

# Study finds restricting insulin doses increases mortality risk

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A new study led by researchers at the Joslin Diabetes Center has found that women with type 1 diabetes who reported taking less insulin than prescribed had a three-fold increased risk of death and higher rates of disease complications than those who did not skip needed insulin shots. The new research appears in the March issue of *Diabetes Care*.

The study highlights the dangers of insulin restriction and concludes that mortality associated with the behavior appears to occur in the context of eating disorder symptoms often exhibited in women with diabetes – sometimes referred to as “diabulimia” in the media.

This 11-year follow-up study of 234 women is one of the first to show an increased risk of mortality as well as higher rates of kidney and foot problems in those who restricted their insulin intake. In addition, the average age of death was younger for those involved in insulin restriction: 45 years of age as compared to 58 years for those who did not restrict.

Thirty percent of the subjects reported restricting their insulin intake at the study’s outset. Frequency of the behavior appears to influence mortality risk. Insulin-restricting women who died had reported more frequent insulin restriction and reported more eating disorder symptoms at the study’s outset than those insulin-restrictors who were still living at study’s end.

Eating disorder symptoms include extreme concern for body weight and

shape, judging self worth according to a thin body ideal, restrictive eating patterns, binge eating and other methods of purging calories, such as vomiting.

“This is an incredibly important women’s health issue in the area of diabetes,” said lead author Ann E. Goebel-Fabbri, Ph.D., psychologist and investigator in the Section on Behavioral and Mental Health at Joslin Diabetes Center and instructor at Harvard Medical School. “The average age of death was significantly younger in the insulin-restricting group,” said Goebel-Fabbri. “This behavior emerged as a significant risk factor for mortality.”

Type 1 diabetes is the autoimmune form of the disease, in which the body is no longer able to produce insulin, a hormone which allows the body to utilize and store calories for energy. Current treatment guidelines for type 1 diabetes aim at achieving near normal blood glucose ranges by taking multiple daily doses of insulin. This study’s findings strongly suggest that insulin restriction and related eating disorder behaviors may be unique barriers to achieving optimal diabetes management, Goebel-Fabbri said.

“Women with this behavior need specialized treatment by someone who understands the connection between eating disorders and diabetes,” she said. “We know that current type 1 diabetes treatment is especially good at preventing complications and preserving longevity. The biggest frustration is knowing that these women, by virtue of their eating disorders, are unable to utilize that lifesaving set of tools.”

Goebel-Fabbri noted that other studies have shown that women with diabetes are nearly 2.5 times more likely to develop an eating disorder than women without diabetes. Warning signs include: unexplained elevations in A1c levels; repeated problems with diabetic ketoacidosis (DKA), which can be fatal; extreme concerns about weight and body

shape; change in eating patterns; unusual pattern of intense exercise (sometimes associated with frequent hypoglycemia); and ammenorrhea (skipping monthly menstrual cycles).

“Raising awareness of the impact of insulin restriction among clinicians who treat type 1 diabetes is extremely important so that they can make appropriate assessments and referrals to mental health professionals who are experienced in the treatment of people with diabetes,” said study co-author Katie Weinger, Ed.D., R.N., investigator in the Section on Behavioral and Mental Health at Joslin Diabetes Center and assistant professor of Psychiatry at Harvard Medical School.

Source: Joslin Diabetes Center

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