

# MONITOR



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## FROM THE DIRECTOR

### Statewide Data

On March 21, 1994, the Texas Birth Defects Monitoring Division began the long process toward statewide coverage. This expansion process has reached a major milestone with the publication of the Report of Birth Defects among 1998-1999 Deliveries, because the 1999 data is the first comprehensive look at birth defects rates for the entire state.

The availability of statewide data will provide essential information in the effort to identify causes of birth defects and to prevent them, allowing epidemiologists and researchers to compare rates among various regions and counties, and to begin to establish true "background rates" for our state. This in turn will make cluster investigations increasingly meaningful, as we are able to identify true excesses in expected rates of birth defects. In addition, statewide coverage allows researchers to explore the implications of the vast cultural, ethnic, geographic, and socioeconomic differences found among Texans.

### Observation from 1998-1999 Data

The dataset now available for 1998-1999 has enough cases to make in-depth analysis of patterns of birth

defects in Texas possible. For example:

- ◆ Hispanic males are more than twice as likely as Hispanic females to have Transposition of the Great Vessels (a heart defect). This sex difference is not found among other racial/ethnic groups.\*
- ◆ White males are much more likely than white females to have Coarctation of the Aorta (another heart defect). Again, this difference is not observed in other racial/ethnic groups.\*
- ◆ Hypospadias (a genitourinary defect primarily affecting males) is significantly more common in Region 3 (greater Dallas/Ft. Worth) when compared to Region 2, the neighboring region that includes Wichita Falls and Abilene.\*\*
- ◆ Pyloric stenosis (a gastrointestinal defect) rates are significantly higher in Region 4 (northeast Texas) than in Region 5 (southeast Texas).\*\*

\*Classification based on race/ethnicity of mother.

\*\*Unadjusted (crude) rates.

### Analyze This

Observations such as those above can be the first step in forming hypotheses that help to identify causes and prevention strategies. Data sets can be obtained by professional and student researchers for further analysis. To find out more about these data, including limitations and confidentiality requirements, contact Peter Langlois, Senior

Epidemiologist, 512-458-7232, peter.langlois@tdh.state.tx.us.

The Report of Birth Defects among 1998-1999 Deliveries is available electronically on our website at [www.tdh.state.tx.us/tbdmd/index.htm](http://www.tdh.state.tx.us/tbdmd/index.htm) and a hard copy can be obtained by contacting Bobbie Mankowski at 512-458-7232 or [bobbie.mankowski@tdh.state.tx.us](mailto:bobbie.mankowski@tdh.state.tx.us)

## REGISTRY NEWS

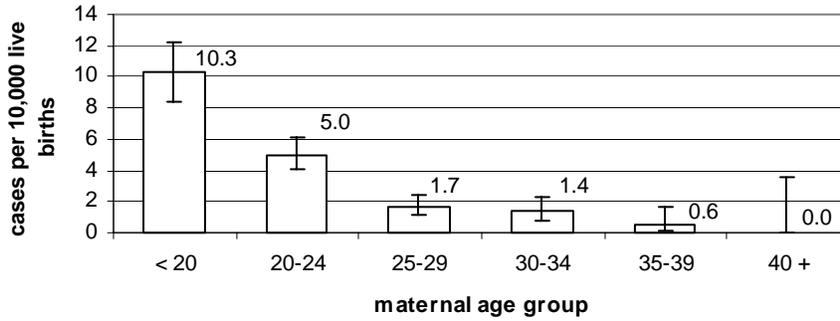
### Report of birth defects among 1998-1999 deliveries reveals impact of maternal age

It is well known that mothers who are 35 or older at the time of delivery are at greater risk of having a child affected by Down syndrome, and this effect increases with advancing maternal age. The charts below show that other birth defects are also correlated with differences in maternal age, and that some defects are more common among younger moms.

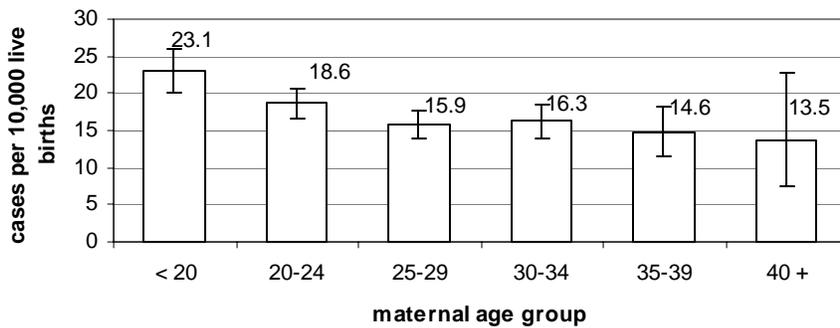
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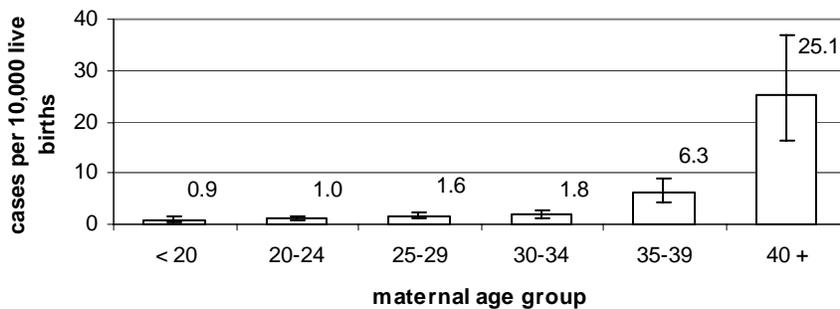
**Gastroschisis by Maternal Age, Texas, 1998-1999**



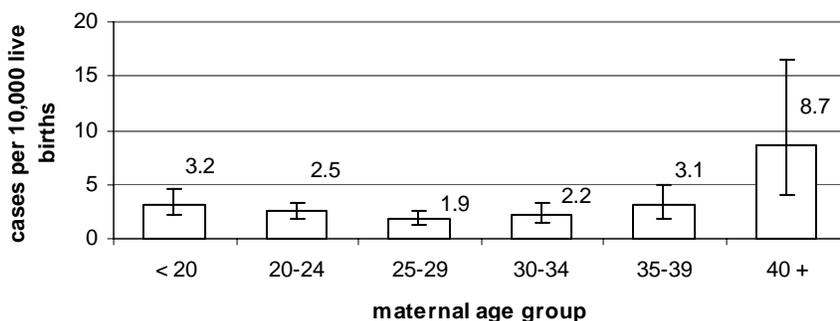
**Pyloric Stenosis by Maternal Age, Texas, 1998-1999**



**Trisomy 18 by Maternal Age, Texas, 1998-1999**



**Microphthalmia by Maternal Age, Texas, 1998-1999**



These age effects may be higher among births to younger mothers such as gastroschisis and pyloric stenosis; higher among births to older mothers as observed in trisomy 18; or with the births to mothers at both extremes more affected than those in the middle-childbearing years as seen in microphthalmia (See charts, left).

The reasons for these differences are not yet entirely clear, but advanced maternal age has also been linked to increased risk for conditions in pregnancy such as hypertension, diabetes, and placental problems.

The Texas Birth Defects Registry Report of Defects among 1998-1999 Deliveries, including the rates above as well as data for birth defects by race/ethnicity of mother, sex of infant, and region of delivery, will be available in January 2003. Copies can be obtained by writing the Texas Birth Defects Monitoring Division, 1100 W. 49th Street, Austin TX 78756, email [birthdefects@tdh.state.tx.us](mailto:birthdefects@tdh.state.tx.us), Fax 512-458-7330, or by calling 512-458-7232. The report will also be published on the TBDMD web site, [www.tdh.state.tx.us/tbdmd/index.htm](http://www.tdh.state.tx.us/tbdmd/index.htm).

## TEXAS RESEARCH UPDATES

### Study on Hazardous Wastes

A new study is being initiated at the CDC-funded Texas Birth Defects Research Center, looking at residential proximity to hazardous waste sites other environmental pollution sources and the risk of selected birth defects.

Investigators are Jean Brender, Ph.D. (lead), Lucina Suarez, Ph.D., Peter Langlois, Ph.D., and F. Benjamin Zhan, Ph.D. Drs. Brender and Zhan are based at Southwest Texas State University - San Marcos, and Drs. Suarez and Langlois are located at

**OUR WORK CUT OUT FOR US . . .**The Texas Birth Defects Registry covers an estimated 365,000 live births, making it the largest birth defects surveillance system in the United States. But did you know that even when compared to registries around the world, Texas is the second largest? The Congenital Malformation Monitoring Programme of England and Wales covers an area with 650,000 live births annually, making it the largest in the world.-Source: The International Clearinghouse for Birth Defects Monitoring Systems, [www.icbd.org/programme.htm](http://www.icbd.org/programme.htm) and the National Birth Defects Prevention Network [www.nbdpn.org/NBDPN/report2001/10bdprog.pdf](http://www.nbdpn.org/NBDPN/report2001/10bdprog.pdf).

Texas Department of Health. The team will examine data collected on cases from several major categories of birth defects from the Texas Birth Defects Registry, as well as from randomly selected control infants (live births without congenital anomalies). The study is anticipated to take three years, and will provide a look at selected environmental causes of birth defects in Texas in a meaningful way.

For more information on this study, contact Peter Langlois at 512-458-7232 or by email at [peter.langlois@tdh.state.tx.us](mailto:peter.langlois@tdh.state.tx.us).

## Recent Findings from the Research Center

### CONSUMPTION OF HIGHLY FORTIFIED BREAKFAST CEREALS AMONG TEXAS WOMEN .

According to data from the Texas Women's Health Survey, consumption of highly fortified cereal (HFC) with 400 mcg folic acid/serving has the potential to increase the percentage of women who consume 400 mcg of folic acid daily, but present consumption levels are too low to make a major contribution (See table, below). The survey found that

13.8% reported consuming HFC at least twice a week (4.6% ate HFC daily and 9.2% ate HFC 2-4x/week). About 70% of nonpregnant Texas women were not taking a supplement daily; in this subgroup, 3.5% ate HFC daily and 5.9% ate HFC 2-4x/week. No significant differences were found among racial/ethnic groups, age groups, education, or household income for women who ate HFC daily or 2-4 times/week. [Case AP, Canfield MA, Watkins M, Williams J, Bennett S. Potential Contribution of Highly Fortified Breakfast Cereals to NTD Prevention. Poster Presentation, CDC Center for Birth Defects and Developmental Disabilities Conference, Atlanta, September 2002.]

**NTDS AND SUBSEQUENT FOLIC ACID USE:** Investigators in Texas observed that rates of folic acid use after pregnancy among women who had given

birth to infants with NTDs varied by race/ethnicity, education, and advice to take folic acid. Just over one-half had recalled recurrence prevention recommendations from a health care provider, but only one-third were taking folic acid. [Canfield MA, Anderson JL, Waller DK, Palmer SE, Kaye CI. Folic Acid Awareness and Use Among Women with a History of a Neural Tube Defect Pregnancy - Texas, 2000-2001. MMWR Morb Mortal Wkly Rep 2002;51:16-19.]

**NEURAL TUBE DEFECTS AND PARENTAL OCCUPATION:** Investigators in Texas reported increased risk of neural tube defects with maternal cleaning and health care professions and occupational exposure to solvents. [Brender J, Suarez L, Hendricks K, Baetz RA, Larsen R. Parental occupation and neural tube defect-affected pregnancies among Mexican Americans. J Occup Environ Med. 2002;44:650-656.]

Texas Women Ages 18-44, Nonpregnant	Take Folic Acid Supplement													
	Daily		5-6 days/k		3-4 days/wk		1-2 days/wk		Less Frequently		All Other		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Consume Highly Fortified Cereal														
Daily+	15	1.2	3	0.2	2	0.2	3	0.4	1	0.1	32	2.6	<b>56</b>	<b>4.6</b>
2 - 4 times a week	27	3.3	2	0.1	3	0.2	3	0.2	4	0.3	62	5.1	<b>101</b>	<b>9.2</b>
~1/week	9	1.3	0	0.0	1	0.0	0	0.0	3	0.2	9	1.0	<b>22</b>	<b>2.5</b>
All other	216	22.8	4	0.5	19	1.7	32	3.4	54	5.4	590	50.0	<b>915</b>	<b>83.7</b>
<b>Total</b>	<b>267</b>	<b>28.6</b>	<b>9</b>	<b>0.8</b>	<b>25</b>	<b>2.1</b>	<b>38</b>	<b>3.9</b>	<b>62</b>	<b>6.0</b>	<b>693</b>	<b>58.6</b>	<b>1094</b>	<b>100.0</b>

## FAS CORNER

### Texas Women's Knowledge of the Risks of Alcohol Use During Pregnancy

The Texas Women's Health Survey was a CDC-funded anonymous telephone survey conducted by the Texas Birth Defects Research Center in 1997 and in 2001. Approximately 1200 women of childbearing ages (15-44) throughout Texas participated in each survey. The telephone interview collected information on women's knowledge and attitudes about preventing birth defects. In this report, we present findings related to women's knowledge of the risks of drinking alcohol during pregnancy.

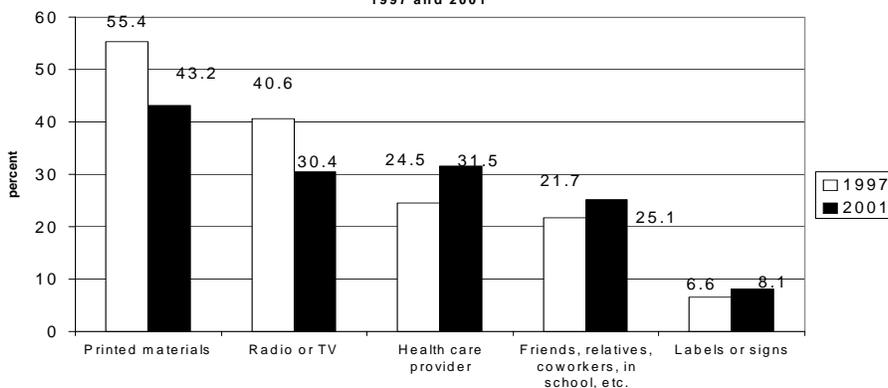
Survey participants were asked the open-ended question, "What do you think causes birth defects?" In 2001, 58% of women included "alcohol" among their responses, compared to 52% of women in 1997, although the increase from 1997 to 2001 was not statistically significant. When asked, "What can a woman do to reduce the risk of birth defects?" 49% included "avoid alcohol" among their responses in the 2001 survey, compared to 44% in 1997, but again, the difference between 1997 and 2001 was not statistically significant.

The survey included a multiple-choice question asking women to select the one response which best describes the phrase "fetal alcohol syndrome" (FAS). In 2001, 52% of women correctly replied that FAS describes a baby born with certain

birth defects. However, 23% of respondents incorrectly stated that FAS describes a baby born addicted to alcohol, 2% thought FAS describes a baby born drunk, and 24% did not know what FAS was. Results from the 1997 survey were very similar (see table, below).

Women were also asked if they had ever heard or read the Surgeon General's recommendation that women who are pregnant or considering pregnancy should not drink alcoholic beverages. Ninety percent of women were aware of this recommendation in 2001 and 87% in 1997. These women were then asked where they read or heard this recommendation and multiple responses were allowed. In the 2001 survey, 43% said they learned the Surgeon General's recommendation through printed materials such as magazines, newspapers, books, and brochures; this was a statistically significant decrease from 55% in 1997. Similarly, there was a significant decrease from 41% in 1997 to 30% in 2001 in the percentage of respondents who learned the recommendation from radio or TV. At the same time, the percentage that learned the recommendation from a health care provider significantly increased from 24% in 1997 to 32% in 2001. About one-quarter of

Where Texas Women Learned the Surgeon General's Recommendation to Avoid Alcohol During Pregnancy, 1997 and 2001



respondents in each year said they learned the recommendation through social contacts such as friends, relatives, at work, in school, at church, etc. Very few respondents said they learned the recommendation from alcoholic beverage labels or signs posted where alcoholic beverages are sold or served (8% in 2001, 7% in 1997).

The results from these surveys indicate that about one-half of Texas women of childbearing age may not be aware of the risks posed to the unborn child by maternal alcohol consumption during pregnancy. This lack of awareness remained essentially constant between 1997 and 2001. Although there appears to be more communication between health

care providers and women about alcohol and pregnancy, there appears to be a waning of educational messages on the topic through print and broadcast media. A recent campaign to distribute decals warning of the dangers of alcohol consumption during pregnancy to over 40,000 Texas establishments licensed to sell or serve alcoholic beverages should help to increase awareness (See Prevention, Page 5).

For more information, contact Mary Ethen, Texas Birth Defects Monitoring Division, at 512-458-7232 or [mary.ethen@tdh.state.tx.us](mailto:mary.ethen@tdh.state.tx.us).

### Women's Knowledge of the Risks of Alcohol Use During Pregnancy

Results from the 1997 and 2001 Texas Women's Health Surveys

Question	Response	1997		2001	
		Percent	95% CI	Percent	95% CI
What do you think causes birth defects?	Alcohol	52.2	48.7 - 55.8	58.3	54.8 - 61.8
What can a woman do to reduce the risk of birth defects?	Avoid alcohol	44.4	40.8 - 47.9	48.8	45.3 - 52.3
Fetal alcohol syndrome (FAS) describes a baby born...	With certain birth defects	48.6	45.1 - 52.2	52.1	48.6 - 55.6
	Addicted to alcohol	26.5	23.3 - 29.6	22.6	19.7 - 25.5
	Drunk	2.8	1.6 - 4.0	1.7	0.8 - 2.6
	Don't know	22.1	19.4 - 24.8	23.7	21.0 - 26.4
Have you ever read or heard the Surgeon General's recommendation that women who are pregnant or considering pregnancy should not drink alcoholic beverages?	Yes	86.5	84.4 - 88.6	89.8	88.0 - 91.6
Where did you read or hear the Surgeon General's recommendation?	Printed materials	55.4	51.9 - 58.9	43.2	39.7 - 46.7
	Radio or TV	40.6	37.0 - 44.1	30.4	27.2 - 33.6
	Health care provider	24.5	21.5 - 27.4	31.5	28.3 - 34.7
	Friends, relatives, coworkers, in school, etc.	21.7	18.7 - 24.7	25.1	22.0 - 28.2
	Labels or signs	6.6	4.8 - 8.4	8.1	6.1 - 10.1

## | PREVENTION

### TABC Introduces Point-of-Sale Signs

Decals warning women of the dangers associated with drinking alcoholic beverages during pregnancy due to the risk of birth defects were distributed during the first part of December to every business in Texas licensed to sell alcoholic beverages. In addition to the decals, the Texas Alcoholic Beverage Commission (TABC) mailed an informative brochure on the Fetal Alcohol Syndrome produced by the Texas Birth Defects Monitoring Division.

At a press conference held December 12, 2002, TABC officials and Texas First Lady Anita Perry announced the public information campaign, featuring the involvement of state agencies as the Texas Commission on Alcohol and Drug Abuse, the Texas Office of Prevention of Developmental Disabilities, Texas Department of Mental Health and Mental Retardation, and the Texas Department of Health. The campaign will also involve members of the alcoholic beverage industry and other support organizations associated with FAS/FAE initiatives such as the Texas Medical Association and the March of Dimes (which partially funded the printing of the decals).

The campaign also requires seller/server schools to offer a mandatory section on FAS/FAE as part of their training on the sale and service of alcoholic beverages.

Though voluntary in nature, license/permit holders are encouraged to display the decal in a location where it can be seen easily by the public.

For more information about this campaign, or to receive additional decals or brochures, please contact the TABC at 512 206-3347.



## | LIVING WITH BIRTH DEFECTS

### Study focuses on outcomes among children with hydrocephalus

A University of Texas - Houston Health Science Center-led project on children with hydrocephalus has been funded by a grant from the National Institute of Child Health and Human Development. The study seeks to identify the factors responsible for the variations in the outcomes of children born with hydrocephalus caused by Spina Bifida, Aqueductal Stenosis, or Dandy Walker Syndrome. Knowledge of the factors responsible for neurobehavioral outcome is fragmentary. The program project aims to make these fragments coherent. Once these connections are better understood, intervention programs to address specific problems can be developed.

Researchers are searching for the genes involved in the development of hydrocephalus. To learn more about hydrocephalus, we need a large number of families to participate in this study. Without the active participation of families with a child who has this condition, we will not be able to learn what we need to know in order to understand what causes hydrocephalus, and in particular, how to maximize the development of children with hydrocephalus. Study participation involves an interview to document the occurrence of hydrocephalus in family members through a family tree, a brief questionnaire recording the child's lesion level and ethnicity, and lastly, a blood sample, approximately 5-7 mls

or two teaspoons, from the child and one or both of his/her biological parents. Samples may be collected by your personal physician or nurse and shipped directly to our genetics laboratory at no cost to you. The project will provide all the necessary equipment, instructions, and a prepared FED-EX Pack.

If you wish to participate, please contact the study coordinator, Irene Townsend, R.N., at (713) 500-3678 or by email: Irene.T.Townsend@uth.tmc.edu.

## | ANNOUNCEMENTS

### TBDMD Staff Changes

*Region 1/9/10*

- ◆ Ray Herrera, promoted to Program Manager
- ◆ Sandra Ordonez, Surveillance Specialist
- ◆ Louie Alva, Surveillance Specialist

*Region 8*

- ◆ Anna Lux, Data Manager

*Region 6*

- ◆ Trilyon Taylor, promoted to Program Manager
- ◆ Kicha Mazique, promoted to Field Supervisor
- ◆ Neva Ellison, Surveillance Specialist
- ◆ Rocio Morales, Surveillance Specialist
- ◆ Anita De Cloutte, Surveillance Specialist

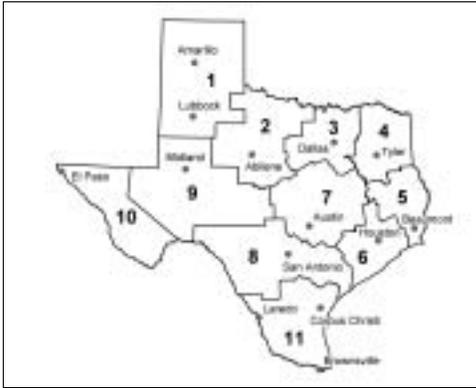
*Region 2/3/4*

- ◆ Victoria Thompson, Surveillance Specialist
- ◆ Martha Jean Brown, Surveillance Specialist
- ◆ Kaye Privitt, Surveillance Specialist
- ◆ Tracy Ray, Surveillance Specialist
- ◆ Ann Trombley, Surveillance Specialist

*Central Office*

- ◆ Lisa Marengo, Epidemiologist
- ◆ Tunu Ramadhani, Research Specialist

Links to TDH Regional Program Offices can be found at [www.tdh.state.tx.us/tbdmd/offices.htm](http://www.tdh.state.tx.us/tbdmd/offices.htm).



## Region 4 joins 2/3

In 1998, the Texas Birth Defects Registry began its final phase of expansion, adding surveillance activities in Central Texas (Region 7), the Panhandle (Region 1), and the northeast corner of the state (Region 4). Because of funding limitations at the time, Region 4 did not have a birth defects program office established locally, but instead birth defects surveillance activities were carried out by one staff member overseen by the Region 7 office. After testing several methods for coordinating data collection in Region 4, it has been determined that the Region 2/3 program (which includes Dallas, Ft. Worth, and Wichita Falls) to cover region 4 as well (See map). The newly combined program covers about 118,000 total live births per year. Region 4 accounts for about 12% of those.

## TFAC-Family Planning and Tool Kits

The Texas Folic Acid Council has begun the last phase of the statewide folic acid campaign funded by a March of Dimes Mission Investment Opportunity grant. This campaign, begun in 1999, centered on the distribution of "starter kits"-cosmetic bags containing promotional items such as emery boards imprinted with a folic

acid reminder, printed literature about the benefits of taking folic acid, and a 30-days supply of multivitamins. In 2001, these kits were distributed to Texas WIC clients in selected areas, who also received one-on-one counseling about the importance of folic acid from trained WIC counselors. In 2003, Texas Department of Health women's health (family planning) clinics will be distributing these kits using a similar protocol. For more information, contact Shri Annigeri, TFAC Coordinator, at 512-458-7111, Ext. 6287, [shri.annigeri@tdh.state.tx.us](mailto:shri.annigeri@tdh.state.tx.us).

## Los Dos Laredos Binational Health Council

The Los Dos Laredos Binational Health Council of the U.S.-Mexico Border Health Association held its fourth annual meeting on September 18-19. At the same event, a proclamation was presented aimed at coordinating collection of data on birth defects in both cities as well as prevention of neural tube defects. This collaboration will enable the development of cross-border patient case follow up of neural tube defects cases through active surveillance. The goal is to reduce the recurrence of cases by 75% in both Laredos (Texas and Tamaulipas).

For more information, contact Jorge Trevino, Texas Birth Defects Monitoring Division, 956-444-3294, [jorge.trevino@tdh.state.tx.us](mailto:jorge.trevino@tdh.state.tx.us).

## Duke NTD Study

Duke University Medical Center is currently conducting research into the genetic basis of neural tube defects and is actively recruiting families with one or more members with a neural tube defect (NTD). No family history is required. A broad definition is used for NTD, including myelomeningocele, meningocele, anencephaly, lipo-

myelomeningocele, tethered cord, and split cord malformation.

Enrollment is completed through Liz Melvin, MS, CGC (genetic counselor and study coordinator). Participation is at no cost to the family and does not require travel to Duke University Medical Center. Enrollment involves a family interview, review of medical records and X-rays, physical examination on unaffected family members, and blood samples from the family member with an NTD and his or her parents and siblings, if possible. Prenatally ascertained samples can also be obtained on current pregnancies.

Families who are interested in learning more or participating in this research should contact Liz Melvin, MS, CGC at Duke University Medical Center, Section of Medical Genetics, Box 3445, Durham, NC 27710. The toll-free telephone number (within the United States) is 800-283-4316, and electronic mail address is [Elizabeth.Melvin@duke.edu](mailto:Elizabeth.Melvin@duke.edu). The group also has a Web page, which can be viewed at [www.chg.mc.duke.edu/patients/neural.html](http://www.chg.mc.duke.edu/patients/neural.html).

## SELECTED READING LIST

**ANTIHISTAMINES:** Investigators in Sweden noted no association between maternal antihistamine use and birth defects. [Kallen B. Use of antihistamine drugs in early pregnancy and delivery outcome. *J Matern Fetal Neonatal Med* 2002;11:146-152.]

**BIRTH DEFECTS AND DIABETES:** Investigators in Canada observed no increased risk of major birth defects among very-low-birth weight infants of mothers with diabetes when compared with mothers without diabetes. [Rehan et al. Outcome of very-low-birth-weight infants born to mothers with diabetes. *Clin Pediatr (Phila)* 2002;41:481-491.] However, researchers in Finland observed increased risk of birth defects among births to mothers with Type 1 diabetes. [Vaarasmaki et al. Congenital anomalies and first life year surveillance in Type 1 diabetic births. *Diabet Med* 2002;19:589-593.]

**LAMOTRIGINE:** This study observed a higher rate of major birth defects with lamotrigine-valproic acid polytherapy than for lamotrigine monotherapy or lamotrigine polytherapy without valproic acid. [Tennis P, Eldridge RR; International Lamotrigine Pregnancy Registry Scientific Advisory Committee. Preliminary results on pregnancy outcomes in

NOT JUST KIDS' STUFF . . . Congenital heart defects (CHD) are well known as a leading contributor to childhood mortality. But did you know that, according to the Texas Bureau of Vital Statistics, 105 Texans aged 25 or older died due to CHD in 2000? -Source: Texas Health Data, <http://soup-fin.tdh.state.tx.us/>

- women using lamotrigine. *Epilepsia* 2002;43:1161-1167.]
- PESTICIDES:** Investigators in Minnesota reported higher rates of birth defects among offspring of pesticide applicators. [Garry et al. Birth defects, season of conception, and sex of children born to pesticide applicators living in the red river valley of Minnesota, USA. *Environ Health Perspect* 2002;110 Suppl 3:441-449.]
- BIRTH DEFECTS AND VITAMINS, FEVER, SMOKING, AND ALCOHOL:** Using data from California, researchers reported increased risk of birth defects among offspring born to women with no vitamin use and/or fever when compared to women with vitamin use and no fever. Birth defect risk was also higher among offspring of women with smoking and no vitamin use when compared to women with vitamin use and no smoking. No pattern with maternal vitamin use and alcohol use was noted. [Shaw et al. Maternal periconceptional vitamins. *Epidemiol* 2002;13:625-630.]
- BIRTH DEFECTS, MULTIVITAMIN USE, AND MATERNAL FEVER:** Investigators in Atlanta reported increased risk of neural tube defects, oral clefts, cardiac outflow tract defects, ventricular septal defect, atrial septal defect, omphalocele, and limb deficiencies with maternal fever and no multivitamin use. Risk was reduced with multivitamin use. [Botto et al. Maternal Fever, multivitamin use, and selected birth defects: evidence of interaction? *Epidemiology* 2002;13:485-488.]
- DOWN SYNDROME AND DIABETES:** Researchers in Spain reported no association of Down syndrome with maternal diabetes, after controlling for maternal age. [Martinez-Frias et al. Epidemiological evidence that maternal diabetes does not appear to increase the risk for Down syndrome. *Am J Med Genet* 2002;112:335-337.]
- FETAL ALCOHOL SYNDROME, GEOGRAPHY AND RACE/ETHNICITY:** Researchers observed that fetal alcohol syndrome rates varied between Alaska, Arizona, Colorado, and New York. Fetal alcohol syndrome rates were highest for blacks and Native Americans. [Centers for Disease Control and Prevention. Fetal alcohol syndrome--Alaska, Arizona, Colorado, and New York, 1995-1997. *MMWR* 2002;51:433-435.]
- GENETICS OF SPINA BIFIDA:** Researchers reported no increased risk of spina bifida with polymorphisms in various examined PAX genes. [Volcik et al. Testing for genetic associations with the PAX gene family in a spina bifida population. *Am J Med Genet* 2002;110:195-202.] Investigators reported no increased risk of spina bifida with polymorphisms in markers within or close to various HOX genes. [Volcik et al. Testing for genetic associations in a spina bifida population. *Am J Med Genet* 2002;110:203-207.]
- HEART DEFECTS AND DRINKING WATER:** Investigators in Sweden noted increased risk of heart defects with chlorine dioxide and nitrate in drinking water and increasing risk of heart defects with increasing trihalomethane concentrations. [Cedergren et al. Chlorination byproducts and nitrate in drinking water and risk for congenital cardiac defects. *Environ Res* 2002;89:124-130.]
- MORTALITY AND TREATMENT OF HYPOPLASTIC LEFT HEART SYNDROME:** Using data from the Nationwide Inpatient Sample, researchers found that the in-patient mortality rate for hypoplastic left heart syndrome declined from 54% in 1988 to 38% in 1997. The rate of treatment with the Norwood procedure increased while the rate of comfort care decreased during 1988-1997. [Chang et al. Clinical management of infants with hypoplastic left heart syndrome in the United States, 1988-1997. *Pediatrics* 2002;110:292-298.]
- CARDIAC DEFECTS AND OBESITY:** Investigators in Illinois reported increased risk of cardiac defects among deliveries to African American mothers with obesity. [Mikhail et al. Association between maternal obesity and fetal cardiac malformations in African Americans. *J Natl Med Assoc* 2002;94:695-700.]
- CARDIAC DEFECTS AND DIAPHRAGMATIC HERNIA:** Investigators in Pennsylvania noted that 18% of cases of diaphragmatic hernia had heart defects. The survival rate for cases with diaphragmatic hernia was lower if heart defects were present. [Cohen et al. Influence of congenital heart disease on survival in children with congenital diaphragmatic hernia. *J Pediatr* 2002;141:25-30.]
- HYDRAMNIOS AND BIRTH DEFECTS:** Researchers in Texas reported that, of the <1% of pregnancies complicated with hydramnios, 11% had offspring with birth defects. Prenatal diagnosis of a birth defect was made in 79% of these cases. [Dashe et al. Hydramnios: anomaly prevalence and sonographic detection. *Obstet Gynecol* 2002;100:134-139.]
- EPIDEMIOLOGY OF LIMB REDUCTION DEFECTS:** Using the Healthcare Cost and Utilization Project data, researchers observed no change in the rate of congenital limb deficiencies during 1988-1996. Congenital limb deficiencies more often affected the upper limb. [Dillingham et al. Limb amputation and limb deficiency: epidemiology and recent trends in the United States. *South Med J* 2002;95:875-883.]
- NEURAL TUBE DEFECTS AND PHYSICAL ACTIVITY:** Investigators in California noted decreased risk of neural tube defects with maternal physical activity. [Carmichael et al. Physical Activity and Risk of Neural Tube Defects. *Matern Child Health J* 2002;6:151-57.]
- NTD RATE AND FOLIC ACID FORTIFICATION:** Investigators in Nova Scotia reported that the NTD rate did not change significantly during a period of supplementation initiatives. However, the rate did decline once folic acid fortification was implemented. [Persad et al. Incidence of open neural tube defects in Nova Scotia after folic acid fortification. *CMAJ* 2002;167:241-245.]
- PYLORIC STENOSIS AND ANTIBIOTICS:** Research in Tennessee observed increased risk of pyloric stenosis with infant erythromycin use, particularly within the first two weeks of life. [Cooper et al. Very early exposure to erythromycin and infantile hypertrophic pyloric stenosis. *Arch Pediatr Adolesc Med* 2002;156:647-650.] Another study, also in Tennessee, reported no association between maternal prescriptions for erythromycin filled during pregnancy and pyloric stenosis risk. However, there was increased risk with maternal prescriptions for non-erythromycin macrolides filled during pregnancy. [Cooper et al. Prenatal prescription of macrolide antibiotics and infantile hypertrophic pyloric stenosis. *Obstet Gynecol* 2002;100:101-106.]
- CRANIOSYNOSTOSIS:** Researchers using data from the Baltimore-Washington area reported associations of isolated, nonsyndromic sagittal craniosynostosis with sex, maternal alcohol use, and maternal and paternal education. [Zeiger et al. Genetic and environmental risk factors for sagittal craniosynostosis. *J Craniofac Surg* 2002;13:602-606.]
- BILIARY ATRESIA:** Researchers in Sweden noted increased risk of biliary atresia with increased maternal age, increased parity, prematurity, and low birth weight for gestational age. [Fischler et al. A population-based study on the incidence and possible pre- and perinatal etiologic risk factors of biliary atresia. *J Pediatr* 2002;141:217-222.]
- HEART DEFECTS:** Researchers in Sweden reported increased risk of heart defects with maternal diabetes, high body mass index, and antiepileptic use. [Cedergren et al. Risk factors for cardiovascular malformation--a study based on prospectively collected data. *Scand J Work Environ Health* 2002;28:12-17.]
- RISK FACTORS FOR HETEROTAXY:** Using data from the Baltimore Washington Infant Study, investigators reported increased risk of heterotaxy or dextrocardia with maternal diabetes, family history of birth defects, cocaine, and plurality. [Kuehl KS, Loffredo C. Risk factors for heart disease associated with abnormal sidedness. *Teratology* 2002;66:242-248.]
- SECULAR TRENDS AND ANEUPLOIDIES:** Researchers in South Carolina observed an increase in trisomy 21 and total aneuploidy rates during 1992-1999, a time when there was increased utilization of folic acid. [Collins et al. Prevalence of aneuploidies in South Carolina in the 1990s. *Genet Med* 2002;4:131-135.]
- SECULAR TRENDS AND NEURAL TUBE DEFECTS:** Researchers in northern Mexico reported a decline in anencephaly and spina bifida rates between 1999 and 2001. In 1999 a folic acid campaign and distribution of folic acid had commenced. [Martinez De Villarreal et al. Decline of neural tube defects cases after a folic acid campaign in Nuevo Leon, Mexico. *Teratology* 2002;66:249-256.]
- SECULAR TRENDS AND NEURAL TUBE DEFECTS:** Using birth certificate data, investigators reported a decline in spina bifida and anencephaly rates during 1991-2001. [Mathews et al. Spina bifida and anencephaly prevalence - United States, 1991-2001. *MMWR* 2002;51:9-11.] Researchers in North Carolina reported that the decline in spina bifida rates among live births and stillbirths during 1995-1999 varied by maternal age, maternal education, maternal race, and geographic region. [Meyer et al. Sociodemographic patterns in spina bifida birth prevalence trends - North Carolina, 1995-1999. *MMWR* 2002;51:12-15.] Another U.S. study reported a 31% decline in spina bifida prevalence and 16% decline in anencephaly prevalence during 1995-1999. The decline in spina bifida prevalence was associated with timing of folic acid fortification. [Williams et al. Prevalence of spina bifida and anencephaly during the transition to mandatory folic acid fortification in the United States. *Teratology* 2002;66:33-39.]
- RISK FACTORS FOR CLUB FOOT:** Researchers in Washington state reported increased risk of club foot with male sex, family history of clubfoot, and maternal smoking. [Skelly et al. Talipes equinovarus and maternal smoking. *Teratology* 2002;66:91-100.]



## CALENDAR

- APRIL 6-8. Texas Public Health Association Annual Conference, San Antonio [www.texmed.com](http://www.texmed.com)
- MAY 8-10. Association of Texas Midwives Corpus Christi conference@texasmidwives.com, [www.texasmidwives.com/conf.html](http://www.texasmidwives.com/conf.html)
- MAY 10 - 14. TEPR (Toward an Electronic Patient Record) 2003: Electronic Patient Management San Antonio [www.medrecinst.com/conferences/tepr/index.shtml](http://www.medrecinst.com/conferences/tepr/index.shtml) Phone: 617-

964-3923 [cust\\_service@medrecinst.com](mailto:cust_service@medrecinst.com)

JUNE 23-25. Spina Bifida Association (National) Conference: San Antonio. [www.sbaa.org](http://www.sbaa.org)

AUGUST 1-3. The ARC of Texas 2003 Texas Advocates Conference, Austin

OCTOBER 11-15. American Society for Reproductive Medicine Meeting, San Antonio [www.asrm.org/Professionals/Meetings/annualmeeting.html](http://www.asrm.org/Professionals/Meetings/annualmeeting.html)

OCTOBER 30-NOVEMBER 2. Midwives Alliance of North America Austin [www.mana.org/conf.html](http://www.mana.org/conf.html) 512-388-3072, e-mail [ashleykraft@earthlink.net](mailto:ashleykraft@earthlink.net).

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