



**PHILIPS**

## MicroDose SI

Mammography

# Diagnostic confidence, comfort and low-dose of radiation

At the Women's Healthcare Imaging Center:  
**Imagerie Médicale des Sources - Thonon-Les-Bains - France.**

#### **Who? Where?**

Dr Joëlle Teyssandier,  
Radiologist at the Women's  
Healthcare Imaging Center:  
Imagerie Médicale des Sources -  
Thonon-Les-Bains, France.

#### **Challenge**

Optimize the quality and reliability  
of mammograms, at a low dose using  
equipment which provides comfort  
for patients and ease of use for the  
operators.

#### **Solution**

Philips MicroDose Mammography SI

Located in the heart of Thonon-les-Bains, a stone's throw from the railway station, the Imaging Center "Imagerie Médicale des Sources" uses all types of diagnostic radiology and medical imagery techniques: conventional radiology and interventional radiology (breast biopsies, infiltrations, etc.), ultrasound, CT scan, MRI, and mammography.

The thirty employees at the center, including six radiologists, share a constant concern for maintaining the highest standards and professionalism in terms of quality of services, patient reception, and care.

This team of specialists is also committed to using equipment that offers the most advanced medical imagery technology. Thus, they acquired their first MicroDose Mammography unit in November 2008, and upgraded to the MicroDose SI version the beginning of 2014.

# Centre d'imagerie de la femme



**Dr Joëlle Teyssandier**

A member of a high-level team that has made mammography one of its areas of excellence, has been using the Philips MicroDose Mammography SI for more than a year. She explains why she thinks “An exceptional system for her center”.

“In May 2012, we opened a new imaging center site as part of the “Centre Médical du Chablais”, a multi-disciplinary consultation establishment grouping surgeons, anesthetists, nurses, physiotherapists and other specialists.”

“However mammography remained here in the middle of the town in the Women’s Healthcare Imaging Center, a structure which lends itself to a personal and warm welcome.”

# A desire to be more

## than simply a provider of diagnoses

After her university and hospital degrees, Dr Joëlle Teyssandier specialized in women's healthcare imaging, and mammography in particular. "It is a specialty which requires fairly advanced technical skills and also a greater focus on the quality of patient reception and follow-up," she stresses. "I always try to put myself in the patients' shoes, and not forget that they can sometimes be anxious." Aiming for excellence and the optimization of treatment pathways,

Dr Joëlle Teyssandier created a network of skilled fellow surgeons and oncologists. "Each month, we organize a multi-disciplinary meeting with hospital and practice-based gynecologists, oncologists, and all practitioners who feel involved in the files presented. When faced with patients who have a real need to feel supported and followed, I could not just sit back and simply deliver a diagnosis."

### **MicroDose Mammography: promises kept with photon-counting technology**

In 2008, the center "Imagerie Médicale des Sources" invested in the "first generation" of MicroDose Mammography, which was equipped with photon-counting technology. "This technology already offered several advantages which quickly convinced us," explains Dr Joëlle Teyssandier.

"On one hand, we have the 50-micron spatial resolution and the high-definition focus spot "diagnostic scan" which means that geometric magnification is no longer necessary. We work directly on the 5 megapixel screens in full resolution (1:1)."

The actual result of the average dose reduction will vary based on variations of digital mammography systems.

- [1]. Oduko, J.M. Young, K.C., Burch, A.: A Survey of Patient Doses from Digital Mammography Systems in the UK in 2007 to 2009. *Digital Mammogr.* IWDM 2010, 365–370, (2010).
- [2]. Baldelli P. et. al., COMPREHENSIVE DOSE SURVEY OF BREAST SCREENING IN IRELAND, *Radiation Protection Dosimetry*, Vol. 145, No. 1, pp. 52–60, (2010).

"On the other hand, photon-counting technology eliminates electronic noise and does not generate dead pixels that would have to be extrapolated by post-processing. This means we can have total confidence in the image with 18 to 50 % lower radiation dose than used on other digital mammography systems, with an average dose reduction of 40%\*. [1],[2],[3],[4]\*"

For six years, the team at Imagerie Médicale des Sources have witnessed other advantages of MicroDose mammography technology on a day-to-day basis.

"It only takes a few seconds after the radiographer does a mammogram for the images to arrive on the doctor's diagnostic workstation,"

says Dr Joëlle Teyssandier. Thus, not only can the radiographer dedicate more time to the patient herself, but we have been able to significantly increase patient flow." This leads to easier management of tight schedules, which is all the more important as the Imagerie Médicale des Sources has recorded a significant increase in patient numbers since the arrival of the MicroDose Mammography.

- [3]. Leitz W, Almén A. Patientdoser från röntgenundersökningar i Sverige – utveckling från 2005 till 2008. SSM 2010-14, ISSN 2000-0456, available online (in Swedish) at HYPERLINK "<http://www.stralsakerhetsmyndigheten.se>". [4]
- [4]. White paper, Comparison of Dose Levels in a National Mammography Screening Program, Philips Healthcare

# Philips MicroDose SI: a huge step forward in the measurement of breast density

In keeping with this partnership, last February the center replaced its MicroDose Mammography with the next generation system: The Philips MicroDose Mammography SI “Spectral Imaging”. “We had heard about Spectral Imaging at various congresses,” recalls Dr Joëlle Teyssandier. This development in photon-counting scanning technology is able to separate low and high energies in particular. The first application of this technology currently available is the measurement of breast density, which by differentiating between adipose and fibroglandular tissue, can give an, objective measurement of breast density, taking into account breast volume. This is a considerable advantage for us, in particular to help determine if we should send the patient for a breast ultrasound scan, even if the breast appears normal.”

Due to the difficulty in penetrating the mammary gland, studying dense breasts by mammography is always complicated. “In this area, the image quality offered by the Philips MicroDose Mammography SI, is a key step forward,” Dr Joëlle Teyssandier assures us.

“The technology contributes to excellent penetration of dense tissues, which is a great help for monitoring patients treated by surgery and radiotherapy. We are much less stressed when faced with dense breast tissue and we are less likely to have to carry out localized compression. Moreover, in general, and for dense breasts in particular, the quality of the mammogram obtained means we are less often obliged to use additional ultrasound scans.”

Dr Joëlle Teyssandier, who systematically records in her reports the breast density obtained using the Philips MicroDose Mammography SI, thus considers that this data could very well become an indicator of the success of certain therapies, and an important factor in decision-making for tailoring patient care in line with their personal risk.

## Sensitivity and specificity: the advantages of a high-definition image

The specialists at the Women’s Healthcare Imaging Center note that with a very low radiation dose, the Philips MicroDose Mammography SI provides high detection sensitivity and excellent diagnostic specificity. This is particularly useful for young women. “we can detect small cancerous lesions” states Dr Joëlle Teyssandier. “We have detected opacities in several patients measuring only 5 mm, which have proved to be cancerous lesions.”

The doctor adds that the high definition provided by the Spectral Imaging photon counter provides an excellent picture of architectural distortions, which are very subtle signs of breast cancer. “In my opinion, these architectural distortions are the most difficult thing to detect by sight,” she explains. High definition helps us to distinguish an area of distortion from superimposed glandular tissue.”

“I believe that in the coming years other applications of tissue differentiation will be possible with spectral analysis will certainly make other applications of tissue differentiation possible,”

**Dr Joëlle Teyssandier.**

# Low dose mammography, **a key factor of differentiation**

For Dr Joëlle Teyssandier, not only does the low radiation dose received by patients represent a key advance from a medical point of view, it also gives the Imagerie Médicale des Sources a decisive advantage. “Patients appreciate that this equipment enables us to perform high-quality examinations with a low radiation dose,” she observes. “This is also reassuring for gynecologists who sometimes have to recommend a mammography to young women due to family history of cancer”

This concern – obtaining excellent image quality while minimizing the level of radiation – is fully consistent with the “ALARA” principle (As Low As Reasonably Achievable), a radiation protection “best practice” which Dr Joëlle Teyssandier and her colleagues at the Imagerie Médicale des Sources scrupulously abide by.

mammographie  
microdose





### Emilie:

**“The machine helps me to focus on the human aspect”**

*“find exams on the Philips MicroDose Mammography SI to be less painful and quicker.*

*From my point of view, the highly automated operation means I don’t have to focus on the machine at all. On the contrary, it helps me focus first and foremost on the patient, her reception and the quality of human contact.*

*MicroDose technology is a real advantage. For example, when I need to take additional localized images, I can explain to the patient that she will only receive low doses of radiation.*

*When I started to work with the various radiology equipment, mammography seemed the most complicated to me. With this equipment, I feel totally confident.”*

# What the radiographers **think**

## Véronique:

**“We save time, improve the quality of our performance, and enhance patient comfort.”**

*“The Philips MicroDose Mammography Si offers excellent working ergonomics. This results in fast performance of the various stages following the arrival of the patient from the waiting room. Thanks to the automated movement of the stand, you can obtain the right position at the push of a button.*

*The slightly curved shape of the Philips MicroDose Mammography SI breast support is warm and allows uniform and homogeneous compression.*

*As there are no ghost images, which would remain on the detector, there is no delay between images and once they are validated, they are automatically sent to the printer, the archiving workstation, and the doctor’s screen nearly instantly. The patient is only in the mammography room for a very short time.*

*Another advantage is that an intelligent automatic exposure control adapts the dose of X-rays according to the density and thickness of the breast as the scan progresses. This reduces the need to reimage.*

*And of course, the low radiation dose is a very important advancement, which reassures patients.”*





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