

# Snoring Linked to Gestational Diabetes Risk

*Habitual snorers had significantly higher blood glucose levels after a 1-hour tolerance test.*

BY BRUCE JANCIN

FROM THE ANNUAL MEETING OF THE ASSOCIATED PROFESSIONAL SLEEP SOCIETIES

SAN ANTONIO — Women who snore frequently during pregnancy are at elevated risk for gestational diabetes, according to a case-control study.

Although the risk is particularly high in obese snorers, snoring remained an independent risk factor for developing gestational diabetes even after investigators controlled for body mass index, Louise M. O'Brien, Ph.D., reported at the meeting.

"These findings have important implications for the prevention of an event—gestational diabetes mellitus—and all its associated morbidities. I have to believe there is a role for patient education and screening: asking pregnant women about their sleep and especially about their snoring in order to improve pregnancy outcomes," said Dr. O'Brien of the department of neurology at the University of Michigan, Ann Arbor.

She reported on 1,221 women in their

third trimester who completed questionnaires about habitual snoring, which was defined as snoring three or more nights per week.

Nearly 31% of the women were habitual snorers in their last trimester. Their mean response to a screening 1-hour oral glucose tolerance test was a blood glucose level of 124 mg/dL, significantly higher than the 117 mg/dL in nonsnorers. Thirty-seven percent of frequent snorers had a response of 130 mg/dL or more, compared with 30% of nonsnorers.

A formal diagnosis of gestational diabetes was made in 24% of the habitual snorers and 17% of nonsnorers, a significant difference.

Altogether, 37% of study participants were obese in their third trimester. That struck some audience members as a high figure, but Dr. O'Brien said that it reflects the advanced state of the obesity epidemic in Michigan.

Habitual snorers were more likely to be obese. Gestational diabetes was diagnosed in 34.5% of obese habitual snorers and 13% of nonobese nonsnorers.

In a multivariate regression analysis adjusted for age, race, gestational age, and parity, obese snorers were at 3.6-fold increased risk of developing gestational diabetes, compared with nonobese nonsnorers. When the investigators controlled further for body mass index, habitual snoring in pregnancy remained independently associated with a significant 1.5-fold increased rate of gestational diabetes.

Dr. O'Brien noted that this finding of an increased risk of gestational diabetes associated with snoring was independently confirmed in two other recent studies.

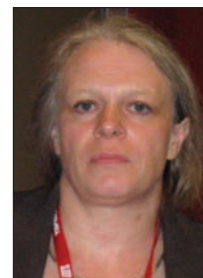
Physicians at Northwestern University in Chicago reported in a prospective sleep survey study of 189 healthy nulliparas that 18.5% of them snored at least 3 nights per week. Their mean 1-hour oral glucose tolerance test values were significantly higher than nonsnorers' by a margin of 118 to 108 mg/dL. Their 14.3% incidence of gestational diabetes was significantly higher than the 3.3% rate in nonsnorers, as well.

The 48% of women who averaged less than 7 hours of sleep per night had a 10.2% incidence of gestational diabetes, compared with 1.1% in those who slept at least 7 hours (Am. J. Obstet. Gynecol. May 25, 2010; PMID:20510182).

In the other study, investigators at Seattle's Swedish Medical Center interviewed 1,290 women early in pregnancy regarding sleep duration and snoring. The incidence of gestational diabetes among study participants was 5.3%.

Women who reported sleeping an average of 4 hours or less per night had a 5.6-fold greater rate of gestational diabetes than did those who slept 9 hours. Overweight short sleepers had a 9.8-fold increased risk. Overweight women who snored at least 3 nights per week had a 6.9-fold increased gestational diabetes incidence compared with normal-weight nonsnorers (BMC Womens Health May 14, 2010; PMID:20470416).

**Disclosures:** Dr. O'Brien reported having no financial conflicts.



**To improve pregnancy outcomes, ask women about their sleep and especially about their snoring.**

DR. O'BRIEN

## White Rice Raised Diabetes Risk 17%, Over Brown Rice

BY MARY ANN MOON

FROM ARCHIVES OF INTERNAL MEDICINE

Consumption of white rice appears to increase the risk of developing type 2 diabetes, whereas consumption of brown rice appears to decrease that risk, according to a report based on data from three studies.

"From a public health point of view, replacing refined grains such as white rice [with] whole grains, including brown rice, should be recommended to facilitate the prevention of type 2 diabetes," said Dr. Qi Sun of the Harvard School of Public Health, Boston, and associates.

White rice is known to have a higher glycemic index than that of brown rice. The consumption of white rice in the United States has more than tripled since the 1930s.

White rice's relationship to type 2 diabetes has been studied in several Asian countries, where it is a staple accounting for as much as 75% of the diet. But this is the first prospective study to specifically assess the relationship between the disease and the intake of both white and brown rice in a Western population, where white rice accounts for approximately 2% of the diet, Dr. Sun and his colleagues noted.

The researchers used data from three large cohort studies that documented food intake to examine this association, assessing diet and diabetes status in 39,765 men in the HPFS (Health Professionals Follow-Up Study), 69,120 women in the NHS I (Nurses' Health Study I), and 88,343 women in the NHS II.

There were 2,648 incident cases of diabetes during 20 years of follow-up in the HPFS, 5,500 cases during 22 years of follow-up in the NHS I, and 2,359 cases dur-

ing 14 years of follow-up in the NHS II, Dr. Sun and his colleagues reported.

Greater consumption of white rice was associated with a higher risk of diabetes across all three studies. This association was attenuated after the data were adjusted to account for multiple lifestyle and dietary risk factors, "but a trend of increased risk associated with high white rice intake remained," the investigators said.

"In comparison with those in the lowest category of white rice intake, participants who had at least five servings of white rice per week had a 17% higher risk of developing type 2 diabetes," they said (Arch. Intern. Med. 2010;170:961-9).

In contrast, greater consumption of brown rice was associated with a lower risk of diabetes. This association was attenuated but still remained significant after the data were adjusted to account for lifestyle and dietary risk factors.

"When compared with the participants who ate less than 1 serving of brown rice per month, the pooled risk reduction of type 2 diabetes was 0.89 for intake of 2 or more servings per week," Dr. Sun and colleagues said.

"Because brown rice consumption levels were rather low in our participants, we could not determine whether brown rice intake at much higher levels is associated with a further reduction of diabetes risk," they added.

The researchers then assessed the relative risks associated with replacing one-third of a serving of white rice per day with the same amount of brown rice. "In all three cohorts, substituting brown rice for white rice was consistently associated with a lower risk of type 2 diabetes." Every 50-g substitution of brown rice for white per day was associated with a 0.84 risk reduction.

The study evaluated the association between diet and

diabetes among working, highly educated health professionals of predominantly European ancestry. The findings may not be generalizable to other populations, Dr. Sun and associates said.

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**Substituting brown rice for white was consistently associated with a lower risk for type 2 diabetes.**