

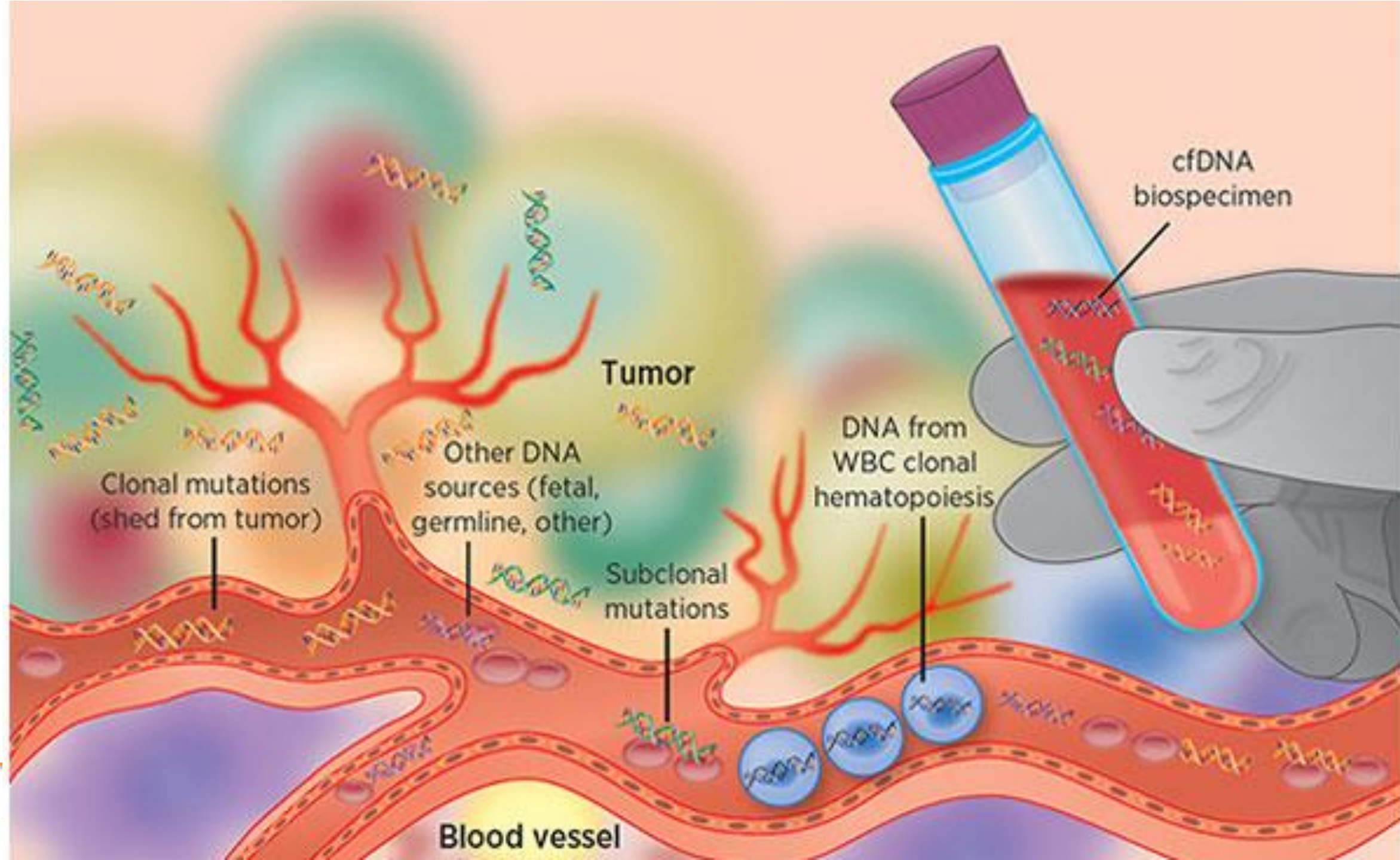
Advances in Surgical Oncology

Riccardo A. Audisio

Department of Surgery - Institute of Clinical Sciences
Sahlgrenska University Hospital
Göteborg, Sweden



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&
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Developing biological tools that enable cancer
screening, diagnosis, monitoring and facilitate the
design of **personalized therapies** without the need for
invasive tumour biopsy sampling

Circulating tumor DNA (ctDNA) to:

Detect gene alterations > markers for specific targeted therapies. RAS and BRAF to predict the responses to anti-EGFR therapy and combination of MEK inhibitor, BRAF inhibitor and anti-EGFR antibody

Detect minimal residual disease > ctDNA can now be detected at markedly low levels, with a **detection limit of 0.01%** (copy number of the target gene/copy number of total genes examined), using advanced technologies such as next-generation sequencing (NGS) and PCR



ELSEVIER

Blood test that finds 50 types of cancer is accurate enough to be rolled out

Diagnostic tool being piloted by NHS England shows 'impressive results' in spotting tumours in early stages



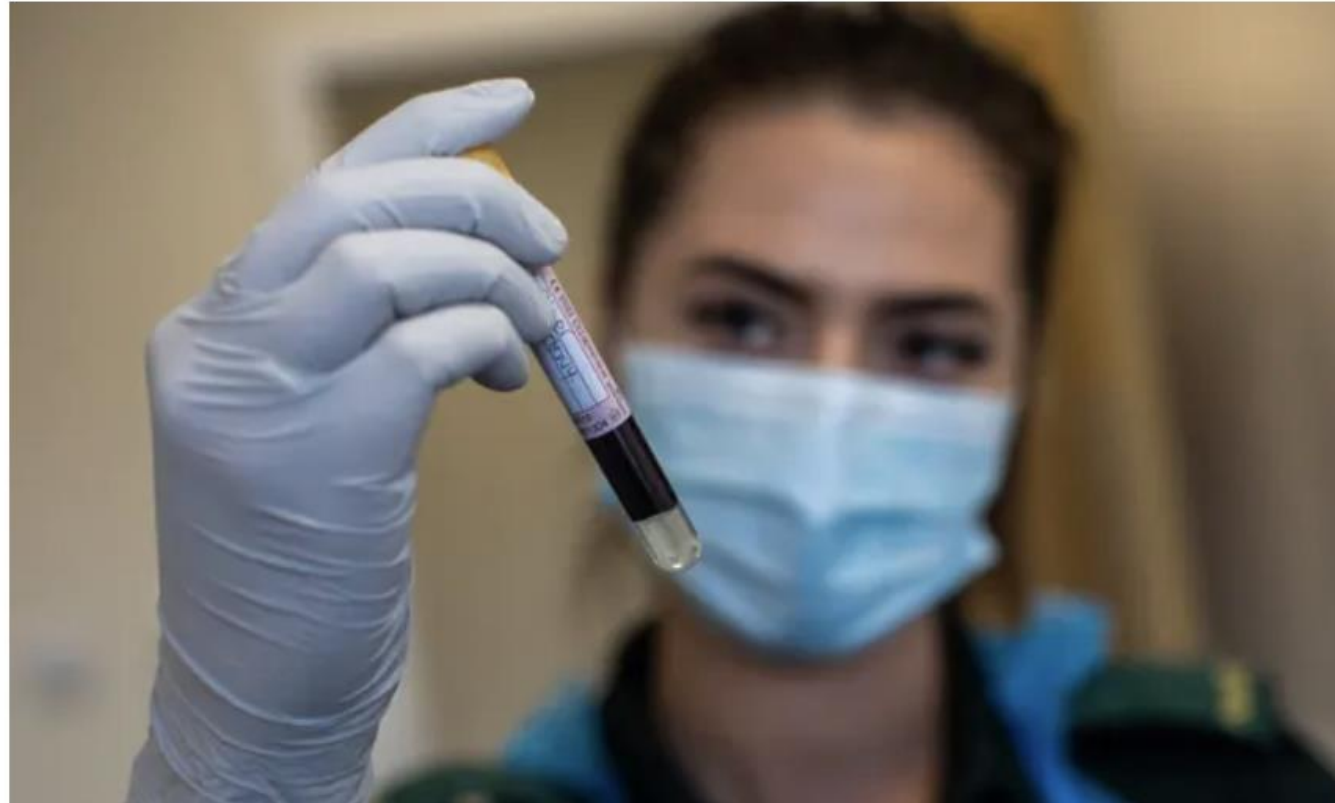
A ctDNA-driven colorectal cancer

Keywords:

ctDNA

Colorectal cancer

Oligometastases



▲ The blood tests are accurate enough to be rolled out as a screening test, scientists say. Photograph: Getty Images

Surgical resection has been the standard (CRC) treatment for decades, but it has expanded to metastatic disease. The intensity of treatment has been increased with chemotherapy, immunotherapy, and targeted therapy. The prognosis of advanced CRC is poor, with a high rate of recurrence. Side effects, such as perianal

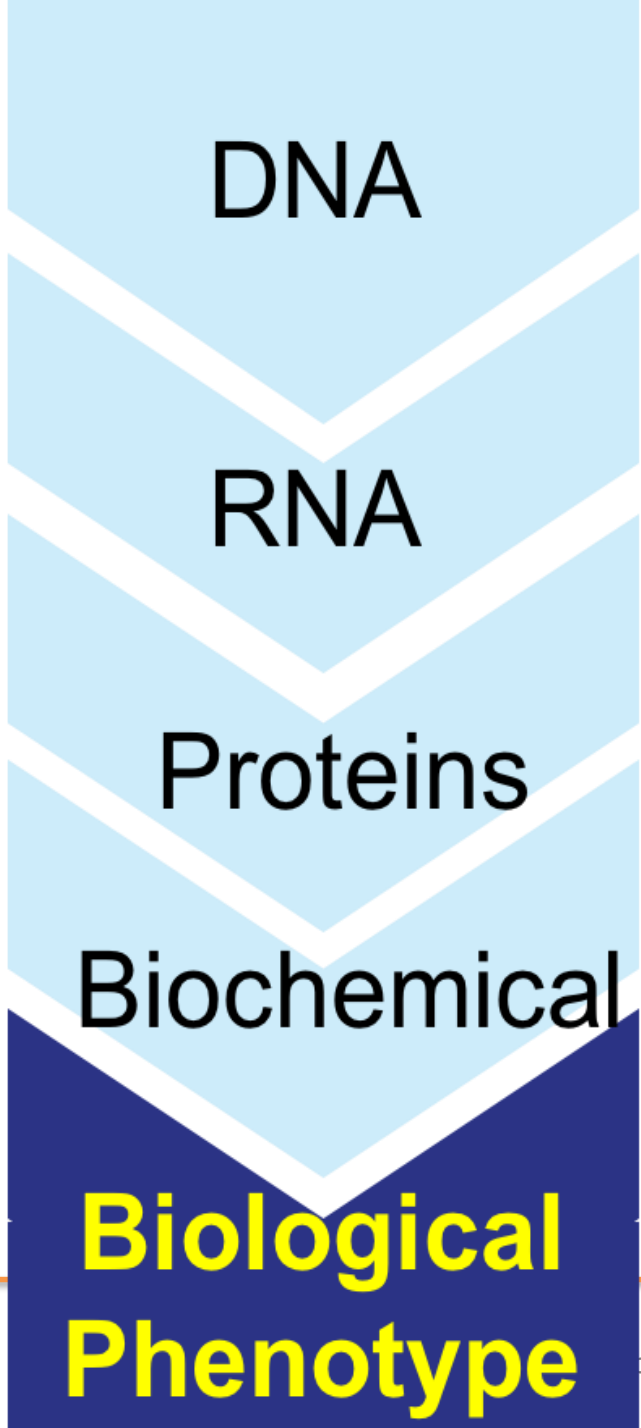
A simple blood test that can detect more than 50 types of cancer before any clinical signs or symptoms of the disease emerge in a person is accurate enough to be rolled out as a screening test, according to scientists.

patients who are ctDNA-positive. A report from the GALOP (Genetic Analysis of Liquid Organisms Platform) (for ctDNA), the detection rate of ctDNA was 100% in stage I, 6% in stage II, 25% in stage III, and 100% in stage IV.

ctDNA can detect recurrence approximately 8–10 months before a CT scan [6]. ctDNA can detect recurrence in earlier stages, which can lead to earlier intervention. A ctDNA-positive result also aids surgeons in deciding whether to perform a CT scan and PET-CT, which can lead to earlier intervention if ctDNA monitoring is used for detection of recurrence.

ctDNA monitoring is a promising strategy for approximately 30% of patients who have a pathological complete response (pCR) after neoadjuvant chemotherapy (TNT). Precise timing of the watch and

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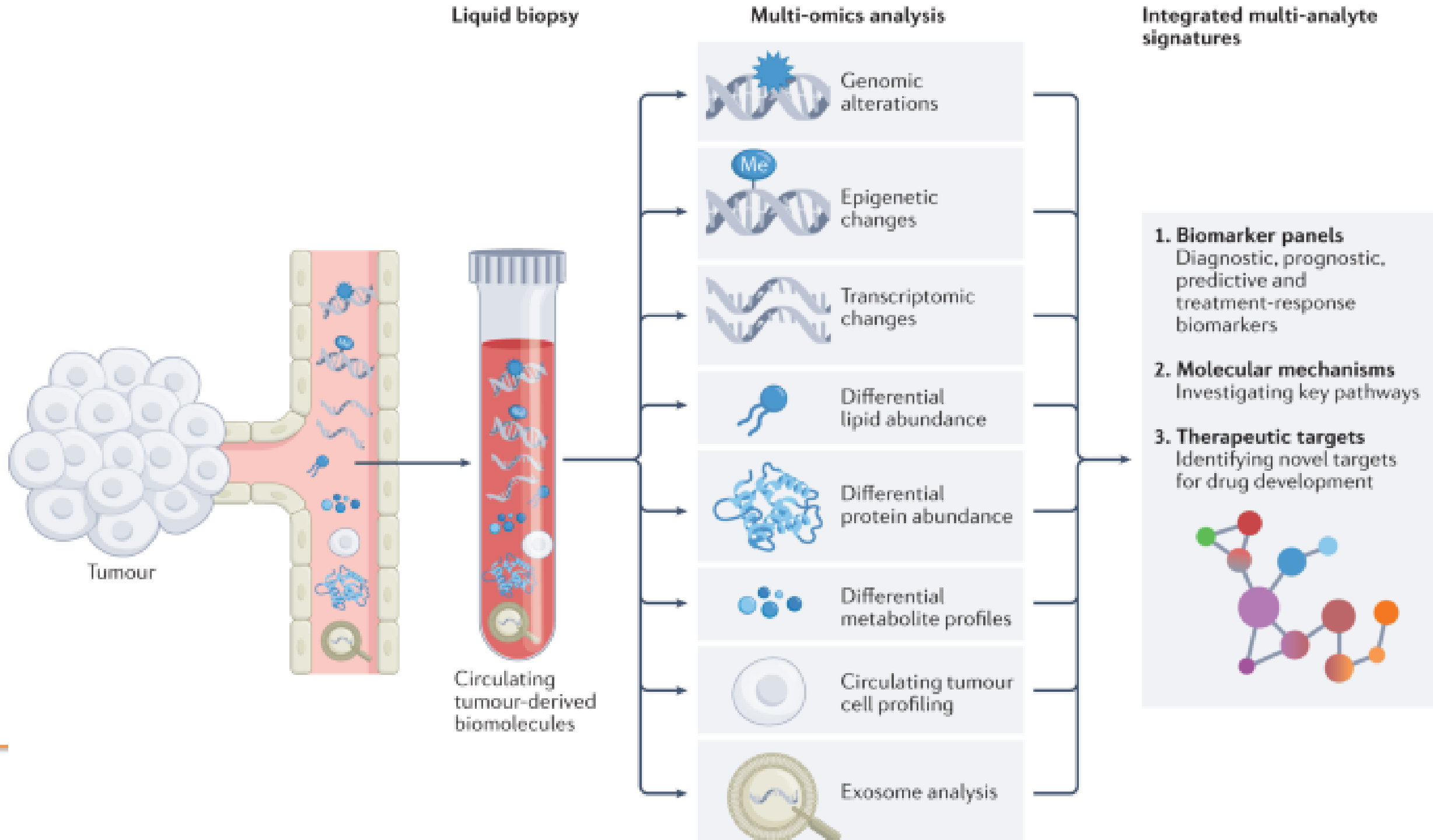


Genomics

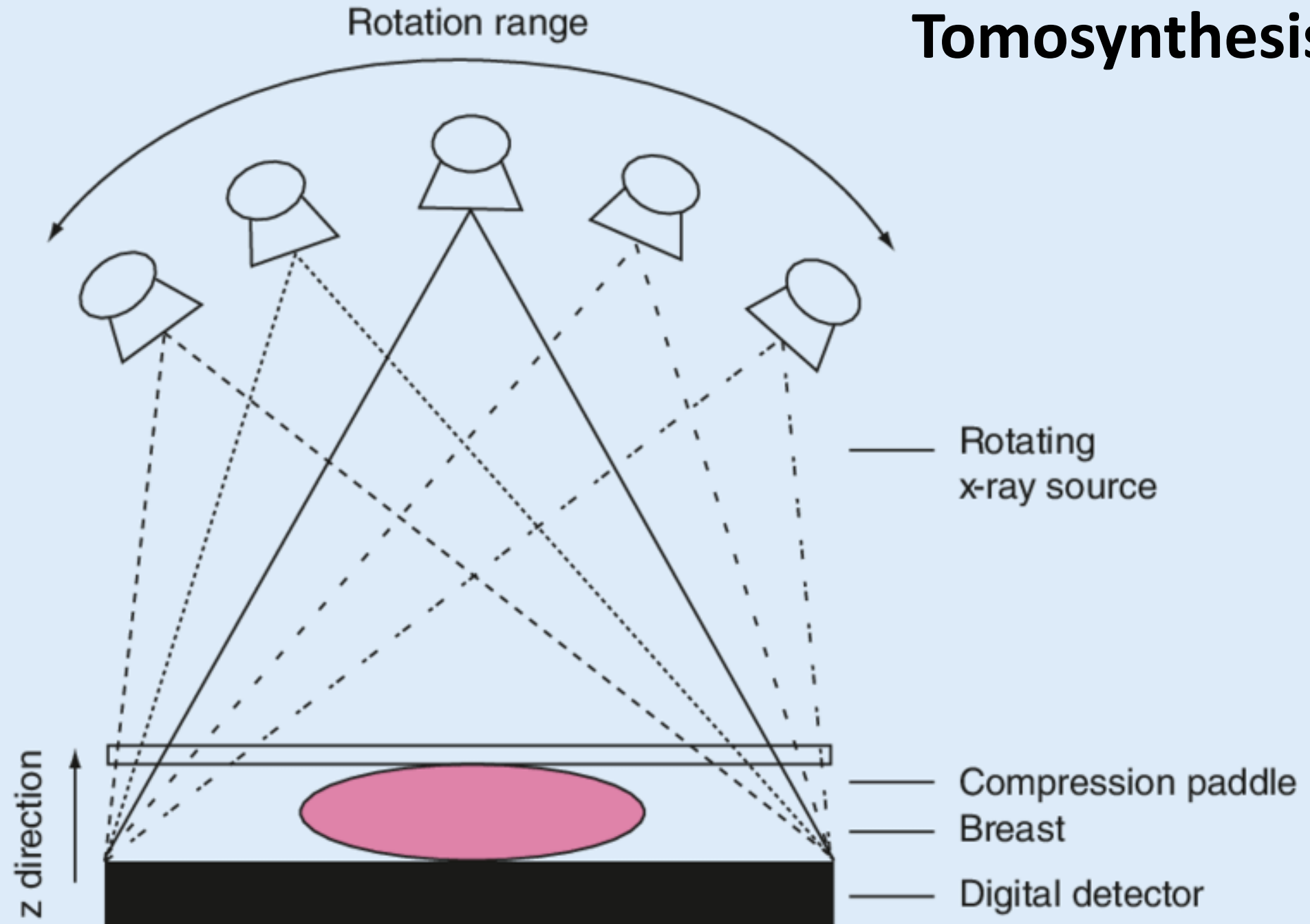
Transcriptomics

Proteomics

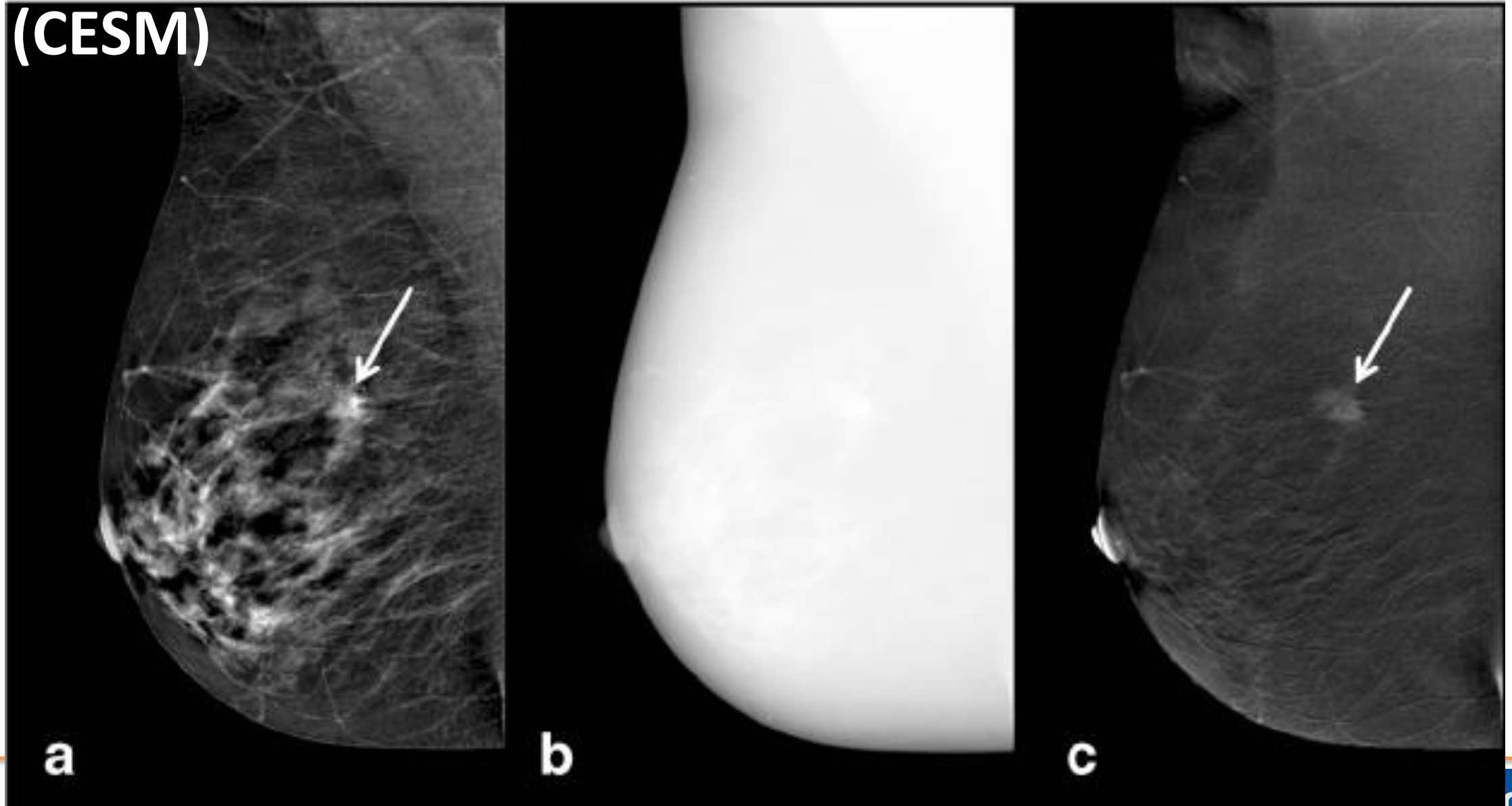
Metabolomics



Tomosynthesis



Contrast-enhanced spectral mammography (CESM)



Giant steps in RT

Scientific Article

A Pilot Study of Synchronization of Respiration-Induced Motions in the Duodenum and Stomach for the Primary Tumor in Radiation Therapy for Pancreatic Cancer Using 4-Dimensional Computed Tomography

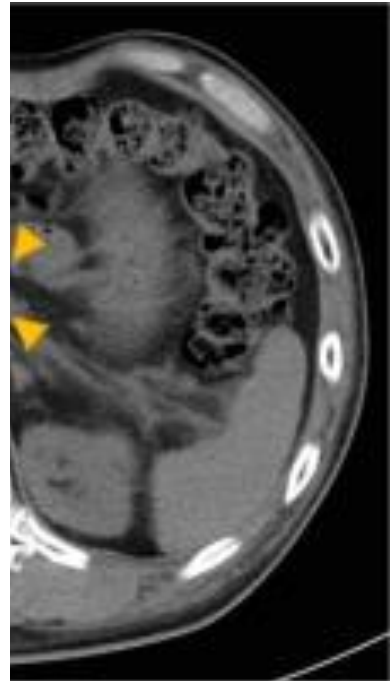
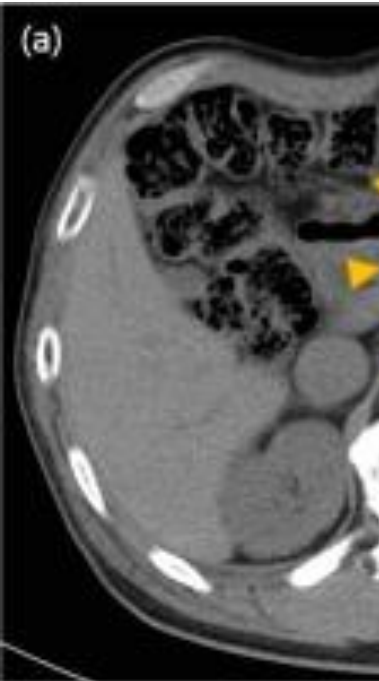
Rei Umezawa, MD, PhD,^{a,b,*} Akihisa Wakita, MSc,^a Yoshiyuki Katsuta, PhD,^b Yoshinori Ito, MD, PhD,^{a,c} Satoshi Nakamura, MSc,^a Hiroyuki Okamoto, PhD,^a Noriyuki kadoya, PhD,^b Kana Takahashi, MD, PhD,^a Koji Inaba, MD, PhD,^a Naoya Murakami, MD, PhD,^a Hiroshi Igaki, MD, PhD,^a Keiichi Jingu, MD, PhD,^b and Jun Itami, MD, PhD^a

^aDepartment of Radiation Oncology, National Cancer Center Hospital, Tokyo, Japan; ^bDepartment of Radiation Oncology, Tohoku University Graduate School of Medicine, Sendai, Japan; ^cDepartment of Radiation Oncology, Showa University School of Medicine, Tokyo, Japan

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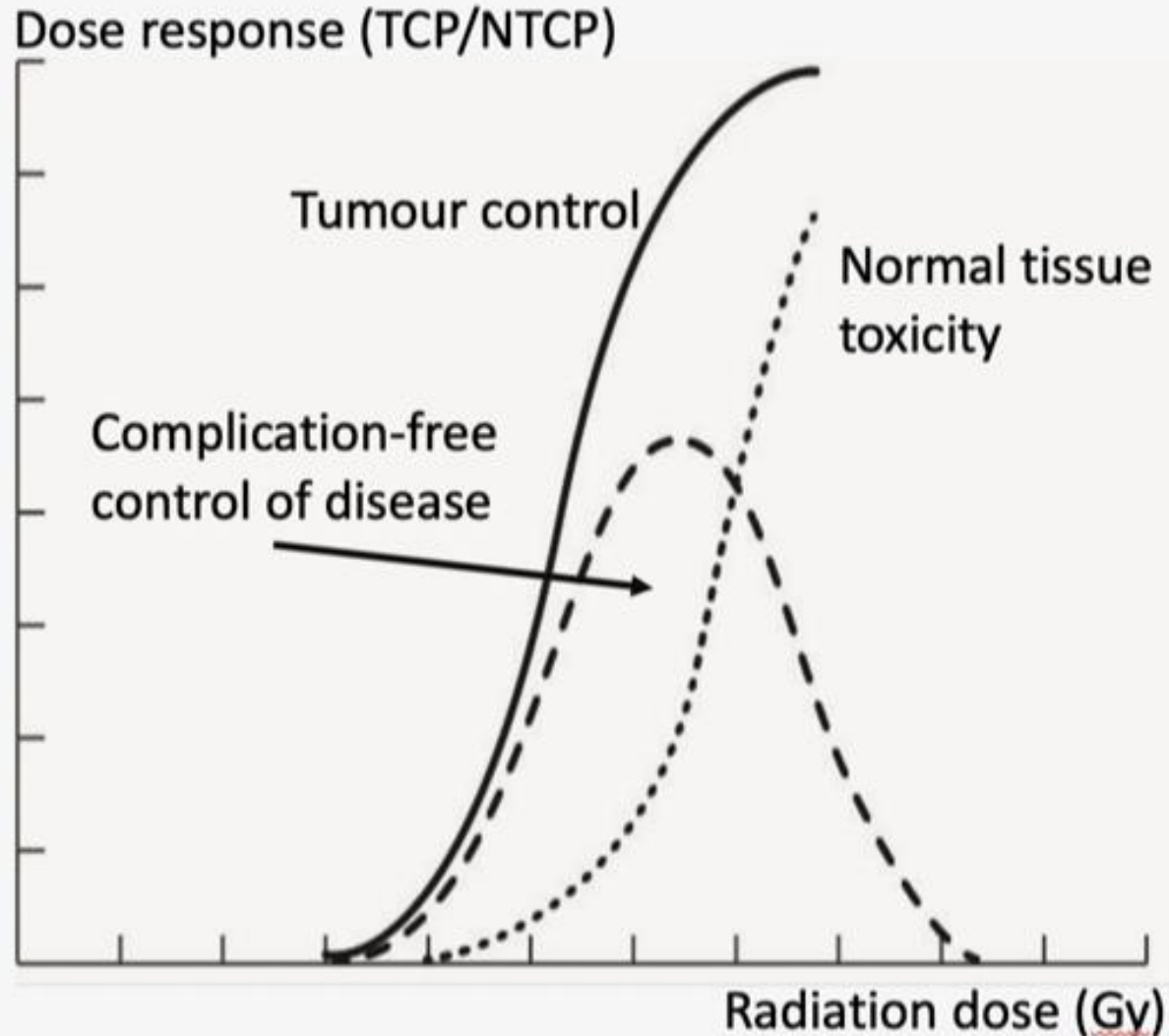
Abstract

Purpose: We investigated the synchronization of respiration-induced motions at the primary tumor and organs at risk at radiation planning for pancreatic cancer.



Genomic-Adjusted Radiation Dose (GARD)

A



Pt1 – tumour and normal tissue are sensitive to RT, but therapeutic window is narrow

Pt2 – Tumour is sensitive & high normal tissue tolerance > wide therapeutic window

Pt3 – Tumour is radioresistant with small therapeutic window

playing an active part (leading?) the MDM



engage into clinical research

stay up-to-date with literature

understand statistics, trial methodology

critical (evidence-based) approach

audit our own data

lateral thinking

phase IV trials

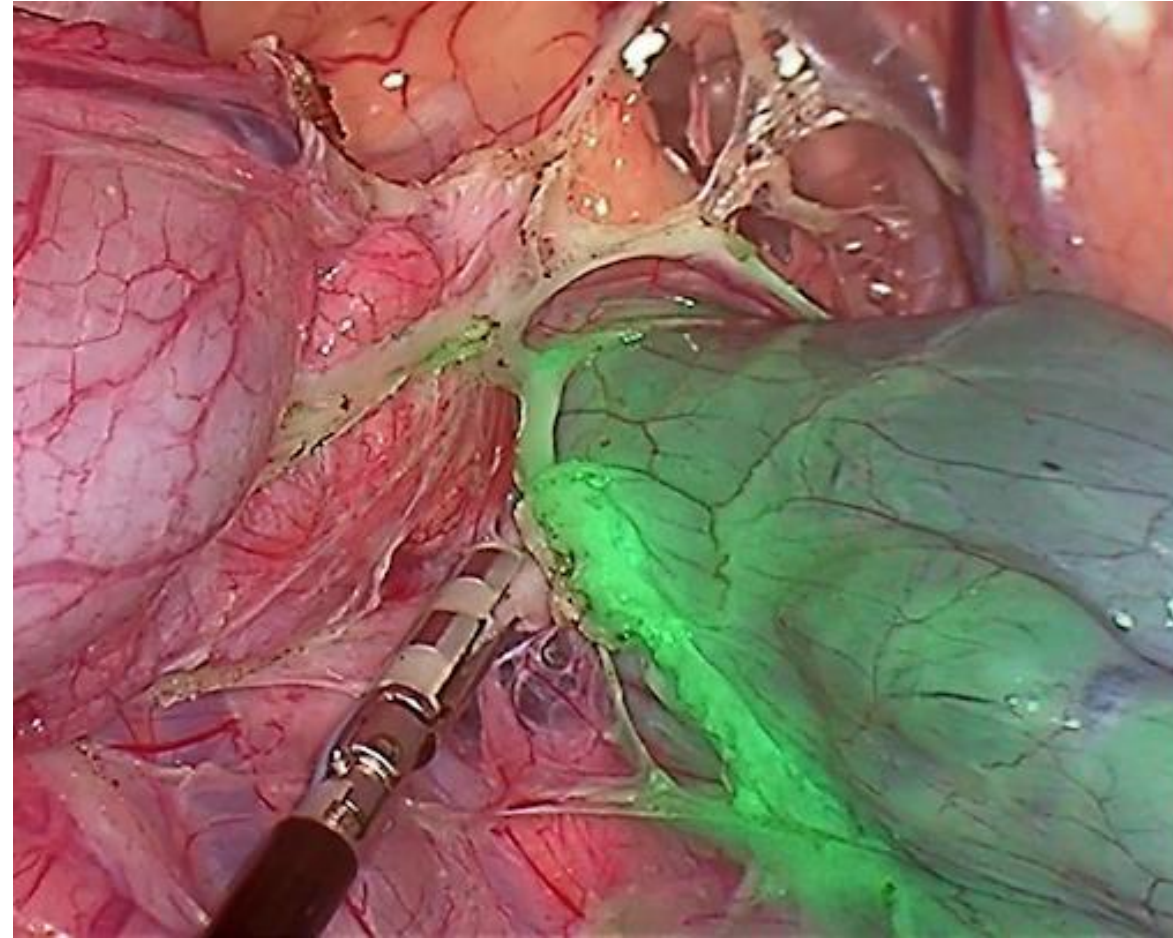
population based studies

national/regional registries

real time capture data - AI

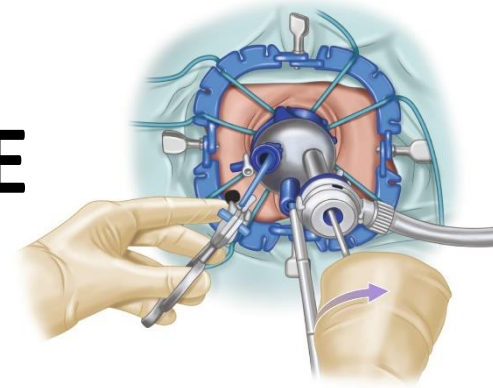
Fluorescence Guided Surgery:

- Tumour imaging
- Sentinel node imaging
- Imaging of vital structures
- Imaging of perfusion
- Imaging of distant metastases



Electro-chemoporation

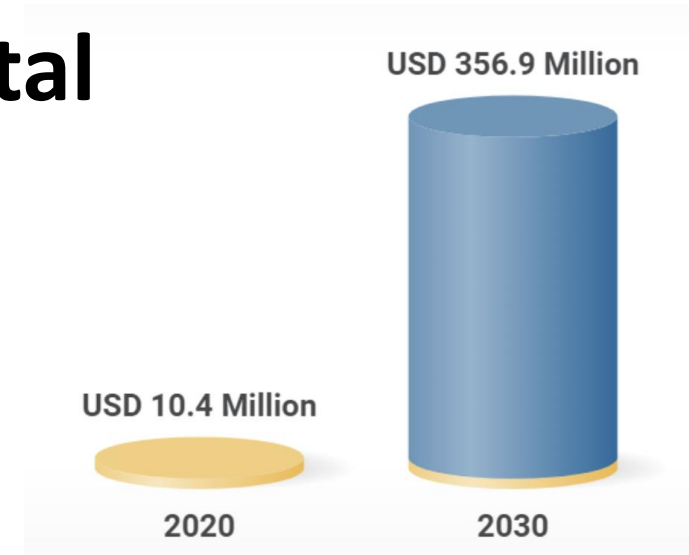
TA-TME



HIPEC **Peritoneal Disease**
PIPAC **Pressurized IntraPeritoneal Aerosol Chemotherapy**
EPIC **Early Postoperative Intraperitoneal Chemotherapy**

ALPPS (Associating Liver Partition & Portal vein ligation for Staged hepatectomy

**Minimally Invasive Surgery
& Future robotics**





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[**https://www.uems.eu/**](https://www.uems.eu/)



UEMS Specialist Division of Surgical Oncology

The ESSO core curriculum committee update on surgical oncology



Jos van der Hage^{a, **}, Sergio Sandrucci^b, Riccardo Audisio^c, Lynda Wyld^d, Kjetil Søreide^{e, f, *}, ESSO core curriculum contributors, Teresa Amaral^g, Riccardo Audisio^h, Viren Bahadoerⁱ, Geerard Beets^j, Kim Benstead^k, Elisabeth Berge Nilsen^l, Kalijn Bol^m, Andreas Brandl^{n, o}, Jerry Braun^p, Tanja Cufer^q, Cristina Dopazo^r, Ibrahim Edhemovic^s, Jesper Grau Eriksen^t, Marco Fiore^u, Tessa van Ginhoven^v, Santiago Gonzalez-Moreno^w, Jos van der Hageⁱ, Merlijn Hutteman^p, Yazan Masannat^x, Elisa Concetta Onesti^y, Beate Rau^z, Theo De Reijke^{aa}, Isabel Rubio^{ab}, Jelle Ruurda^{ac}, Sergio Sandrucci^{ad}, Kjetil Soreide^{ae}, Stefan Stattner^{af, ag}, Dario Trapani^{ah}, Domenico D'Ugo^{ai}, Menno Vriens^{ai}, Lynda Wyld^{aj}, Ane Gerda Zahl Eriksson^{ak}

^a Department of Surgery, Leiden University Medical Center, PO Box 9600, 2300 RC Leiden, the Netherlands

^b Surgical Oncology Unit, City of Health and Science, University of Turin, Turin, Italy

^c Department of Surgery, Sahlgrenska University Hospital, University of Gothenburg, Sweden

^d Department of Oncology and Metabolism, Sheffield University, Sheffield, United Kingdom

^e Department of Gastrointestinal Surgery, HPB unit, Stavanger University Hospital, Stavanger, Norway

^f Department of Clinical Medicine, University of Bergen, Bergen, Norway

^g Dermatology, Eberhard Karls Universität Tübingen, Tübingen, Germany

^h University of Gothenburg, Gothenburg, Sweden

ⁱ Department of Surgery, Leiden University Medical Center, Leiden, the Netherlands

^j Department of Surgery, Netherlands Cancer Institute, Amsterdam, the Netherlands

^k Gloucestershire Oncology Centre, Cheltenham General Hospital, United Kingdom

^l Department of Obstetrics and Gynecology, Stavanger University Hospital, Stavanger, Norway

^m Department of Medical Oncology, Radboud University Medical Center, Nijmegen, the Netherlands

ⁿ Department of Surgery, Campus Virchow-Klinikum and Charité Campus Mitte, Charité - Universitätsmedizin Berlin, Berlin, Germany

^o Digestive Unit, Champalimad Foundation, Lisbon, Portugal



To promote accredited specialist breast surgical care by
the certification of trained surgeons in breast cancer
surgery

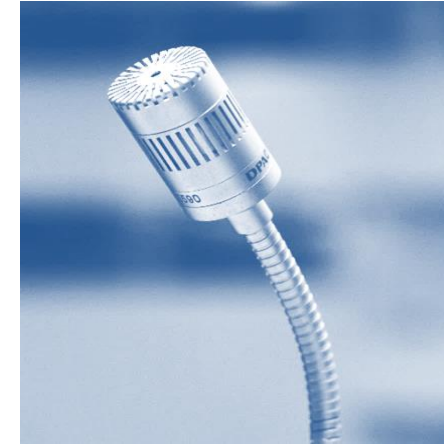
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Certified surgeons



Advances in Surgical Oncology ???

Multidisciplinary Knowledge (& attitude)

Innovations

Training, Accreditation, Certification

“Study hard to achieve certainties, while harvesting doubts...”

