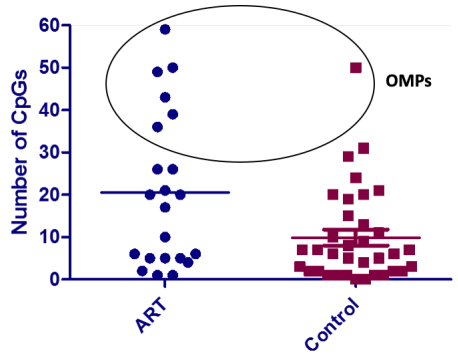
Identification & Characterization of Epigenetic Outliers (Outlier Methylation Phenotype, OMP)

Assisted reproductive technology (ART)

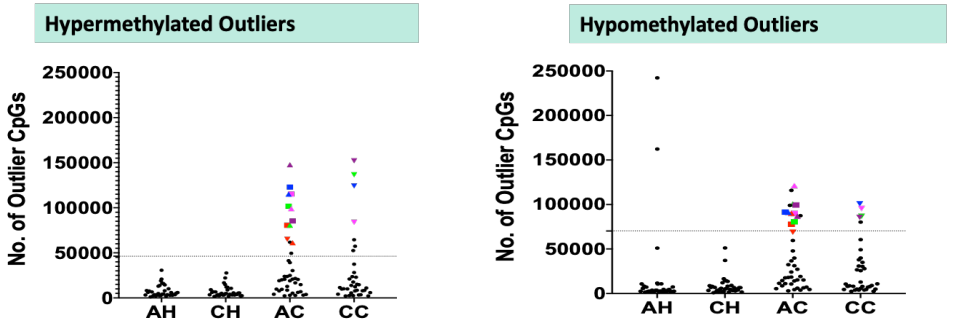
Children conceived by ART have higher frequency of OMPs than naturally conceived.



Colorectal Cancer (CRC)

What does our data show

CRC patients have significantly higher frequency of OMPs than healthy controls.



Symbols in color are OMPs. AH: African American Healthy; CH: Caucasian Healthy; AC: African American CRC; CC: Caucasian CRC

Questions we aim to address (Short term goals)

Do any of the clinically modifiable interventions in ART (like vitrification, intracytoplasmic sperm injection) influence OMPs?

Whether OMP is a cause/effect of genetic (ancestry informative variants) or environmental (diet/ gut microbiome) factors?

Do OMPs have worse outcomes (in terms of responsiveness to treatment, survival)?

Long term goals

Long term outcomes of OMP (follow-up studies at 5-7yrs of age).

Use of OMP as a less invasive diagnostic (in controls) and prognostic (in CRC patients) tool.

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Recent Publications:

Hum Mol Genet (2016)
Clin Epigenetics (2017)
Adv Can Res (2019)
Hum Mol Genet (2022)

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