Process

The process of building a custom animation begins with a discovery meeting (virtual or in person) between the client and the Understand.com™ team. A collaborative effort to develop the concept ensues: the audience is determined, the scope of the information to be included is defined, and the storyline is established. From the discovery call, we will set up a schedule for pre-production (research, script, storyboard), production (modeling, animating, rendering), and post-production (editing, sound, titles, and effects).

Time frame:
1 day

“A study of 483 patients found that 40% could not read above a 6th grade level.”
- Center for Healthcare Strategies
Pre-Production: Script & Storyboard

Script & Storyboard
Next, our team of medical writers conducts the necessary research and develops a script. We ensure careful attention to detail and medical accuracy; when appropriate, we collaborate with our medical advisory board of accomplished MDs. The script will be developed into an illustrated storyboard, which establishes direction including action, camera angles, movements, transitions, and effects. This is typically the first time you will review the script and proposed story in sketch form. Edits and changes at this point are expected and easy to make. Big changes late in the game cost everyone time!

Narration
When the script and storyboard have been approved, a professional announcer is hired to read the script and the recorded narration is used as a guide for timing the animation. The earlier the audio is locked down, the smoother the animation process and the more integrated the action will appear.

Time frame:
Usually 1-2+ weeks depending on complexity

“Poor healthcare literacy adds $100-$200 billion in additional healthcare expenses each year.
- Thomas Jefferson University & Hospitals

BREAST CANCER STORYBOARD
Breast Reconstruction - Visual Plan

STEP 2: ANATOMY
The breast is composed of mammary glands and milk ducts surrounded by fatty tissue, which provides shape, and ligaments and connective tissue, which provide support. The pectoralis muscles lie underneath the breasts, separating them from your ribs. The breast does not contain muscle tissue, except for tiny muscle fibers in the nipple. The circular, darker region around the nipple is called the areola. Blood is supplied to the breast by a network of blood vessels, providing cells with oxygen and nutrients and removing wastes. Lymph, a fluid which helps fight infection, and eliminate waste material, circulates through the breast and the rest of the body through a series of lymph vessels and lymph nodes. During a mastectomy, all fatty tissue, connective tissue and glands are removed. Depending on findings and the extent of the cancer, lymph nodes in the armpit area may also be removed. Although there are skin-sparing and nipple-sparing mastectomy options, the nipple and areola are also commonly removed to minimize the risk of recurring cancer.
**Production:**
Modeling, Texturing, Animating

**Modeling**
Once you give the storyboard and script a thumbs up, the production process may begin. Assets are built in our 3D animation software including the models, materials, and environments. Many of the 3D models and environments will be sculpted from scratch; others will be derived from our model library and refined for the animation. Clients are often encouraged to provide CAD files, for example a medical device that the Understand.com team will use to bring to life in an animation. The models and environments are then textured using the latest techniques and software, and style frames will be rendered and sent your way. This helps determine the look and feel of the animation and establishes a color scheme. This is an important stage for client feedback: tell us what you think of the models and textures before we begin animating the scene. (Once we start animation, backtracking can blow established timelines).

**Animating**
Following the approved storyboard and script, our team will begin animating the primary action. Several render tests will be created and reviewed during this phase. The recorded narration is a useful guide for timing and contributes to the seamless and elegant action of your custom animation.

**Refinement**
Our talented team will then refine the animation: finessing the models, polishing movements, smoothing transitions, and generating any additional lighting or environmental effects. While animation is a time-consuming process, the subtlety and intricacy that can be achieved in a 3D rendering can add a truly dynamic appeal to any medical procedure.

*Time frame:*
*Usually 4-8 weeks but could be shorter or longer depending on animation length.*

"65% of the population are visual learners."
Post-Production

Post-production is where things come alive. The animation is often rendered in layers and then compiled in our professional editing software where each layer can be adjusted independently to create the best possible composition. The animation and high-quality audio recording are edited for length and appropriate transitions are created. Titles, labels, and all other graphic components are animated during this final phase, and any musical tracts, sound effects, or unique camera filters are added using our professional editing software.

Time frame:
Usually 2 weeks

Visual aids can increase understanding and retention by 400%.

- Wharton Applied Research Center
FAQs

How much does a custom medical animation cost?
You’ve heard the expression time is money; well, the more time it takes our team to create an animation, the more money it costs. We have built custom animations for as little as $5000 and as much as $100,000! Average animations, which are of medium complexity and run 2-4 minutes, cost $25,000-$50,000. To be fair, we can only give you an accurate estimate after a discovery call when we establish the scope of the project.

How long does it take to create a custom medical animation?
Creating a custom medical animation can take between two weeks to four months or more depending on the length and complexity. The average animation takes about eight weeks. After the discovery call, our team will propose a production schedule to determine a timeline. We love clients who are involved; the more specific details that you can provide from the get go—and timely feedback throughout—will accelerate the process!

What are you going to expect from me?
After we have established the scope of the animation, we need some things from you. To get started we may require CAD files, product samples, branding artwork, and marketing literature if appropriate. If the topic is highly specialized or complex, access to your medical experts, scientists, or engineers is greatly appreciated. Most importantly, we need you to help us out by responding in a timely manner to questions that may come up along the process—that way we can get it right for you the first time!

What is involved in creating a custom medical animation?
Creating a custom animation is broken down into 5 steps: discovery, pre-production, production, post-production, and review. Below is brief overview of our animation process, but be sure to refer to the Custom Animation section for a more detailed outline.

1. **Discovery.** Here is where we collaborate with you, the client, to discuss your vision. Our creative team will suggest ways to tell your story in the most visually compelling manner that will compliment your product or procedure.

2. **Pre-production.** The script and storyboard are created during pre-production, much like drawing blueprints for a new house. When
the client approves the script and storyboard, an announcer will record the narration to help with timing the animation.

3. **Production.** This is where the magic happens! The production process includes creating models and environments, texturing, lighting, and animating the action. This stage requires the most time and changes made at this point can really impact the timeline.

4. **Post-production.** We composite and edit the rendered animation sequences, then add all titles and labels during this portion of the process. Adding sound and special effects will really make your video pop!

5. **Final review.** After reviewing the animation and performing several quality control checks, the animation is ready for final delivery!

**Who writes the script?**
Our medical writers can take a script you have created and tailor it to the animation or write a brand new script for you. Most clients leave it up to our writers who have strong science and medical backgrounds, are skilled at research, and are experienced at writing for a broad range of audiences. If appropriate, we will use an expert advisory board of MDs to review the script for accuracy and best practices.

**How do we ensure the custom medical animation is medically accurate?**
Medical accuracy is our priority and when creating each model, procedure, and mode of action, we defer to the appropriate panel of experts. We have available a medical board of certified MDs that routinely review our content and several endorsements from established medical associations.

**Once we start, are changes easy to make?**
Changes to the initial script and storyboard phase are easy and expected. Significant changes to the animation during the production process will impact the timeline and could increase costs. Remember, we want to offer you an insanely great experience in developing your custom animation, so when we ask for feedback or have questions, we are just trying to make the process as smooth as possible!