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ORAL ABSTRACT

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The Correlation Between Increasing Incidence of Uterine, Colorectal, and Breast Cancer Among Young Female Patients in the United States

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Objectives
The incidence of breast, colorectal, and uterine cancers has been rising in individuals aged 20-49 in the United States, with annual percent increases of 1-2%. We aimed to identify any modifiable risk factors such as diet, alcohol consumption, and cigarette smoking that that may influence the incidence of these cancers.

Methods
Cancer incidence data from the U.S. Cancer Statistics (USCS) database (2001-2018) were analyzed to assess trends in breast, colorectal, and uterine cancers among women aged 20-49. Modifiable lifestyle factors, including obesity (Classes I, II and III), cigarette smoking, alcohol consumption, fiber intake, and total caloric intake were extracted from the National Health and Nutrition Examination Survey (NHANES) over the same period. Average Annual percent change (AAPC) and Pearson correlation coefficients were used to evaluate trends and associations between cancer incidence and risk factors.

Results
Between 2001 and 2018, 914,659 breast, 144,130 colorectal, and 110,656 uterine cancer cases were identified. The highest increases in incidence occurred in women aged 20-24 for colorectal (AAPC 6.92%; 95% CI: 4.30-9.60, p< 0.01), 25-29 for uterine cancer (AAPC 4.80%; 95% CI: 1.80-7.80, p< 0.01), and 20-24 for breast cancer (AAPC 1.69%; 95% CI: 1.0-2.4, p< 0.01). NHANES data demonstrated increased rates of obesity in four of six age groups, most prominently in women aged 35-39 (AAPC 2.82%; 95% CI: 0.60-5.10, p=0.014). Pearson correlation analysis demonstrated a significant positive association between obesity rates and increasing incidence of all three cancer types in patients aged 20-49 years for colorectal (r=0.93; p< 0.01), uterine (r=0.90; p< 0.01), and breast cancer (r=0.92; p< 0.01). A stratified trend analysis demonstrated a statistically significant and “dose dependent” association between increasing obesity class severity and incidence of each of these three cancer types, with the strongest correlations seen in patients with class III obesity: colorectal (r=0.90; p< 0.01), uterine (r=0.89; p< 0.01), and breast cancer (r=0.90; p< 0.01). There were no significant changes in total caloric intake, alcohol consumption, or saturated fat intake across age groups.

Conclusions
Obesity rates continue to increase, correlating with the increasing incidence of breast, colorectal and uterine cancers. A strong, graded association was observed between obesity severity and cancer incidence. Meanwhile, certain modifiable risk factors have remained stable or declined. This suggests that obesity may play a key role in the rising cancer incidence observed in young female populations. Additional research is needed to determine causality between obesity and the rising incidence of these cancers. If confirmed, these findings would highlight the urgent need to address obesity as a critical public health priority.