Prevalence of congenital anomalies: time trends 2010-2017
Update: February 2019

One of the goals of the registration is monitoring the prevalence of congenital anomalies over time. In the graphs presented below the prevalence rates per year are shown for a period of eight years. We present the graphs from 2010 onwards because since that year we included the ‘non responders’ in the prevalence rates (see for definition: Introduction and Methods). Total births are shown, except for those anomalies where a major impact of prenatal diagnosis and selective termination of pregnancy can be expected. In that case, total births and terminated pregnancies are presented. The Y-axis represents the observed prevalence of the selected congenital anomaly per 10,000 births, with adjustment of scale according to the magnitude of the counts. The three year moving average, calculated for each year as the average prevalence rate of that year, the previous and the following year, is also included.

First, the groups of all congenital anomalies together were analyzed. Subsequently, we analyzed chromosomal and monogenic anomalies. Finally, we studied specific malformations excluding chromosomal and monogenic disorders and deletions. This resulted in a group of so-called ‘non genetic’ anomalies, where environmental factors could play a role.

In addition to graphical presentation of frequencies, chi-square testing for independence and trend was performed. Results of chi-square test are presented under each figure.

All congenital anomalies
There is gradual (significant) decrease in overall prevalence of All congenital anomalies. The decline in numbers in the most recent years is largely caused by incomplete registration of all cases for these years.

Period 2010-2017: X² for independence = 98.5, p = <.001; X² for trend = 86.6, p = <.001
Chromosomal anomalies
The prevalence of the group of Chromosomal anomalies shows a fluctuating pattern. This is true for the total prevalence as well as for the proportion of terminated pregnancies.

Period 2010-2017: $X^2$ for independence = 14.1, $p = 0.050$; $X^2$ for trend = 3.2, $p = 0.074$

Trisomy 21
Trisomy 21 (Down syndrome) is the most prevalent chromosomal anomaly. In 2015 the total prevalence of trisomy 21 was 22.0 per 10,000 births. There is no statistically significant difference between years of birth nor time. The proportion of terminated pregnancies in this period shows a heterogeneous pattern.

Period 2010-2017: $X^2$ for independence = 7.6, $p = 0.371$; $X^2$ for trend = 0.6, $p = 0.439$
Trisomy 13
Trisomy 13 (Patau syndrome) is a rare chromosomal anomaly. The total number of cases is very low (31 in eight years), which causes some fluctuations in prevalence, but non-significant.

Period 2010-2017: $X^2$ for independence = 2.8, $p = 0.901$; $X^2$ for trend= 0.1, $p = 0.738$

Trisomy 18
Trisomy 18 (Edwards syndrome) does not show a significant difference per year or a significant trend over the last eight years, although the most recent years show an increasing trend.

Period 2010-2017: $X^2$ for independence = 12.2, $p = 0.094$; $X^2$ for trend = 1.4, $p = 0.230$
**Neural tube defects**
The prevalence of neural tube defects seems to fluctuate over the last eight years, but not in a statistically significant way.

Period 2010-2017: $X^2$ for independence = 10.9, $p = 0.141$; $X^2$ for trend = 0.5 $p = 0.486$

**Spina bifida**
Spina bifida, the most common neural tube defect, does not show a significant difference per year.

Period 2010-2017: $X^2$ for independence = 9.3, $p = 0.233$; $X^2$ for trend = 0.1 $p = 0.795$
Heart anomalies
Heart anomalies are among the most common congenital anomalies. The prevalence of all congenital heart anomalies combined, not associated with a genetic or syndromal condition, fluctuates between 75 per 10,000 births in 2012 and 44.9 in 2017. There is also a significant decrease over time. Pregnancy terminations do not seem to increase substantially.

Period 2010-2017: $X^2$ for independence = 21.0, $p = .004$; $X^2$ for trend = 14.4, $p = <.001$

ASD
Atrium septum defects do not show a significant difference per year or a significant trend over the last eight years.

Period 2010-2017: $X^2$ for independence = 8.0, $p = 0.334$; $X^2$ for trend = 0.2, $p = 0.688$
VSD
Ventricular septum defects (VSD) are one of the most common heart defects. They show a significant decrease over time since 2013.

Clefts
Clefts are relatively common group of anomalies with a prevalence varying between 11 and 18.1 per 10,000 births.
**Hypospadia**
The prevalence of hypospadia is decreasing over time since 2014.

![Hypospadia Graph](image)

Period 2010-2017: $X^2$ for independence = 13.8, $p = 0.055$; $X^2$ for trend = 4.8, $p = 0.028$

**Renal dysplasia**
The prevalence of renal dysplasia also shows fluctuation over the years, between 8.2 and 3.0 per 10,000 births, but not in a statistically significant way.

![Renal dysplasia Graph](image)

Period 2010-2017: $X^2$ for independence = 7.7, $p = 0.360$; $X^2$ for trend = 0.4, $p = 0.508$
Reduction defects Limb
The prevalence looks heterogeneous over the birth years but not statistically significant. The prevalence is fluctuating from 1.7 in 2011 to 7.8 per 10,000 births in 2012.

Period 2010-2017: $X^2$ for independence = 12.0, $p = 0.099$; $X^2$ for trend = 2.0, $p = 0.157$