

## Obesity-Associated Cancers on the Rise in Younger Patients — Screening should begin earlier in high-risk individuals, researchers suggest

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Obesity-associated cancers are affecting people at earlier ages in the U.S., a population-based study found.

The analysis of more than 2.6 million incident cases from 2000 to 2016 found that the percentage of new cases of obesity-associated cancer occurring in individuals 65 and older decreased over this interval, whereas it increased in those ages 50-64, said Siran Koroukian, PhD, of Case Western Reserve University School of Medicine in Cleveland, and colleagues.

The trend did not extend to individuals younger than 50, however, as the proportion of obesity-related cancers occurring in that group decreased as well.

Demographic subgroup analyses found that percentages of such cancers occurring in individuals ages 50–64 versus other age groups increased among most groups but was especially notable among non-whites. Proportions rose from 29.8% to 39.8% in Hispanic men, from 35.8% to 43.1% in black men, and from 30.9% to 38.8% in black women, the team reported online in *JAMA Network Open*.

"The shift of cancer burden to younger age groups has important public health, research, and policy implications," Koroukian and colleagues wrote. "First, earlier onset of cancer may be associated with more advanced-stage breast or colorectal cancer at diagnosis, as well as more aggressive cancer, premature mortality, and more years of potential life lost."

The results also suggest that cancer screening should be initiated earlier, especially in those with personal, family, and genetic risk factors, the study authors said.

In addition, a greater cancer burden among individuals younger than 65 means that more incoming and younger Medicare beneficiaries will be cancer survivors, with higher burdens of comorbidities, mental health problems, functional impairments, and financial hardships, the researchers said. "Because of these hardships, many may also qualify for Medicaid. Together, these findings suggest an increasing cancer burden on Medicare and Medicaid programs in the future."

Koroukian's group analyzed data from the Surveillance, Epidemiology, and End Results (SEER) program. The study population included 2,655,574 incident cases of obesity-associated cancers including colorectal, female breast, uterine, gallbladder, esophageal, stomach, liver, pancreatic, ovarian, renal, and thyroid. The study also included more than 3.4 million incident cases of non-obesity associated cancers. The investigators examined changes in incidence rates, the number of incident cases, and the distribution of cases among population subgroups.

One of the main limitations of the study was that the SEER data did not include information on body adiposity such as body-mass index, the authors noted: "Thus, we were unable to determine whether obesity-associated cancers actually occurred in individuals with high body adiposity. Similarly, we were unable to account for factors such as poverty, racism, compromised social determinants of health, smoking and other behaviors, environmental factors, genetic mutations, and family history of cancer, all of which are associated with increased cancer risk. The availability of data on these risk factors in cancer surveillance databases will augment the utility of such data resources."

### **Global Stats**

Koroukian and colleagues cited a report published earlier this year on the global burden of cancer attributable to obesity and type 2 diabetes. The report, published in *Metabolism: Clinical and Experimental*, noted that overweight or obesity affects two billion people and that diabetes affects 425 million worldwide. The author of the report, Alejandro López-Suárez, PhD, of Hospital Virgen del Camino in Cádiz, Spain, pointed to certain biological mechanisms common to obesity and diabetes that can lead to cancer, including upregulation in the receptors of insulin growth factors (IGFs), hyperinsulinemia, insulin resistance, and dyslipidemia.

"Unbalanced adipokines, insulin, IGFs, and pro-inflammatory cytokines activate cell membrane receptors that drive complex changes in several signaling pathways," he wrote. "All of these changes are believed to play a critical role in the risk of oncogenic transformation by favoring cell proliferation and migration, angiogenesis, and reducing cell apoptosis."

Many obesity-related cancers have also been linked to diabetes, including breast, colorectal, uterine, liver, gallbladder, pancreatic, prostate, ovarian, kidney, and thyroid cancer, López-Suárez continued.

He said although difficult to implement and achieve, the best strategy for preventing cancer in patients with obesity and/or diabetes remains promoting a healthy lifestyle: "Approximately 30% to 40% of the most common cancers are preventable by avoiding smoking and preventing overweight by adopting a healthy lifestyle. Having a healthy lifestyle means engaging in regular physical activity; choosing a predominantly plant-based diet that limits the consumption of red meat, alcohol, and ultra-processed foods, particularly of red processed meat; and selecting legumes, nuts, dry fruits, and fish as the main source of proteins."

"Education to promote positive choices has to be continuously reinforced throughout all periods of life," he wrote.

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Koroukian and co-authors reported having no relevant conflicts of interest.

López-Suárez reported having no conflicts of interest.

### **Primary Source**

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