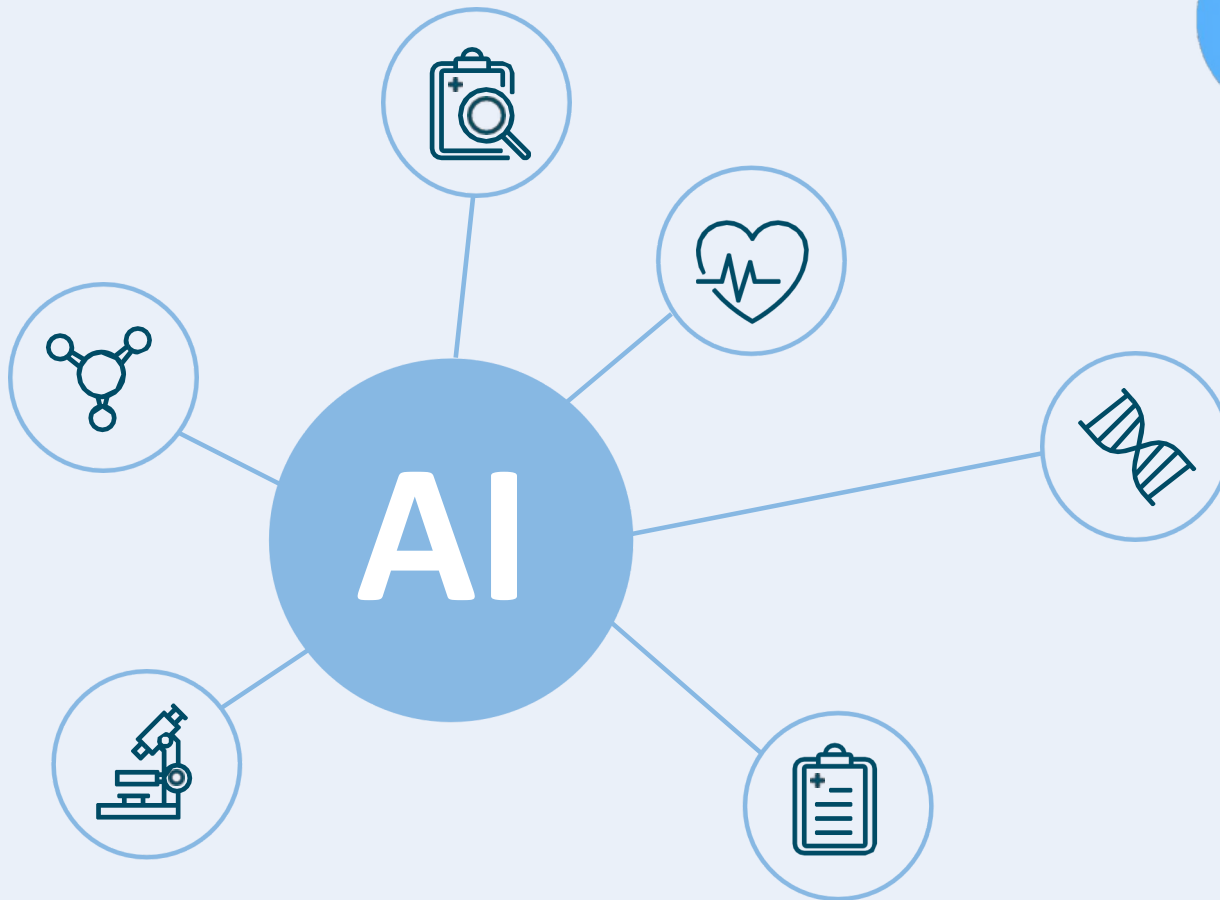




**Artificial Intelligence for the early detection of breast
diseases**

Design and marketing of artificial intelligence
algorithms for image and clinical data
analysis.

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REGULATORY

ENS

ISO 13485, 27001, 9000

EC DECLARATION OF CONFORMITY IN
ACCORDANCE WITH THE MEDICAL DEVICES
DIRECTIVE 93/42/EEC AND ITS AMENDMENT
2007/47/EC

HL7 FHIR



AN UNMET CLINICAL NEED

quantusMM is a non-invasive, quick, and easy-to-use test for the early detection of breast pathologies, developed in collaboration with the Basque Health Service **Osakidetza** and the Biodonostia Institute Association.

Using a mammogram, it can **detect** the presence of malignant **nodules or microcalcifications**, thus helping to identify the risk of breast cancer.

Its technology is based on the quantitative analysis of the texture of the breast image. quantusMM classifies the images and assigns them a category that determines the probability of malignancy in the breast analyzed, based on sensitivity values.

quantusMM has been designed as a tool to assist clinicians, especially in mass screening processes for patients with risk factors, in the early detection of breast pathologies, and in prioritizing waiting lists.



NON-INVASIVE



SAFE



FAST



COMPATIBLE

How to use **quantusMM**?



**1.Acquire magnetic
resonance images**



**2. Upload the cuts
to the web
application**



**3. Obtain the
results**

Step 1: Acquire a mammogram

quantusMM requires a mammogram in DICOM format. A simple guide is available within the application that shows how to acquire the image.

How to use quantusMM?

Step 2: Use the quantusMM medical application to analyze the image.

This application allows you to send the image you want to analyze to the system.



Upload

Upload images to the web



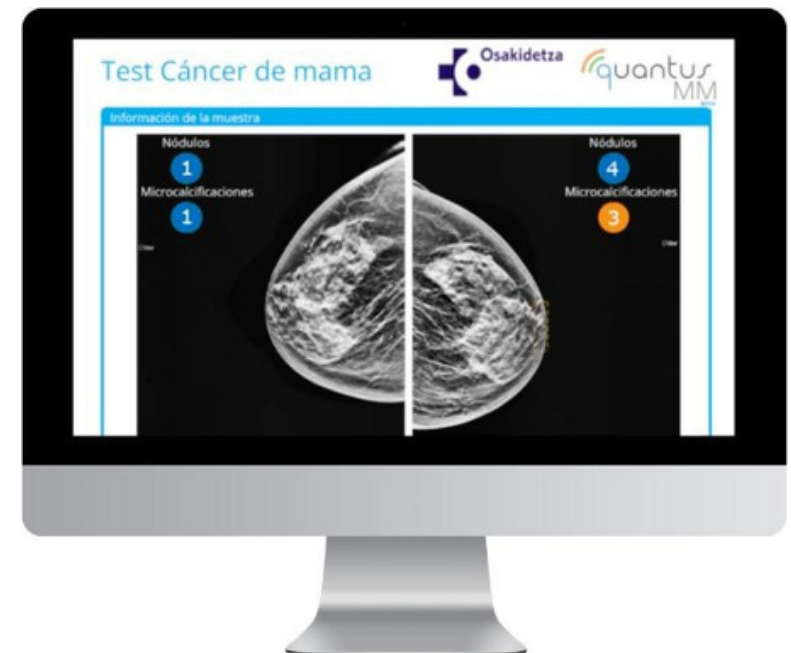
Select

The images you want
to be analyzed



Send

The sample to be analyzed



Step 3: Obtain the result of the application through a results report in a few minutes.

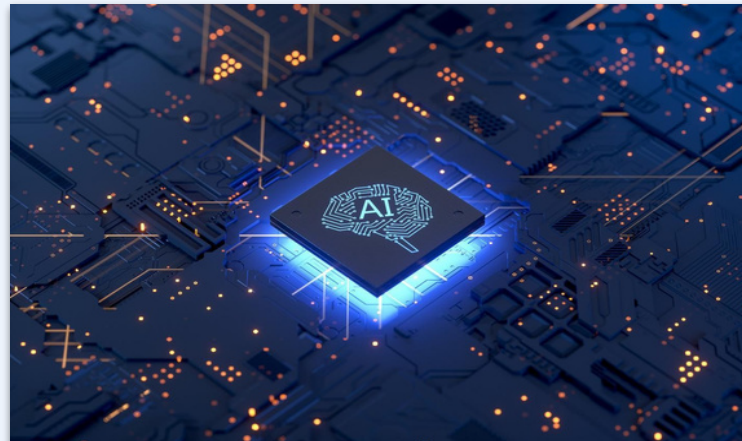
Artificial Intelligence at the service of medicine

quantusMM is an innovative Artificial Intelligence method based on state-of-the-art Deep Learning, with two different classification algorithms: one for **nodules** and another for **microcalcifications**.

Its technology is based on performing a **quantitative analysis** of the image texture, which allows patterns associated with malignant nodules or microcalcifications to be identified, thus helping to identify the risk of breast cancer.

The original image is subjected to contrast enhancement filters and divided into patches so that image quality is not lost when the lesions to be detected are very small.

quantusMM has been designed with a clear focus on helping the female population, being of great help in **screening patients** with risk factors, monitoring patients, and prioritizing **waiting lists**.



ANALYSIS AND CLASSIFICATION OF MAMMOGRAM

Its technology is based on quantitative analysis of breast image texture. quantusMM classifies images (cranio-caudal (CC) and oblique medio-lateral (OML) views of both breasts) and assigns them a category that determines the malignancy status of the breast being analyzed.

Classification system applied in quantusMM

- 1: Benign breast
- 3: Findings probably benign 4:
Suspicious for malignancy
- 5: Highly suggestive of malignancy 6:
Malignant breast

The determination of the **BIRAD category** to which each mammogram image belongs is based on different thresholds with different sensitivity and specificity values, as shown in the following tables.

quantusMM bases the determination of the category on sensitivity values rather than positive predictive value.



RELIABILITY OF QUANTUSMM

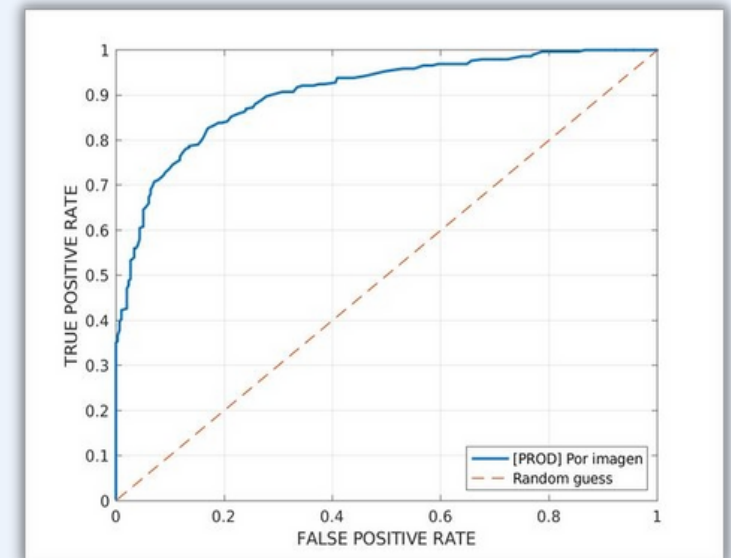
Nodules

CLASS	SENS	SPECIFICITY	PPV	NPV
1	Completely healthy breast			
2	99	23	56	71
3	95%	51	65	91%
4	65%	95%	92	73
5	37	100%	99%	62

Microcalcifications

CLASS	SENS	SPECIFICITY	PPV	NPV
1	Completely healthy breast			
2	99	3	39	89
3	95%	52	56	94%
4	66%	95%	89%	76
5	42	100%	99%	73

AUC ROC curve for nodule detection



AUC:
90.42

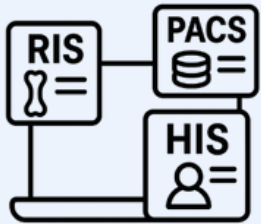
An unlimited experience



Unrestricted 24-hour **access**: With an internet connection, you can use quantusMM and review results anytime, anywhere.



No requires installation: or download of any type of software



Our service allows for seamless integration between **HIS**, **RIS**, and **PACS** systems, optimizing clinical work and ensuring centralized and secure access to medical information.



High compatibility: quantusMM is compatible with most web browsers as well as devices used in primary care practice.



RESTful web services: Compatible with HL7 FHIR



Pay-per-use: Pay only for each analysis you request

Our partners





Developing tomorrow's medical technologies today