Native Health in the Bemidji Area

Birth Defects 2021

What are birth defects?

Birth defects are changes in the body structure that are present at birth. Birth defects are common, affecting one in every 33 babies born in the United States yearly. They can affect almost any part of the body and range in severity depending on what is affected and by how much.[1] Some birth defects can be identified before birth, while others may require special testing such as echocardiograms to look at the heart or hearing tests after birth. Most are diagnosed before a baby's first birthday.

Not all birth defects have a specific cause. The majority are thought to result from a complex combination of environmental and/or genetic causes.[2] Some maternal risk factors that can increase the risk of birth defects in a baby include: smoking (including secondhand smoke exposure), vitamin deficiency, drinking alcohol, obesity, genetics, and maternal age. Environmental causes can include air or water pollution, pesticides, and other chemical exposures.[2] Additionally, it is possible to have a baby with a birth defect even if the mother doesn't have any risk factors.[1] It isn't possible to prevent all birth defects. Still, there are some ways a woman can reduce the risk, such as taking 400 mcg of folic acid daily, getting prenatal care as early in the pregnancy as possible, and avoiding alcohol and smoking.[1]

Often, babies with birth defects will need special care specific to their birth defect. The amount of care required will depend on the severity of their birth defect. Some, such as minor cleft lips, can be surgically repaired, while others, such as Down syndrome, will require the child to receive life-long care. Early intervention to diagnose and treat birth defects is vital to improving the baby's outcome.[1]

Birth defects in the Bemidji Area

In the three-state area, birth defects are more common among American Indian/Alaska Natives than whites, although this was not statistically significant (Table 1). However, birth defects affecting the heart (Table 2) are statistically more common among American Indian/Alaska Native infants.

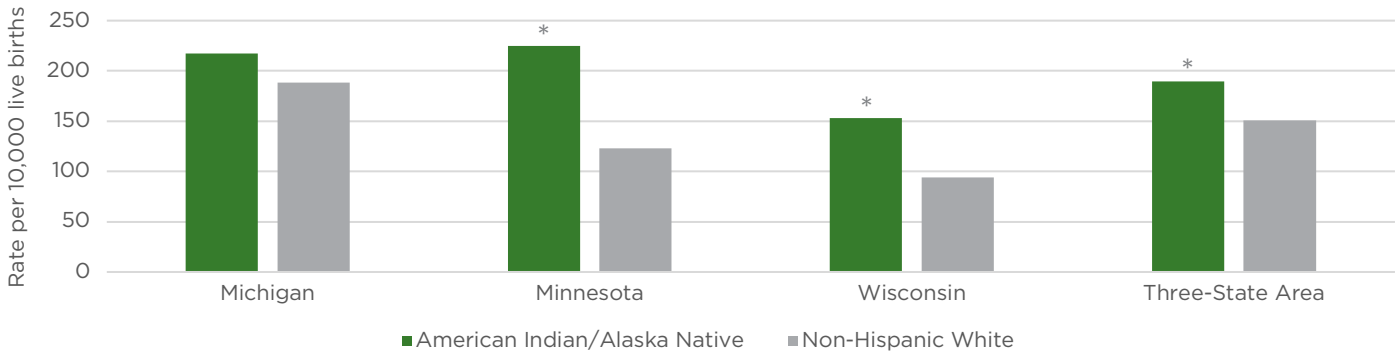
Table 1. All Causes Birth Defects and Rates (per 10,000 Live Births) Among American Indian/Alaska Natives and Non-Hispanic Whites in Michigan, Minnesota, Wisconsin, and the Three-State Area, 2012-2016

		Number	Rate per 10,000 live births (95% Confidence Interval)
Michigan	American Indian/Alaska Native	93	306.1 (243.9-368.3)
	Non-Hispanic White	12,536	318.5 (313.0-324.1)
Minnesota	American Indian/Alaska Native	44	341.1 (240.3-441.9)
	Non-Hispanic White	1,540	238.8 (226.9-250.7)
Wisconsin*	American Indian/Alaska Native	90	255.3 (202.6-308.1)
	Non-Hispanic White	4,412	194.5 (188.8-200.2)
Three-State Area	American Indian/Alaska Native	227	289.1 (251.5-326.7)
	Non-Hispanic White	18,488	270.0 (266.1-273.8)

*Rate is significantly higher in American Indian/Alaska Natives than non-Hispanic whites

The Great Lakes Inter-Tribal Epidemiology Center (GLITEC)'s *Native Health in the Bemidji Area* factsheet series presents data on various health-related topics for communities in the Bemidji Indian Health Service Area (Michigan, Minnesota, Wisconsin, and Chicago). GLITEC welcomes discussion with Bemidji Area communities' health staff in the use of this factsheet to support assessment, planning, and evaluation functions. Please contact us to discuss how we may support your community.

Figure 1. Congenital Heart Defect[A] Rates (per 10,000 Live Births) Among American Indian/Alaska Natives and Non-Hispanic Whites in Michigan, Minnesota, Wisconsin, and the Three-State Area, 2012-2016



*Rate is significantly higher in American Indian/Alaska Natives than non-Hispanic whites
[A]Includes: Atrial septal defect, Atrioventricular septal defect, Coarctation of the aorta, Hypoplastic left heart syndrome, Pulmonary valve atresia, Pulmonary valve atresia and stenosis, Tetralogy of Fallot, Total anomalous pulmonary venous, Ventricular septal defect

Table 2. Congenital Heart Defects[A] and Rates (per 10,000 Live Births) Among American Indian/Alaska Natives and Non-Hispanic Whites in Michigan, Minnesota, Wisconsin, and the Three-State Area, 2012-2016

		Number	Rate per 10,000 live births (95% Confidence Interval)
Michigan	American Indian/Alaska Native	66	217.2 (164.8-269.7)
	Non-Hispanic White	7,406	188.2 (183.9-192.5)
Minnesota*	American Indian/Alaska Native	29	224.8 (143.0-306.6)
	Non-Hispanic White	794	123.1 (114.6-131.7)
Wisconsin*	American Indian/Alaska Native	54	153.2 (112.3-194.1)
	Non-Hispanic White	2,134	94.1 (90.1-98.1)
Three-State Area*	American Indian/Alaska Native	149	189.7 (159.3-220.2)
	Non-Hispanic White	10,334	150.9 (148.0-153.8)

* Rate is significantly higher in American Indian/Alaska Natives than non-Hispanic whites
[A] Includes: Atrial septal defect, Atrioventricular septal defect, Coarctation of the aorta, Hypoplastic left heart syndrome, Pulmonary valve atresia, Pulmonary valve atresia and stenosis, Tetralogy of Fallot, Total anomalous pulmonary venous, Ventricular septal defect

Table 3. Selected Birth Defects and Rates (per 10,000 Live Births) Among American Indian/Alaska Natives and Non-Hispanic Whites in the Three-State Area, 2012-2016

		Number	Rate per 10,000 live births (95% Confidence Interval)
Mouth/Face Defects[A]	American Indian/Alaska Native	14	17.8 (8.5-27.2)
	Non-Hispanic White	1,065	15.6 (14.6-16.5)
Muscle/Bone Defects[B]	American Indian/Alaska Native	11	14.0 (5.7-22.3)
	Non-Hispanic White	820	12.0 (11.2-12.8)
Brain/Spine Defects[C]	American Indian/Alaska Native	2	2.5 (0.0-6.1)
	Non-Hispanic White	369	5.4 (4.8-5.9)
Stomach/Intestine Defects[D]	American Indian/Alaska Native	2	2.5 (0.0-6.1)
	Non-Hispanic White	439	6.4 (5.8-7.0)
Trisomy 21 (Down Syndrome)	American Indian/Alaska Native	7	8.9 (2.3-15.5)
	Non-Hispanic White	841	12.3 (11.4-13.1)

[A] Includes: Cleft lip alone, cleft lip and cleft palate, and cleft palate alone [B]Includes: Diaphragmatic hernia, gastroschisis, limb defects, and omphalocele [C]Includes: Anencephalous, encephalocele, spina bifida without anencephalous [D]Includes: Esophageal atresia/tracheoesophageal fistula, rectal and large intestinal atresia/stenosis

Data Source: *Major Birth Defects Data from Population-Based Birth Defects Surveillance Programs in the United States, 2012-2016*. National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention Accessed April 15, 2021. https://www.nbdpn.org/docs/Supplement.pdf

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2. Weinhold B. Environmental Factors in Birth Defects: What We Need to Know. Environ Health Perspect. 2009;117(10):A440-A447.