



# **SCREENING / BREAST CANCER?**

**A DECISION THAT  
BELONGS TO  
EVERY WOMAN**

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# *ORGANISED MAMMOGRAPHY BREAST CANCER SCREENING*

*Is it foolish not to attend screening?*



# 50%

About 50 % of women aged 50 to 74 years who are invited to breast cancer screening do not attend screening.

## OF WOMEN

Can we declare that these women are wrong and that they should feel guilty?

*Why breast cancer, a condition for which considerable resources are devoted remains such a problem of public health?*

## WHY WAS SCREENING IMPLEMENTED?

*Initial reason*

### SMALL=EARLY=CURABLE, THIS SEEMED TO BE AN OBVIOUS HYPOTHESIS

Intuitively, it seems straightforward that the smaller the cancer is, the better is the prognosis...

Small=early=curable, this seemed to be an obvious hypothesis

A wonderful tool: mammography

Simple, effective, painless...

*The first trials seemed to confirm the hypothesis, claiming that screening can reduce the risk of breast cancer death by 30%.*

▲ A figure usually found in numerous web sites and leaflets.

## 20 YEARS LATER:

*A new player, THE OVERDIAGNOSIS*

Epidemiologists and researchers highlighted biases in the methodology used in trials on breast screening.

### THE ACTUAL REDUCTION OF MORTALITY IS LOWER THAN THAT EXPECTED

OFFICIAL DATA from the National Institut of Cancer:

Reduction from 15 to 21%, i.e., 150 to 300 deaths avoided for 100,000 invited to screening during 7 to 10 years, which means at best 2 to 3 deaths avoided for 1,000 screened women; no reliable information about the number of years of life saved.

*On the other hand an unexpected effect of the screening came to light: the overdiagnosis or the excess of diagnoses of breast cancers.*

# *What is overdiagnosis?*

*Consequence: artificial increase of breast cancer diagnosis*

It is the diagnosis of a cancer that would never have damaged the health of the woman in her lifetime, had it be left undetected.

## **CONSEQUENCE:**

*artificial increase of breast cancer diagnosis, of useless treatments and of stress for women, as a consequence of the implementation of screening campaigns.*

*the more you search...*



*...the more you find.*

# BUT

Reducing from 20% or 30% the risk of dying from a breast cancer has no significant effect if the absolute risk of dying from a breast cancer is low.

**In 2010 (in France):**

- ▲ 4.4% of women died from breast cancer,
- ▲ 19.4% from another cancer,
- ▲ **29% from cardiovascular disease.**

(Health status/mortality/deaths by cause: [www.ecosante.fr](http://www.ecosante.fr))

*In comparison, tobacco smoking kills one of two consumers.*

# THE EVIDENCE FOR OVERDIAGNOSIS

A study in Norway

## ▲ NORWAY'S STUDY:

Two groups of women, one screened every two years, and the other one screened once after six years.

Result: **22% of diagnoses are in excess.**

Indeed, if all the tumours progressed into a clinical cancer, there should be a same rate of cancer in these two groups of women who have similar characteristics. If we find more cancers in the group detected every two years, it means that there is an excess of diagnosis.

(Zahl, Maehlen, Welch 2008)

## THE TEST OF PEARLS

According to an independent study based on available data on 2,000 women aged 40 and more, and screened for 10 years:  
(Cochrane Collaboration. <http://www.cochrane.dk/screening/index-fr.htm>)

Let a jar of 2,000 pearls representing screened women. Among them, put:

- 1 GOLDEN PEARL  
1 death by avoided breast cancer.
- 10 RED PEARLS  
10 healthy women who have been overdiagnosed and uselessly treated.
- 200 WHITE PEARLS  
200 women stressed out due to a wrong diagnosis that has been corrected several weeks later by further examinations.

Draw one pearl at random and check how many times you draw the golden pearl. **It looks like a lottery...**





## *a*AVAILABLE DATA

*Calculations for France*

*French Institute for Public Health Surveillance (InVS) 2010, French National Institute for Cancer (InCA) 2013*

Data from InVS enable to estimate for France based on hypotheses from InCA:

**PER 1,000 WOMEN AGED 50 TO 74 AND SCREENED EVERY TWO YEARS FOR 24 YEARS:**

- More than half will receive a false positive result
- 8 to 16 overdiagnoses
- 3-4 avoided deaths by breast cancer  
*(B. Pabion, Princeps-Colloquium)*

## *f*ACTS FROM RECENT STUDIES

*on women*

▲ **Screening did not decrease the number of advanced cancer cases and consequently has few or no effect on the decrease in mortality by breast cancer that has been noticed in France since 1994. Contrary to what had been expected, there was no reduction of the heaviest treatments (mastectomies, chemotherapies).**

▲ SAME DECREASE IN MORTALITY

in the group of screened women as in the group of non-screened women, this decrease likely being associated to treatments and to the reduction of menopausal hormone replacement therapies.

▲ SAME SURVIVAL RATE

in groups of screened and non-screened women, whichever the cancer stage at diagnosis.  
*(A. Miller 2014 ; C. Harding 2015)*

# SCREENING IS BASED ON FALSE POSTULATES

1. THINK THAT CANCER EVOLVES IN A LINEAR AND AUTOMATIC WAY:  
Precancerous lesion ---> invasive cancer ---> spread of cancer ---> death.

BUT THIS IDEA IS NOT PROOFED.

A small cancer does not necessarily mean it is recent.  
Therefore large cancer does not inevitably mean late-stage cancer.  
*A cancer can grow, regress or remain stable for years.*

2. DETERMINE THE START OF THE DISEASE ONLY BY:  
a microscopic examination of tissue (histological diagnosis)

BUT A SINGLE HISTOLOGICAL EXAMINATION

*can neither fully define the cancer stage, nor predict its development.*

# OTHER RISKS OF SCREENING

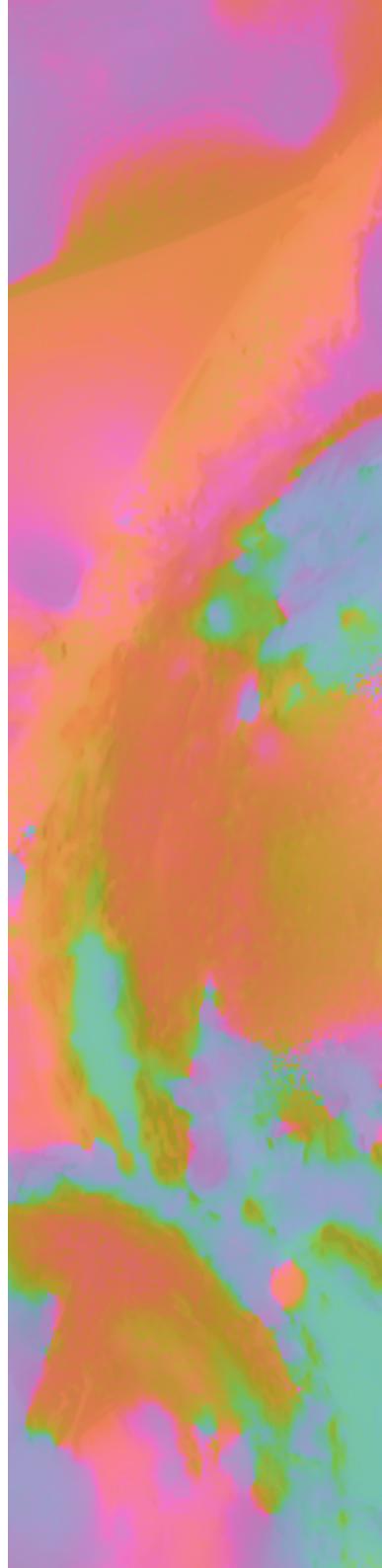
▲ FALSE POSITIVE SCREENING result leading to further - sometimes heavy - examinations, to biopsies whose number has largely increased since the implementation of screening campaigns. Sometimes women have to wait for several weeks before being confirmed that they do not have cancer.

*Per 1,000 women aged 50 and more and having attended screening for 20 years, it would be about 1,000 wrong diagnoses in France, leading to 150 to 200 biopsies (Prescrire journal, February 2015/volume 35 N°376).*

## ▲ RADIATION-INDUCED CANCERS

According to InCa (French national Institute of Cancer), radiation-induced cancers would be about 1 to 20 cases per 100,000 screened women aged 50 and more.

*Repeated examinations and multiple x-ray images per exam increase the risk of radiation-induced cancers.*



# THE ILLUSION OF EARLY DETECTION...

*Both women have the same life expectancy.*

*One of the two women has known for longer than the other that she has a cancer.*

*Is it really a "benefit"?*

**Cancer diagnosis at 60 years old**

**Non-screened woman**

Disease

**65-year life expectancy**

**Cancer diagnosis at 57 years old**

**Screened woman**

V

Disease

**65-year life expectancy**

**Reference\***: [www.gesundheit.uni-hamburg.de](http://www.gesundheit.uni-hamburg.de)

\* reference: Leaflets for patients in Germany



## HARMS DUE TO OVERDIAGNOSIS

▲ HEALTHY WOMEN BECAME SICK WOMEN,  
*wrongly representing "family history risk" for their own children.*

▲ ALTERED, EVEN RUINED LIFE:

- physically
- professionally
- interpersonally
- socially
- economically
- emotionally

▲ INCREASE IN GLOBAL LEVEL OF ANXIETY FOR ALL WOMEN.

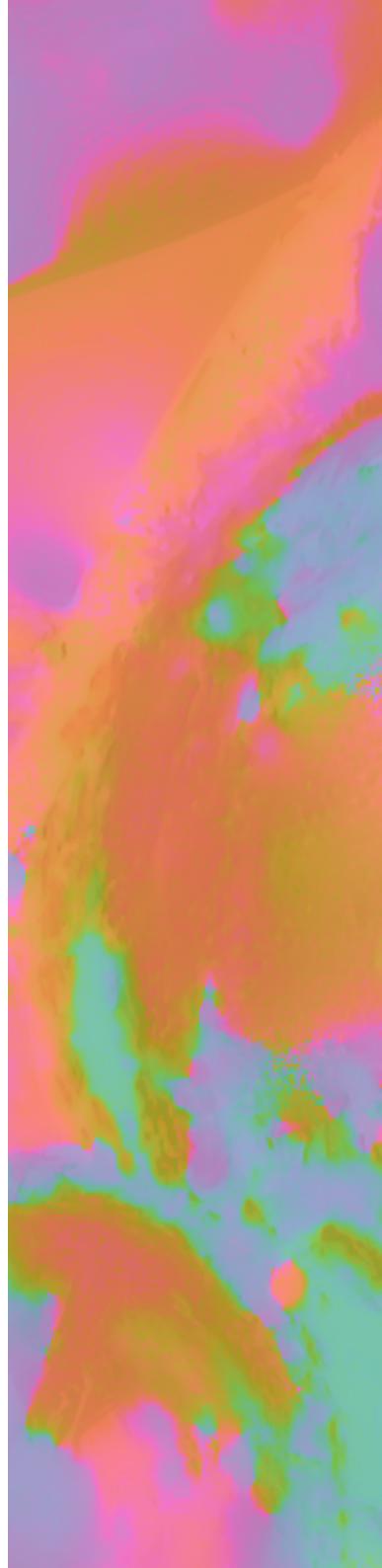
▲ OVERTREATMENTS WITH:

- Increase in mastectomy rate.
- Chemotherapies (including their toxicity, even higher when several concomitant treatments).
- Radiotherapies (including their complications), in parallel to overdiagnoses.

▲ EARLY MENOPAUSE SYMPTOMS DUE TO TREATMENTS.

## MAMMOGRAPHY

**MAMMOGRAPHY IS A GOOD TOOL FOR DIAGNOSIS BUT NOT FOR SYSTEMATIC SCREENING.**





## *b*ENEFIT-RISK BALANCE

- ▲ In spite of disagreements on the benefit-risk assessment, studies are however consistent about the fact that overdiagnosis exists.
- ▲ To make your decision easier, note that studies' results are consistent about the fact that screening slightly decreases breast cancer mortality, because the absolute risk of death by breast cancer is low.
- ▲ This small effect has to be weighed against adverse effects as wrong diagnosis, overdiagnosis, overtreatment, radiation-induced cancer.

### IN FRANCE IN 2015,

per 1,000 women screened for 20 years, there are at least 19 overdiagnosed cancer cases.

*You are free to attend screening, this is an individual decision that has to be well thought-out, neither forced nor suffered.*

## *So, WHAT TO DO?*

- ▲ See a doctor if you feel the need to do it or if you feel something strange **in a breast, even if you just underwent a mammography that was considered as normal**. The doctor has to inform you honestly and according to current scientific data.
- ▲ Be watchful regarding medical information, you have to play an active role for your health.
- ▲ Whatever you keep in mind either a desired beneficial effect or risks,  
**BE AWARE THAT MAMMOGRAPHY SCREENING** plays a minor role in the breast cancer mortality decrease that has been noticed for 20 years. This small effect has to be weighed against risks caused by this screening.  
(*Ph. Autier, bulletin du Conseil de l'Ordre N°21, January-February 2012*)

*Current data do not allow to make you feel guilty if you do not want to attend screening.*

*"all these statistics! 25% here, 15% there..."*



*... Anyway, if I am among the overdiagnosed cases,  
it will be 100% for me!..."*



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