

Facts about Cleft Palate (CP) 2000-2010, Arizona

Definition and Types

Cleft palate (CP) is a type of birth defect that occurs when the roof of the mouth does not fully close within the first six to nine weeks of conception. The palate is divided between the hard (front) and the soft (back) portions. The palate may be completely or partially open. Surgery within 12 months of birth can correct CP.¹

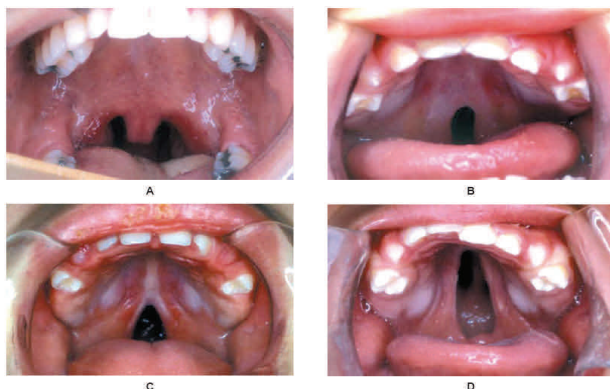


FIGURE 1- Different extents of isolated cleft palate: A) uvula, B) soft palate, C) incomplete hard palate and D) complete hard palate

Clinical presentation of CP²

Children with CP may have a variety of health problems; some children may need assistance with breathing, eating, and talking. Ear infections, loss of hearing, and dental problems are common in children with CP. Problems with adjusting to social situations may influence how the child learns and behaves.³

United States Estimates

There are approximately 2,600 babies in the U.S. born with CP each year.⁵ The societal and economic lifetime cost associated with caring for a child that has been diagnosed with CP is at least \$100,000.³

In 1992, the Centers for Disease Control and Prevention (CDC) recommended that women of childbearing age consume 400 micrograms of synthetic folic acid daily. Then in 1997-1998, the Food and Drug Administration required the addition of folate to enriched cereal-grain products.⁶ The U.S. prevalence rate for CP between 1999 and 2000 was 5.3 cases per 10,000 live births. Fortification was associated with a 12% drop in CP rates in the U.S.⁷

ABDMP Data Collection

The ABDMP staff reviews hospital reports, and birth and death certificates in order to identify potential cases. If potential cases are identified, the staff review the medical records to confirm that the child has a reportable birth defect. Once confirmed, information from the abstract is entered into the Arizona Birth Defects Monitoring Program.⁴

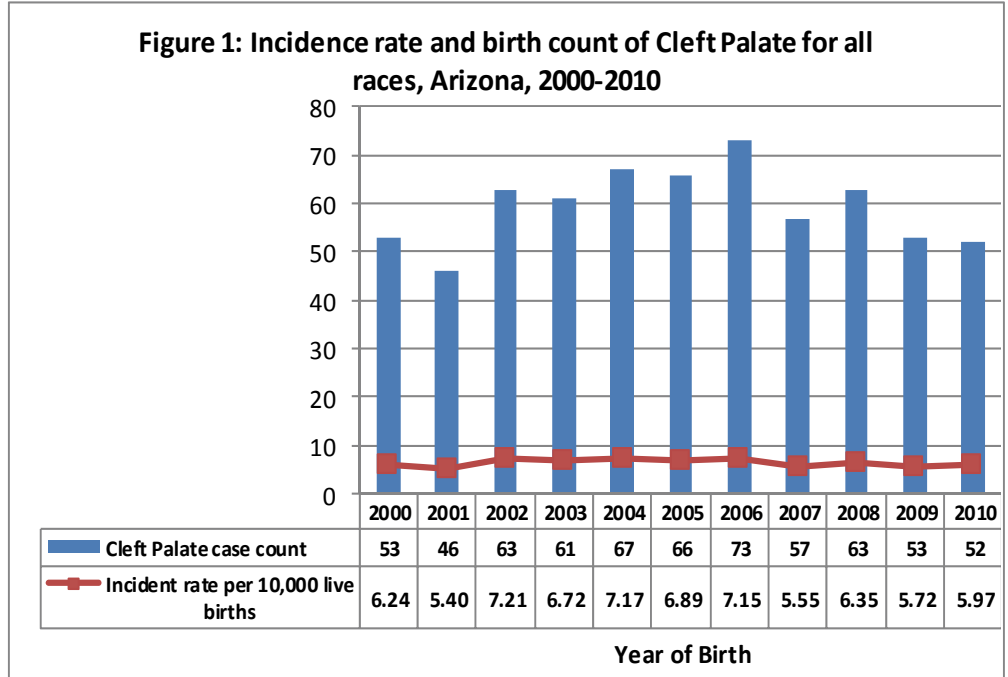
Cleft Palate in Arizona

Approximately 60 babies are born each year in Arizona with isolated CP (namely, not concurrent with cleft lip).⁸ Between January 2000 and December 2009, the average rate of CP in Arizona decreased (following the folic acid fortification of many cereal foods). The rate of CP during the pre-folic acid fortification period (1991-1999) was 6.42 per 10,000 live births. The rate from 2000-2010 was 6.40 per 10,000 live births. This lack of reduction in the occurrence of CP falls short of the 12% decrease seen nationally.

The rate for Whites (non-Hispanic) was 6.50 per 10,000 live births. The rate for Native Americans was 6.38 per 10,000 live births, an increase from 5.74 in 2004. The rate for Hispanics was 6.05 per 10,000 live births. Blacks had the lowest rate of all races/ethnicities with 3.53 per 10,000 live births. Asians had a rate of 6.62 per 10,000.

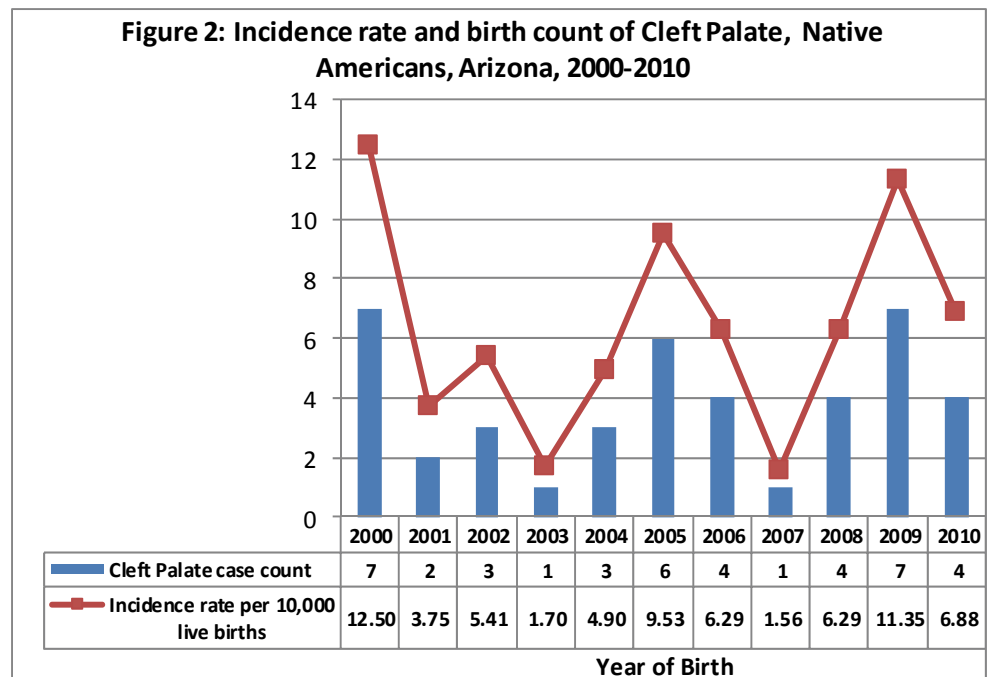
Cleft Palate in Arizona

Figure 1: The average rate of cleft palate for all races in Arizona between 2000 and 2010 is 6.40 cases per 10,000 live births.



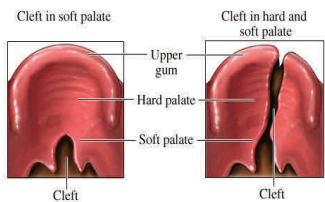
A 3D clinical presentation of CP.⁹

Figure 2: The average rate of cleft palate in the Native American population between 2000 and 2010 is 6.37 per 10,000 live births. The small number of cases makes the yearly rates appear unstable.



Facts about Cleft Palate (CP)

Figure 3: The average rate of cleft palate in the Hispanic population between 2000 and 2010 is 6.05 per 10,000 live births.



Types of CP¹⁰

Figure 3: Incidence rate and birth count of Cleft Palate, Hispanics, Arizona, 2000-2010

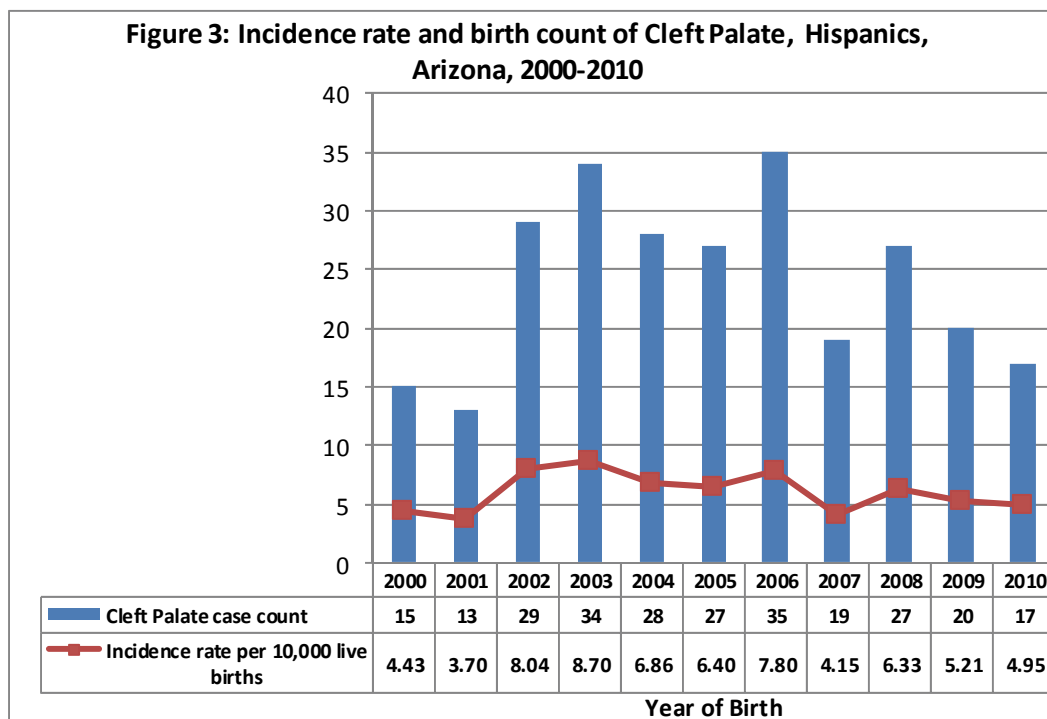
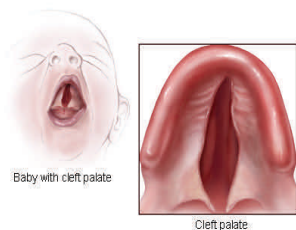
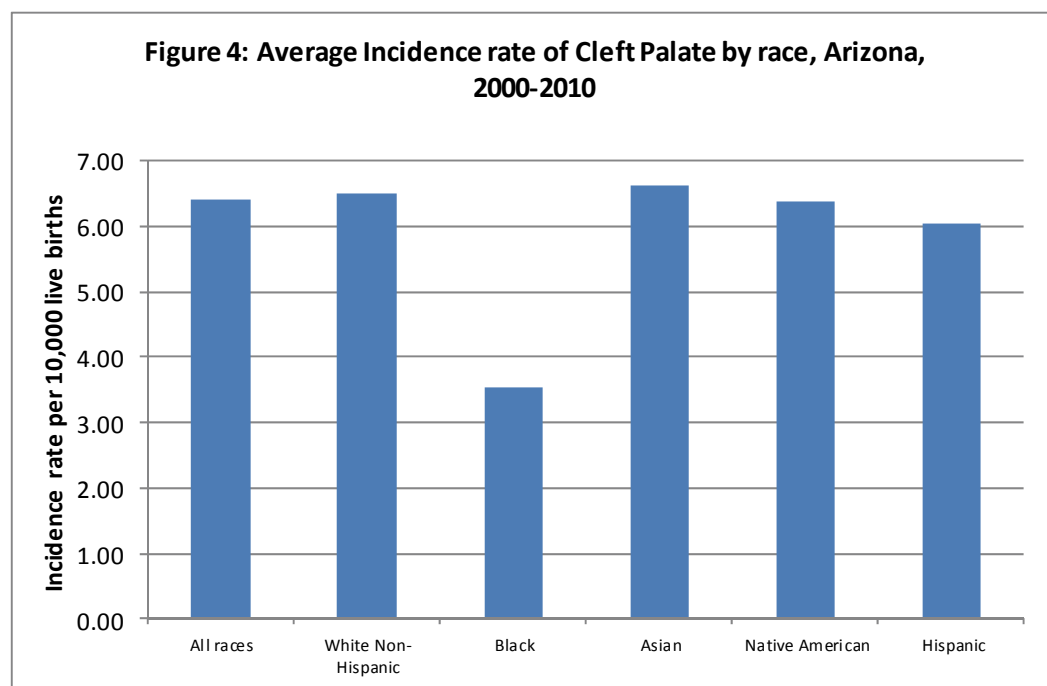


Figure 4: The average rate of cleft palate by race/ethnicity for births between 2000 and 2010.



Clinical Presentation of CP¹

Figure 4: Average Incidence rate of Cleft Palate by race, Arizona, 2000-2010



Prevention

Research has demonstrated that smoking, illicit drug use (cocaine), and alcohol consumption are associated with the development of CP. Therefore, women who plan on conceiving should refrain from all of these substances.^{11,12,13} Also, some studies suggest CP can be reduced by consuming adequate folic acid.¹⁴

Referral Services

The ABDMP is dedicated to identifying children with birth defects so that they can be referred to outreach services.

- The Arizona Early Intervention Program (AzeIP) is a state-mandated outreach program that provides medical services for children up to three years of age. Some benefits of this program include counseling, physical therapy, and developmental screening. Utilizing this service enables children and families to gain the support they need.¹⁶
- A second state mandated resource is Children's Rehabilitative Services (CRS). This program involves specialty physicians that assist in the treatment of chronic conditions associated with birth defects.¹⁷
- The March of Dimes (MOD) is a nonprofit agency that promotes the health of babies by preventing birth defects, prematurity, and infant deaths.¹⁸

ABDMP Goals

The Arizona Birth Defects Monitoring Program (ABDMP) is a statewide, population-based, active surveillance program that collects and analyzes information on children with reportable birth defects diagnosed within the first year of life.

The goals of the ABDMP include :

- To reduce the incidence of birth defects in Arizona from preventable causes.
- To produce accurate statistics regarding the occurrence of birth defects in Arizona.
- To identify, report, and investigate various birth defects trends, high-risk populations, and high risk locations.
- To provide a resource for information about the incidence and epidemiology of birth defects for researchers, health professionals, hospitals, local health agencies, and others with a valid scientific or public health interest.²⁰



Surgery may aid in correcting a CP.¹⁵



Dietary folate and folic acid can ensure the health of mother and child.¹⁹

We are on the web!

<http://www.azdhs.gov/phs/phstats/bdr/index.htm>

References

1. Centers for Disease Control and Prevention. (2007, November 13). Birth defects: Cleft lip and cleft palate. Retrieved March 16, 2009, from <http://www.cdc.gov/ncbddd/bd/cleft.htm>
2. Silva Filho, O. G., Rosa, L. A., & Lauris, Rde, C. (2007). Influence of isolated cleft palate and palatoplasty on the face. *J Appl Oral Sci.*, 15(3), 199-208.
3. Centers for Disease Control and Prevention. (2004, October 4). Division of oral health: Oral health and quality of life. Retrieved March 16, 2009, from http://www.cdc.gov/oralhealth/publications/factsheets/sgr2000_fs5.htm
4. Arizona Department of Health Services. (2006). 1998-2000 arizona birth defects monitoring program report. Retrieved March 16, 2009, from <http://www.azdhs.gov/phs/phstats/bdr/reports/2007-06-15--1998-2000ABDMPReport-ForPrint.pdf>
5. Centers for Disease Control and Prevention. (2006, January 6). Improved national prevalence estimates for 18 selected major birth defects-United states, 1999-2001. *MMWR* 54(51,52), 1301-1305.
6. Canfield, M. A., Honein, M. A., Yuskiv, N., Xing, J., Mai, C. T., Collins, J. S., et al. (2006). National estimates and race/ethnic-specific variation of selected birth defects in the United States, 1999-2001. *Birth Defects Research Part A: Clinical and Molecular Teratology*, 76(11), 747-747.
7. Canfield, M. A., Collins, J. S., Botto, L. D., Williams, L. J., Mai, C. T., Kirby, R. S., et al. (2005). Changes in the birth prevalence of selected birth defects after grain fortification with folic acid in the United States: Findings from a multi-state population-based study. *Birth Defects Res A Clin Mol Teratol.*, 73(10), 679-689.
8. Cleft Palate without cleft lip (BPA Codes 749.00-749.09)
9. Medison. (2009). Defect of fetal's development-Cleft palate. Ultrasound image. Retrieved March 16, 2009, from <http://www.medison.ru/uzi/eho341.htm>
10. Hubpages. (2009). About cleft palate. Retrieved March 16, 2009, from http://hubpages.com/hub/about_cleft_palate
11. van Gelder, M. M. H. J., Reefhuis, J., Caton, A. R., Werler, M. M., Druschel, C. M., Roeleveld, N., et al. (2009). Maternal periconceptional illicit drug use and the risk of congenital malformations. *Epidemiology*, 20(1), 60-66.
12. MacLehose, R. F., Olshan, A. F., Herring, A. H., Honein, M. A., Shaw, G. M., Romitti, P. A., et al. (2009). Bayesian methods for correcting misclassification: An example from birth defects epidemiology. *Epidemiology*, 20(1), 27-35.
13. DeRoo, L. A., Wilcox, A. J., Drevon, C. A., & Lie, R. T. (2008). First-trimester maternal alcohol consumption and the risk of infant oral clefts in Norway: A population-based case-control study. *American Journal of Epidemiology*, 168(6), 638-646.
14. March of Dimes Foundation. (2008b). Professionals & researchers: Folic acid. Retrieved March 16, 2009, from http://www.marchofdimes.com/professionals/14332_1151.asp
15. Nucleus Medical Art. (2009). Surgical repair of the cleft palate-Medical illustration, human anatomy drawing. Retrieved March 16, 2009, from <http://catalog.nucleusinc.com/enlargeexhibit.php?ID=6492>
16. Arizona Department of Economic Security. (2007). Arizona early intervention program. Retrieved March 16, 2008, from <http://www.azdes.gov/azeip/>
17. Arizona Department of Health Services. (2008). Office for children with special health care needs: Children's rehabilitative services. Retrieved March 16, 2009, from http://www.azdhs.gov/phs/ocshcn/crs/crs_az.htm
18. March of Dimes Foundation. (2008a). About us. Retrieved March 16, 2009, from <http://www.marchofdimes.com/aboutus/aboutus.asp>
19. Natural Therapy Pages. (2009.) Folate/folic acid. Retrieved March 16, 2009, from http://www.naturaltherapypages.com.au/article/Folate_Folic_Acid
20. Arizona Department of Health Services. (2004). Arizona birth defects monitoring program. Retrieved March 16, 2009, from <http://www.azdhs.gov/phs/phstats/bdr/aboutbdr.htm>