If you have recently moved or have a new phone number, please call us at 1-800-786-3538 (Toll free in California) • (808) 586-2996 (Oahu) • 1-877-415-8323 (Toll free in Hawai’i) or visit our website at www.uhcancercenter.org/mec
Type 2 diabetes incidence and prevalence show strong disparities across ethnic groups with higher risk in groups with ancestries other than European. Factors such as excess weight, smoking, poor diet, and physical inactivity play a significant role in the development of type 2 diabetes. To understand these ethnic differences, researchers in Hawai‘i and Los Angeles recently studied how different risk factors affect the five ethnic groups in the MEC.

During the 23 years of study follow-up between 1993 and 2016, 46,500 MEC participants were diagnosed with type 2 diabetes, which accounted for about 27% of the members not reporting diabetes at baseline. Several ethnic groups had a higher risk to develop type 2 diabetes. By the end of the follow-up period, the percentages with diabetes were 31% for Native Hawaiians, 31% for Latino Americans, 28% for Japanese Americans, 28% for African Americans, and 20% for Whites.

The most important factor related to type 2 diabetes in all ethnic groups was the presence of overweight or obesity at cohort entry, but excessive body weight was not equally important for all ethnic groups as shown in the Figure below. Overweight and obesity increased risk of diabetes incidence by 2-fold and 3-fold, respectively. This was true for each ethnic group except African Americans, where the risk of diabetes was lower. It is also noteworthy that Japanese American and White individuals who were underweight experienced a 30% lower incidence of diabetes. Physical activity as reported by cohort members in the first questionnaire was also associated with the presence of diabetes. On average, individuals who were more active had a 20% reduced risk for diabetes.

Another risk factor investigated was daily red meat consumption. Compared with those who ate less red meat per day, individuals who consumed moderate to high amounts both showed a 6-15% elevated risk in developing diabetes. Conversely, participants who reported a high quality diet displayed a lower risk for the disease. In addition, moderate consumption of coffee and alcohol was found to be protective against diabetes in all ethnic groups. Smoking was a significant risk factor for type 2 diabetes.

These results confirm the importance of known risk factors for type 2 diabetes and show how vital it is to take care of one’s overall lifestyle to prevent type 2 diabetes. Maintaining a healthy weight and diet, as well as reducing adverse behaviors, such as smoking, may protect against this serious condition and its complications such as heart disease, kidney failure, damage of the retina, and loss of limbs.

**Figure:** Risk of type 2 diabetes associated with body mass index (BMI) and physical activity by ethnicity. Values above 1 indicate an increased risk for diabetes, while values below 1 show a protective effect against developing the disease.
Traffic-related Air Pollution and Survival Following Breast Cancer Diagnosis Among Californian Women in the MEC

There are over 3.8 million breast cancer survivors in the U.S. A public health priority is to identify factors that can improve the health of this large group of women. Air pollution is known to impact several health outcomes, including mortality. A study was conducted among 3,089 women in the MEC, who were diagnosed with breast cancer and who resided in California from 1993-2013. Among these women, there were 474 deaths from breast cancer and 272 deaths from cardiovascular disease during the study follow-up. Exposure to air pollution was estimated over this 21-year period based on the statewide air monitoring data available for California.

The association between air pollution and risk of death following a breast cancer diagnosis was examined. An increased risk of death from breast cancer and cardiovascular disease was found with higher exposure to the gaseous pollutants called nitric oxides that are markers of traffic-related air pollution.

These findings are important as they suggest that traffic-related air pollution influences survival after breast cancer diagnosis, supporting the need for public policies and regulation to maintain healthy air standards.

Addressing Overweight and Obesity in Hawai‘i

An estimated 42% of U.S. adults aged 20 and over are classified as obese and another 31% are overweight. Data from the Multiethnic Cohort volunteers participating in the “MEC Adiposity Phenotype Study”, from Hawai‘i and California, assisted with the discovery that substantial variation exists in the distribution of body fat, especially when comparing multiple ethnic groups. Among some individuals, excess body fat was identified as being primarily around the abdomen and/or limbs. In contrast, there were others with excess body fat being primarily around the internal abdominal organs. With regard to overall health, the body fat around the abdominal organs, referred to as “visceral adipose tissue” (VAT), puts one at greater risk for type 2 diabetes, chronic liver disease, and certain cancers.

To address these risks, MEC investigators undertook a pilot study, the Healthy Diet and Lifestyle (HDLS) study, to evaluate how well different diets reduce VAT, and how well participants followed the study requirements. The pilot was restricted to sixty East Asian volunteers in Hawai‘i, ages 35-55 years. The volunteers were randomized to one of two diets for three months.

One involved intermittent energy restriction with partial fasting two consecutive days each week combined with a Mediterranean diet (IER+MED) the remaining five days of the week. The other was the DASH diet with no energy restriction. The participants were able to successfully follow the diets. The study demonstrated that the IER+MED diet was acceptable and lowered VAT.

These results provided the backdrop to undertake a larger study to better evaluate which method of energy restriction works the best. The idea of IER+MED worked well in the pilot. What is unknown is whether the intermittent energy restriction performs differently from “daily energy restriction”. National Institutes of Health designated studying this question a priority. To explore this research question, we submitted a “HDLS2” proposal to the National Institutes of Health (NIH). The good news is that we received a grant to carry out this work.

IF YOU ARE A HAWAI‘I RESIDENT BETWEEN 35-69 YEARS OLD AND INTERESTED IN PARTICIPATING IN THE SIX-MONTH HDLS2, PLEASE CONTACT US AT 808-237-3901 OR BY EMAIL AT HDLS2@CC.HAWAII.EDU.

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The Role of Birthplace and Generation Status in Influencing Cancer Death Rates in Mexican-Latinos in the MEC

Latinos are the largest ethnic population in California, and more than 80% of Latinos in California are of Mexican origin. Little is known about how nativity and generation status influence cancer rates in Mexican-Latinos. MEC investigators examined whether birthplace and generation status influence cancer mortality among the 27,000 cohort participants of Mexican-Latino origin. We observed a higher risk of cancer death by 30% in US-born Mexican-Latinos with both parents born in Mexico, with one parent born in Mexico and the other born in the US, and with both parents born in the US. These findings suggest that US birthplace is a risk factor for cancer death in Mexican Americans. Finding what factors contribute to increasing cancer mortality in US-born Mexican-Latinos is important to curtailing this pattern.