

## Intentional weight loss and risk of lymphohematopoietic cancers

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### Abstract

**Objectives** We hypothesized that intentional weight loss may be associated with development of lymphohematopoietic cancers, based on observations of immune suppression following weight loss in short-term studies.

**Methods** At the baseline of the Women's Health Initiative Observational Study (1994–1998), participants reported information about intentional weight loss episodes in the past 20 years. We estimated hazard ratios (HRs) and 95% confidence intervals (CIs) among 81,219 women for associations between past intentional weight loss and risk of developing non-Hodgkin lymphoma (NHL), leukemia, and multiple myeloma during an average 9.9 years of follow-up.

**Results** The risk of NHL was associated with having lost a large maximum amount of weight ( $\geq 50$  pounds, HR = 1.68,

95% CI 1.13–2.50). NHL risk also varied by the frequency of intentional weight loss; women had increased risk if they lost 50 pounds or more  $\geq 3$  times (HR = 1.97, 95% CI 0.93–4.16;  $p$  trend by frequency = 0.09) or 20–49 pounds  $\geq 3$  times (HR = 1.55, 95% CI 1.00–2.40;  $p$  trend = 0.05), but there was no risk associated with smaller amounts of weight loss (10–19 pounds  $\geq 3$  times, HR = 0.78, 95% CI 0.46–1.33). These associations persisted with adjustment for body mass index at different ages. We observed non-significant associations of similar magnitude for multiple myeloma, but past intentional weight loss episodes were not associated with leukemia.

**Conclusion** Further assessment of intentional weight loss as a possible risk factor for lymphomas may provide insight into the etiology of these cancers.

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