

Appendix E: Research Using Data from the Texas Birth Defects Registry and Related Projects

Once in the Texas Birth Defects Registry, a case infant's family may be invited to participate in research studies, including the National Birth Defects Prevention Study. Epidemiologists and clinicians conduct epidemiological research to investigate the causes of birth defects. Members of the Texas Department of State Health Services Institutional Review Board evaluate study protocols to protect the privacy and other concerns of participants.

Below are citations for research using data contained in the Texas Birth Defects Registry and other projects related to the registry or birth defects published since this Appendix was last produced in early 2012. With respect to National Birth Defects Prevention Study (NBDPS) publications, we have listed studies lead by Texas researchers. Many other NBDPS projects have included Texas data; a list is available upon request (please call 512-776-7232 or send an e-mail to birthdefects@dshs.state.tx.us). In addition, publications are listed in the Texas Birth Defects Monitor, the research and data update of the Texas Birth Defects Epidemiology and Surveillance Branch. Past issues of the Monitor are available on our website at www.dshs.state.tx.us/birthdefects.

Published Research Articles from the Texas Birth Defects Registry and the Texas Center for Birth Defects Research and Prevention

Agopian A, Waller DK, Lupo PJ, Canfield MA, Mitchell LE. A case-control study of maternal bathing habits and risk for birth defects in offspring. *Environ Health*. 2013;12:88

Agopian AJ, Cai Y, Langlois PH, Canfield MA, Lupo PJ. Maternal residential atrazine exposure and risk for choanal atresia and stenosis in offspring. *J Pediatr*. 2013;162:581-586

Agopian AJ, Langlois PH, Cai Y, Canfield MA, Lupo PJ. Maternal residential atrazine exposure and gastroschisis by maternal age. *Matern Child Health J*. 2013;17:1768-1775

Agopian AJ, Langlois PH, Ramakrishnan A, Canfield MA. Epidemiologic features of male genital malformations and subtypes in Texas. *Am J Med Genet A*. 2014; 164a:943-949

Agopian AJ, Lupo PJ, Canfield MA, Langlois PH. Case-control study of maternal residential atrazine exposure and male genital malformations. *Am J Med Genet A*. 2013;161a:977-982

Agopian AJ, Lupo PJ, Canfield MA, Mitchell LE. Swimming pool use and birth defect risk. *Am J Obstet Gynecol*. 2013;209:219.e211-219

Agopian AJ, Marengo LK, Mitchell LE. Predictors of trisomy 21 in the offspring of older and younger women. *Birth Defects Res A Clin Mol Teratol*. 2012;94:31-35

- Agopian AJ, Moulik M, Gupta-Malhotra M, Marengo LK, Mitchell LE. Descriptive epidemiology of non-syndromic complete atrioventricular canal defects. *Paediatr Perinat Epidemiol.* 2012;26:515-524
- Brender JD, Shinde MU, Zhan FB, Gong X, Langlois PH. Maternal residential proximity to chlorinated solvent emissions and birth defects in offspring: A case-control study. *Environ Health.* 2014;13:96
- Brender JD, Weyer PJ, Romitti PA, Mohanty BP, Shinde MU, Vuong AM, Sharkey JR, Dwivedi D, Horel SA, Kantamneni J, Huber Jr JC, Zheng Q, Werler MM, Kelley KE, Griesenbeck JS, Zhan FB, Langlois PH, Suarez L, Canfield MA. Prenatal nitrate intake from drinking water and selected birth defects in offspring of participants in the National Birth Defects Prevention Study. *Environ Health Perspect.* 2013; 1083:121-129
- Canfield MA, Mai CT, Wang Y, O'Halloran A, Marengo LK, Olney RS, Borger CL, Rutkowski R, Fornoff J, Irwin N, Copeland G, Flood TJ, Meyer RE, Rickard R, Alverson C, Sweatlock J, Kirby RS, Network ft. NBDP. The association between race/ethnicity and major birth defects in the United States, 1999-2007. *American Journal of Public Health.* 2014;104:e14-e23
- Canfield MA, Mai CT, Wang Y, O'Halloran A, Marengo LK, Olney RS, Borger CL, Rutkowski R, Fornoff J, Irwin N, Copeland G, Flood TJ, Meyer RE, Rickard R, Alverson C, Sweatlock J, Kirby RS, Network ftNBDP. The association between race/ethnicity and major birth defects in the United States, 1999-2007. *American Journal of Public Health.* 2014;104:e14-e23
- Carozza SE, Langlois PH, Miller EA, Canfield M. Are children with birth defects at higher risk of childhood cancers? *Am J Epidemiol.* 2012;175:1217-1224
- Case AP, Colpitts LR, Langlois PH, Scheuerle AE. Prenatal diagnosis and cesarean section in a large, population-based birth defects registry. *J Matern Fetal Neonatal Med.* 2012;25:395-402
- Case AP, Mitchell LE. Prevalence and patterns of choanal atresia and choanal stenosis among pregnancies in Texas, 1999-2004. *Am J Med Genet A.* 2011;155A:786-791
- Centers for Disease Control and Prevention (CDC). Preconception health indicators among women--Texas, 2002-2010. *MMWR Morb Mortal Wkly Rep.* 2012;61:550-555
- Chandler AL, Hobbs CA, Mosley BS, Berry RJ, Canfield MA, Qi YP, Siega-Riz AM, Shaw GM. Neural tube defects and maternal intake of micronutrients related to one-carbon metabolism or antioxidant activity. *Birth Defects Res A Clin Mol Teratol.* 2012;94:864-874

- Chiquet BT, Henry R, Burt A, Mulliken JB, Stal S, Blanton SH, Hecht JT. Nonsyndromic cleft lip and palate: Crispld genes and the folate gene pathway connection. *Birth Defects Res A Clin Mol Teratol.* 2011;91:44-49
- Desrosiers TA, Lawson CC, Meyer RE, Richardson DB, Daniels JL, Waters MA, Van Wijngaarden E, Langlois PH, Romitti PA, Correa A, Olshan A. Maternal occupational exposure to organic solvents during early pregnancy and risks of neural tube defects and orofacial clefts. *Occup Environ Med.* 2012;69:493-499
- Fixler DE, Nembhard WN, Salemi JL, Ethen MK, Canfield MA. Mortality in first 5 years in infants with functional single ventricle born in Texas, 1996 to 2003. *Circulation.* 2010;121:644-650
- Fixler DE, Nembhard WN, Xu P, Ethen MK, Canfield MA. Effect of acculturation and distance from cardiac center on congenital heart disease mortality. *Pediatrics.* 2012;129:1118-1124
- Fixler DE, Xu P, Nembhard WN, Ethen MK, Canfield MA. Age at referral and mortality from critical congenital heart disease. *Pediatrics.* 2014;134:e98-105
- Getz KD, Anderka MT, Werler MM, Case AP. Short interpregnancy interval and gastroschisis risk in the National Birth Defects Prevention Study. *Birth Defects Res A Clin Mol Teratol.* 2012;94:714-720
- Griesenbeck JS, Brender JD, Sharkey JR, Steck MD, Huber JC, Jr., Rene AA, McDonald TJ, Romitti PA, Canfield MA, Langlois PH, Suarez L. Maternal characteristics associated with the dietary intake of nitrates, nitrites, and nitrosamines in women of child-bearing age: A cross-sectional study. *Environ Health.* 2010;9:10
- Green RF, Devine O, Crider KS, Olney RS, Archer N, Olshan AF, Shapira SK. Association of paternal age and risk for major congenital anomalies from the National Birth Defects Prevention Study, 1997 to 2004. *Ann Epidemiol.* 2010;20:241-249
- Hashmi SS, Canfield MA, Marengo L, Moffitt KB, Belmont JW, Freedenberg D, Tanksley SM, Lupo PJ. The association between neonatal thyroxine and craniosynostosis, Texas, 2004-2007. *Birth Defects Res A Clin Mol Teratol.* 2012;94:1004-1009
- Hoyt AT, Browne M, Richardson S, Romitti P, Druschel C. Maternal caffeine consumption and small for gestational age births: Results from a population-based case-control study. *Matern Child Health J.* 2013

- Hoyt AT, Canfield MA, Shaw GM, Waller DK, Polen KN, Ramadhani T, Anderka MT, Scheuerle AE. Sociodemographic and Hispanic acculturation factors and isolated anotia/microtia. *Birth Defects Res A Clin Mol Teratol.* 2014
- Huber JC, Jr., Brender JD, Zheng Q, Sharkey JR, Vuong AM, Shinde MU, Griesenbeck JS, Suarez L, Langlois PH, Canfield MA, Romitti PA, Weyer PJ. Maternal dietary intake of nitrates, nitrites and nitrosamines and selected birth defects in offspring: A case-control study. *Nutr J.* 2013;12:34
- Kirby RS, Marshall J, Tanner JP, Salemi JL, Feldkamp ML, Marengo L, Meyer RE, Druschel CM, Rickard R, Kucik JE. Prevalence and correlates of gastroschisis in 15 states, 1995 to 2005. *Obstet Gynecol.* 2013;122:275-281
- Kirby RS, Nembhard WN. Increasing the utility of population-based birth defects surveillance program data. *J Registry Manag.* 2014;41:3
- Kucik JE, Shin M, Siffel C, Marengo L, Correa A. Trends in survival among children with down syndrome in 10 regions of the United States. *Pediatrics.* 2013;131:e27-36
- Langlois PH, Canfield MA, Swartz MD. Poisson versus logistic regression in a descriptive epidemiologic analysis of data from a birth defects registry. *Birth Defects Res A Clin Mol Teratol.* 2013; 97:702-707
- Langlois PH, Moffitt KB, Scheuerle AE. A modified panel of sentinel congenital anomalies for potential use in mutation epidemiology based on birth defects registry data. *Am J Med Genet A.* 2014; 187-199
- Lavery AM, Brender JD, Zhao H, Sweeney A, Felkner M, Suarez L, Canfield MA. Dietary intake of choline and neural tube defects in Mexican Americans. *Birth Defects Res A Clin Mol Teratol.* 2014; 463-471
- Lee LJ, Canfield MA, Hashmi SS, Moffitt KB, Marengo L, Agopian AJ, Belmont JW, Freedenberg D, Tanksley SM, Mitchell LE, Lupo PJ. Association between thyroxine levels at birth and choanal atresia or stenosis among infants in Texas, 2004-2007. *Birth Defects Res A Clin Mol Teratol.* 2012;94:951-954
- Lupo PJ, Chapa C, Nousome D, Duhon C, Canfield MA, Shaw GM, Finnell RH, Zhu H. A gch1 haplotype and risk of neural tube defects in the National Birth Defects Prevention Study. *Mol Genet Metab.* 2012;107:592-595
- Mai CT, Cassell CH, Meyer RE, Isenburg J, Canfield MA, Rickard R, Olney RS, Stallings EB, Beck M, Hashmi SS, Cho SJ, Kirby RS. Birth defects data from population-based birth defects surveillance programs in the United States, 2007 to 2011: Highlighting orofacial clefts. *Birth Defects Res A Clin Mol Teratol.* 2014;100:895-904

- Mai CT, Kucik JE, Isenburg J, Feldkamp ML, Marengo LK, Bugenske EM, Thorpe PG, Jackson JM, Correa A, Rickard R, Alverson CJ, Kirby RS, for the National Birth Defects Prevention N. Selected birth defects data from population-based birth defects surveillance programs in the United States, 2006 to 2010: Featuring trisomy conditions. *Birth Defects Res A Clin Mol Teratol.* 2013;97:709-725
- Mai CT, Riehle-Colarusso T, O'Halloran A, Cragan JD, Onley RS, Lin A, Feldkamp M, Botto LD, Rickard R, Anderka M, Ethen M, Stanton C, Ehrhardt J, Canfield M. Selected birth defects data from population-based birth defects surveillance programs in the United States, 2005-2009: Featuring critical congenital heart defects targeted for pulse oximetry screening. *Birth Defects Res A Clin Mol Teratol.* 2012;94:970-983
- Marengo L, Farag NH, Canfield M. Body mass index and birth defects: Texas, 2005-2008. *Matern Child Health J.* 2013;17:1898-1907
- Marengo LK, Hoyt AT, Canfield MA. The utility of the national death index as a supplemental data source in ascertaining 5-year mortality among Texas heterotaxy cases. *J Registry Manag.* 2014;41:4-6
- McKinnish T, Rees DI, Langlois PH. Seasonality in birth defects, agricultural production and urban location. *Econ Hum Biol.* 2014;15c:120-128
- Morris SA, Ethen MK, Penny DJ, Canfield MA, Minard CG, Fixler DE, Nembhard WN. Prenatal diagnosis, birth location, surgical center, and neonatal mortality in infants with hypoplastic left heart syndrome. *Circulation.* 2014;129:285-292
- Nassar N, Leoncini E, Amar E, Arteaga-Vazquez J, Bakker MK, Bower C, Canfield MA, Castilla EE, Cocchi G, Correa A, Csaky-Szunyogh M, Feldkamp ML, Khoshnood B, Landau D, Lelong N, Lopez-Camelo JS, Lowry RB, McDonnell R, Merlob P, Metneki J, Morgan M, Mutchinick OM, Palmer MN, Rissmann A, Siffel C, Sipek A, Szabova E, Tucker D, Mastroiacovo P. Prevalence of esophageal atresia among 18 international birth defects surveillance programs. *Birth Defects Res A Clin Mol Teratol.* 2012;94:893-899
- Naufal Z, Zhiwen L, Zhu L, Zhou GD, McDonald T, He LY, Mitchell L, Ren A, Zhu H, Finnell R, Donnelly KC. Biomarkers of exposure to combustion by-products in a human population in Shanxi, China. *J Expo Sci Environ Epidemiol.* 2010;20:310-319
- Nembhard WN, Xu P, Ethen MK, Fixler DE, Salemi JL, Canfield MA. Racial/ethnic disparities in timing of death during childhood among children with congenital heart defects. *Birth Defects Res A Clin Mol Teratol.* 2013;97:628-640
- Peterson C, Ailes E, Riehle-Colarusso T, Oster ME, Olney RS, Cassell CH, Fixler DE, Carmichael SL, Shaw GM, Gilboa SM. Late detection of critical congenital heart

disease among us infants: Estimation of the potential impact of proposed universal screening using pulse oximetry. *JAMA Pediatr.* 2014;168:361-370

Ramakrishnan A, Lupo PJ, Agopian AJ, Linder SH, Stock TH, Langlois PH, Craft E. Evaluating the effects of maternal exposure to benzene, toluene, ethyl benzene, and xylene on oral clefts among offspring in Texas: 1999-2008. *Birth Defects Res A Clin Mol Teratol.* 2013;97:532-537

Shin M, Kucik JE, Siffel C, Lu C, Shaw GM, Canfield MA, Correa A. Improved survival among children with spina bifida in the United States. *J Pediatr.* 2012;161:1132-1137

Simeone RM, Rasmussen SA, Mei JV, Dollard SC, Frias JL, Shaw GM, Canfield MA, Meyer RE, Jones JL, Lorey F, Honein MA. A pilot study using residual newborn dried blood spots to assess the potential role of cytomegalovirus and toxoplasma gondii in the etiology of congenital hydrocephalus. *Birth Defects Res A Clin Mol Teratol.* 2013

Simmons K, Hashmi S, Scheuerle A, Canfield M, Hecht J. Mortality in babies with achondroplasia: Revisited. *Birth Defects Research Part A: Clinical and Molecular Teratology.* 2014; 100:247-249

Suarez L, Felkner M, Brender JD, Canfield M, Zhu H, Hendricks KA. Neural tube defects on the Texas-Mexico border: What we've learned in the 20 years since the Brownsville cluster. *Birth Defects Res A Clin Mol Teratol.* 2012;94:882-892

Vuong AM, Shinde MU, Brender JD, Shipp EM, Huber JC, Jr., Zheng Q, McDonald TJ, Sharkey JR, Hoyt AT, Werler MM, Kelley KE, Langlois PH, Canfield MA. Nitrosatable drug exposure during pregnancy and preterm and small-for-gestational-age births. *Paediatr Perinat Epidemiol.* 2014; 29:60-71

Vendola C, Canfield M, Daiger SP, Gambello M, Hashmi SS, King T, Noblin SJ, Waller DK, Hecht JT. Survival of Texas infants born with trisomies 21, 18, and 13. *Am J Med Genet A.* 2010;152A:360-366

Weedn AE, Mosley BS, Cleves MA, Waller DK, Canfield MA, Correa A, Hobbs CA. Maternal reporting of prenatal ultrasounds among women in the National Birth Defects Prevention Study. *Birth Defects Res A Clin Mol Teratol.* 2014;100:4-12

Yazdy MM, Werler MM, Anderka M, Langlois PH, Vieira VM. Spatial analysis of gastroschisis in Massachusetts and Texas. *Ann Epidemiol.* 2014;25:7-14