

Regular vaccinations in the Czech Republic

In the Czech Republic, regular vaccination currently covers the following diseases (decree 299/2010 Coll.):

- diphtheria (diphtheria) – since 1946,
- tetanus – since 1952,
- whooping cough (pertussis) – since 1958,
- communicable polio (poliomyelitis) – since 1958,
- measles (morbilli) – since 1969,
- rubella – since 1982,
- mumps (parotitis epidemica) – since 1985,
- viral hepatitis B – since 2001,
- diseases caused by *Haemophilus influenzae group b* - since 2001.

Vaccination against tuberculosis (TB) has been carried out since 2010 only for children at risk of contact with TB (details below).

Vaccination calendar valid as of 1/1/2018

Age	Mandatory vaccinations (from 1.11.2010)	Mandatory vaccinations (from 1 January 2018) Decree 355/2017 Coll.	Optional/special vaccinations
4 days - 6 weeks		tuberculosis (only in at-risk children with indication)	tuberculosis (only in indicated cases)
6 weeks			rotavirus (1st dose)
2 months	hexavaccine (1st dose from week 9)	hexavaccine (1st dose from the 9th week, for children vaccinated against TB - from the 13th week, always until the reaction has healed)	pneumococcus (1st dose) rotavirus (2nd dose – 1 month apart) meningococcus B (1st dose) meningococcus A, C, W-135 and Y (depending on the type of vaccine)
3 months	hexavaccine (2nd dose – 1 month apart)		pneumococcus (2nd dose – 1 month apart) rotavirus (3rd dose - 1 month apart) meningococcus B (2nd dose - 1-2 months apart)
4 month	hexavaccine (3rd dose - 1 month apart)	hexavaccine (2nd dose – 2 months apart)	pneumococcus (3rd dose – 1 month apart) meningococcus B (3rd dose - 1-2 months apart)
10 months	hexavaccine (4th dose – 6 months apart)		
11-15 months		hexavaccine (3rd dose between 11 and 13 months)	pneumococcus (vaccination) meningococcus B (booster at 12-23 months)
15 months	MMR (1st dose)	MMR (1st dose at 13-18 months)	chicken pox (1st dose)
21-25 months	MMR (2nd dose - 6-10 months apart)		chicken pox (2nd dose)
5 years	1st revaccination: diphtheria, tetanus, pertussis (1st revaccination)	diphtheria, tetanus, pertussis (1st vaccination) MMR (2nd dose)	
10 years	diphtheria, tetanus, pertussis, polio (2nd vaccination)	diphtheria, tetanus, pertussis, polio (2nd vaccination)	
14 years		tetanus (in unvaccinated 10-11 year olds)	girls and boys: papillomavirus (3 doses)
20-25 years	tetanus (7th dose)		

Hexavaccine

From January 2018, there is a change in the hexavaccine scheme, from 3+1 to 2+1. The first dose is administered from the 9th week of age, the second 2 months after the first, that is approximately at the 4th month, and the third, revaccination, between the 11th and 13th months of age. The 3+1 scheme applies to the vaccination of premature infants.

Diphtheria (D), tetanus (T), whooping cough (P), hepatitis B (HBV), poliomyelitis (IPV), Haemophilus influenzae type B (Hib) are simultaneously vaccinated with combined vaccines .

Hexavaccine (overall Hexacima®, Infarix hexa® only for prematurely born, unvaccinated) contains:

- diphtheria and tetanus toxoids;
- *Bordetella pertussis* (acellular) antigens : anatoxin, hemagglutinin and pertactin;
- recombinant HBsAg (rDNA Antigenum tegiminis hepatitis B);
- (inactivated) *poliomyelitis virus* (types 1-3);
- adsorbed conjugated polysaccharide vaccine against *Haemophilus influenzae type b* .

Other vaccines contain combinations of fewer components, such as diphtheria, tetanus, pertussis, hemophilus (Infanrix Hib®), only diphtheria, tetanus, pertussis (Infanrix®), a separate HBV vaccine (eg, Engerix-B®), and a separate inactivated polio vaccine (Imovax polio®) (previously used attenuated). **All** vaccines are administered **intramuscularly** (anterolateral upper part of the thigh, deltoid muscle from 15 months), polio can also be administered subcutaneously.

Basic vaccination schedule according to Decree No. 299/2010 Coll. with hexavaccin, it consists of **the administration of three doses** .

- **The first dose** is vaccinated from **the 9th week onwards** , ideally in the 3rd month. In children vaccinated against tuberculosis, the basic vaccination with the hexavalent vaccine is carried out from the beginning of the thirteenth week after the birth of the child, but always after the recovery of the post-vaccination reaction after the vaccination against tuberculosis.
- **The second and third doses** are given **during the first year of the child's life** , while **the interval between doses is 2 months and 6 months**.

Since January 1, 2018, the hexavaccine has been vaccinated again in the 2+1 scheme, because the 3+1 scheme did not increase seroprevalence in children aged 1–5 years, reduced the persistence of seroprevalence in the elderly, and also apparently contributed to the increase in the incidence of pertussis in the 1990s and to turn of the millennium. The original 3+1 scheme remained recommended only for premature babies.

Revaccination against diphtheria, tetanus, whooping cough and communicable polio [[edit](#) | [edit source](#)]

Re-vaccination against **diphtheria, tetanus and whooping cough** is carried out with the vaccine against these infections (Infanrix®) between the 5th and 6th year of age, then together with the application of the fifth dose of the inactivated polio vaccine **from** the 10th to the 11th. year.

*At the age of 12, children who have not been vaccinated before are vaccinated against **HBV** .*

Revaccination against tetanus is then carried out from the age of 25 until the age of 26, and then every 10-15 years.

Measles, rubella and mumps (MMR) vaccination

Measles, rubella, and mumps are vaccinated with **a three-combination vaccine** containing **attenuated viruses (Priorix®)** , or a four-combination (Priorix-tetra®), which also contains an attenuated **varicella** virus . The vaccine is administered **subcutaneously** .

The basic vaccination is carried out with *a live vaccine* no earlier than **the 13th month** (up to the 18th month) after the birth of the child. **Revaccination** is carried out between the 5th and 6th year. The reason for vaccination with this vaccine only after the first year is, among other things, the fact that it is adversely affected by the presence of the mother's IgG antibodies in the child's serum. They got there transplacentally and persist for the first 6 months. However, it seems that in some cases they can last up to a year. In such a case, the vaccination would be ineffective.

Vaccination schedules are adjusted according to the results of **pre-vaccination** monitoring and post-vaccination **immunity verification** in a representative sample of the population.

Tuberculosis vaccination

Comprehensive vaccination of newborns was carried out in the Czech Republic in the years 1953-2010. Decree No. 299/2010 from 1.11.2010 abolished regular vaccination against TB . This vaccination is now exclusively intended for children and adults exposed to an increased risk of tuberculosis. For newborns, it is indicated by a doctor in the neonatal department or a general practitioner for children and adolescents based on anamnestic information from the child's legal representative, the vaccination takes place at calming workplaces. Basic vaccination consists of 1 dose of vaccine. Vaccination at an age older than 12 months usually does not lead to the creation of protection against tuberculosis, therefore vaccination is no longer given at this age.

Indications for vaccination against tuberculosis (Decree No. 537/2006 Coll.):

- One or both of the child's parents or a sibling of the child or a member of the household in which the child lives had/has active tuberculosis.
- The child, one or both of the child's parents, or a sibling of the child or a member of the household in which the child lives, was born or resides continuously for more than 3 months in a state with a higher incidence of tuberculosis than 40 cases per 100,000 inhabitants.
- The child was in contact with a patient with tuberculosis.
- An investigation was conducted regarding TB among persons with whom the child was in contact.

Countries with a higher incidence of TB (according to the Ministry of Health of the Czech Republic, February 2017): In Europe: Belarus, Lithuania, Latvia, Moldova, Romania, Russia and Ukraine. In Asia: all Asian countries except Bahrain, Iran, Israel, Japan, Jordan, Qatar, Kuwait, Lebanon, Oman, Saudi Arabia, United Arab Emirates, Syria and Turkey. In Africa: all African countries except Egypt, Comoros, Libya, Mauritius, Seychelles and Tunisia. In the

Americas: Bolivia, Brazil, Dominican Republic, Ecuador, Guyana, Haiti, Honduras, Nicaragua, Panama, Paraguay, Peru and El Salvador. In Australia and Oceania: Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Palau, Papua New Guinea, Solomon Islands, Tuvalu and Vanuatu.

Vaccination against pneumococcal infections

- conjugated polysaccharide vaccine (Prevenar13®, Synflorix® – 10 serotypes) – voluntary vaccination from 2 months, scheme 3+1 or 2+1;
- polysaccharide vaccine (Pneumo23®) – from 2 years of age, intended especially for the elderly.

Vaccination against rotavirus infections

- live vaccine (Rotarix®, Rotateq®) – voluntary vaccination of infants from 6 weeks to 8 months, orally 2 or 3 doses with an interval of 1-2 months, it is preferable to vaccinate outside the winter months (season of rotavirus infections).

Links

Related articles

- Active immunization • Passive immunization • Simultaneous combined immunization
- Specific immunity • Non-specific immunity
- Breakdown of vaccination in the Czech Republic

External links

- Vakciny.net (<http://www.vakciny.net/>)
- Česká vakcinologická společnost ČLS JEP (<http://www.vakcinace.eu/>)
- Očkovací kalendář 2018 (<http://provolbu.cz/ockovaci-kalendar-2018-interval-y-ockovani/>)

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3. ↑ http://www.vakciny.net/355_2017
4. ↑ *Incomplete website citation*. . *Vaccination in the Czech Republic* [online]. Czech Vaccinology Society ČLS JEP, ©2013. [feeling. 2014-02-07]. < http://www.vakcinace.eu/ockovani-v-cr_odb >.
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6. ↑ PETRÁŠ, Marek. *Why did the vaccination in the Czech Republic change from 2+1 to 3+1?* [online]. Last revision 2016-01, [cit. 2017-11-02]. < http://www.vakciny.net/AKTUALITY/akt_2016_01.htm >.
7. ↑ PROVOLBU.CZ,. *Vaccination calendar 2018, vaccination intervals* [online]. [feeling. 2018-05-09]. < <http://provolbu.cz/ockovaci-kalendar-2018-interval-y-ockovani/> >.
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9. ↑ *Incomplete website citation*. PETRÁŠ, Marek. *Vaccination according to age* [online]. Last revision 2016-09-24, [cit. 2017-11-02].
10. ↑ https://www.mzcr.cz/dokumenty/seznam-statut-tbc-k-20-2-2017_13439_2465_5.html

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