

How the Breast Environment May Influence Breast Cancer Risk

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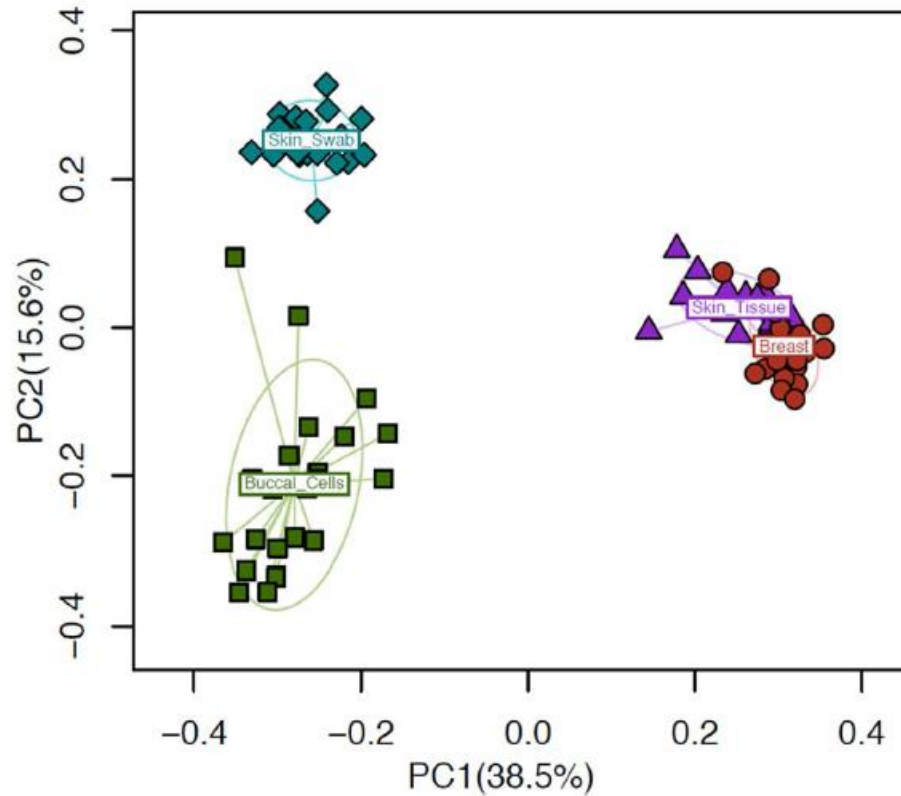
Professor & Chair

UCLA Department of Epidemiology

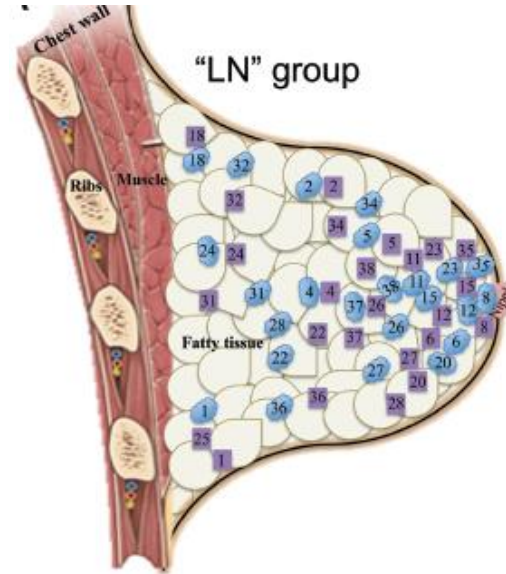
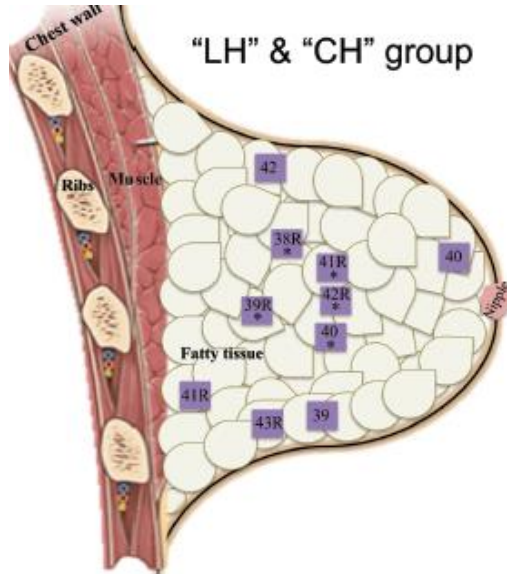
Breast - Environment?



Breast Microbiome

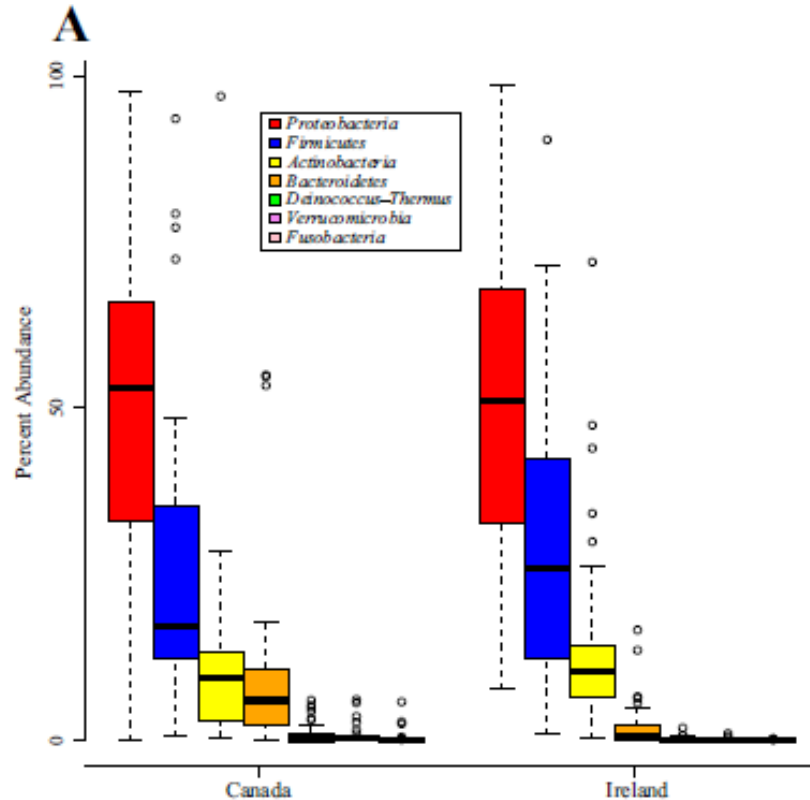


Breast Microbiome



Abundance of Bacterial Phyla in Breast Tissue

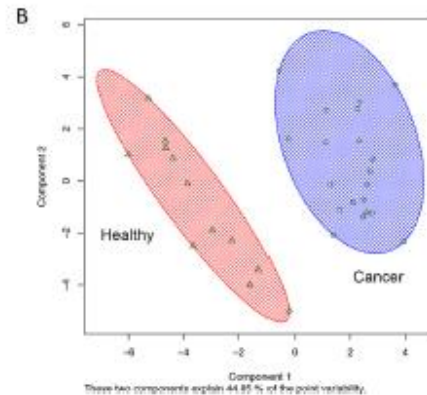
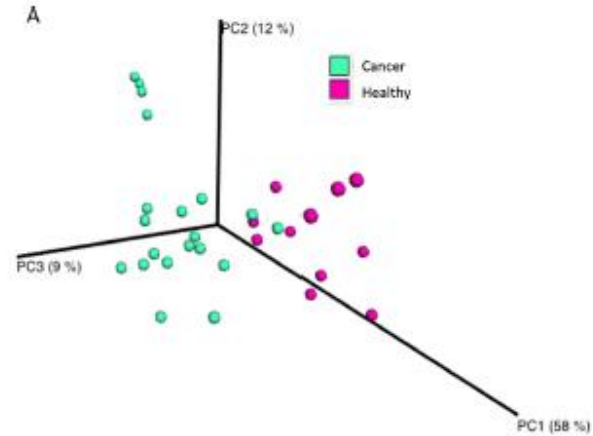
16S RNA Sequencing



Mammary Microbiome and Breast Cancer

- Breast tissue is not sterile but contains diverse population of bacteria
- Mammary microbiome as individual as gut microbiome
- Breast microbiome may modulate risk of breast cancer

Breast Microbiome in Healthy Women vs. Normal Adjacent Tissue



Breast Microbiome

- Bacterial DNA load reduced in tumor vs. normal adjacent and breast augmentation
- Bacterial DNA load inversely correlated with advanced disease

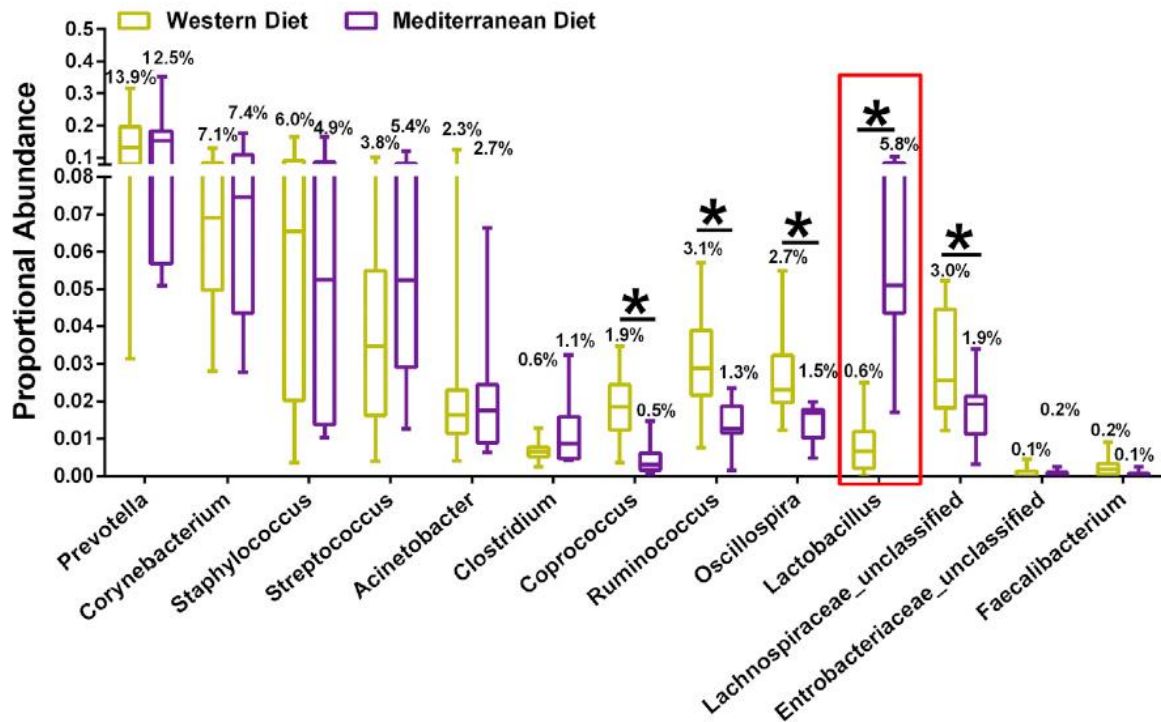
Questions

- Healthy normal tissue
- Prediagnostic tissue => predictive marker

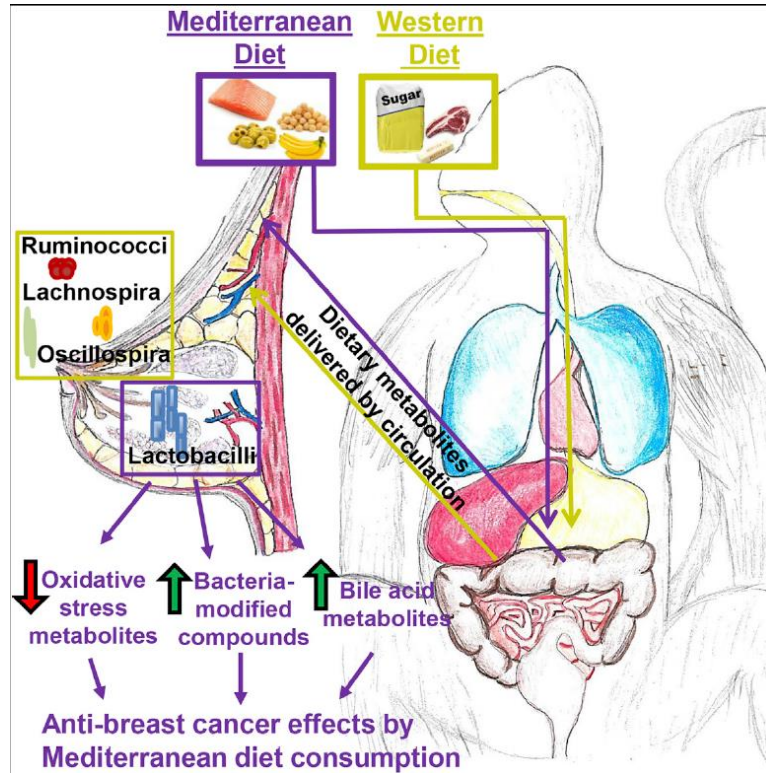
Implications & Future Research

- Manipulate breast microbiome to prevent cancer
- Factors affecting breast microbiome
 - Environmental factors
 - Genetics/Epigenetics
- Microbiome of breast milk

Is Diet Important for Breast Microbiome?



Is Diet Important for Breast Microbiome?



YOU ARE YOUR MICROBES

TEDEd

