

## Preventing Disabilities in Children

### Directions

Read below about how some disabilities in children can be prevented. Then read the chart on Progress in Reducing Causes of Disabilities in Children and answer the questions that follow.

Some disabilities that affect children can be prevented. For example:

**Polio:** Polio is a disease that weakens the muscles and can cause paralysis. It is caused by a virus and can be prevented by giving a vaccine (either by injection or by mouth). UNICEF is active in a global campaign to wipe out polio, in partnership with Rotary International's Polio Plus program, which has raised more than \$800 million since 1985.

**Blindness:** Some forms of blindness are caused by a lack of vitamin A. Giving children vitamin A supplements can help prevent blindness. UNICEF provides vitamin A capsules to children whose diets may lack this nutrient.

**Mental retardation:** Mental retardation can be caused by a number of factors, but some forms of mental retardation are caused by a lack of the nutrient iodine, or iodine deficiency disorder (IDD). Adding iodine to salt can help prevent IDD. UNICEF works to eliminate IDD in partnership with Kiwanis International, which has raised and leveraged nearly \$100 million since 1994.

You can use statistics to calculate the rate at which polio and iodine deficiency disorder have been eliminated in countries around the world since 1997 (data on vitamin A supplementation was not available in UNICEF's 1999 *State of the World's Children* report). Use the sample statistics on polio in Rwanda to practice the calculation. Then calculate rates of change for countries in the data table below.

Country	Column A: % of 1-year-olds immunized against polio in 1997	Column B: % of 1-year-olds immunized against polio in 2007	Column C: % change from 1997 to 2007	Column D: Rate of change from 1997 to 2007
Rwanda	77	98	21	27.27%

- First, calculate the change in the percentage of immunized children in Rwanda from 1997 to 2007. You can do this by subtracting the number in Column A from the number in Column B. Write the result in Column C.
  - The change in the percentage of children immunized from 1997 to 2007 in Rwanda was 21 ( $98 - 77 = 21$ ).

- Next, calculate the rate of change in immunization from 1997 to 2007 for Rwanda. You can do this by dividing the number in Column C by the number in Column A. Multiply this result by 100. Write this number in Column D.
- The rate of change during this 10 year period was 27.27% (21 divided by 77 = .2727. Multiplying this result by 100 gives a rate of change of 27.27% over 10 years.)

Now try calculating the rates of change in polio immunization in these countries:

Reducing Childhood Disabilities: Polio Immunization				
Country	Column A: % of 1-year-olds immunized against polio in 1997	Column B: % of 1-year-olds immunized against polio in 2007	Column C: % change from 1997 to 2007	Column D: Rate of change from 1997 to 2007
Afghanistan	45	83		
Colombia	85	93		
Iraq	92	66		
Nigeria	25	61		
United States	84	92		
Uzbekistan	97	98		

Next, calculate the rates of change in consumption of iodized salt:

Reducing Childhood Disabilities: Salt Iodization				
Country	Column A: % of 1-year-olds immunized against polio in 1997	Column B: % of 1-year-olds immunized against polio in 2007	Column C: % change from 1997 to 2007	Column D: Rate of change from 1997 to 2007
Afghanistan	No data	28		
Colombia	92	92		
Iraq	10	28		
Nigeria	98	97		
United States	No data	No data		
Uzbekistan	0	53		

Based on your calculations, answer these questions:

1. Was there anything that surprised you about these statistics?

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2. What questions do these statistics raise?

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3. What might be reasons that some countries have experienced a negative rate of change, rather than a positive one, between 1997 and 2007?

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4. For the countries that had a positive rate of change for polio immunization and salt iodization between 1997 and 2007: If this rate of change continues, calculate how long it will take until 100 percent of the country's 1-year-olds are immunized.

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5. For the countries that had a positive rate of change for salt iodization: If this rate of change continues, calculate how long it will take until 100 percent of the country's households consume iodized salt.

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6. How would you describe the progress being made in these approaches to preventing childhood disabilities?

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Sources of statistics: 1999 *State of the World's Children* report (report reflects 1997 data):

Table 2: Nutrition, <http://www.unicef.org/sowc99/sowc99d.pdf>

Table 3: Health, <http://www.unicef.org/sowc99/sowc99d.pdf>

2009 *State of the World's Children* report (report reflects 2007 data):

Table 2, Nutrition: [http://www.unicef.org/sowc09/docs/SOWC09\\_Table\\_2.pdf](http://www.unicef.org/sowc09/docs/SOWC09_Table_2.pdf)

Table 3, Health, [http://www.unicef.org/sowc09/docs/SOWC09\\_Table\\_3.pdf](http://www.unicef.org/sowc09/docs/SOWC09_Table_3.pdf)