MALTA CONGENITAL ANOMALIES REGISTER

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HALF YEARLY REPORT JULY-DECEMBER 1999

PERICONCEPTIONAL FOLIC ACID SUPPLEMENTATION IN MALTA

Neural tube defects (NTDs) include anencephaly, spina bifida and cephaloceles. *Anencephaly* is a congenital malformation characterised by the total or partial absence of the cranial vault, the covering skin, and the brain missing or reduced to a small mass. *Spina bifida* is a family of congenital malformation defects in the closure of the spinal column characterized by herniation or exposure of the spinal cord and/or meninges through an incompletely closed spine. *Cephaloceles* (including encephaloceles and meningoceles) are congenital malformations characterized by herniation of the brain and/or meninges through a defect in the skull.

Every year in Malta an average of 7 babies (or 1 in every 750 births) are born with NTDs (excluding spina bifida occulta). In addition, an unknown number of fetuses affected by these birth defects are miscarried each year. Babies born with spina bifida usually survive, often with serious defects, but anencephaly is invariably fatal. Studies have shown that a significant proportion of these defects are preventable by periconceptional folic acid intake[1].

Interest in the primary prevention of birth defects has increased in recent years following the publication of a series of reports that have explored the relationship between vitamin supplementation and birth defect risk. These reports have documented that folic acid reduces by at least 50% the risk of NTDs[2,3], and have prompted professional organisations and public health authorities in several countries to issue advisories and recommendations promoting the increased use of folic acid to prevent NTDs[1].

Reports, mainly from observational studies, have also suggested that multivitamin supplements, taken around the time of conception or early in pregnancy, reduce the risk of other specific birth defects, including clefts of the lip and palate[4,5]. Other birth defects whose risk may be reduced by multivitamin use are some heart defects[3,4,6] and some types of limb deficiencies[4,7].

In Malta, DH circular No. 36/94 was issued by the Department of Public Health on 22nd February 1994 and circulated to all medical practitioners. This circular (copy attached) recommended an increased dietary intake of folic acid for women planning a pregnancy. The circular also listed which foods contained most folic acid. Vitamin supplementation was not mentioned in this circular.

In view of the findings that folic acid reduces by half the risk for neural tube defects and the fact that primary prevention policies have been issued by public health authorities in a minority of countries, and which are not uniform across countries, the International Clearinghouse of Birth Defects Monitoring Systems (ICBDMS) is conducting an international collaborative study involving various birth defect registries investigating 'Preventive strategies based on periconceptional folic acid supplementation'.

The ICBDMS is an association of birth defect monitoring programmes monitoring over 2,500,000 births per year in 34 countries spread over 5 continents. Its headquarters, the International Centre for Birth Defects (ICBD), is based in Rome. The Malta Congenital Anomalies Registry has been invited to participate in this study by contributing data and information. As part of this collaborative study, each individual registry was asked to conduct a local survey regarding folic acid awareness within the country. This survey involved interviewing a sample of mothers who had just delivered a baby. The results of the survey carried out in Malta are presented here.

METHODS

A representative sample of mothers resident in Malta was required. In order to attain this all hospitals in Malta and Gozo were invited to participate in this survey and all agreed. The hospitals involved were St. Luke's (SLH), Gozo General (GGH), Capua Palace, St. James' and St. Philip's Hospitals.

The total sample size for Malta and Gozo requested by the ICBD was a minimum of 200 consecutive deliveries. Each hospital was asked for a sample of the size to the annual proportion of deliveries usually performed at the hospital. Thus a sample size of 191 (88%) mothers was taken from SLH, and a total of 25 (12%) from GGH and private hospitals.

Questionnaires designed by the ICBD were administered by nurses or midwives interviewing mothers at postnatal wards. The questionnaires included information regarding mother's age, education, smoking habits, date of last menstrual period (LMP), parity, knowledge of folic acid and its importance in relation to pregnancy, knowledge of foods rich in folates, alteration of diet during pregnancy, intake of folic acid supplements before or during pregnancy and when these were started.

Trained nurses from the Department of Health Information interviewed the mothers delivering babies at SLH, while midwives or nurses working at the various other hospitals interviewed the mothers at their respective hospital. All women delivering a baby at the hospital from 18th October 1999 to the time when the required sample size had been reached were interviewed. All mothers accepted to be interviewed.

Statistical analysis were carried out using Epi Info-6 and SPSS statistical packages. Confidence intervals (CI) quoted are given at the 95% level of confidence.

RESULTS

A total of 216 resident mothers were interviewed.

Age, level of education and parity

The age and educational distribution of the mothers interviewed are given in Tables 1, 2 and Figure 1. Compulsory education was taken as education until 16 years of age, post-secondary school was considered as any education after 16 years and before university, and tertiary was university level education.

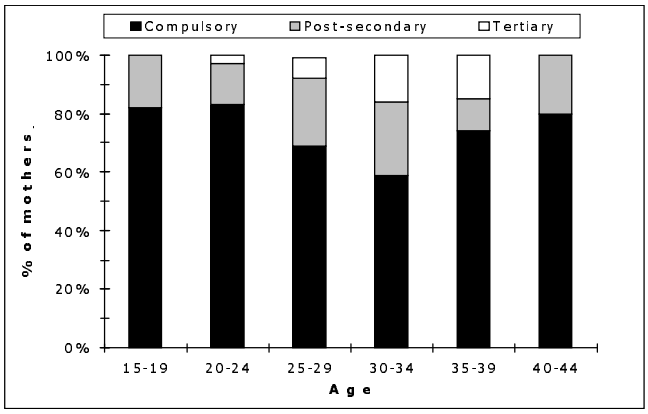
Table 1 - Variation of age

Age group	No of cases	(%)
15-19	11	(5%)
20-24	36	(17%)
25-29	81	(38%)
30-34	56	(26%)
35-39	27	(13%)
40-44	5	(2%)
Total	**216**	**(100%)**

Table 2 - Variation of educational level

Education	No of cases	(%)
Compulsory	152	(70%)
High school	44	(20%)
Tertiary	20	(9%)
Total	**216**	**(100%)**

Figure 1 - Proportion of mothers according to age and level of education



The largest number of mothers interviewed were within the 25-34 year age group 137 (63%).

Of the 216 women interviewed, 70% (CI 64-77%) had received only compulsory education, 20% (CI 15-26%) had post-secondary education and 9% (CI 6-14%) had tertiary education. The highest proportion of women with tertiary education was in the 30-39 year age group (Figure 1).

Of the 216 women interviewed, 96 (44%) were primagravidae, 73 (34%) were in their 2nd pregnancy, 28 (13%) were in their 3rd pregnancy while the rest 19(9%) were in their 4th or more pregnancy.

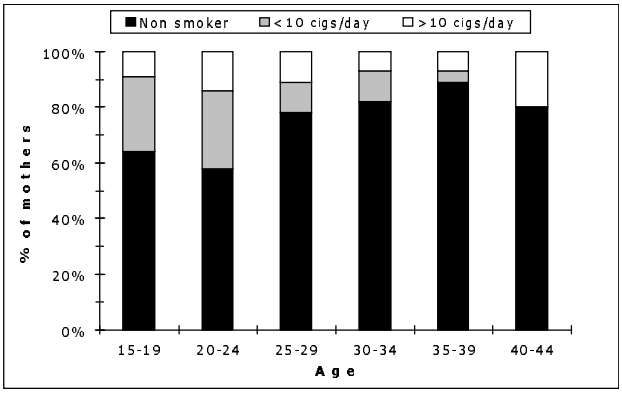
Smoking habits

The mothers' smoking habits in the six months prior to pregnancy varied as shown in Table 3. A total of 24% (CI 18-30%) of mothers had smoked shortly before pregnancy. The highest proportions of mothers smoking shortly before pregnancy were in the 15-24 year age brackets (Figure 2).

Table 3 -Smoking habits in the six months prior to pregnancy

Smoking habits	No of cases	(%)
Non smokers	165	(76%)
< 10 cigs/day	29	(13%)
> 10 cigs/day	22	(10%)
Total	**216**	**(100%)**

Figure 2 - Proportion of mothers smoking prior to pregnancy by age



Folate awareness and source of knowledge

Of the 216 mothers interviewed, 187 (87%; CI 81-91%) claimed to have heard of folic acid, and of these 155 knew its intake was important in pregnancy (Table 4). A mother's knowledge was considered as accurate or partially accurate if she mentioned the importance of folic acid in preventing 'spina bifida' or 'neural tube defects' or 'bone formation' or 'birth defects'. Her knowledge was classified as vague or incorrect if she said folic acid was important for 'a healthy pregnancy' or 'the baby' or 'strength' or 'the uterus'.

Table 4 - Folic acid awareness in mothers

Total women interviewed (216)		
Never heard of folic acid	*29*	*(13%)*
Heard of folic acid	*187*	*(87%)*
- but did not know it was important in pregnancy	32	(17%)
- and knew it was important in pregnancy	155	(83%)
- Accurate / partially accurate knowledge	*74*	*(48%)*
- Vague or incorrect knowledge	*81*	*(52%)*

From the 216 mothers interviewed, a total of 74 (34%; CI 28-41%) women had an accurate or partially accurate knowledge of the importance of folic acid in preventing neural tube and other birth defects.

When questioned regarding the source of their information regarding folic acid the most commonly mentioned by the mothers was the doctor/ gynaecologist (46%), the next was knowledge from previous pregnancies (16%), followed by reading (12%), friends and other people (4%), media (4%), academic education (2%) and unreported (2%).

Variation of folate awareness with age, level of education and parity

Knowledge of folic acid varied with age, educational level and number of previous pregnancies as seen in Figures 3 to 5. It was found that accurate and partially accurate knowledge of the importance of folic acid in pregnancy was highest in the 30-40 year age groups and in mothers with higher educational levels.

Using multiple logistic regression analysis, these results show that education irrespective of age or parity is the major factor determining better knowledge of folic acid and its importance in pregnancy ($p<0.001$). Age irrespective of education and parity also influences knowledge to a lesser extent ($p=0.01$), while parity does not significantly affect knowledge ($p>0.1$).

Figure 3 - Proportion of women according to type of knowledge of folic acid and age

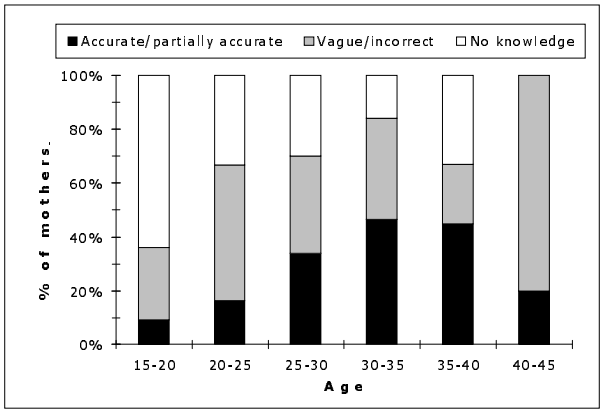


Figure 4 - Proportion of mothers according to type of knowledge of folic acid and education

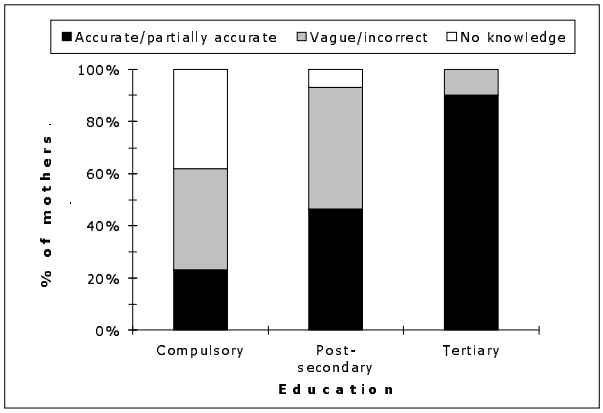
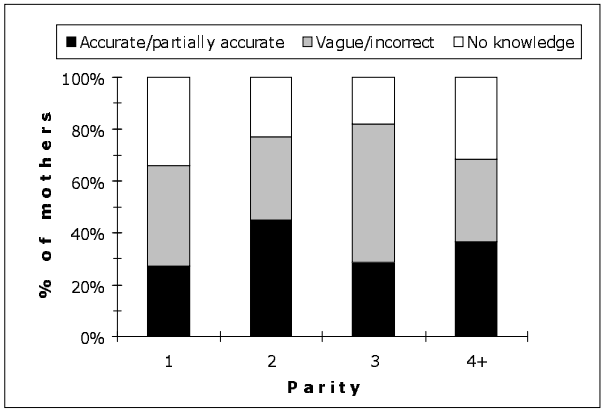
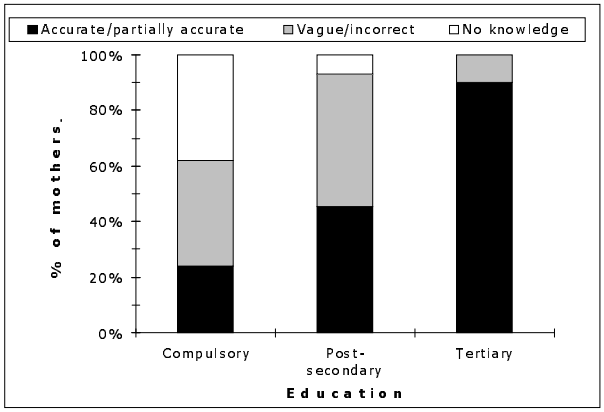


Figure 5 - Proportion of women according to type of knowledge of folic acid and parity





Knowledge of foods containing folates

The mothers were also questioned regarding their knowledge regarding which foods are rich in folates. A mother's knowledge of such foods was classified as accurate/partially accurate if she mentioned green vegetables and/or cereals and/or fruit. Her knowledge was considered as vague or incorrect if she mentioned 'healthy foods' or 'better diet'.

A total of 103 (48%; CI 41-55%) mothers claimed to have no knowledge of foods rich in folates and another 103 (48%; CI 41-55%) had accurate or partially accurate knowledge. 10 (5%; CI 2-9%) claimed to know which foods contained folates but their knowledge was wrong. The more educated and 30-35 year old mothers had best knowledge of which foods were rich in folate (Figures 6 and 7).

Figure 6 - Knowledge of foods rich in folic acid and age

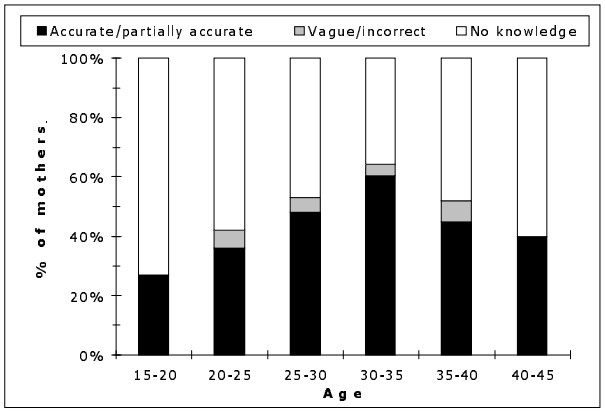


Figure 7 - Knowledge of foods rich in folic acid and education

Alteration of diet during pregnancy

When the mothers were asked whether they had altered their diet in one way or another during pregnancy, 111 (51%; CI 45-58%) claimed that they had, while 105 (49%; CI 42-55%) said that they had not. A total of 74 (34%; CI 28-41%) of all mothers interviewed had actually altered their diet, increasing or probably increasing folate intake (Table 5).

A mother was considered to have increased or probably increased her folate intake if she mentioned that alteration in diet included an increase in green vegetables and/or cereals and/or fruit. The mother was considered not to have increased folate intake if alteration in diet included only an increase in foods such as ice-creams, sweets etc.

Table 5 - Alteration of diet in pregnancy and increase in folate intake

Diet alteration	Cases	(%)
Diet changed with an increase / probable increase in folates	74	(34%)
Diet changed but no increase in folates	37	(17%)
Diet not altered	105	(49%)
Total	**216**	**(100%)**

Figure 8 - Alteration of diet in pregnancy and increase in folate intake

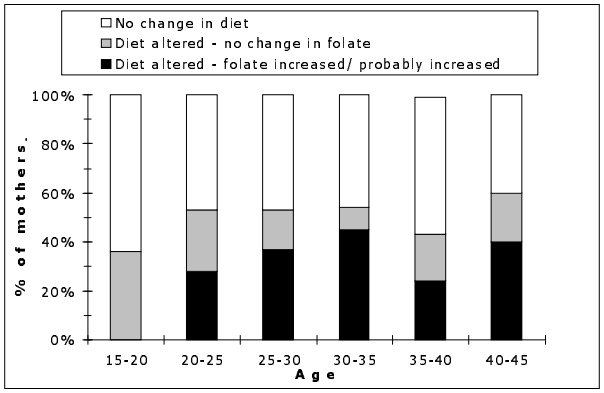
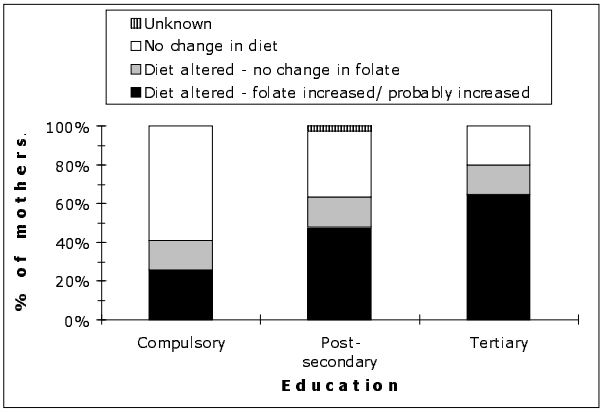


Figure 9 - Alteration of diet and education



Folic acid supplementation during pregnancy
On analysing whether folic acid supplements were taken in pregnancy, 12 (6%; CI 3-10%) had not taken any folic supplements. 31 (15%; CI 10-20%) claimed to have started prior to their last menstrual period (LMP), 12 (6%; CI 3-10%) said that they had started during the first month of pregnancy, 158 (73%; 67-79%) started after the first month of pregnancy, i.e. soon after they realised they were pregnant (Table 6 and Figure 11).

When analysing the doses of folic acid supplements taken it is seen that the most frequently taken dosage was 5000 micrograms (ug) (Table 5 and Figure 10). Level of education was found to influence the time of starting supplementation but not the dose taken.

Figure 10 - Doses of folic acid supplementation taken by mothers

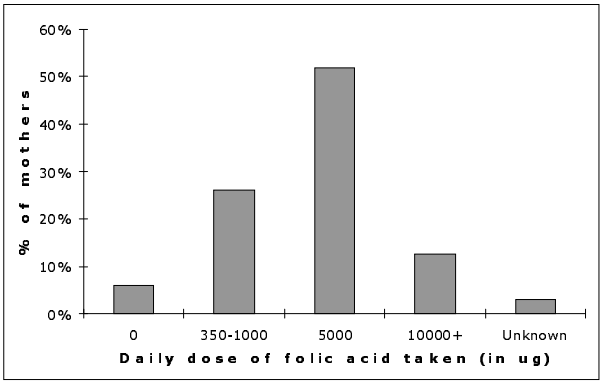
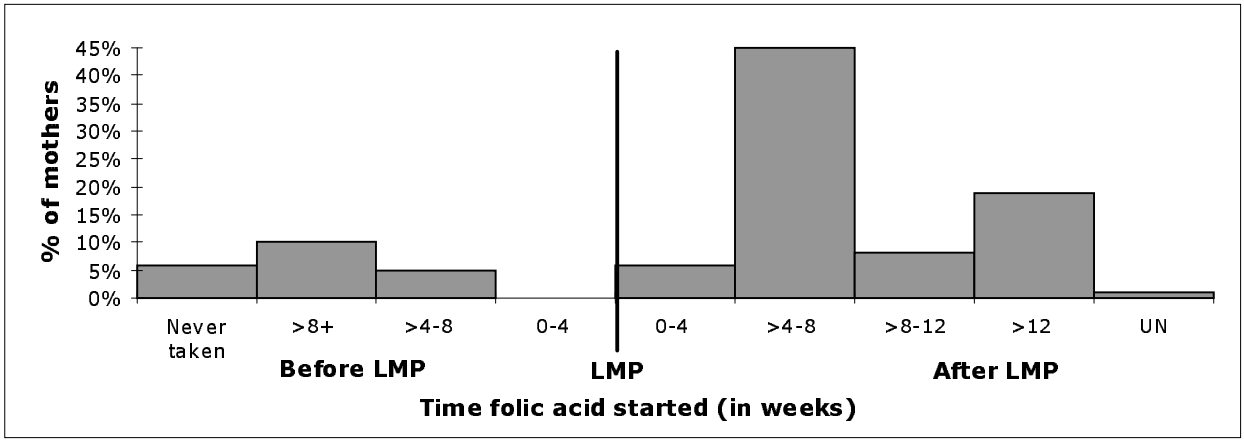


Table 6 - Folic acid doses taken during pregnancy and when started

Vitamins started	Dose of folic acid (in ug)									
	0	**350**	**400**	**500**	**1000**	**5000**	**10000**	**15000**	**UN***	**Total**
Never taken	12	-	-	-	-	-	-	-	-	**12** (6%)
8+ weeks before LMP	-	0	0	1	0	14	5	0	1	**21** (10%)
4-8 wks before LMP	-	0	0	1	0	8	0	0	1	**10** (5%)
0-4 wks before LMP	-	0	0	0	0	0	0	0	0	**0** (0%)
0-4 wks after LMP	-	0	0	2	0	9	0	0	1	**12** (6%)
>4-8 wks after LMP	-	1	0	14	2	64	15	1	1	**98** (45%)
>8-12 wks after LMP	-	0	0	5	0	10	1	0	2	**18** (8%)
>12 weeks after LMP	-	0	3	28	0	6	4	0	1	**42** (19%)
Unknown	-	0	0	0	0	2	0	1	0	**3** (1%)
Total	**12** (6%)	**1** (0.5%	**3** (1%)	**51** (24%)	**2** (0.5%	**113** (52%)	**25** (12%)	**2** (0.5%	**7** (3%)	**216 (100%**

*UN - Unknown

Figure 11 - Time (in weeks) when folic acid supplementation was started in relation to date of LMP



Conclusion

In this survey mothers who had just given birth to a baby were interviewed and this does not necessarily reflect the knowledge of all women of childbearing age in Malta. In spite of this certain trends are seen.

As expected, education was the major factor found to improve the mothers' knowledge of folic acid and consequent compliance in taking folic acid supplementation prior to pregnancy and appropriate alteration of diet during the pregnancy.

Of the sample interviewed, 31 (15%; CI 10-20%) of mothers actually took folic acid supplementation prior to pregnancy. Most (158, 73%; CI 67-79%) took folic acid after the 1st month of pregnancy, although studies show that development of defects in the neural tube will have occurred within the first month of pregnancy, often before the mother knows she is pregnant.

Recommendations regarding doses of folic acid supplementation advise 400ug daily in women of childbearing age and up to 800ug daily in pregnancy[1]. This survey showed that the majority 140 (64%; CI58-71%) of our mothers were taking 5000ug or more daily. The effects of high folic acid intake are not well known but include complicating diagnosis of vitamin B12 deficiency, it is advised to keep folic acid doses at less than 1mg/day[1].

Following current scientific recommendations, all women of childbearing age are to be encouraged to:
- increase folates in their diet,
- take 400ug of folic acid supplements daily while
- avoid high doses unless prescribed by a physician.

Acknowledgements:

I am grateful to the hospitals that participated in this survey, the staff of the Department of Health Information especially Ms V. Parnis, Ms J. Farrugia, Ms R. Micallef and Ms C. Scicluna for interviewing the mothers, Dr J. Pace and Dr V. Grech for their advice.

References:

1 Centers for Disease Control. Recommendations for the use of folic acid to reduce the number of cases of spina bifida and other neural tube defects. *MMWR*, 41:1-7, 1992

2 Medical Research Council Vitamin Study Research Group. Prevention of neural tube defects: results of the Medical Research Council vitamin study. *Lancet,* 338: 131-137, 1992

3 Czeizel AE, Dudas I. Prevention of the first occurrence of neural tube defects by periconceptional vitamin supplementation. *New Engl J Med,* 327: 1832-35, 1992

4 Shaw GM, O' Malley CD, Wasserman CR, Tolarova MM Lammer EJ Maternal periconceptional use of multivitamins and reduced risk for conotruncal heart defects and limb deficiencies among offspring. *Am J Med Genet*, 59(4):536-545, 1995

5 Czeizel AE. Reduction of urinary tract and cardiovascular defects by periconceptional multivitamin supplementation. *Am J Med Genet*, 62(2):179-183, 1996

6 Botto LD, Khoury MJ, Mulinare J, Erickson JD Periconceptional multivitamin use and the occurrence of conotruncal heart defects: results from a population-based, case-control study. *Pediatrics*, 98(5):911-917, 1996

7 Czeizel AE. Periconceptional folic acid containing multivitamin supplements. *Eur J Obste. Gynaecol Reprod Biol*;78(2):151-161, 1998

Copy of circular regarding folic acid issued to all medical practitioners in 1994

DH Circ. No. 36/94 Telephone:224071
DH File No. 1107/93 Fax: 242884

22nd February 1994

To: All Medical Practitioners

Dear Doctor,

Recent studies have shown that a good dietary intake of folic acid during pregnancy reduces the risk of neural tube defects.

Folic acid is not found naturally in foods and tissues but is present as folates which are in the B vitamin group. There are several different folates which vary in the extent to which they are absorbed from foods and only one- half to two-thirds of the total folate from normal mixed diets may be available.

Foods which are rich in folates include green leafy vegetables and liver. Although liver is a rich source of folic acid and folates, pregnant women and those intending to become pregnant are advised not to increase their intake of liver and use it as a source of folic acid because its level of vitamin A may be extensive and carries it' s own risk of adverse effects.

The table enclosed indicates the main folate content of local food, however one should remember that folates are vulnerable to heat and dissolve in water so that cooking may cause a considerable reduction in the folate contents of food. There may also be gradual loss with prolonged storage.

Eating more folate-rich foods and avoiding .over cooking are already part of the general advice given for healthy eating to the population. We also currently advise that the curent consumption of vegetables be doubled, the use of high fibre cereals and bread be increased and fruit taken on a regular basis. Women who are planning a pregnancy would benefit particularly from such advise diet and should aim to select a diet with 0.4 milligrams (400 micrograms) folate/folic acid. This can be achieved by increasing their consumption of folate-rich foods.

Therefore the main recommendations to help reduce the prevalence of neural tube defect should be:

1. Achieve a diet with 400 micrograms per day of folate/folicacid prior to conception and during the first twelve weeks of pregnancy.
2. Women who are planning a pregnancy should eat more folate-rich foods and avoid over-cooking them
3. Increase the intake of wholemeal breads and fortified breakfast cereals.

- . -, . . -.~-
Dr. A Amato-Gauci
Director Public Health

IKEL LI FIH AMMONTI TAJBA TA' FOLIC ACID

L-ikel li fih il-folic acid gej minn diversi sorsi pero l-aktar komuni u tajba huma:

HAXIX/ VEGETABLES	***MIKROGRAMMI TA' FOLIC ACID F'KULL PORZJON GO PLATT***
Kabocci/ Cabbages	25
Karrotti/Carrots	10
Pastard/Cauliflower	45
Fazola Hadra/ Green Beans	50
Pizelli/Peas	30
Patata/Potatoes	45
Spinaci/Spinach	80
Sweetcorn	10
Hjar/Cucumber	2
Hass *(nej)*/ Lettuce	15
Tadam *(nej)* / Tomatoes	15
Brokkoli/Broccoli	30
Brussel Sprouts	100

FROTT/FRUIT	***MIKROGRAMMI TA' FOLIC ACID F'KULL PORZJON***
Banana	15
Grapefruit	20
Laring/Oranges	50
Meraq ta' laringa/ Orange Juice *(one glass)*	40

IKEL IEHOR/ OTHER FOODS	***MIKROGRAMMI TA' FOLIC ACID F'KULL PORZJON***
Ross abjad/ White Rice	5
Ross ismar/ Brown Rice	15
Spaghetti	9
Hobz abjad *(zewg slices)*/ White Bread *(two slices)*	25
Hobz wholemeal *(zewg slices)*/ Wholemeal Bread *(two slices)*	40
Cereali tal-breakfast/ Breakfast Cereals/ *(unfortified)*	3
Cereali tal- breakfast/ Breakfast Cereals *(fortified)*	100
Cereali tal-breakfast/ Breakfast Cereals *(wholegrain)*	40
Halib *(pinta)*/ Milk *(one pint)*	35
Estratt tac-Canga *(kull tazza)*/ Beef Extract *(one glass)*	95

This report includes congenital anomalies diagnosed and confirmed in infants/fetuses born during the period July to December 1999 in Malta and Gozo and having been registered at the registry by May, 2000. All major anomalies as defined by EUROCAT (European Registration of Congenital Anomalies) guidelines are included. Minor anomalies are reported only when they occur in combination with major defects.

Total number of infants/fetuses diagnosed with major congenital anomaly

Hospital		Total births*		With Congenital anomaly	
		Livebirths	Fetal Deaths	Livebirths	Fetal Deaths
St. Luke' s Hosp.	M	979	11	29	3
	F	945	5	20	2
Gozo Gen. Hosp.	M	90	0	2	0
	F	76	0	2	0
Private Hosp.**	M	97	0	0	0
	F	109	0	2	0
Total		**2296**	**16**	**55**	**5**

*Data from National Obstetric Information System (NOIS), WHO-OBSQID project, Malta; hospital records & National Mortality Register

** Private Hospitals include: Capua Palace Hospital, St. James' Hospital and St. Philip' s Hospital.

Distribution of infants/fetuses according to number of major anomalies

Anomalies	Number of infants/fetuses
Isolated major anomaly	46
Two or more major anomalies of same system	4
Major anomalies involving two different systems	4
Major anomalies involving three or more different systems	1
Chromosomal anomalies	3
Other congenital malformation syndromes and malformations NEC	2
Total	**60**

Distribution of infants/fetuses with major congenital anomalies according to system/s involved

ICD code	System	Number of infants/fetuses			Fetal
		Total	Males	Females	deaths
Q00-Q99 Congenital malformations, deformations and chromosomal anomalies					
Q00-Q01	Neural tube defects	0	0	0	-
Q02-Q07	Other nervous system defects	3	1	2	-
Q10-Q18	Eyes, ears, face and neck	3	2	1	-
Q20-Q28	Cardiovascular	10	3	7	2
Q30-Q34	Respiratory	1	0	1	-
Q35-Q37	Cleft palate and lip	9	4	5	-
Q38-Q45	Digestive system	4	4	0	-
Q50-Q56	Genital organs	8	7	1	-
Q60-Q64	Urinary	0	0	0	-
Q65-Q79	Musculoskeletal deformities	8	4	4	1
Q80-Q85	Skin & Integument	1	1	0	-
Q86-Q89	Other congenital malformation syndromes and malformations NEC	2	2	0	-
Q90-Q99	Chromosomal anomalies	4	2	2	-
	Two different systems	4	4	0	2
	Three or more different systems (not recognised as a syndrome or sequence)	1	0	1	-
Other Anomalies*					
EEE	Hypothyroidism	1	0	1	-
PPP	Hydrops fetalis	1	0	1	-
	Total Infants with anomalies	**60**	**34**	**26**	**5**

* These anomalies are not tabulated in EUROCAT reports

The table overleaf gives a breakdown of all the major anomalies registered in babies born between July and December 1999. In this table:- Hydrocephaly occurring with spina bifida is not included

- Spina bifida occulta is reported only if there are complications or when it occurs in combination with major defects
- Confirmed glandular / coronal / 1st degree hypospadias is not registered unless in combination with major defects.
- Skin tags, naevi, angiomas, hemangiomas, glomus tumors, lymphangiomas and birthmarks less than 4 cms^2 are not registered unless in combination with major defects.

Other minor anomalies as defined by EUROCAT guidelines are also not registered unless in combination with other major

Anomalies registered for infants born from July – December '99 (as registered by 31 May 2000)

Code	Anomaly	Total	Male	Female
Q00-Q01	**Neural Tube defects**	**0**	**0**	**0**
Q02-Q07	**Other anomalies of nervous system**	**2**	**0**	**2**
Q02	Microcephaly	1	0	1
Q04.2	Holoprosencephaly	1	0	1
Q10-Q18	**Anomalies of the eye, ear, face and neck**	**4**	**3**	**1**
Q13.2	Other congenital malformations of the iris	1	1	0
Q13.3	Congenital corneal opacity	1	1	0
Q13.4	Other corneal malformations	1	1	0
Q17.9	Congenital malformation of the ear, NOS	1	0	1
Q20-Q28	**Anomalies of cardiovascular system**	**20**	**11**	**9**
Q21.0	Ventricular septal defect	6	2	4
Q21.1	Atrial septal defect	6	3	3
Q21.3	Tetralogy of Fallot	1	1	0
Q22.0	Pulmonary valve atresia	1	1	0
Q22.1	Congenital pulmonary valve stenosis	1	1	0
Q23.4	Hypoplastic left heart syndrome	1	1	0
Q25.0	Patent ductus arteriosus	3	2	1
Q26.2	Total anomalous pulmonary venous drainage	1	0	1
Q30-Q34	**Anomalies of respiratory system**	**2**	**1**	**1**
Q30.9	Congenital malformation of nose, unspecified	1	1	0
Q31.4	Congenital laryngeal stridor	1	0	1
Q35-Q37	**Cleft lip and cleft palate**	**10**	**5**	**5**
Q35.3	Cleft soft palate	3	2	1
Q35.5	Cleft hard palate with cleft soft palate	2	0	2
Q35.6	Cleft palate, medial	2	2	0
Q36.9	Cleft lip, NOS	1	1	0
Q37.9	Cleft palate with cleft lip	2	0	2
Q38-Q45	**Anomalies of digestive system**	**6**	**5**	**1**
Q39.1	Aresia of oesophagus with tracheo-oesophageal	2	2	0
Q40.0	Congenital hypertrophic pyloric stenosis	1	1	0
Q42.2	Absence, atresia and stenosis of anus with fistula	1	1	0
Q42.3	Absence, atresia and stenosis of anus without fistula	1	1	0
Q43.1	Hirschsprung's disease	1	0	1
Q50-Q56	**Anomalies of the genital organs system**	**13**	**12**	**1**
Q52.6	Congenital malformation of clitoris	1	0	1
Q53.9	Undescended testicle (assoc. with other defects)	1	1	0
Q54.0	Hypospadias, coronal (assoc. with other defects)	1	1	0
Q54.1	Hypospadias, penile	1	1	0
Q54.2	Hypospadias, penoscrotal	1	1	0
Q54.4	Congenital chordae	1	1	0
Q54.9	Hypospadias, unspecified	7	7	0
Q60-Q64	**Anomalies of the urinary system**	**3**	**3**	**0**
Q61.4	Renal dysplasia	1	1	0
Q62.0	Congenital hydronephrosis	1	1	0
Q64.4	Malformation of urachus	1	1	0
Q65-Q79	**Deformities of the musculoskeletal system**	**9**	**3**	**6**
Q66.0	Talipes equinovarus (structural)	1	0	1
Q66.8	Other congenital deformities of feet	1	0	1
Q69.0	Accessory finger(s)	1	0	1
Q69.2	Accessory toes	1	1	0
Q70.2	Fused toes	1	1	0
Q70.3	Webbed toes	2	1	1
Q70.9	Syndactyly, unspecified	1	0	1
Q79.0	Congenital diaphragmatic hernia	1	0	1
Q80-Q85	**Congenital anomalies of the skin & integument**	**3**	**2**	**1**
Q80.2	Collodian baby, lamellar ichthyosis	1	0	1
Q82.5	Congenital non neoplastic naevus (>4cm^2)	1	1	0
Q82.9	Congenital malformation of skin, unspecified	1	1	0
Q86-Q89	**Other congenital anomalies / multiple anomalies**	**3**	**3**	**0**
Q87.0	Malformation syndromes affecting facial appearance	2	2	0
Q89.9	Congenital malformation, unspecified	1	1	0
Q90-Q99	**Chromosomal anomalies**	**4**	**2**	**2**
Q90.9	Down syndrome / Trisomy 21 NOS	4	2	2
Other major anomalies registered		**3**	**1**	**2**
E03.1	Congenital Hypothyroidism	1	0	1
H54.7	Unspecified visual loss / blindness	1	1	0
E83.2	Hydrops fetalis not due to haemolytic disease	1	0	1