

# Eating chocolate twice a week reduces heart failure incidence

Andrea CIOBANU, MD

Cardiology and Internal Medicine Department, Emergency University Hospital, Bucharest, Romania



**H**ypertension is one of the strongest risk factors for heart failure (HF). Patients who have a blood pressure > 160/90 mmHg double their risk of developing HF, compared to those who have a blood pressure <140/90 mmHg.

Up to now, several randomized and observational studies showed that chocolate intake is associated with lower systolic and diastolic blood pressure, improved endothelial function, reduced inflammation, lower incidence of stroke and myocardial infarction. Chocolate is one of the most concentrated source of flavanoids, demonstrated to reduce the cardiovascular risk factors.

However, there were no studies to examine the association between chocolate intake and the incidence of HF.

A prospective observational study of more than 30 000 women between 48 and 83 year old from the Swedish Mammography Cohort was conducted from 1998 throughout 2006. Participants with a history of myocardial infarction or diabetes were excluded from the study, because of their particular dietary require-

ments. A food-frequency questionnaire was completed by the participants, the chocolate intake being a mandatory request to fill in. The questionnaire also included information about physical activity, cigarette smoking, alcohol consumption, education, body mass index, family medical history.

Over 9 years of follow-up, 419 women were hospitalized for incident HF (n=379) or died of HF (n=40). Compared with no regular chocolate intake, the multivariable-adjusted rate ratio of HF was 0.74 (95% CI, 0.58 to 0.95) for women consuming 1 to 3 servings of chocolate per month, 0.68 (95% CI, 0.50 to 0.93) for those consuming 1 to 2 servings per week, 1.09 (95% CI, 0.74 to 1.62) for those consuming 3 to 6 servings per week, and 1.23 (95% CI, 0.73 to 2.08) for those consuming 1 servings per day (P=0.0005 for quadratic trend).

This prospective study showed that no more than 2 weekly servings of chocolate in middle-aged and elderly Swedish women is associated with a lower rate of HF hospitalization or death. More studies are needed to determine the optimal quantity and type of chocolate to be recommended for lowering HF incidence. □

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*Comment on a paper:*

**Mostofsky E, Levitan EB, Wolk A et al** – Chocolate Intake and the Incidence of Heart Failure. A Population-Based Prospective Study of Middle-Aged and Elderly Women. *Circ Heart Failure* 2010; 3:612-616