News in Brief

MEN WHO EAT SOY REGULARLY MAY FACE FERTILITY RISK.

Previously, animal studies have linked heavy consumption of isoflavone-rich foods like soybeans and soy products to infertility. Now, according to a Harvard School of Public Health study of men seen at a fertility clinic, those who reported eating a half serving daily of soy had a sperm concentration that was 41 million/mL less than men who did not eat soy. Obese men who ate soy regularly had the lowest sperm count. However, the authors warned that not too much should be made of the findings at this point, owing to the scarcity of human data from randomised trials.

The theoretical rationale for the association between soy intake and sperm concentration is that isoflavones (daidzein, genistein and glycitein) have estrogenic effects (i.e., they are phytoestrogens). Phytoestrogens might interfere with the hormonal signaling in sperm production.

To assess the potential impact of soy on human fertility, the authors studied 99 men presenting at a fertility clinic for semen analysis. The participants completed a questionnaire that included questions about their diet. The men reported how much soy they consumed during the previous 3 months and the serving size, based on a list of 15 soy-based foods.

The average age of the men was 36.4 years. 90% were Caucasian. Nearly 75% were overweight or obese (body mass index ≥ 25). Semen was analysed for sperm concentration, morphology and motility. Normal sperm count for healthy men in the study was taken as 80 million to 120 million/mL.

Nearly 60% had some sperm abnormality. 10% had a sperm concentration <20 million/mL. 55% had <50% motile sperm. 26% had <4% morphologically normal sperm. 39 participants never consumed soy. Of the remaining 60 men, they were evenly divided into 3 groups with estimated median soy consumption of 0.04, 0.16, and 0.54 servings per day.

Using univariate analysis, men who ate the most soy had a median sperm concentration that was 35 million/mL less than that of men who did not consume soy ($P = 0.03$). Using adjusted analysis, there was a stronger association, with a difference in sperm concentration of 41 million/mL ($P = 0.02$). The association was even stronger in overweight and obese men who consumed the most soy (difference of 50.45 million/mL, $P = 0.02$).

The study only demonstrates an association between soy consumption and sperm count, but does not explain the association, since the study is an observational study. The other main limitations of the study are that the assessment of isoflavone consumption was only limited to soy-based foods (other dietary sources were not asked for in the diet assessment tool). There is other evidence that soy does not appear to adversely affect fertility. For example, phytoestrogens have a very low binding affinity compared to oestradiol; no significant adverse effects of soy on fertility have been observed in men in Asia where soy consumption is very high.

Source reference: Chavarro JE, et al. Soy food and isoflavone intake in relation to semen quality parameters among men from an infertility clinic. Hum Reprod 2008; DOI: 10.1093/humrep/den243.

AMERCIAN COLLEGE OF EDNOCRINOLOGY TASK FORCE ISSUES CONSENSUS STATEMENT ON PRE-DIABETES.

A consensus statement from a task force of the American College of Endocrinology states that the treatment of pre-diabetes requires intensive lifestyle modification, and for patients with high-risk, the use of drugs. The statement was meant to fill the void in recommendations for treating pre-diabetes by defining specific goals and targets for glucose levels, weight, blood pressure and lipids.

In the US, there are 57 million adults with pre-diabetes, defined as impaired fasting glucose (IFG) of 100 to 125 mg/dL, or impaired glucose tolerance (IGT) of 140 to 199 mg/dL, or both.

Of those with IGT, 6% to 10% will develop diabetes each year. Of those with IFG and IGT, 60% will develop diabetes within 6 years.

Of those with IGT, 50% meet the criteria for metabolic syndrome. The statement states that the preferred treatment approach in this group is intensive lifestyle management, which is safe, and for which there is strong evidence of efficacy in improving glycaemia and reducing cardiovascular (CV) risk factors.

The recommendations for treatment of patients with pre-diabetes include:

- Losing 5% to 10% of body weight, assisted by self-monitoring, setting of realistic goals, stimulus control, cognitive strategies, social support, and reinforcement.

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- Having at least 150 minutes of moderate-intensity exercise (for example, walking or biking) per week.
- Limiting total and saturated fat, and trans-fatty acids.
- Meeting the same lipid and blood pressure targets as diabetics using statins, ACE inhibitors, and angiotensin receptor blockers as first-line treatments.

In addition, the use of medication should be considered in patients at high risk (for example, worsening glycaemia, CV disease and non-alcoholic fatty liver disease). The statement recommended metformin and acarbose for controlling glycaemia on the basis of their efficacy in reducing the transition from pre-diabetes to diabetes and their safety. The statement cited safety concerns with thiazolidinediones. There was also insufficient evidence to recommend the newer agents (glucagon-like peptide 1 receptor agonists, dipeptidyl peptidase-4 inhibitors, and meglitinides).

The statement outlined measures for monitoring patients with pre-diabetes for a worsening of the condition, which include:

- Annual glucose tolerance test and testing for micro-albuminuria.
- Twice-yearly fasting plasma glucose, hemoglobin A1c, and lipids.

Source: American College of Endocrinology Task Force on Pre-Diabetes "Consensus statement on the diagnosis and management of pre-diabetes in the continuum of hyperglycemia – when do the risks of diabetes begin? 23 July 2008. URL: http://www.aace.com/meetings/consensus/hyperglycemia/hyperglycemia.pdf

ASSOCIATION BETWEEN SLEEP PATTERN AND ISCHAEMIC STROKE IN POST-MENOPAUSAL WOMEN.

A prospective study from the University of North Carolina showed that post-menopausal women who regularly slept 9 or more hours a night, or 6 hours or less a night, might have an increased risk of ischaemic stroke. Those who slept longer had a 70% higher risk of ischaemic stroke compared with women who slept for 7 hours. Those who slept 6 hours or less had a 14% greater stroke risk. As there were nearly twice as many women who were short-sleepers compared to long sleepers, the overall impact for short sleep was probably greater than for long sleep.

The authors note that many studies show a U-shaped association between sleep duration and mortality. However, they note that these studies did not account for many factors that might increase the risk of cardiovascular (CV) disease and stroke (for example, age, race, socio-economic factors, smoking, exercise, hormone therapy, hypertension, hypercholesterolaemia, diabetes mellitus, obstructive sleep apnea and depression).

The authors thus conducted a prospective study that accounted for these risk factors. They studied 93,175 women, aged 50 to 79 in the multi-ethnic Women's Health Initiative Observational Study, recruited from 40 US clinical centres from September 1994 to December 1998. Cox (proportional hazards) models were used to adjust for the multiple factors.

At baseline, 8.3% reported that they regularly slept 5 hours or less a night. 4.6% reported sleeping 9 hours or more. After an average of 7.5 years of follow-up, 1,166 cases of ischaemic stroke occurred.

The multivariable-adjusted RR and 95% CI for ischaemic stroke was 14% (95% CI 0.97 to 1.33) for 6 hours of less; 24% (95% CI 1.04 to 1.47) for 8 hours, and 70% (95% CI 1.32 to 2.21) for 9 hours or more (7 hours sleep time used as the reference). For women without CV disease at baseline, there was a slightly stronger association with ischaemic stroke (RR 22%) for 6 hours or less (95% CI 1.03 to 1.44). For women who had frequent snoring or sleepiness, there was statistically non-significant increased RR for ischaemic stroke (31%, 95% CI 1.00 to 1.72).

Long sleep duration was associated with being retired or unemployed, smoking, physical inactivity, depression, CV disease, diabetes, hypertension, hypercholesterolaemia and hormone therapy. Short sleep duration was associated with overweight women and women from ethnic minorities.

Provided that sleep duration is an independent risk factor for ischaemic stroke, the causes of the association between sleep duration and ischaemic stroke are unclear. The authors hypothesise that possible explanations could include systemic inflammation, thrombo-static abnormalities, endothelial dysfunction and re-setting of the circadian pacemaker predisposing to cardiac arrhythmia. However, they state that more sound studies are needed.

The authors warn that the study does not suggest that long sleepers who cut their sleep hours would decrease their stroke risk, because the observed increased stroke risk in long sleepers might be due to unmeasured confounders (for example, sleep disorders, occupational stress or stressful life events). Also, the increased risk findings do not apply to younger women and men. The other main limitation of the study is that sleep duration was self-reported. ■

Source: Chen JC, et al. Sleep duration and risk of ischaemic stroke in postmenopausal women. Stroke 2008: DOI: 10.1161/strokeaha.108.521773.