeve into the desired location.
- Slide Drill Guide into the Drill Guide C1 DTS Sleeve.

Fig. 86

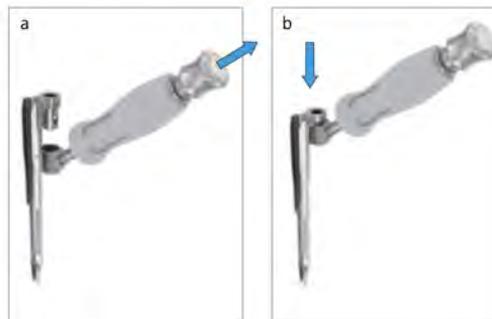
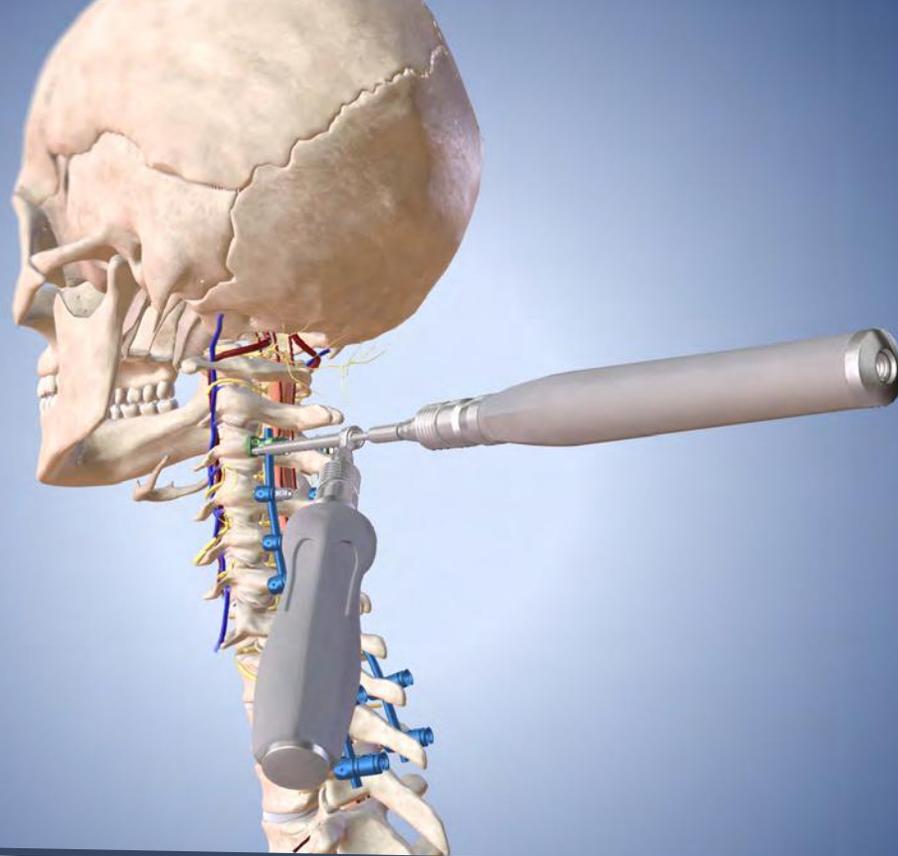


Fig. 87



Fig. 88





The Goal: Show, Not Tell

Since the SYMPHONY system refined and expanded upon former posterior cervical procedures, Joanna sensed the education around this next-gen device would also need to be refined and expanded. She wanted a training program that would show, not just tell surgeons how to use it. Her team was determined to lay the foundation of device familiarity for surgeons and educators before they entered in-person training so that they could focus exclusively on the application of this orthopedically intricate system.

When she observed surgeons during lab demonstrations of SYMPHONY, where its passionate engineers didn't even have a spine model, Joanna realized that they needed a way to integrate the three-dimensional dynamics of the system.

"I watch the intuitive response," Joanna explains. "We can show them the implants, but they still have to visualize where it sits on the anatomy." Where and how it sits on the spinal anatomy is precisely what makes this implant system so groundbreaking. "How do we launch this product in a meaningful way that can highlight the unique J&J MedTech innovations of the design element and the use before they get their hands on it?" That question drove Joanna and her team to seek superior solutions.

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Joanna Talis
Sr. Manager of Worldwide
Professional Education

The Solution:

Simplifying Complex Medicine, Saving Time

Joanna was familiar with the BioDigital Human platform; her team had already leveraged it to successfully demonstrate other medical devices. She began to imagine how it could be applied to SYMPHONY to augment hands-on learning.

Knowing that surgeons come into presentations at all stages of their careers and at various points of the learning curve, she realized that they needed to be educated about the biomechanics of the implant itself prior to attending an in-person course. She suspected that this technical device proficiency could enhance in-body application learning.

Her team reached out to BioDigital and the 3D SYMPHONY training experience was born. After development, the BioDigital team presented an even more immersive learning solution than Joanna imagined. BioDigital's SYMPHONY multi-point training experience features:



3D Virtual Learning

BioDigital augments (and in some cases, replaces) physical demonstrative learning with immersive virtual modeling that:

- Enables unobstructed 3D visibility of anatomical implant functions
- Allows clinicians to see the implant process from various angles



Animation Creation

The BioDigital interactive, customizable model:

- Allows clinicians to zoom in, freeze frames, annotate, or label images to align with their learning and teaching requirements
- Promotes engaging user experience that can improve clinicians' spatial appreciation and cognitive surgical skill development





Centralized Education Control

Unlike two-dimensional static learning tools like PDFs or PowerPoints that require an expert presence and multiple versions as data evolves, BioDigital assets can:

- Be updated in real time
- Reduce liability risk
- Allow faster rollout for new market versions



Use Case Diversity

BioDigital is customizable to a wide range of aptitudes, learning curves, and learning styles. The platform makes learning more immersive in:

- The professional training lab
- The sales training setting
- The conference or trade show venue

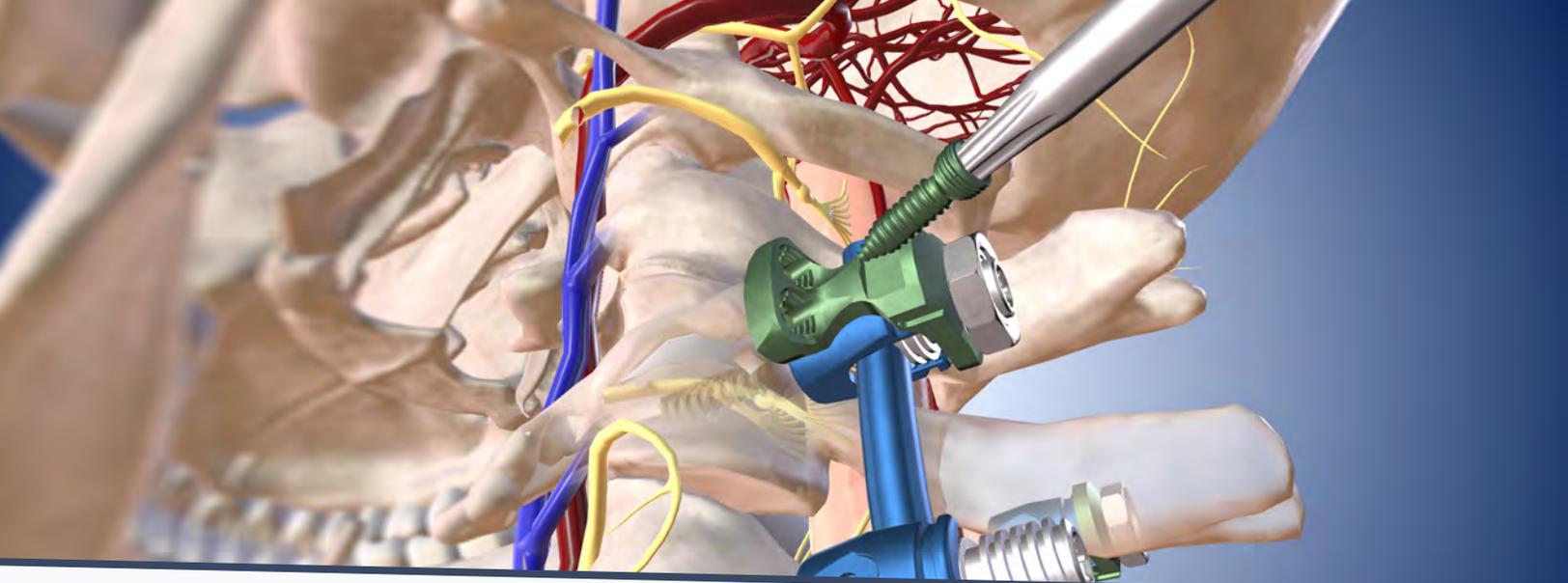


Multi-Channel Deployment

The BioDigital Human complements cadaveric, simulation, and live course training modules, enhancing existing methods in a scalable and accessible way. It can be leveraged in the classroom or lab for professional training to immerse surgeons in the unique functions of the SYMPHONY system because it is:

- Embedded in live course presentations for immersive virtual learning
- Available on-demand via clinician portal which enables self-directed learning to prepare for or review expert-led live training
- Eventually going to be augmented with AR/VR channel capabilities





The Results: Optimal Engagement

After launching their new model, Joanna's team once again observed surgeons in action to determine its educational effectiveness. They soon realized they'd found the modality that embodied their vision of ideal SYMPHONY system training. Before their eyes, surgeons were transitioning from schematic information-gathering to immersive skill application — with agility and enthusiasm.

BioDigital's rich, interactive format captures surgeons' attention and allows them to visualize in 3D the motor skills required to master surgical biomechanics. These highly attentive clinicians are no longer checking their cell phones. "We're seeing them transition from awareness of the SYMPHONY system to the cognitive skill development required to experience its efficacy," Joanna says.

They can now view every translucent layer of every screw insertion relative to other screws in the spinal implant — at every angle. This level of technical proficiency gives them confidence when they enter the OR to observe a surgery, even if their view is obstructed by blood or position. Because they've already studied how the implant functions inside the human anatomy, they can more easily apply that immersive learning to the hands-on training experience.

For surgeons training on the BioDigital Human, "force distribution" is not just a word spoken by an educator or a line highlighted on a graph. Now, sensing where to take a bone graft is more intuitive — knowing where to decompress a nerve, more instinctive. Seeing surgeons' eyes light up and fingers tap during this immersive learning experience led Joanna to surmise that attention spans are expanding and engagement is growing.

Global education directors want to ensure that each surgeon fully understands the mechanics of the SYMPHONY system and has acquired baseline knowledge of its use within the human anatomy before entering hands-on training sessions, where they can now be much more focused and engaged in real-world applications.



The Biodigital Human assists surgeons both before and after in-person training. Those who need to revisit their newly acquired skills after their live sessions are enjoying access to post-course reviews on their portal at their convenience. Meanwhile, European health systems have reported such promising results that they're forging the future of surgical device education by making BioDigital's interactive 3D experience mandatory pre-course.

BioDigital's solution also outperforms other education content production from a business perspective – it's far more cost-effective and easier to scale across all J&J MedTech markets. With previous alternatives, custom iterations and the language translations of models, videos, documents, diagrams, or graphs required to support comprehensive launch strategies were expensive and time-consuming. Now, the most recent research, case study insights, or submitted data are all easy to integrate into the program in real time, so launching even this highly complex model in the Asia-Pacific market doesn't require extensive revamping. For Joanna, her team, and their HCP clients, BioDigital was a win-win choice.

Joanna's colleagues who develop training programs at J&J MedTech will also benefit from the opportunity to standardize training by using the same model for commercial sales training. They'll have more control over how they learn, at what pace they absorb information, from what angle they see a device enter the body, and how to maneuver it. They'll be able to share immersive training options with surgeons during sales visits where they demonstrate a medical device – which they no longer have to transport in cases to each doctor's office. With the ever-increasing complexity of J&J MedTech's medical devices, 3D interactive training can be a critical tool.



Engage Clinicians with Next-Gen MedEd

Immersive learning is the future of health education – it provides hands-on, interactive learning that engages clinicians and aligns with their daily digital lifestyles. If your team is striving to produce medical education that moves physicians beyond watching and listening and engages them with dynamic in-anatomy learning, you're in the right place.



See for yourself how the BioDigital Human experience
can elevate your medical device education program.

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