

Loop Medical is developing the first “painless” blood collection device

Success at a glance

- Reclaimed 30% of engineering time lost to previous IT overhead
- Streamlined collaboration and communication between distributed product design teams
- Improved IP security with Onshape's multiple levels of access permissions

A breakthrough for simplifying blood diagnostic testing

Do you have needle phobia?

If so, you may soon have an option for painless, needle-free blood collection for diagnostic tests at the hospital, lab, doctor's office, or even at home. Switzerland-based Loop Medical is developing a new minimally invasive device to extract blood from capillaries just below the skin, versus conventional methods that collect blood from the vein. Funded by the Bill and Melinda Gates Foundation, the breakthrough technology is aimed at simplifying blood diagnostic testing at health care facilities around the world—typically in developing nations where medical resources and standards are subpar.

Loop Medical is also focusing on reducing the spread of infectious diseases through used contaminated needles. "Right now, when you need to do a blood test, you really need to go to a blood collection center and have a phlebotomist, doctor, or nurse take blood from your vein. But in places like parts of Africa, it can be far more complicated because there aren't enough trained professionals to go around," says Arthur Queval, founder and CEO of Loop Medical. "Our device makes a superficial incision and eliminates the risk of needle-stick injuries. It can be used by the patient or by someone with very little training."

He adds, "furthermore, you can completely integrate this blood collection sample with a standard lab like LabCorp or Quest Diagnostics. So it fits in perfectly with existing workflows with the same standards and processes."

Loop Medical is now testing its prototype device and expects to go into clinical trials in early 2021, with a planned product launch of 2023 for the U.S. market. The company is keeping many details of its design and proprietary technology confidential for now.

Asked what "painless" means since it is an extremely subjective term, Queval described what the blood extraction felt like to him when his team tested the prototype on themselves.

"When my colleague and I first placed the devices on our arms and activated it, we thought, 'Oh, it didn't work for some reason,'" recalls Queval. "But when we removed the device after a couple of minutes, we saw there was a blood sample inside. We actually were not aware that it had already started. So it is truly painless."

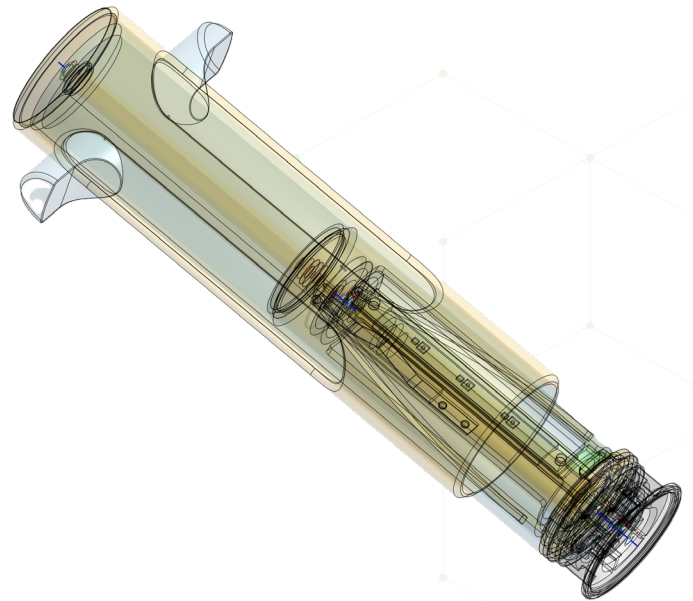
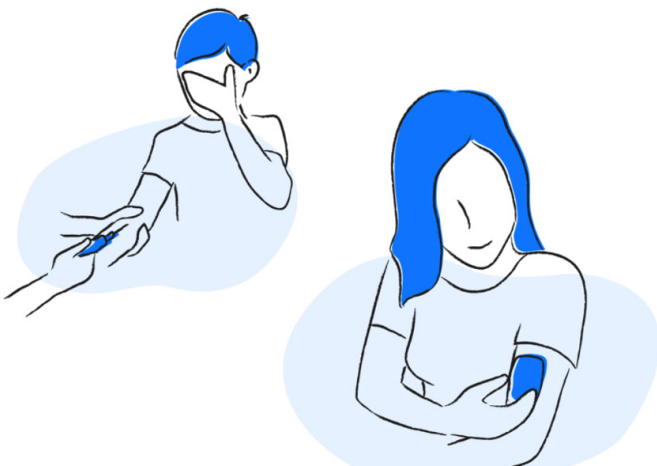


Speedier collaboration between teams in Switzerland, Germany, and France

When Queval launched his medical device startup in 2016, he initially was searching for a CAD platform that ran on a Mac. With his previous file-based, on-premise CAD system, he needed to first install Windows on his Mac using virtualization software, which required him to purchase much more computing power per machine.

Although designing more smoothly on a Mac and cutting hardware expenses was an initial motivation to try Onshape, he says a much bigger benefit that quickly emerged was speeding up collaboration between his teams in Switzerland, Germany, and France.

"Sharing design files used to be very frustrating because partners would always be working on a different version of the CAD system and we couldn't open up each other's work without having long email conversations or using Google Drive. Communication was very inefficient," Queval says.



"Onshape's workflow is really smooth, and it's much easier to share our work and move on to the next task," he adds. "As the CEO, I can always see the status of a design and comment or address problems in real time."

Onshape's sharing feature allows users to securely and instantly collaborate with a colleague, vendor, customer, or partner by granting them editing, commenting, or view-only access rights to a CAD model. Equally valuable is the ability to instantly withdraw outside access to your designs when a project is over, reducing the risk of unintentionally leaking your intellectual property.

“Onshape helps our team reclaim 30 percent of its time”

Queval adds that another huge business benefit is that Onshape requires no installs, downloads, licenses, or other time-sucking IT tasks.

“Just before we switched to Onshape, our system crashed, and we had to install and reinstall our CAD software multiple times. We lost maybe three days trying to install the new updated version,” he says. “I like that Onshape delivers its new updates in the cloud and that everything just works.”

Released every three weeks, Onshape’s regular updates include new release management functionality, collaboration tool enhancements, CAD features, improvements to user interface and performance, bug fixes, and updates to Onshape drawings and FeatureScript—the open-source programming language to create custom features.

With each update, users experience zero downtime. Onshape’s safe and continuous deployment automatically tests every CAD model against the new software version, so there are no unexpected broken designs.

“Before, IT issues would take up 30 percent of our engineering team’s time, or we’d need to dedicate one IT person for the R&D team,” says Queval.

“We don’t need to do that now. So we’re saving on overhead while also being much more efficient.”

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Arthur Queval,
Founder and CEO, Loop Medical

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