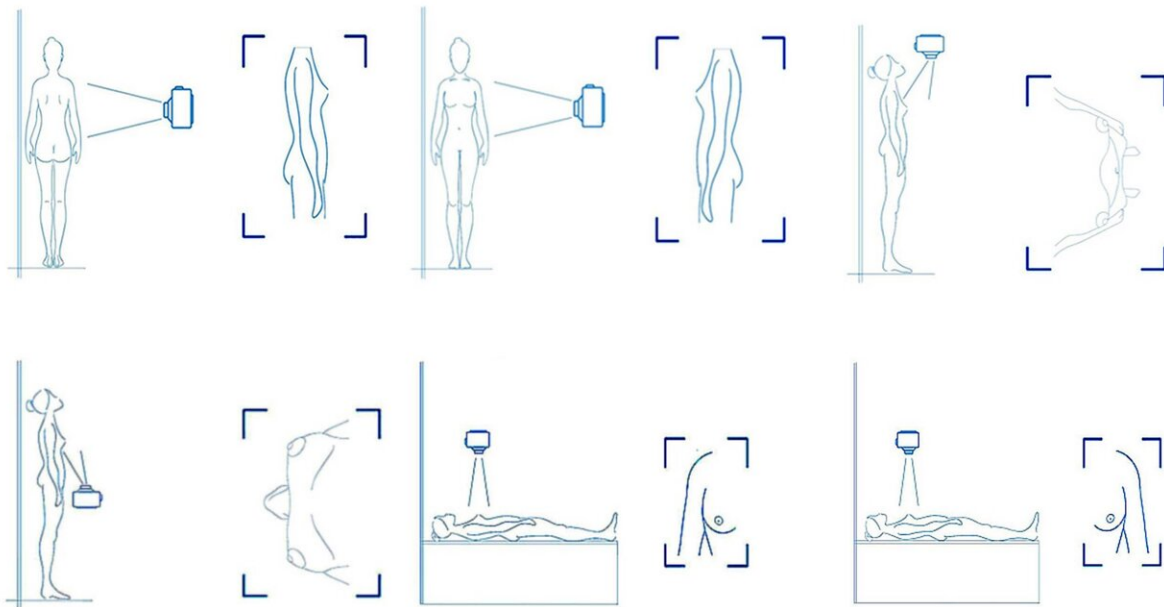


# Photographic protocol developed to plan breast cancer surgeries

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Credit: Asociación RUVID

Breast cancer is most common among women: More than half a million new cases were detected in the European Union in 2018. Surgery and breast reconstruction are part of the treatment in a high percentage of cases, by way of oncoplastic techniques that require a broad image study to design the most suitable and personalized surgical strategy. However, there was no standardized protocol to establish the requirements for a

full photographic study, from all viewpoints and with an optimum image quality, while also preserving patient privacy and comfort. Research professors from the Degrees in Medicine and Industrial Design at the CEU Cardenal Herrera University (CEU UCH) have collaborated in this first photographic protocol proposal for breast cancer surgery, with the participation of students and in collaboration with the National Autonomous University of Mexico (UNAM).

The [protocol](#) codifies the optimum planes and angles of the images, the appropriate positions of the patients to take the photos, the optimum specifications for different types of available photographic equipment, the uniformity of light and the importance of neutral and single-color backgrounds to take two-dimensional photographic images with clinical use for breast cancer. "The collaboration between doctors and [industrial design](#) engineers has been key to define the different parameters that this first photographic protocol with clinical use establishes," says Belén Merck, head researcher of the project, specialist in [breast cancer](#) and professor of the Degree in Medicine at the CEU UCH.

As well as technical recommendations for the images, the protocol also includes the appropriate procedure to guarantee patient confidentiality. "It is of utmost importance to preserve confidentiality and to guarantee the appropriate treatment and comfort of the patients during this photo-taking process. Steps such as signing a consent form and appropriate storage of the images, the presence of only the necessary people in the room, the appropriate temperature, having a clothing item with which to cover up during the evaluation, keeping the patient's face from appearing in the images... are all also included in the protocol, along with the technical indications for the photos," says Dr. Merck.

## **Better strategy, less anxiety and more feedback**

The protocol designed by doctors and engineers of the CEU UCH and

UNAM also includes a graphic checklist, which summarizes the recommendations for taking photos in seven steps, with explanatory graphs for each step and for the angle of each image. "The design of this photographic protocol can be added to the image diagnosis process of mammograms and magnetic resonance tests, for the pre-operation design of less invasive and more conservative [breast](#) surgical strategies. It can also be helpful to explain to the patient the expected result of the surgery, thus decreasing their anxiety from the intervention and also from the aesthetic results. They also allow the surgeon to analyze the results after the intervention and obtain valuable feedback on the surgical intervention conducted."

**More information:** [www.embj.org/embj/photographic ... n-in-breast-surgery/](http://www.embj.org/embj/photographic...n-in-breast-surgery/)

Provided by Asociacion RUVID

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