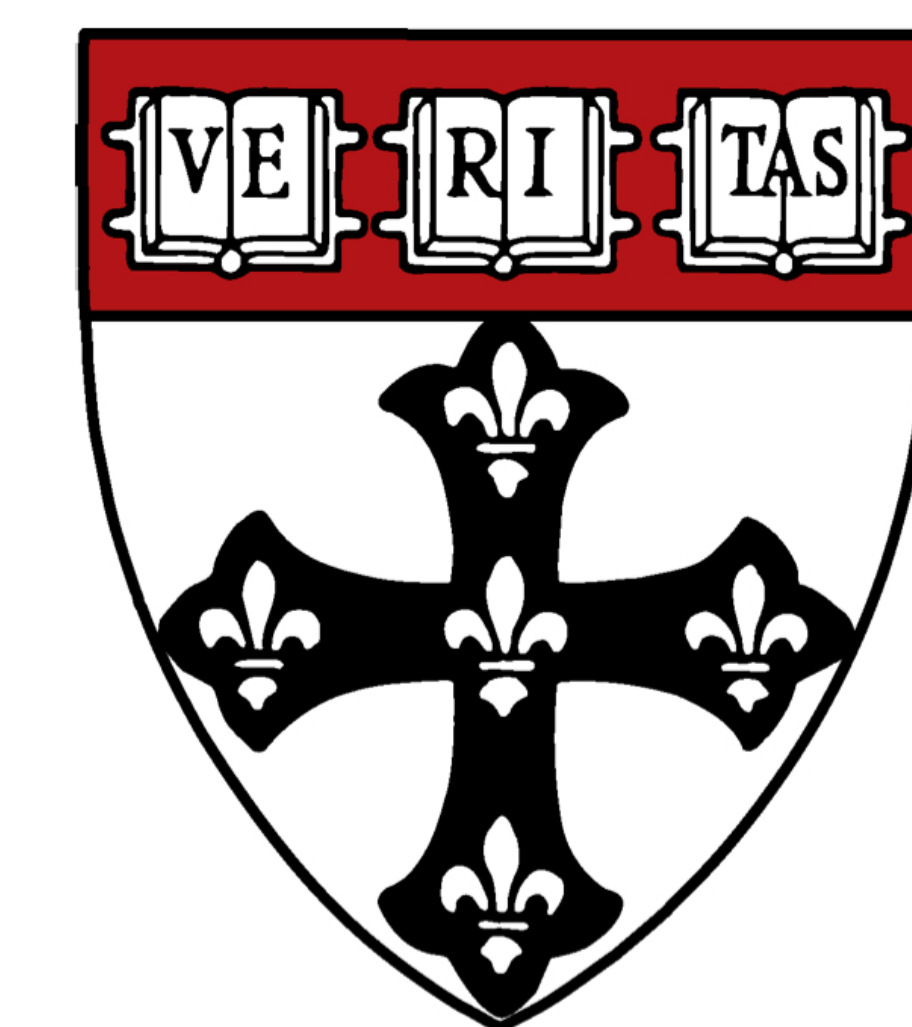




Gut microbial alterations preceding colorectal premalignant lesions

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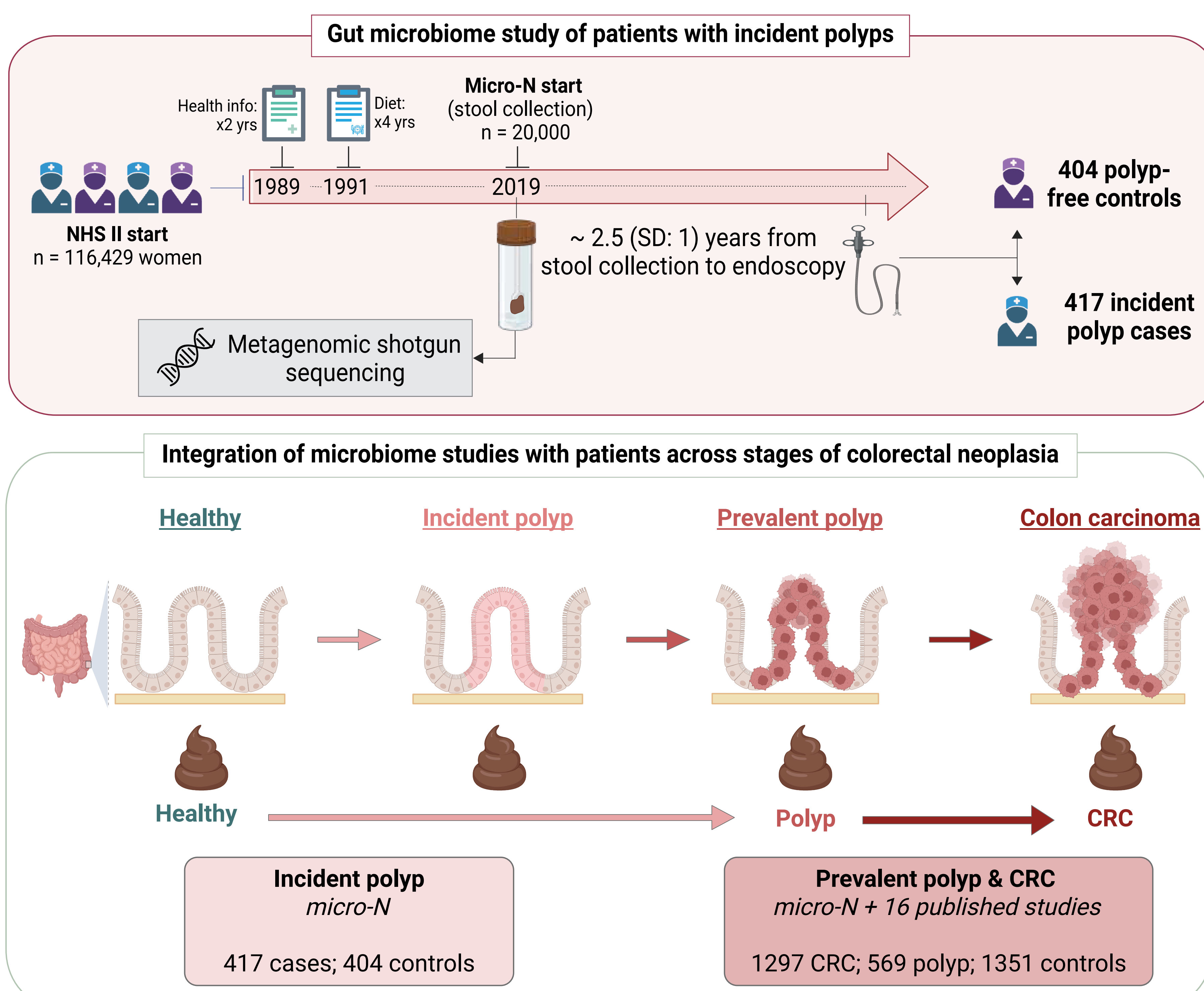
Background

- Colorectal cancer (CRC) develops primarily from polyp precursors via two molecularly and morphologically distinct pathways:
 - Conventional (adenoma–carcinoma) pathway: 70-85% of CRC
 - Serrated pathway: 15-30% of CRC
- The gut microbiome is implicated in CRC
- Gut microbial signatures of colorectal polyps and CRC are well-established, but only in already-diagnosed patients

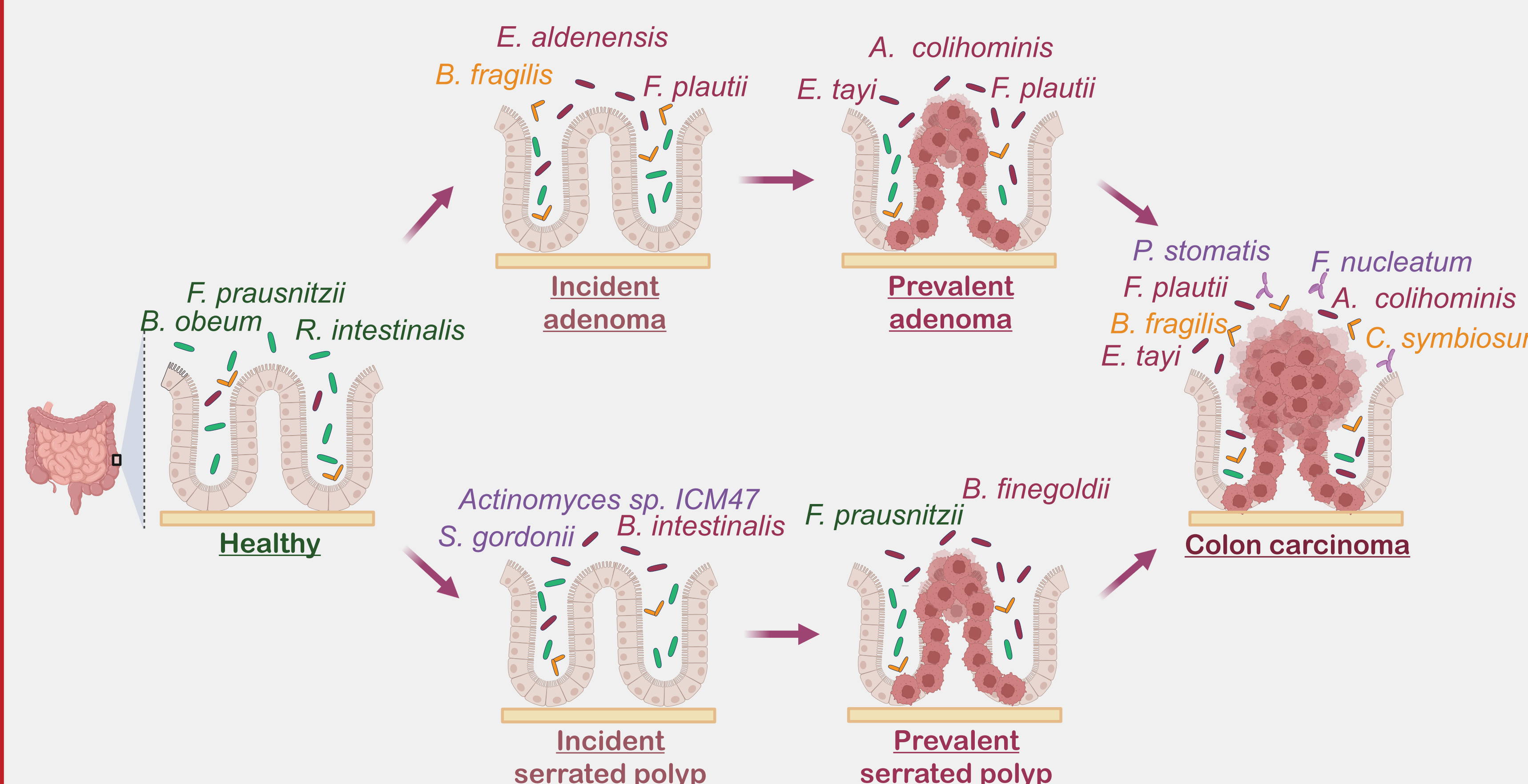
Research questions

- Are microbial alterations detectable before polyp diagnosis?
- Do adenomatous and serrated pathways show distinct microbial signatures from the earliest stages?
- Does the pre-diagnostic microbial signal resemble established prevalent-disease signatures?

Study design



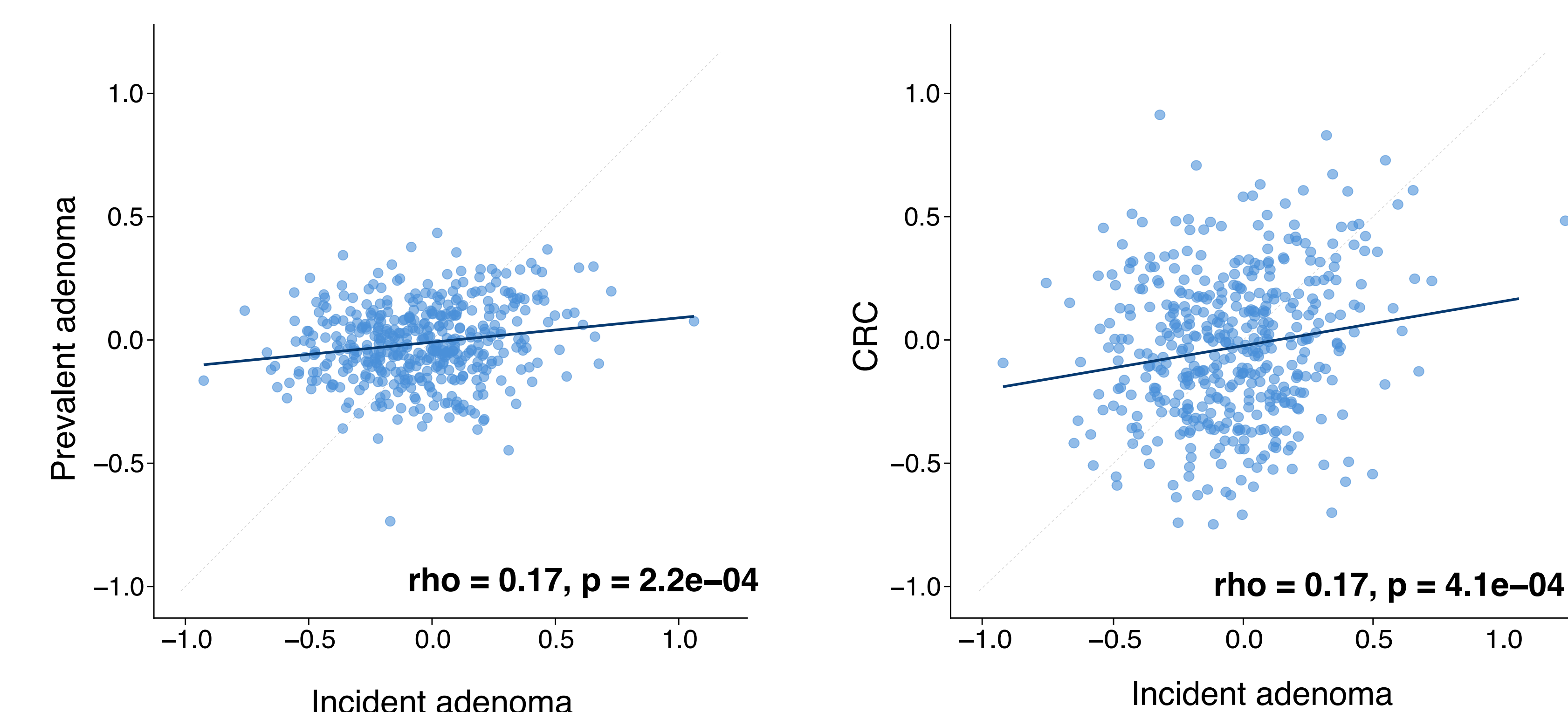
Gut dysbiosis begins before polyp diagnosis and is pathway-specific



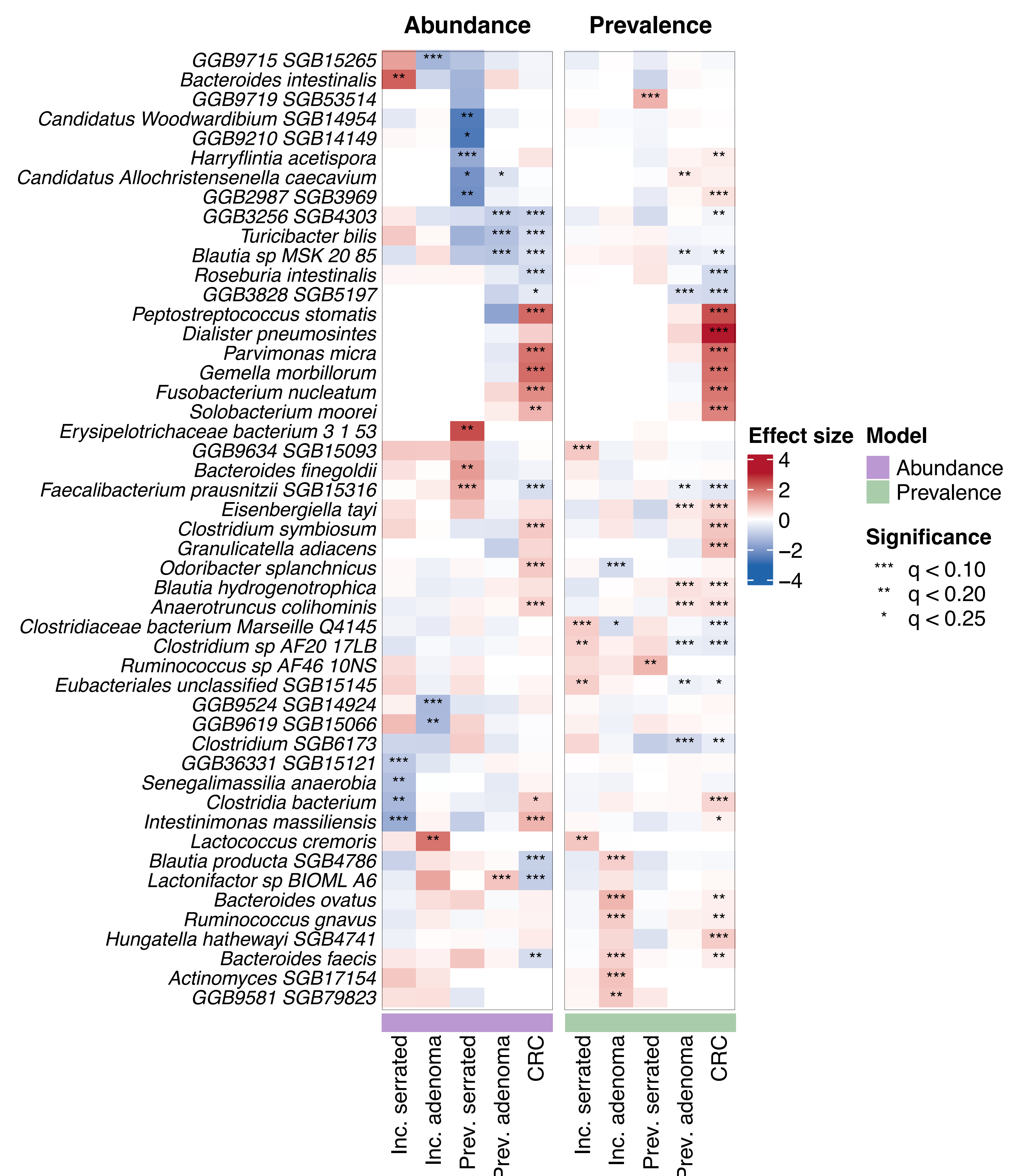
Incident adenomas weakly mirror the microbial signatures of prevalent adenomas and CRC

Serrated polyps diverge from the earliest stages, reflecting the distinct biology of the serrated pathway

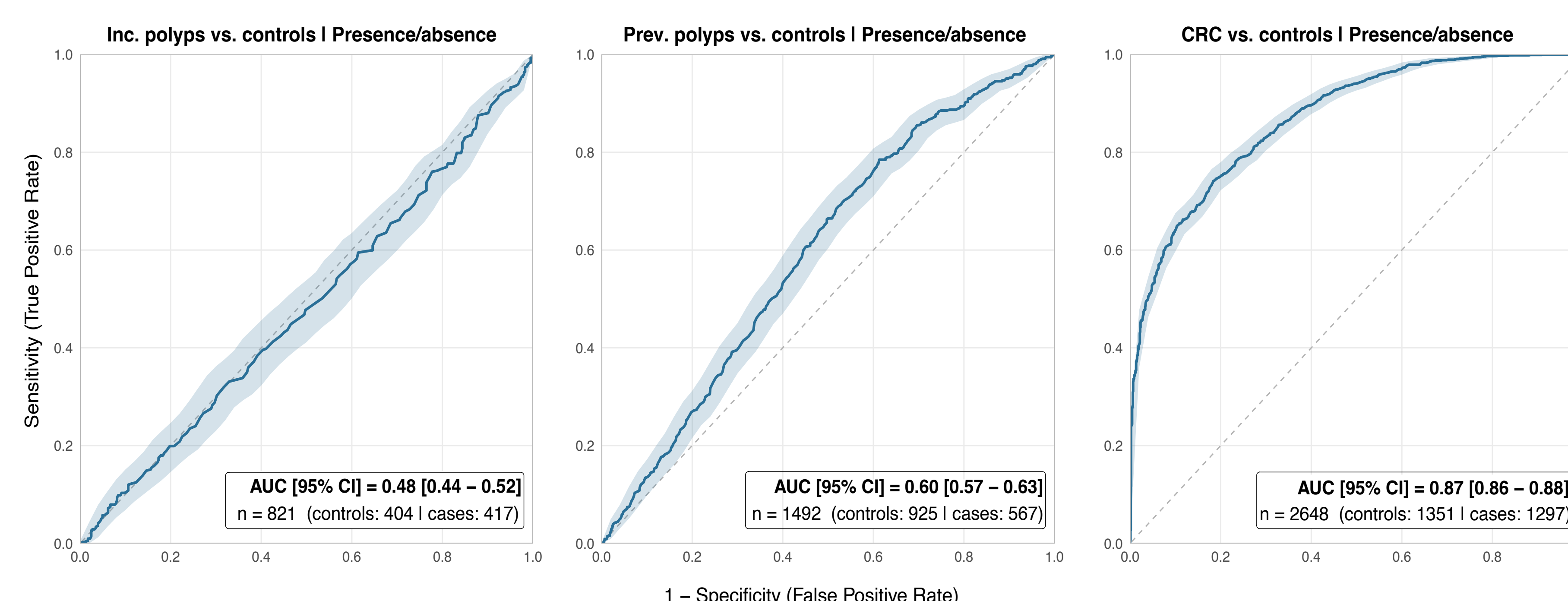
Microbial profiles of incident adenomas weakly resemble those in prevalent adenomas and CRC



Serrated polyps and adenomas present distinct microbial profiles



Gut microbial discrimination strengthens over the polyp-carcinoma continuum



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