

African Collaborative Center for Microbiome and Genomics Research (ACCME)



The Goal: to investigate the role of the vaginal microbiome in Human Papilloma Virus (HPV) persistence and cervical cancer progression in African women to inform prevention strategies across Africa.

The Problem

With correct strategies such as screening and vaccination, cervical cancer caused by Human Papillomavirus (HPV) can be prevented entirely. However, many African women are unable to access screening programs or vaccines, causing this preventable disease to be especially deadly across the continent. By understanding the genomic risk and the role of the vaginal microbiome in persistence of HPV infection and cervical cancer progression, scientists and doctors can develop screening and prevention strategies to identify at-risk individuals and reduce their risk of cervical cancer.

Project Strategy

1. Enrolling 12,000 women to conduct a number of research studies to better understand the genomic risk and role of the vaginal microenvironment in persistence of high risk Human Papilloma Virus (hrHPV) infection, and the progression of cervical cancer.
2. Establish state-of-the-art genomic and microbiomes research centers across Africa.
3. Develop, support, and conduct training and capacity development in genomics and microbiome research in Africa.

Outcomes to Date

Through genomic sequencing, ACCME has been able to demonstrate a wide range of associations between genomic variants and the types of bacteria present in the vaginal microbiome, and risk of persistent hrHPV infection and cervical cancer. To understand the full picture of genomic factors, vaginal microbiome, and hrHPV infection and cervical cancer progression, the group is continuing to generate insights into the genomic factors and vaginal microbiome of women with and those without HPV infections. These insights may enable novel strategies for treatment and prevention of cervical cancer.

Project Leads



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Project Sites



A: Nigeria

Institute of Human Virology Nigeria, University of Ibadan, African University of Science and Technology, National Hospital Abuja, Covenant University

B: Zambia

Center for Infectious Disease Research in Zambia, University of Zambia

Non-African Collaborators:

USA: Greenebaum Comprehensive Cancer Center, Institute of Human Virology and Institute of Genome Sciences, University of Maryland School of Medicine, National Institutes of Health, University of New Mexico

UK: Queen Mary University of London



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