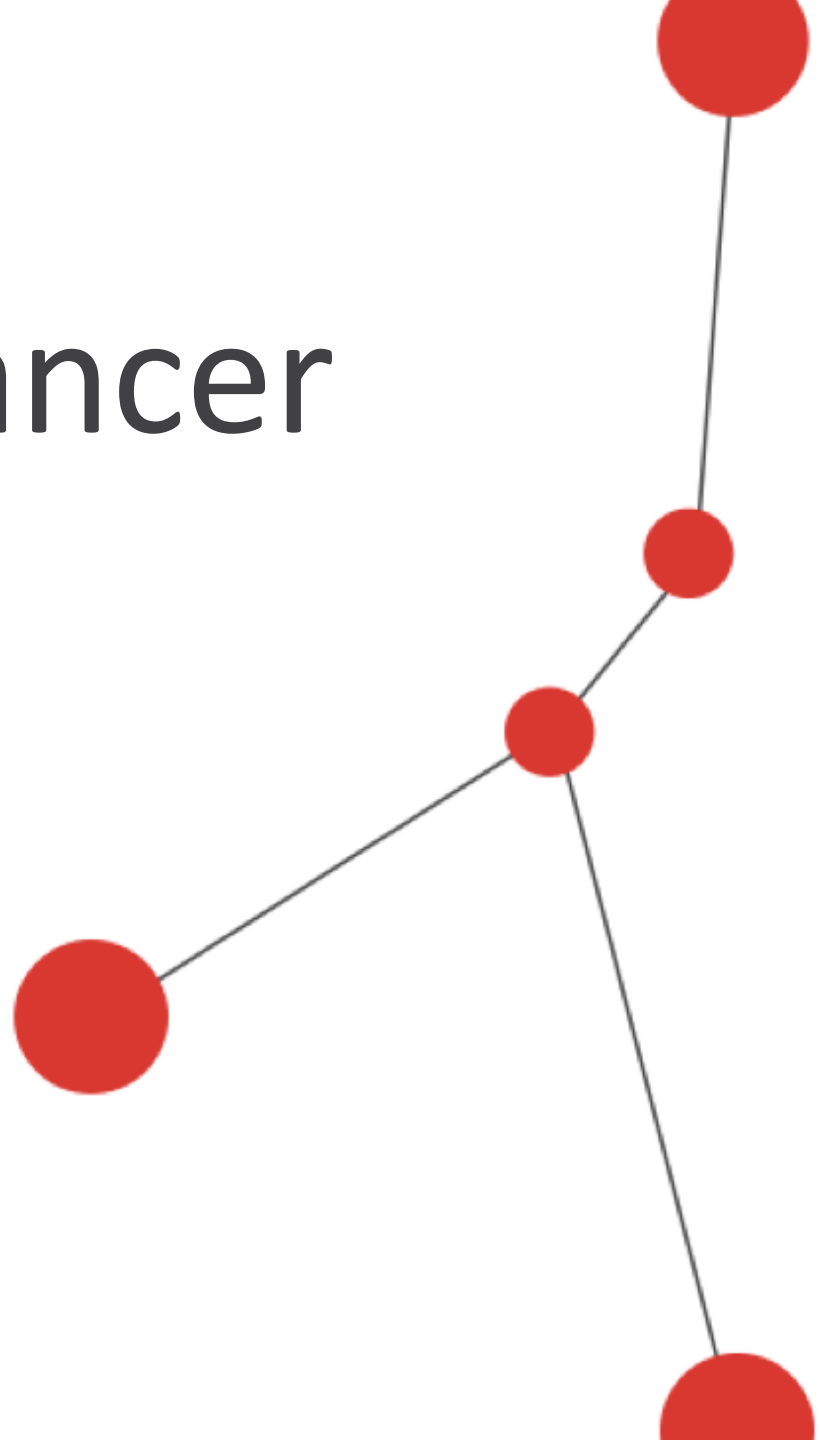
Liquid biopsy: applications in cancer care



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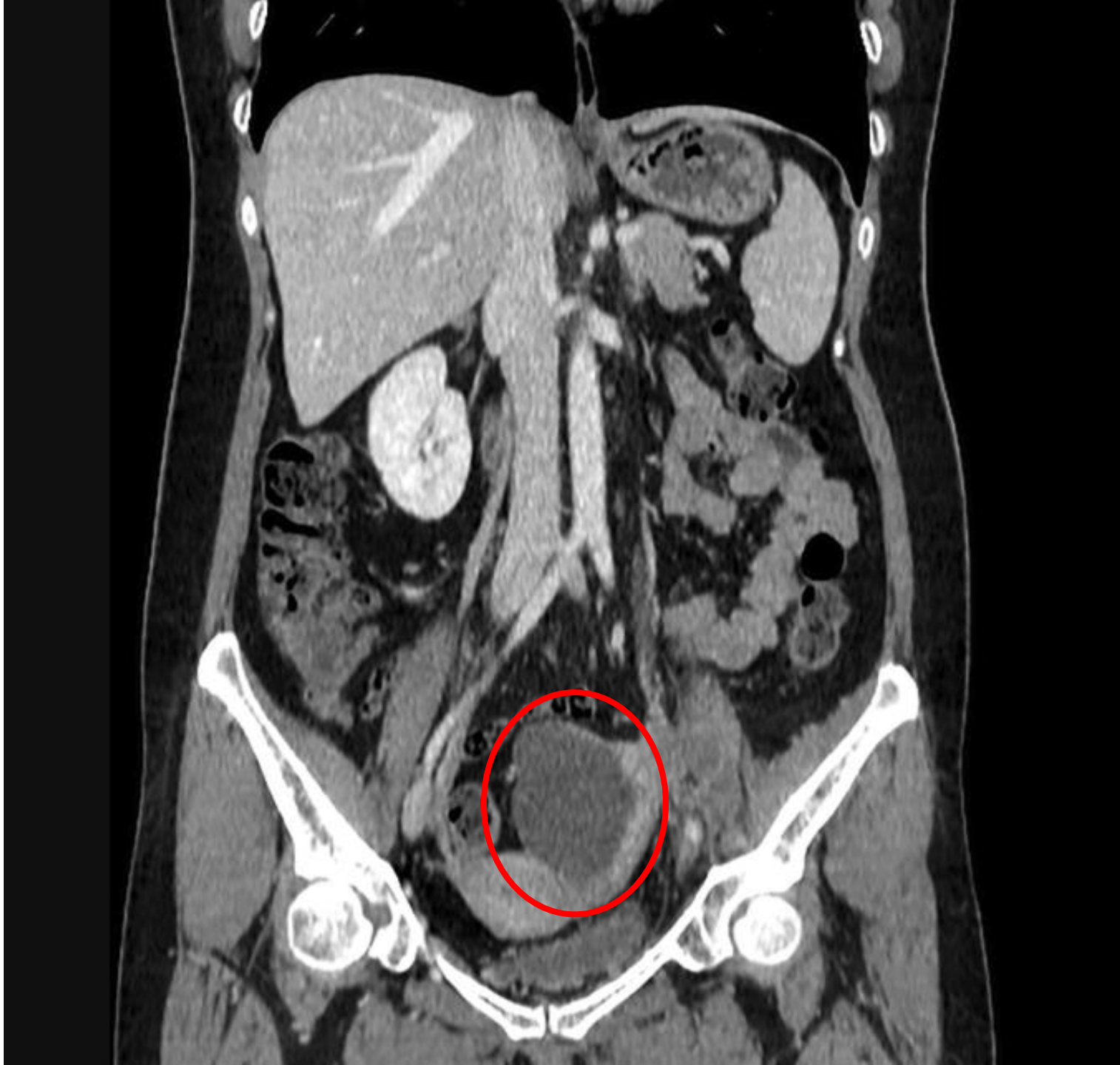
UCSF Health

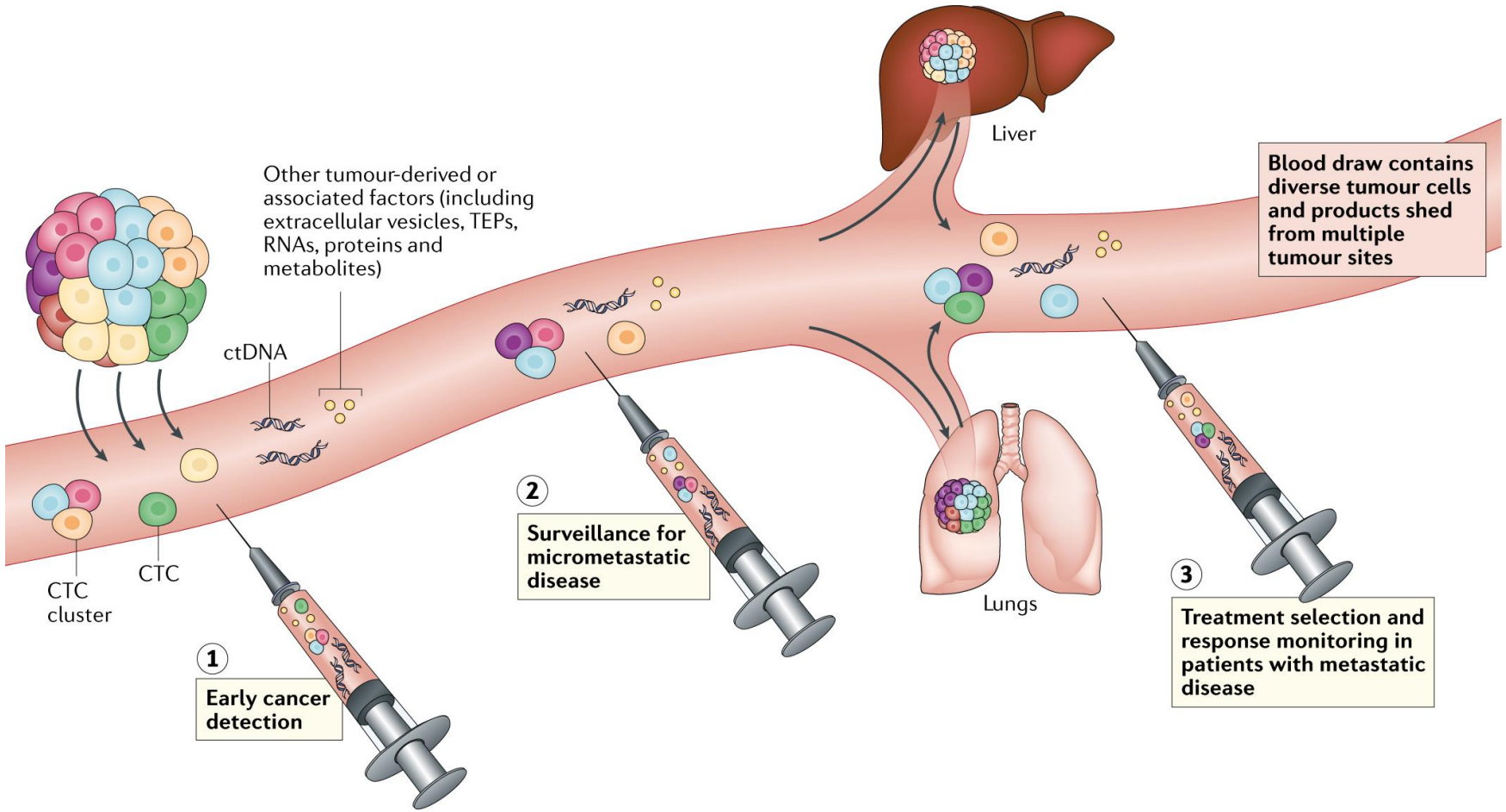
Objectives

- Understand blood based cancer detection tests “liquid biopsies”
- Discuss how liquid biopsy tests can be used for cancer detection
- Discuss how liquid biopsy tests can be used in monitoring for cancer recurrence
- What are my options today?

Limitations of current testing



LIQUID BIOPSY



Liquid biopsy for detecting new cancers early

Liquid biopsy for detecting new cancers early is considered **experimental**

The New York Times

Blood Tests That Detect Cancers Create Risks for Those Who Use Them

The tests screen for cancers that often go undetected, but they are expensive and some experts worry they could lead to unnecessary treatments without saving patients' lives.

Complex decision making with liquid biopsy results for early cancer detection

Symptoms?

Imaging?

Cancer detected in a symptomatic patient

Is this a false positive – they don't really have cancer?

Or is this detecting cancer that we simply can't detect with standard imaging?

Imaging?

Cancer detected in asymptomatic patient

This is a false negative – the patient has cancer and the test was negative.

Symptoms?

Imaging?

Could still have asymptomatic / microscopic cancer undetectable with liquid biopsy (false negative result)

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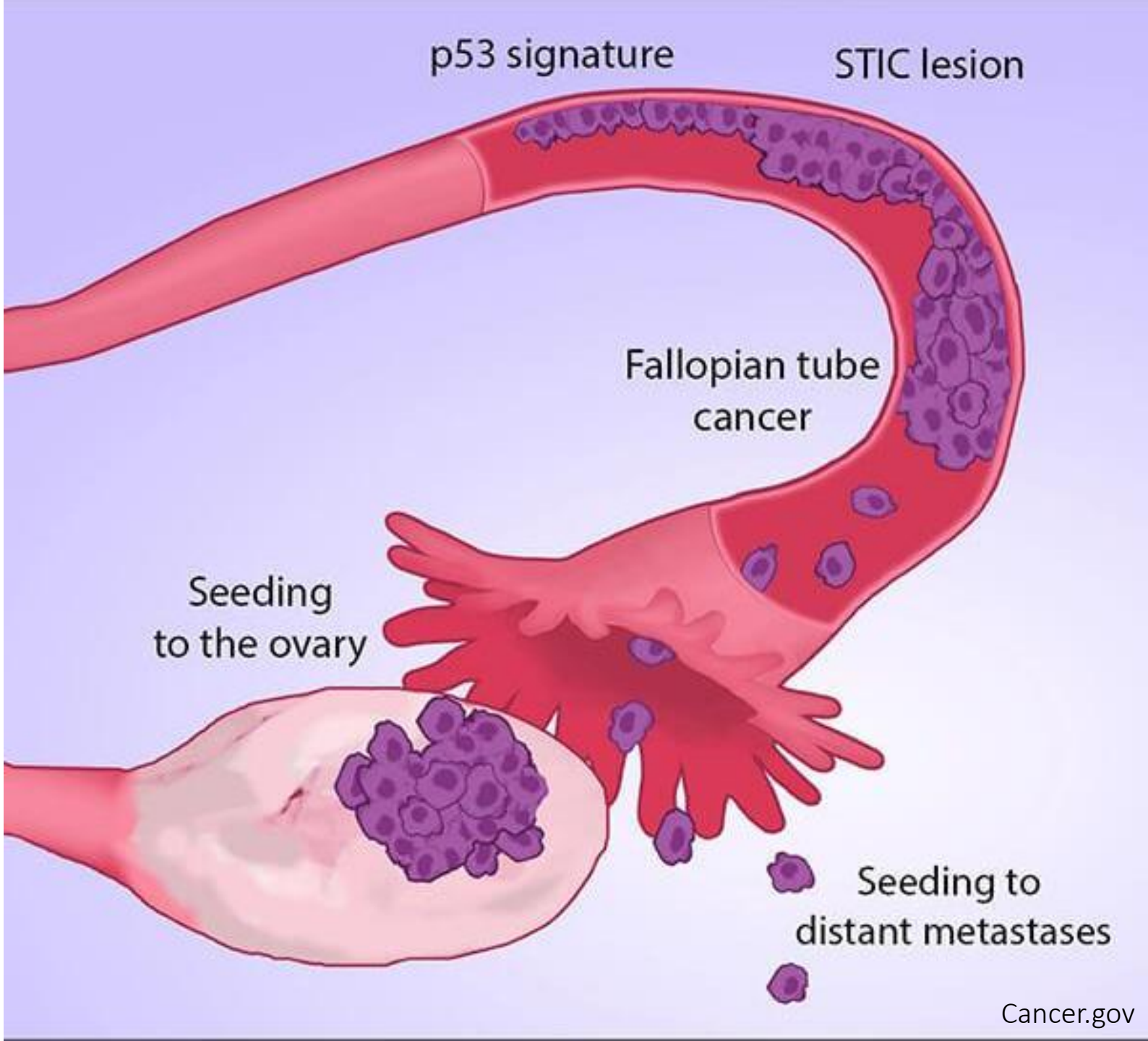
Ovarian cancer is hypothesized to start in the Fallopian tubes and is MICROSCOPIC



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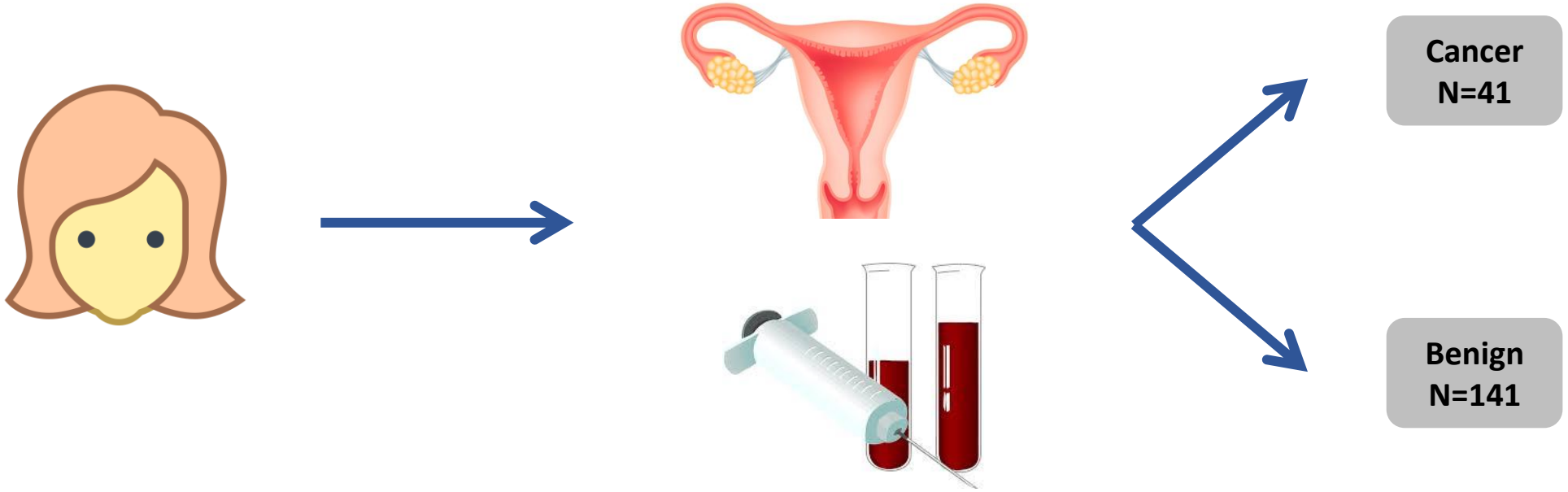
PRECiSE: PREdiction with **C**irculating tumor DNA to **S**creen for **E**pithelial ovarian cancer



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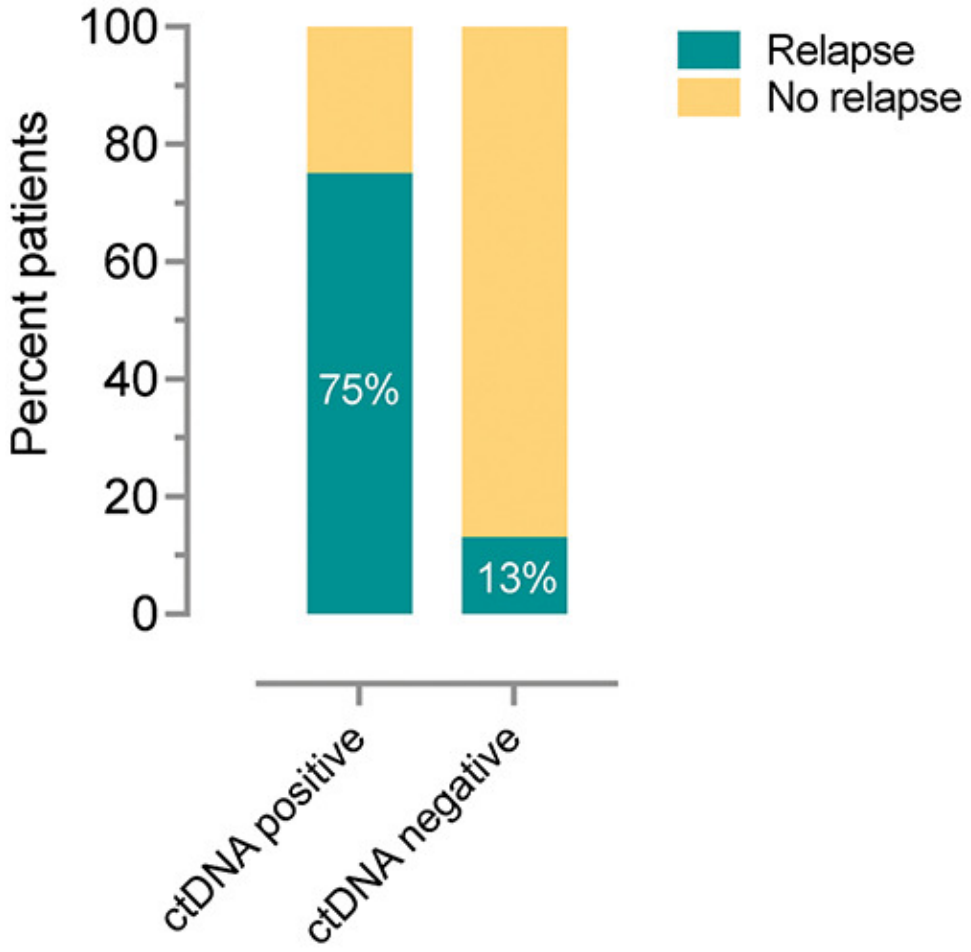
Liquid biopsy for monitoring cancer responses and recurrences



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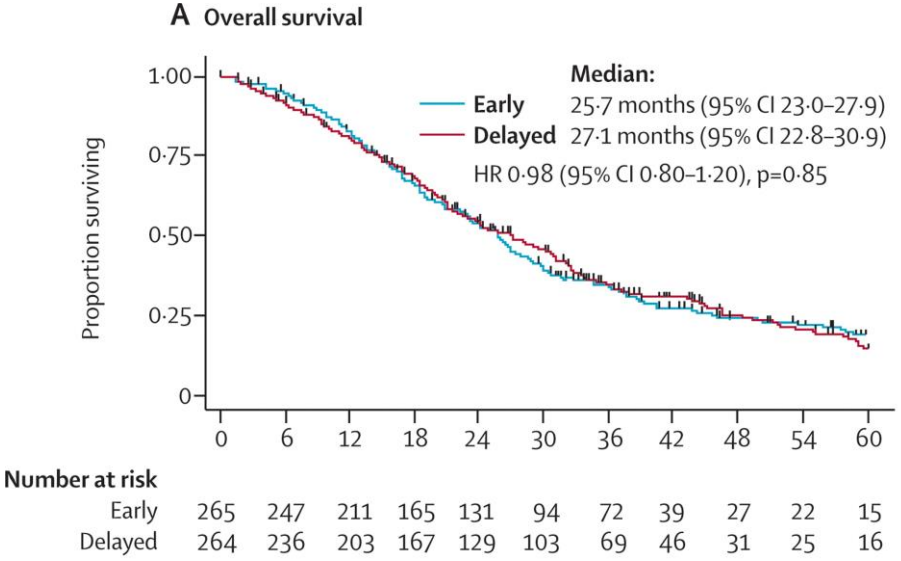
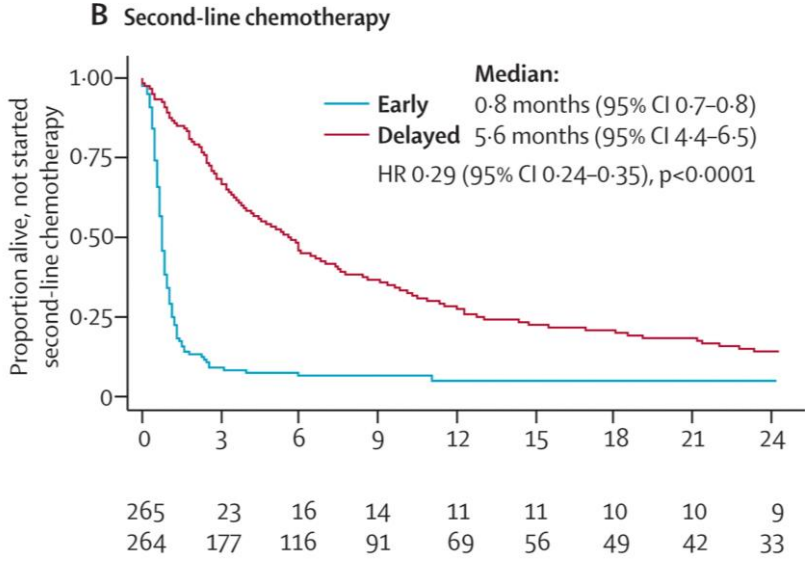
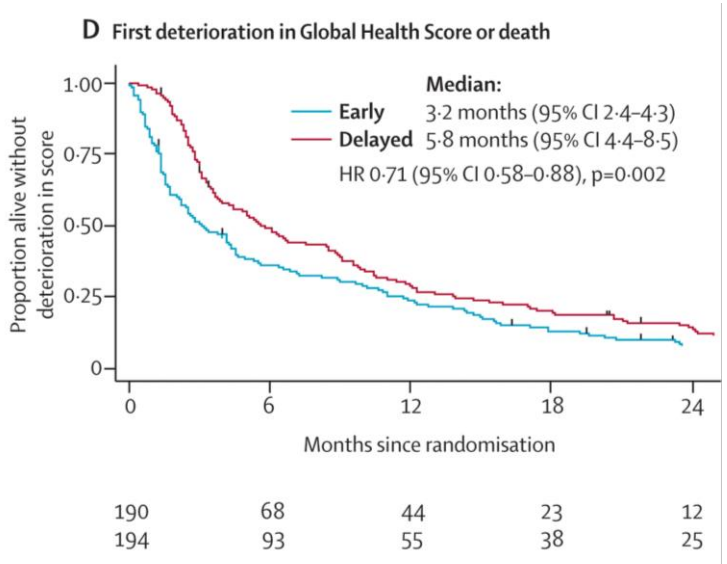
Hou, Chapman et al. Circulating tumor DNA monitoring for early recurrence detection in epithelial ovarian cancer. Gynecologic Oncology 2022.

No evidence of a survival benefit with early treatment of relapse







Cancer survival the same

Early treatment = more chemo

Early treatment = worse QOL

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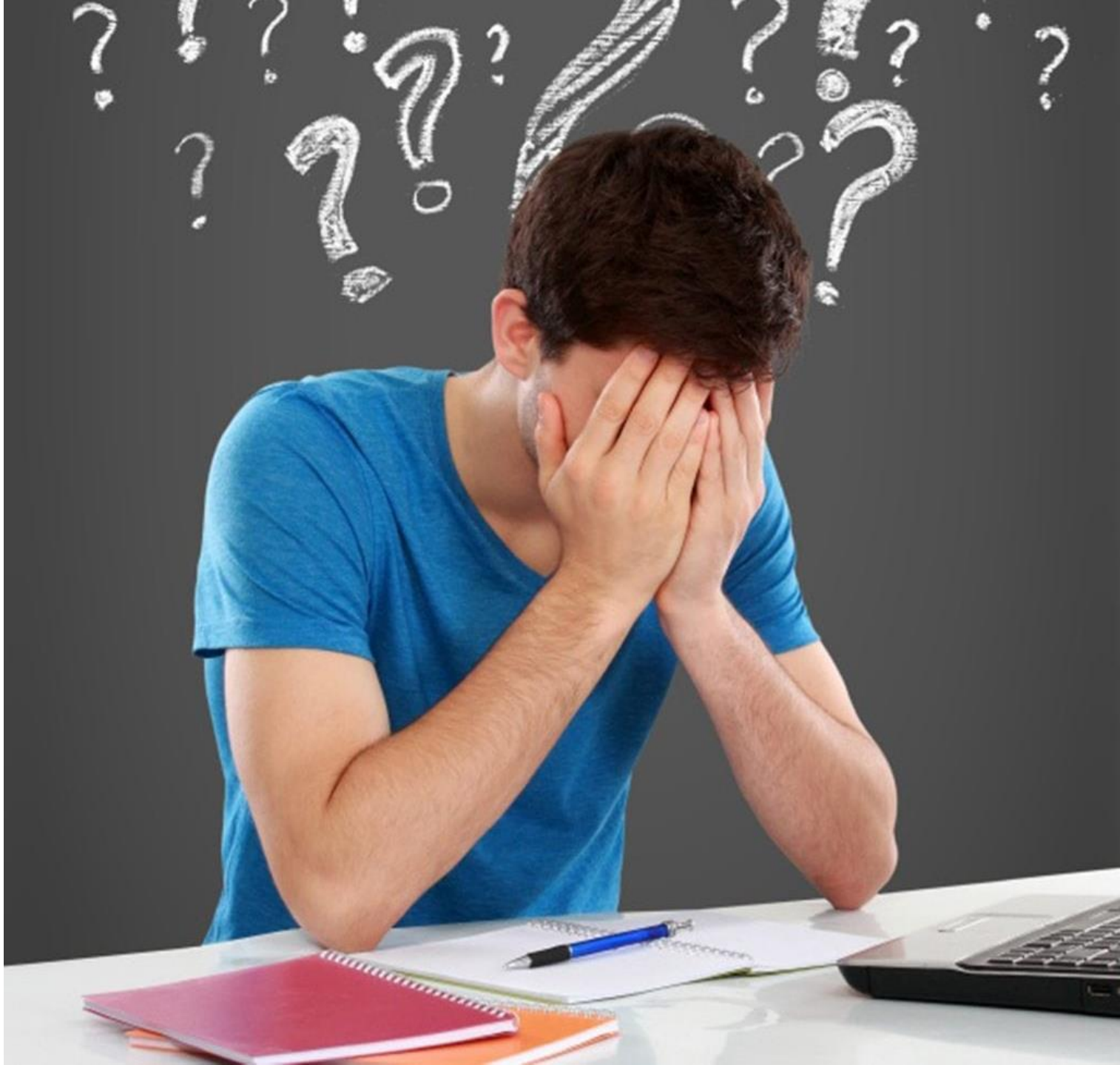
Rustin et al. Early versus delayed treatment of relapsed ovarian cancer (MRC OV05/EORTC 55955): a randomised trial. The Lancet2010.

To test or not to test…???



UCSF Launches the Cancer Early Detection and Interception (CEDI) Initiative

Mission: To develop a rational and equitable approach to improved early detection through application of known and AI-informed risk, blood-based assays and state-of-the-art imaging; to facilitate biomarker discovery and validation at UCSF and to provide clinical diagnostic care for individuals with suspected underlying malignancy.

UCSF (CEDI) Initiative

Director
HDFCCC

Director
Cancer Early Detection
and Interception

Disease Site Advisors

Steering Committee

Biomarker
Technology
Assessment Team

Imaging Technology
Assessment Team

Clinical Unit

Clinical Research

Education and
Outreach

UCSF Health

“Better is possible. It does not take genius. It takes diligence. … And above all, it takes a willingness to try.”

Atul Gawande, MD

Better: A Surgeon’s Notes on Performance