BACKGROUND

- 1991 - two studies demonstrated that supplementing the diet of women with folic acid could reduce the incidence of neural tube defects (NTDs)\(^1,2\)

- 1992 the Department of Health (DoH) promoted advice that women should take folic acid supplements \textit{pre} and \textit{post}-conception

- Other countries implemented compulsory fortification of staple foods (USA and Canada from 1998)

- 2003 - Scientific Advisory Committee on Nutrition (SACN), 700 to 900 pregnancies affected by \textbf{significant} NTDs each year in England and Wales (excludes miscarriages)\(^7\)
BACKGROUND CONT…

- 2007 - Food Standards Agency (FSA) advised British Government to proceed with fortification – deferred

- Independent review by SACN

OBJECTIVES

1. Return focus to the debate

2. To understand what is currently driving women's behaviour
METHOD

- Approvals: Ethics, R&D, data protection and hospital management

- Pregnant women attending antenatal clinics were asked to complete an anonymous questionnaire

- Statistical validity:
  - 386 responses (384 required for 95% confidence for +/- 5% error)
  - 97% response rate
RESULTS

- 89% of women consumed folic acid supplements (95% CI 85.7% to 92.2%)
- Only 31% of women took folic acid prior to conceiving (95% CI 26.2% to 35.6%)

Johnston (2008): “NTDs result from failure of normal neural tube closure by approximately 28 days after conception”

- Nearly 70% of women were not appropriately protected
71% of women taking supplements in their current pregnancy despite not having taking them in a previous pregnancy cited advice from their ‘Doctor/GP’ (46%) or midwife (25%) as the trigger.
RESULTS

- 81% of the women who started taking supplements based upon advice from the ‘Doctor/GP’ or ‘midwife’ started after they become pregnant.

- Women who did not specifically mention the association with NTDs were less likely to start folic acid before conceiving (43% versus 54%).
RESULTS

Reasons given for not taking folic acid supplements:

- 41% of women not taking the supplements were unaware of the health benefits of folic acid
  - “It had not been recommended” (29%)
  - “I didn’t think it was necessary” (12%)

- 34% discovered that they were pregnant too late for supplements to be of benefit

- No women cited the cost of purchasing supplements as a barrier to taking them
RESULTS

Groups at Particular Risk:

**Education** was found to be the most influential factor:

- 97% of women with a degree took folic acid, 57% started supplements before they conceived

- ‘Degree +’ were 6.6 times more likely to comply ($P=0.000$)

- No formal educational qualification were 25.8 times less likely to follow the advice ($P=0.000$)
RESULTS

Age:
- ‘19 and under’ - 47% did not consume folic acid at all, 0% took it before they became pregnant
- Over 25s were found to be 4.6 times more likely to comply with full advice than those 25 and under (P= 0.000)

Smoking Status:
- Non-smokers were four times more likely than smokers to start taking folic acid before conceiving (P= 0.000)
RESULTS

Wealth:
- Incomes of £25k and above were 3.6 times more compliant (P= 0.000)

Marital Status:
- 4.5 times as many married women took supplements both pre- and post-pregnancy compared with unmarried women (P= 0.000)

Ethnicity:
- No statistically significant differences in behaviour were identified (Fisher’s exact test)
  - Caucasians and non-Caucasians (P=0.130)
  - British and non-British (P=1.000)
  - British Caucasians and all other ethnicities grouped together (P=0.527)
CONCLUSIONS

- Fortification of UK food products offers a major public health opportunity

In the absence of fortification:
- Target most at risk groups (less educated, younger, unmarried and less affluent women)

- Gaps in the public health message:
  - Many women do not appreciate the potential consequences of not taking folic acid
  - Importance of starting supplements in the pre-conceptional period

- GPs and midwives cannot be relied upon to educate the majority of women
REFERENCES


5. Alberman E. Food should be fortified with folic acid BMJ. 1999 July 10;


REFERENCES


