



UiO : **University of Oslo**

AI-assisted diagnosis and treatment

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May 27th 2025

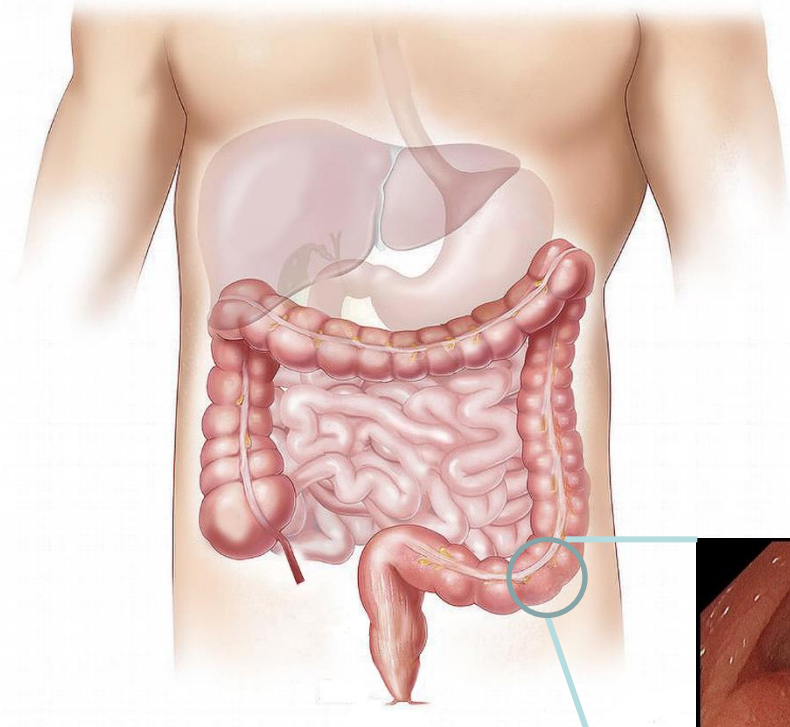
AI in Circle U



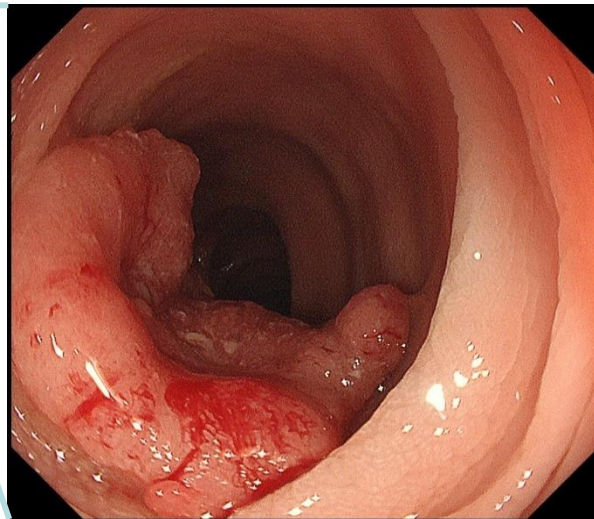
Questions to answer

- 1) Why focus on colon cancer?**
- 2) Could artificial intelligence (AI) contribute positively or negatively to colon cancer prevention?**

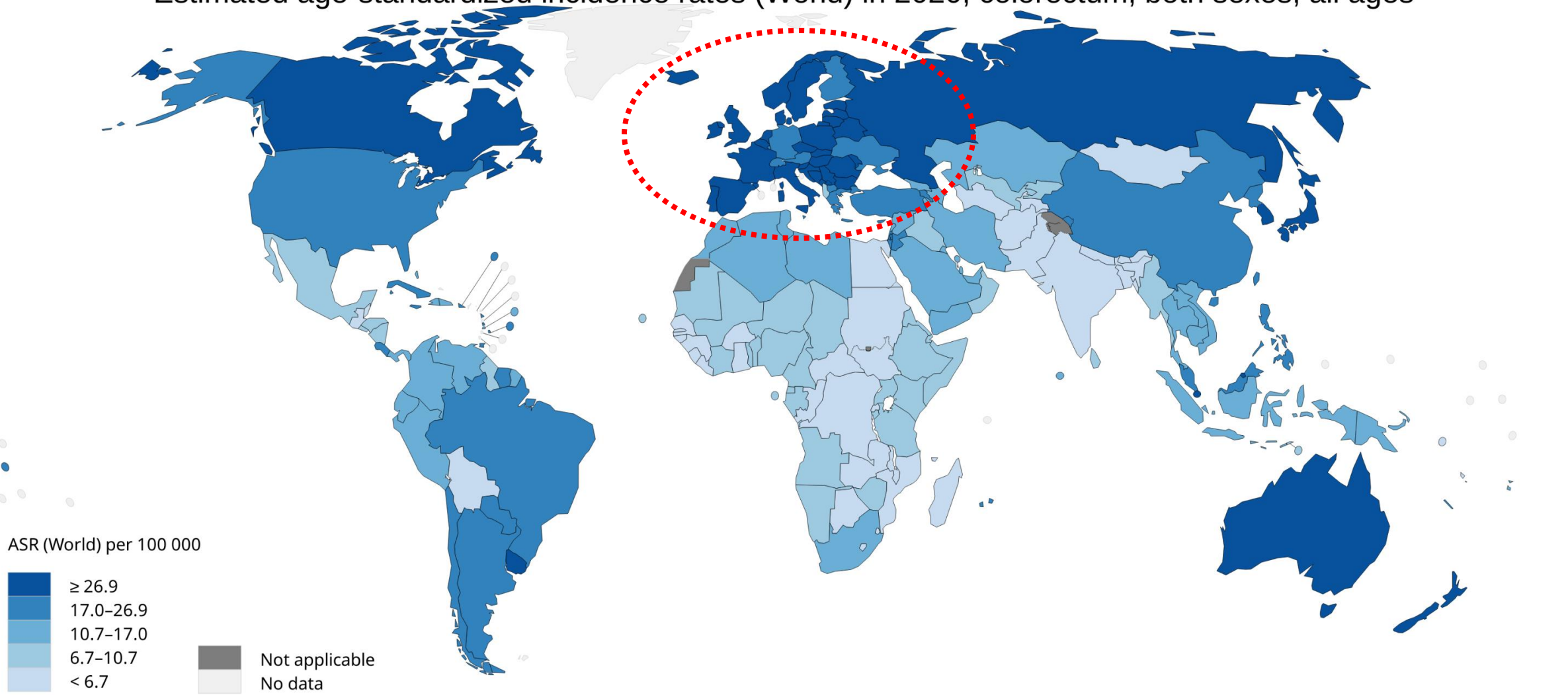
Colon cancer



- 3rd most common cancer
- One of the few “preventable” cancers



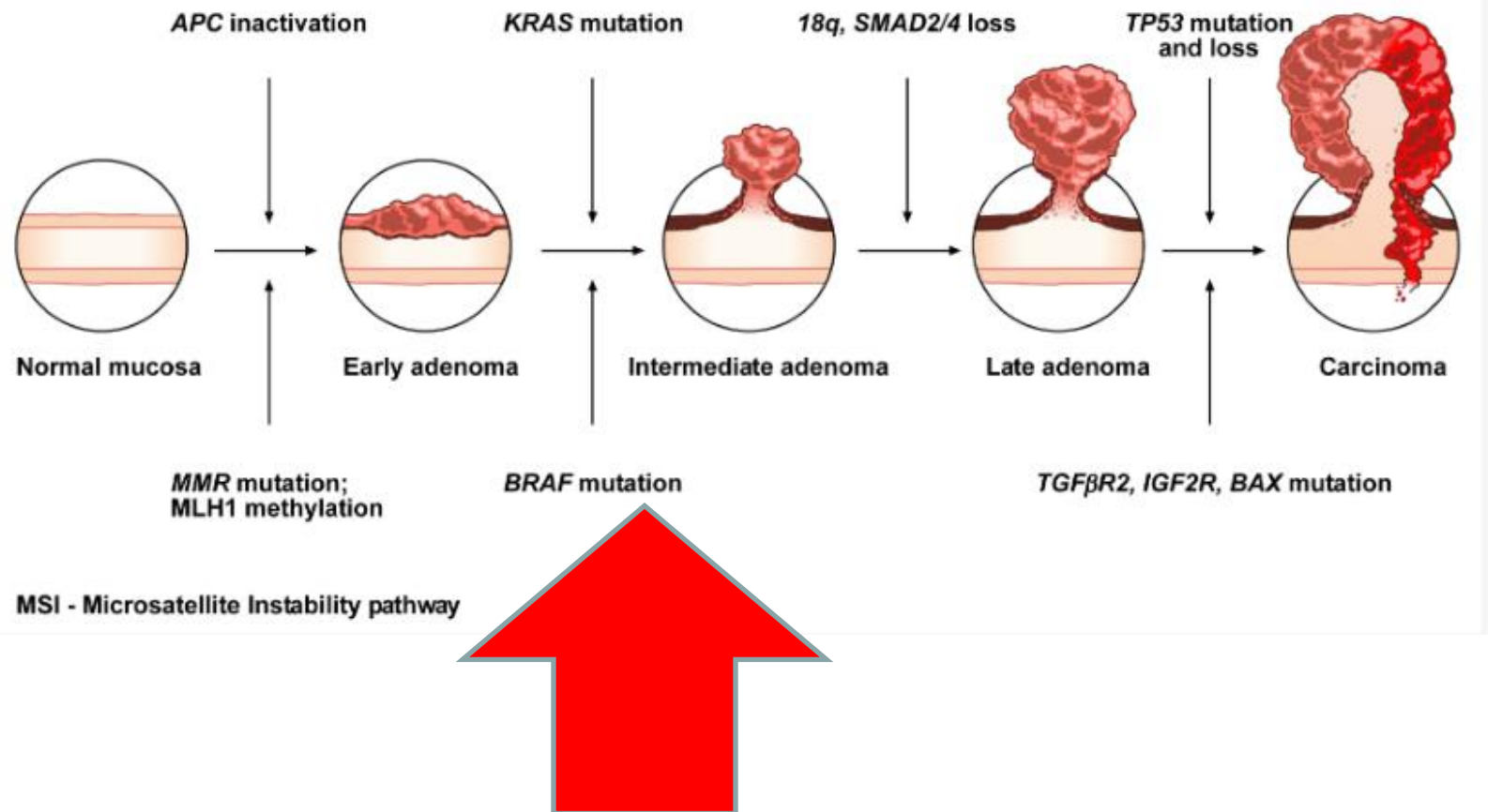
Estimated age-standardized incidence rates (World) in 2020, colorectum, both sexes, all ages



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Data source: GLOBOCAN 2020
Map production: IARC
(<http://gco.iarc.fr/today>)
World Health Organization

How to prevent colon cancer?

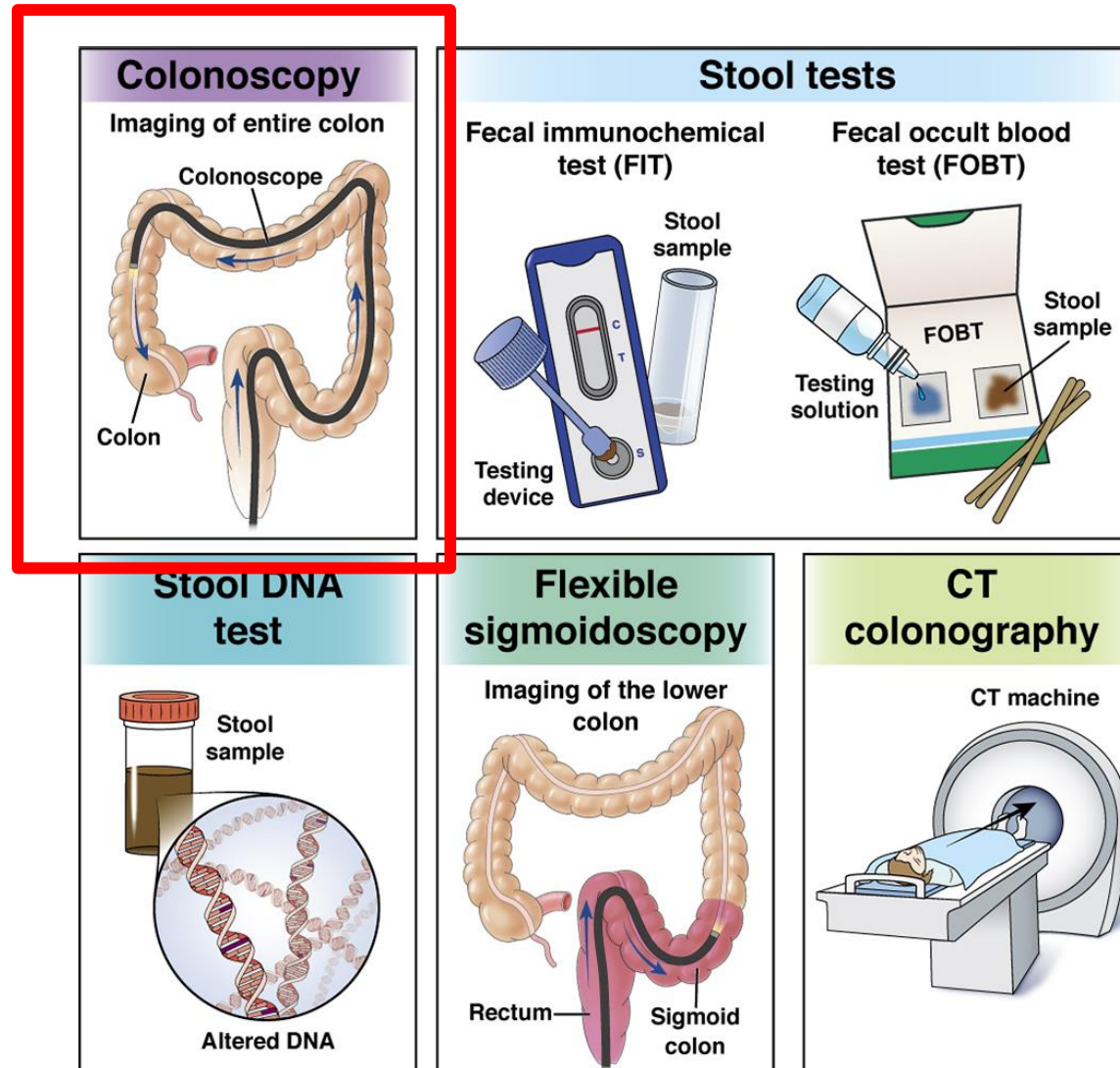


Removal of
adenoma

De Palma, et al. Cancers 2019

CLINICAL EFFECTIVENESS
RESEARCH GROUP

Tools for early removal: detect and diagnose



AI in colonoscopy

- Computer aided detection (CADe): detects lesions
 - 26% of adenomas are usually missed – *Zhao et al Gastroenterology 2019*
- Computer aided diagnosis (CADx): diagnose lesions
 - Could reduce recognition error

IS AI TRULY VALUABLE?

Patient-important outcomes

Benefits

Colorectal cancer incidence and death

Harms

Coloscopy-related adverse event

Burden

Number of colonoscopies

Health care provider important outcomes

- Overdiagnosis and overtreatment
- Cost
- Carbon emission
- Responsibility of care

AI in colonoscopy

- Computer aided detection (CADe)
- Computer aided diagnosis (CADx)
- Our project: *Optimising Colorectal Cancer Prevention through Personalized Treatment with Artificial Intelligence (OperA)*



OperA

Optimising Colorectal Cancer Prevention through
Personalised Treatment with Artificial Intelligence

Study period

Budget

PI

Collaborators

Sep. 2022- Aug. 2027

6 M Euros

University of Oslo – Yuichi Mori

17 institutions from 11 countries



Funded by the
European Union



CLINICAL EFFECTIVENESS
RESEARCH GROUP



Yuichi Mori



Michael Bretthauer



Øyvind Holme



Mette Kalager



Magnus Løberg



Svein Oskar Frigstad



Anita Aalby



Michal F Kaminski



Nastazja Pilonis



Paulina Wieszczy



Marek Bugajski



Marek Buszkiewicz



Marcin Romańczyk



Krzysztof Jarus



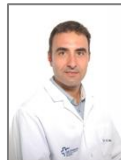
Paweł Kołodziej



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Jorge Gordillo Abalos



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Rune Erichsen



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Hiroki Nakamura



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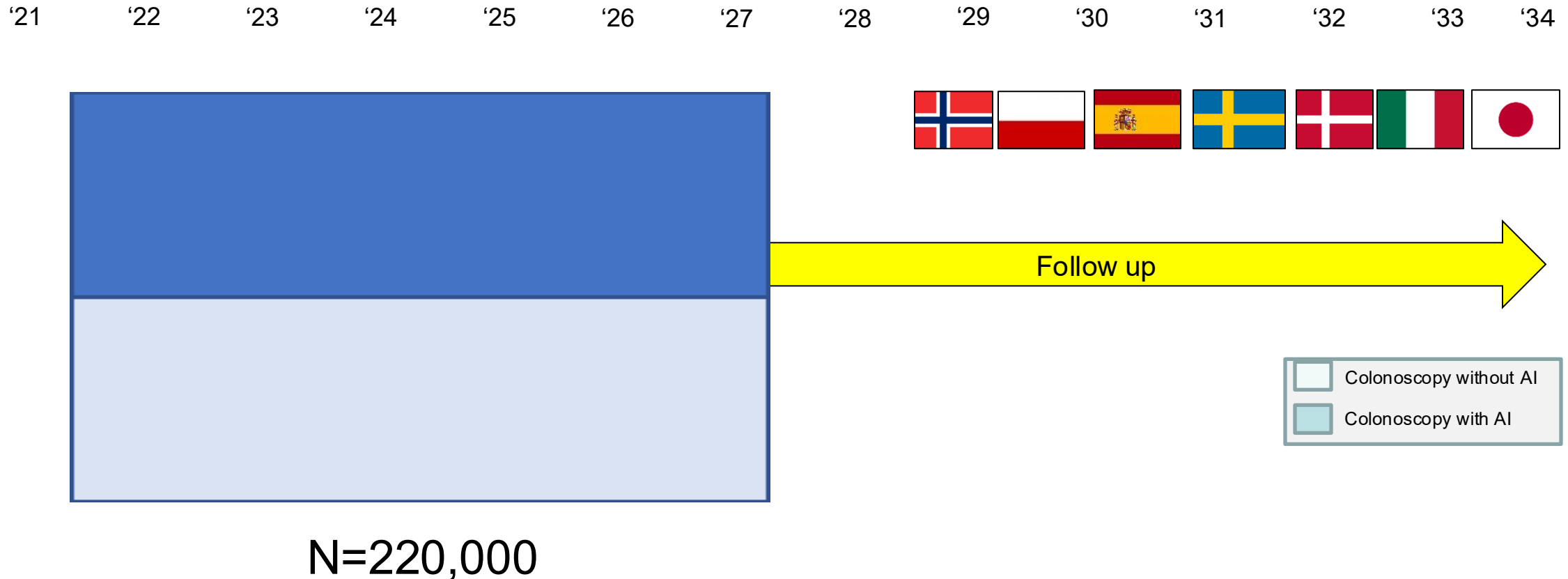


Masashi Misawa

OperA includes 7 work packages (WP's)

- WP 1: Establishing long-term effectiveness, the ACCEPT trial
- WP 2: AI tool to identify cancer risk
- WP 3: Cost-effectiveness modelling
- WP 4: Addressing ethical/legal concerns
- WP 5: Trustworthy and living guideline
- WP 6: Dissemination and exploitation
- WP 7: Communication activities
- WP 8: Project management

The ACCEPT trial: Artificial intelligence in colonoscopy for cancer prevention



Status per May 2025

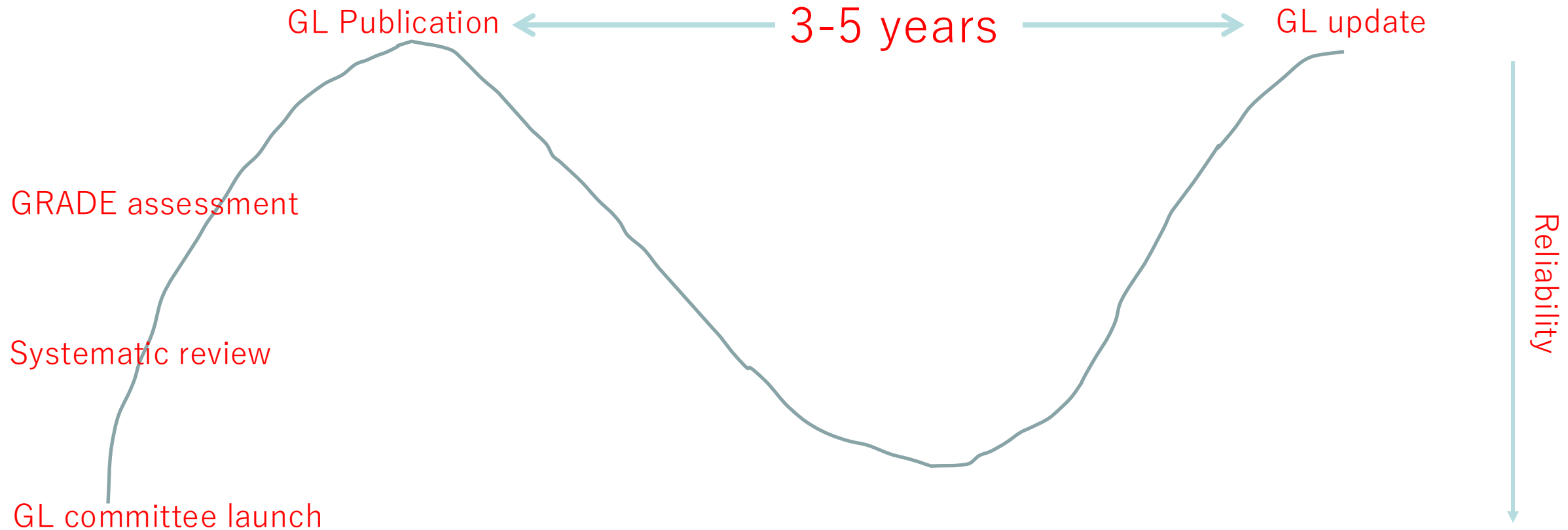
- Centers included: 47
- Inclusions: 34,239

How to implement our knowledge?

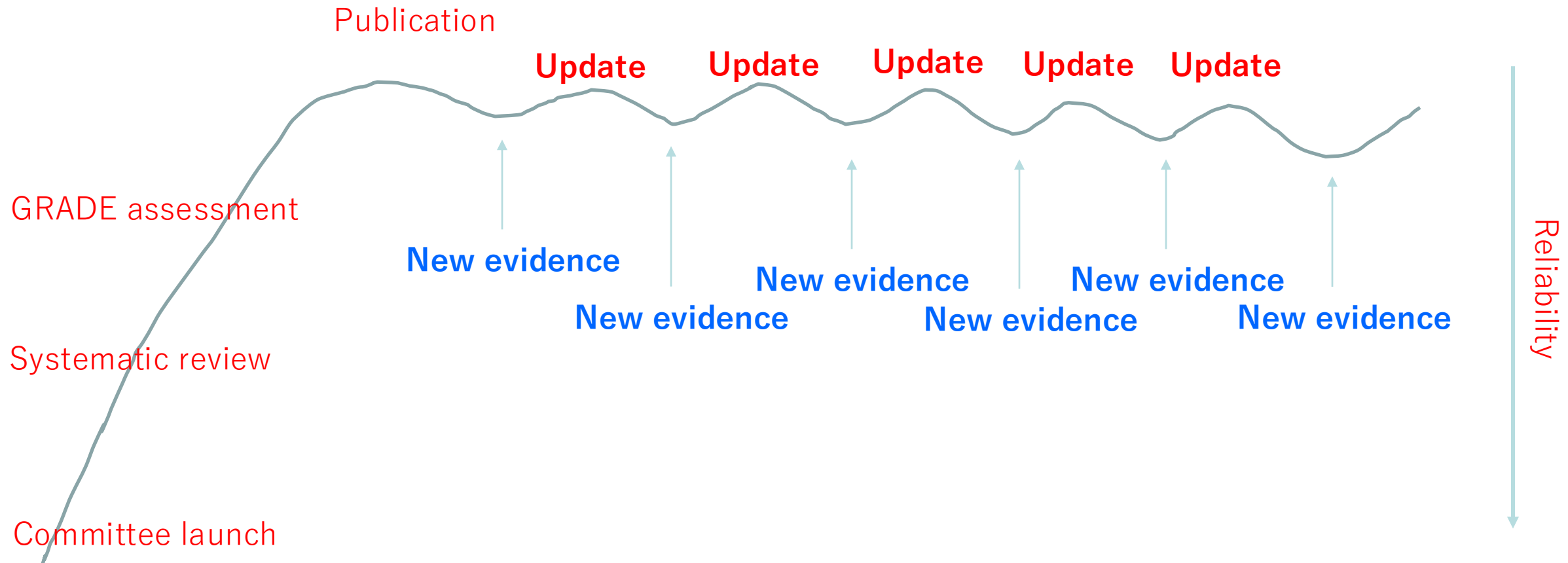


- Our project collaborates closely with [Magic evidence ecosystem foundation](#) in WP5 who aspire to produce living guidelines
- The same evidence was used by three different medical associations to produce guidelines:
 - [BMJ Rapid Recommendations](#)
 - [The European Society of Gastroenterology \(ESGE\)](#)
 - [The American Gastroenterological Association \(AGA\)](#)

Regular guidelines



Living guidelines



Results

- Microsimulation show that CADe in screening provide:
 - small and uncertain reduction of CRC
 - no incremental harms (perforation and bleeding)
 - and increased number of follow-up colonoscopies
- Included data from randomized control trials, several meta-analyses, and pooled estimates

The beauty of research

All three societies were exposed to the same data, but decided on three different recommendations:

- BMJ: advice against the use of AI - *Faroutan et al 2025*
BMJ
- ESGE: advices for the use of AI - *Bretthauer et al 2025*
Endoscopy
- AGA: offer no recommendation - *Sultan et al 2025*
Gastroenterology

The future

- Evolution of CADe and CADx
 - More training → higher clinical impact?
- Overcome potential issues such as over-reliance and de-skilling

If you any questions about the abstract or study, feel free to contact me: Natalie Halvorsen, Clinical effectiveness research group, Oslo University Hospital, Oslo, Norway. Address: Klinisk effektforskning, Bygg 20, Sognsvannsveien 25, 0372, Oslo. Email: nghalvor@uio.no.