White Paper

The Link Between Women, Obesity, and Cancer

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INTRODUCTION

The link between obesity and cancer is well-established. Attributable to anthropometric and lifestyle factors, people with obesity often have comorbidities and other conditions that predispose them to cancer. As the rate of obesity continues to rise, so does the number of obesity-related cancers. Despite a 25-year low in the number of cancer deaths in the United States, the number of cancer deaths related to obesity is growing.[1]Obesity is second only to tobacco as the leading cause of cancer.[2] Even this is likely to change over the next couple of decades as more people become obese and fewer smoke. The Cancer Research UK similarly forecasts that obesity will "be linked with more female deaths than smoking" due to the United Kingdom's similar trends in obesity and smoking.[3]

The World Cancer Research Fund and American Institute for Cancer Research found strong evidence that being overweight or obese throughout adulthood increases the risk of multiple types of cancer, including esophageal, pancreatic, liver, colorectal, endometrial, kidney, and breast (in postmenopausal women).[4] Further, being overweight or obese increases the risk for other cancers, including gallbladder,[5] liver, multiple myeloma, non-Hodgkin's lymphoma, cervical,[6] ovarian, stomach, and mouth, pharynx and larynx.[7]

After treatment, obese patients still face greater challenges. They have worse prognoses, an increased risk of metastatic disease, and shorter remission periods.[8] There also are indications that cancer survival rates decrease for obese patients depending on the type of cancer.[9] This has been found in cases of breast, endometrial, prostate pancreatic, colorectal, and ovarian cancers.[10] Among cancer survivors, obese patients report lower physical and functional well-being, poorer quality of life, and fatigue.[11,12]

CHALLENGE: CANCER AND OBESE WOMEN

Cancer risk for women is high. Obese women are more likely than men and other women of healthy weight to have cancer. Women receive 55 percent of cancers diagnoses[13] and seven[14] to 20 percent[15] of cancer deaths in women are linked to being overweight or obese. Indeed, these estimates may be conservative factoring in the continued upward trend in obesity since this research was conducted.[16]

Breast cancer is the most common type of cancer in women and the connection between obesity and breast cancer is strong. The likelihood of an obese women getting cancer is affected specifically by a women's weight prior to and after menopause. Premenopausal women who are overweight or were overweight between the ages of 18 and 30 have lower rates of breast cancer[17] and women who lose weight after menopause also reduce the risk for breast cancer.[18] Conversely, women who are overweight, or gain weight in adulthood have a higher risk of postmenopausal breast cancer.[19] Even a slight weight gain increases the risk of getting breast cancer. Healthy women who gain five percent of their body mass over a decade increased their risk by 36 percent, about the

same risk experienced by obese women (BMI>30 kg/m²). Morbidly obese women (BMI>35 kg/m²) are at an even higher risk (58%) of developing an invasive breast tumor and experience lower survival rates.[20]

The risk for women extends beyond breast cancer. A longitudinal study that assessed the impact of weight duration on cancer in postmenopausal women revealed a significant connection between longer durations of being overweight (BMI>25 kg/m²) or obese (BMI ≥ 30 kg/m²) and colon, endometrial, and kidney cancers, in addition to breast cancer.[21]

Despite the prevalence of obesity in the population, most Americans are unaware of the connection between obesity and cancer.[22] This suggests that greater education and awareness can make a strong, impactful difference and lead to a decrease in obesity and, correspondingly, the likelihood of cancer. Weight loss is by far the best corrective measure.

SOLUTION: WEIGHT LOSS BENEFITS & CANCER

Although specific dietary components are not directly linked to a greater or lesser likelihood of cancer, excessive weight is clearly linked with greater risks. Several studies state that a moderate five to 10 percent reduction in body weight positively impacts health outcomes for obese patients.[23,24] There also is strong consensus among researchers and health care providers that weight loss and avoiding weight gain as an adult are beneficial in virtually all cases of obesity.

Evidential research validating weight loss as a means of cancer prevention is limited for two reasons. First, weight loss findings typically are self-reported rather than measured and thus may not be reliable; also, it is not always possible to determine whether weight loss is or is not intentional. However, studies that use a more rigorous approach to linking weight loss to cancer occurrences have found a link. For example, postmenopausal women who lost roughly five percent of their body weight had a lower risk of breast cancer than women who did not lose weight.[25] Luo and colleagues likewise found that intentional weight loss lowered women's risk for endometrial cancer.[26] Improvements to cardiovascular health, systolic and diastolic blood pressure, and HDL cholesterol resulting from weight loss also benefit patients throughout and following treatment.

An increased awareness by doctors and health care providers on the importance of addressing obesity issues with patients – combined with advances in technology – offer multiple options for weight loss interventions.

Caloric Reduction

To achieve meaningful weight loss, lifestyle changes must be adopted, including a reduction in caloric intake. Caloric reduction helps reduce inflammation which is common in obese patients and leads to chronic disease.[27] The Academy of Nutrition and Dietetics notes that the effectiveness of dietary approaches varies among individuals. As such, it supports the use of different, evidence-based interventions, including Low-C Calorie Diets (LCD), Very Low Calorie Diets (VLCD), and meal replacement or structured meal plans based on individual need and preferences.[28]

LCD and VLCD are effective approaches to weight loss with the benefit of improved metabolic parameters. In studies using meal replacement plans, significant improvements in body weight, BMI, blood glucose, and blood pressure were found,[29] as was reduced joint pain, greater energy, and improved mental health.[30] These improvements help minimize participants' risk not only of cancer, but also cardiovascular disease and diabetes.[31] Adults following meal replacement plans also maintained their weight loss after a year,[32] contrary to previously held views that rapid weight loss is followed by rapid weight gain.

Exercise

Exercise, in combination with diet, results in the greatest weight loss.[33] Physical activity offers significant improvements in cardiometabolic health and has been shown to improve outcomes for breast and colon cancer patients. The American Heart Association recommends 150 minutes per week of moderate intensity or 75 minutes per week of vigorous intensity. Individuals new to an exercise regime do better starting with shorter sessions throughout the week, then increasing them 10 percent per week until the targeted level is achieved.[34]

Counselling and Support

Having a support system during weight loss is vital to commitment and effectiveness. In a study of obese participants following a*n* LCD, support systems were credited with helping 80 percent of participants meet or exceed their 10 percent weight loss goal.[35] Group meetings are effective structures for support, though those who struggle with weight loss or desire more intensive counselling may benefit from individual sessions with a behavioral psychologist or registered dietician. *Both group and individual counselling have been found effective in achieving significant weight loss, BMI reduction, and waist circumference decrease.[36]*

In addition to traditional face-to-face sessions, advances in technology offer multiple options to accommodate the preferences of virtually any patient. For example, using a phone-based intervention, women being treated for breast cancer lost significantly more weight than the comparison group.[37] *Another study using behavioral interventions including either face-to-face or remote contact revealed significant weight loss for all participants which they maintained for two-years.[38]* The VITAL study similarly found video conferencing can be effective and convenient for weight management.[39]

Self-monitoring, such as tracking one's diet, also is associated with weight loss. Diligence in tracking food daily results in the greatest weight and likelihood of keeping it off.[40] A meta-analysis found that compared to other interventions, mobile phone apps led to significant loss of weigh and reduction in BMI, with additional improvement in physical activity.[41] With the vast majority of Americans owning a smartphone the use of weight loss and tracking apps offer opportunities previously unavailable to enhance and improve the weight loss experience.

RECOMMENDATIONS

These findings suggest that to minimize the risk for several types of cancer, women should maintain a healthy weight with a BMI of 25 kg/m² or lower. Because most Americans are unaware that obesity increases the risk for cancer, doctors and health care providers must be proactive in addressing the issue of obesity with their patients. Traditionally the purview of primary care physicians (PCP), a more comprehensive, team-based approach to weight loss is necessary to help patients identify and resolve obesity-related diseases, including cancer.

Weight loss as an intervention to reduce the risks of cancer involves multiple levels. Reducing caloric intake, specifically through a LCD or VLCD, and increasing physical activity, are among the most effective steps an obese patient can take to ensure better health outcomes.

Because obese patients already face more health complications than healthy-weight individuals, a multi-disciplinary team, including PCPs, nurses, registered dieticians, oncologists, surgeons, behavioral therapists,

and other relevant healthcare professionals, must come together to recommend interventions appropriate and specific to patients' needs.[42] Although the Centers for Disease Control recommends that health care providers counsel obese patients on the connection between weight and cancer,[43] patients report that their oncologists rarely counsel them about weight loss.[44] Everyone involved in patient care must take a role in educating patients and their publics about the high risks of obesity.

CONCLUSION

The number of obese American adults has risen significantly since 2000, from just over 30 percent to nearly 40 percent. At this rate, by 2030 more than half of the adults in the United States will be obese[45] and there will be over a half-million new obesity-related cases of cancer each year.[46] It is not unreasonable to believe that the ability to effectively provide medical, emotional, social, and financial support will, at some point, become untenable.

The single most effective means of reducing the number of cancer cases is to create a healthier, lower-weight population. It is time for the medical community to adhere to the same recommendations they offer; that is, a reduction of obesity by five to 10 percent among the patients and populations they serve. Meeting this goal would significantly reduce the level of obesity and the associated negative health risks.

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