

# Periconceptional folic acid in the Netherlands in 1995. Socioeconomic differences

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In November 1993 the Dutch Inspectorate of Public Health advised that all women planning a pregnancy should consume 0.5 mg of folic acid daily in the periconceptional period, that is from four weeks before conception until eight weeks thereafter.<sup>1</sup> Thus the risk of fetal neural tube defects (NTD) would be reduced by 50%. As fortified foods were not available in the Netherlands because of legal restrictions, women were advised to take folic acid pills. A major concern was how to inform women planning a pregnancy. A mass media campaign was started with special attention for low socioeconomic status women because generally they are difficult to reach via campaigns, and because in several countries NTDs are relatively frequent in this group.<sup>2</sup> For the Netherlands it is not known whether NTDs are more frequent in lower socioeconomic status groups.

In this paper we describe the relation between socioeconomic status and knowledge and periconceptional consumption of folic acid in the Netherlands in 1995 at the time of the start of the folate awareness campaign.

## Methods

A series of consecutive pregnant women at their first or second antenatal visit to the obstetrician, midwife or general practitioner were asked to fill out a questionnaire. As this study was intended to provide baseline data for measuring the effect of the national folic acid campaign, women (n=1636) were included only if the first day of their last menstrual period occurred before 1 September 1995, the official starting date of the campaign. The highest fulfilled level of education was taken as an indicator for socioeconomic status. For the statistical analyses the levels were merged into: "low" education, "middle" education, and "high" education.

The statistical analysis was performed using SPSS for Windows. Logistic regression was used to calculate multivariate odds ratios.

Table 1 Knowledge and consumption of folic acid in relation to educational level

	Education						Crude OR	Adjusted OR* (95% CI)
	low		middle		high			
	n	%	n	%	n	%		
Knowledge about folic acid								
ever heard of folic acid	399	67	585	86	296	93	6.7	6.2 (3.8, 10.0)
heard before pregnancy	168	28	313	46	183	57	3.4	3.2 (2.3, 4.3)
knowing protective effect for NTD†	88	53	185	60	120	66	1.7	1.9 (1.2, 2.9)
knowing advised period†	78	48	171	56	121	67	2.2	2.2 (1.4, 3.4)
Use of folic acid								
during (part of) advised period	101	18	181	27	122	39	3.0	2.7 (2.0, 3.8)
during entire advised period	14	2	33	5	31	10	4.5	3.8 (1.9, 7.4)

\*Adjusted for age, gravidity, region, and previous child with a congenital anomaly. †Respondents who knew before pregnancy (n=676).

## Results

Of 1636 pregnant women, 676 (41%) had heard about folic acid before they became pregnant. Higher educated women were better informed. The odds ratio for the highest education, compared with the lowest category, for hearing about folic acid before pregnancy was 3.2 (table 1). Of the group of respondents who did receive advice before their conception (n=358), the general practitioner was mentioned as the most frequent source for getting information from professionals (35%). Of the media, parents' magazines were an important source of information (16%). Folic acid had been used in (part of) the periconceptional period by 411 (25.2%) of the women, and in the entire advised period by 78 (4.8%). Both any use and use during the entire advised period were related to socioeconomic status (table 1). Women with a high educational level took 3.8 times as often folic acid during the entire advised period as respondents with a low educational level.

Of the respondents (n=374) who had adequate knowledge of folic acid 51% did not take folic acid, for diverse reasons. Too late awareness to start in time or not thinking about it were often mentioned.

## Conclusion

Before the start of the folic acid awareness campaign higher educated women were better informed about the periconceptional use of folic acid to reduce the risk of NTD. An Irish and an American study found the same result.<sup>3,4</sup> Use of folic acid was far more frequent among higher educated women. As a result, differences are to be expected in NTD prevalence because of more adequate primary prevention in high socioeconomic categories and lack of knowledge in the lower educated group. One way to avoid socioeconomic differences in folic acid intake might be fortification

of a staple food, as is presently done in the United States.<sup>5</sup> Future awareness studies will be used to evaluate the effect of the campaign.

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Conflicts of interest: none.

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