

EXECUTIVE SUMMARY

ROUTINE IMMUNISATION SCHEDULE FOR ALL AGES - CHILDREN, ADOLESCENTS AND ADULTS - Andalusia (Spain) - 2020

ROUTINE IMMUNISATION SCHEDULE FOR ALL AGES - CHILDREN, ADOLESCENTS AND ADULTS - ANDALUSIA, SPAIN 2020															
Vaccines	Prenatal	Birth	2 months	4 months	11 months	12 months	15 months	3 years	6 years	12 years	14 years	18 years	50 years	65 years	>65 years
Tetanus, diphtheria, pertussis	Tdap ¹		DTaP	DTaP	DTaP				Tdap (DTaP ²)		Td	Td ³	Td ³	Td ³	Td ³
Poliomyelitis			IPV	IPV	IPV				(IPV ⁴)						
Hepatitis B		HepB ⁵	HepB	HepB	HepB	HepB ⁶									
Haemophilus influenzae tipo b			Hib	Hib	Hib										
Pneumococcal Conjugate			PCV	PCV	PCV									PCV ⁷	
Meningococcal C - ACWY				MenC		Men ACWY				Men ACWY ⁸	Men ACWY ⁹				
MMR						MMR		MMR	MMR ¹⁰						
Varicella							VZV	VZV	VZV ¹¹						
Papillomavirus									HPV ¹²	HPV ¹³					
Influenza	Infl ¹⁴														Annual Influenza ¹⁵

Intense colour Routine doses Light colour Susceptible people or incomplete vaccination

Table 1. Recommended child, adolescent and adult immunisation schedule, Andalusia (Spain) 2020

Acronym:

DTaP: Diphteria and Tetanus toxoids, and acellular Pertussis (whooping cough) vaccine for children.

Tdap: Tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (whooping cough) vaccine.

Td: Tetanus and diphtheria toxoids vaccine.

HepB: Hepatitis B vaccine.

IPV: Inactivated Poliomyelitis Vaccine.

Hib: *Haemophilus influenzae* type b vaccine.

PCV: Pneumococcal Conjugate Vaccine.

MenC: Meningococcal serogroup C conjugate vaccine.

MenACWY: Meningococcal conjugate vaccine against serogroups A, C, W and Y.

MMR: Measles, Mumps and Rubella vaccine.

VZV: Varicella Zoster Virus (chickenpox) vaccine.

HPV: Human Papillomavirus Vaccine.

Notes:

1. **Pertussis vaccination during pregnancy:** one Tdap dose during every pregnancy from 27 weeks gestation, but preferably at week 27 or 28.
2. **Tdap/DTaP routine vaccination at 6 years of age:** from January 2023, 6-year-old children (born from January 1, 2017) will receive DTaP-IPV vaccination (see note 4). Until then, children at 6 years will be given Tdap vaccination.
3. **Td vaccination in adults:** check prior vaccination status before starting or completing a primary vaccination scheme with Td in adults. Health services, including occupational health and safety services, should be contacted to verify the vaccination status and, when required, Td vaccination will be administered until completing 5 doses. A Td dose will be administered to adults aged around 65 who received 5 doses during childhood and adolescence.
4. **IPV vaccination at 6 years of age:** from January 2023, DTaP-IPV immunisation will be given as a combination vaccine to assure all children under 6 receive at least 4 doses of immunisation against poliomyelitis to ensure adequate long-term protection.
5. **Monocomponent vaccine against HepB in newborns:** babies born to mothers infected with hepatitis B (HBsAg+) will be given a first dose of the hepatitis B vaccine within 24 hours of their birth (preferably within 12 hours of birth), together with administration of anti-HBs immunoglobulin. Babies of mothers with unknown HBsAg, if tests results are not available within the first 24 hours of life, will also be given a dose of hepatitis B vaccine. All babies must follow the standard hexavalent vaccine scheme: doses given at 2, 4 and 11 months of age. Thus, babies born to mothers with HBsAg+, will be given 4-doses: at 0, 2, 4 and 11 months of age.
6. **Monocomponent vaccine against HepB in children and adolescents:** children and teenagers up to the age of 18, who have never been vaccinated before, will follow a 3-dose series at 0, 1 and 6 months.
7. **13-Valent pneumococcal conjugate vaccine (PCV 13) for adults aged 65:** routine vaccination is recommended for all adults over 65 years of age born after 1 January 1954.
8. **Vaccination against meningococcal ACWY at 12 years of age:** A dose will be given to all 12-year-old teens who did not receive a dose of MenACWY since the age of 10.
9. **Meningococcal ACWY immunisation campaign to 13-18 year-olds:** From 1 January 2020 to 31 December 2022, all teenagers will be vaccinated when they turn 15 or 18.
10. **Catch-up MMR vaccination:** Health services, including occupational health and safety services, should be contacted to verify vaccination status. Vaccination is recommended in people with no history of previous vaccination nor history of measles and born after 1970. When required, two doses of MMR vaccine will be given with a minimum interval of 4 weeks between doses. If a first dose has been previously administered, only one MMR dose will be given. MMR vaccine is not suitable for pregnant women nor for people who are immunosuppressed.
11. **Catch-up vaccination against varicella (VZV) (chickenpox):** Teenagers from the age of 12, who have never had chickenpox and have never received this immunisation, should be given 2 doses with a minimum interval of 4 weeks (preferably 8 weeks). If a first dose has been previously administered, they will only be given one dose. Adults with no history of chickenpox and who have not been vaccinated will be tested for IgG antibodies. If there is a history of one documented dose given, the second dose will be given. MMR vaccine is not suitable for pregnant women nor for people who are immunosuppressed.
12. **Routine immunisation against the human papillomavirus (HPV) at 12 years of age:** only to women. Two doses will be given, with at least 6 months between them.
13. **Catch-up vaccination against human papillomavirus (HPV):** This immunisation is meant for 13 to 18-year-old girls, not vaccinated or partially vaccinated before. Dose scheme will be scheduled according to age of first dose given.
14. **Flu vaccination during pregnancy:** pregnant women may be vaccinated during the flu immunisation campaign at any stage of pregnancy.
15. **Flu vaccination for adults 65 and over:** annually, in every flu immunisation campaign, one-dose routine vaccination is recommended.

INTRODUCTION

This summary describes the main recommendations stated in the official source document. DGSPyOF-8/2019 full document (Spanish version) can be accessed via this [link](#), as well as supplementary material.

1. ROUTINE IMMUNISATION DURING PREGNANCY

1.1. FLU VACCINATION

One dose of flu vaccine, administered intramuscularly, is recommended for pregnant women **regardless of their stage of pregnancy**, during the annual flu immunisation campaign. This vaccine has proved **safe** for both the pregnant woman and the future neonate. This immunisation has a double **benefit**, it protects the baby and the mother. For further information, visit [flu vaccine overview](#) website of the Regional Ministry of Health.

1.2. TETANUS, DIPHTHERIA AND ACELLULAR PERTUSSIS (Tdap) VACCINATION

One dose of intramuscularly administered whooping cough vaccine (included in Tdap vaccine) is recommended for pregnant women, from week 27, though preferably at **week 27 or 28**. This immunisation will be given during **every pregnancy**, regardless of previous vaccinations. It has proved safe and mainly aims at protecting the baby against whooping cough during the first 3-4 months of life. The vaccine may be administered at the same time as the flu vaccine.

2. ROUTINE IMMUNISATION DURING CHILDHOOD AND ADOLESCENCE

2.1. HEXAVALENT VACCINE (TETANUS, DIPHTHERIA, PERTUSSIS, POLIOMYELITIS, HAEMOPHILUS INFLUENZAE TYPE B AND HEPATITIS B).

The hexavalent vaccine is a 6-in-1 vaccine protecting against six infections: tetanus, diphtheria, pertussis (whooping cough), poliomyelitis, *Haemophilus influenzae* type B and hepatitis B. A 2+1 dose scheme intramuscularly administered at 2, 4 and 11 months of age is recommended, both in babies born at term and premature babies. Neonates born to mothers infected with hepatitis B (HBsAg+) will be given a first dose of the hepatitis B vaccine within 24 hours of their birth (preferably within 12 hours of birth), together with administration of anti-HBs immunoglobulin. Babies of mothers with unknown HBsAg, if tests results are not available within the first 24 hours of life, will also be given a dose of hepatitis B vaccine. All babies must follow the standard hexavalent vaccine scheme: doses given at 2, 4 and 11 months of age. Thus, babies born to mothers with HBsAg+, will be given 4-doses: at 0, 2, 4 and 11 months of age.

2.2. PNEUMOCOCCAL (PCV 13) VACCINATION

A 2+1 dose scheme of 13-valent pneumococcal conjugate vaccine (PCV 13) (Prevenar 13) intramuscularly administered at **2, 4 and 11 months of age** is recommended, both in babies born at term and premature babies.

People who are at greater risk of complications from pneumococcal invasive disease, will follow specific [recommendations](#).

2.3. MENINGOCOCCAL C/ ACWY VACCINATION

Both the MenC and MenACWY are inactivated (do not contain any live organisms) vaccines and intramuscularly administered. These are the new recommendations from 1 Jan 2020:

- **At 4 months of age:** one **meningococcal C vaccine dose (Neisvac C)**. Replacing the dose of meningococcal C vaccine at 4 months of age, in the immunisation schedule, by a dose of meningococcal ACWY vaccine is an option which is not publicly funded.
- **At 12 months of age** (infants turning 12 months old after 1 January 2020): one dose of **meningococcal ACWY** vaccine (Nimenrix).
- **At 12 months of age** (infants turning 12 months old after 1 January 2020): one dose of **meningococcal ACWY** vaccine (Nimenrix).

Catch-up immunisation campaign for 13 to 18-year-olds during the period 2020-2022.

A three-year immunisation campaign with meningococcal ACWY vaccine starts on 1 January 2020 for 13 to 18 (inclusive) year-old teenagers (Nimenrix). This way, every year, during three consecutive years, teenagers turning **15 years old** or **18 years old** will be vaccinated.

In Andalusia, this initiative will develop as follows:

- **From 1 January 2020 to 31 December 2020:** teenagers born in 2005 (turning 15 years old during 2020) and 2002 (turning 18 years old during 2020) will be recruited and vaccinated.
- **From 01 January 2021 to 31 December 2021:** teenagers born in 2006 (turning 15 years old during 2021) and 2003 (turning 18 years old during 2021) will be recruited and vaccinated.
- **From 01 January 2022 to 31 December 2022:** teenagers born in 2007 (turning 15 years old during 2022) and 2004 (turning 18 years old during 2022) will be recruited and vaccinated.

The necessary recruitment actions will be taken to achieve the highest possible vaccine coverage. School vaccination is recommended as the most effective mass immunisation measure for these ages.

Teenagers with indication of MenACWY vaccine, if they have previously received MenACWY vaccine (Nimenrix or Menveo) before the age of 10, they should be given a dose of MenACWY.

People who are at greater risk of complications from pneumococcal invasive disease, will follow specific [recommendations](#).

2.4. MEASLES, MUMPS AND RUBELLA (MMR) VACCINATION

Immunisation against measles, rubella and mumps is recommended, with a **two-dose** scheme, given at **12 months** and **3 years** of age, by subcutaneous route.

2.5. VARICELLA (CHICKENPOX) VACCINATION

Immunisation against varicella is recommended, with a **two-dose** scheme, given at **15 months** and **3 years** of age, by subcutaneous route. Catch-up doses will be given to vulnerable children (those who have not had chickenpox before and have not received 2 doses of the vaccine) and: 1) were born after 1 October 2014 and turned 4 years old; or 2) teenagers from 12 years of age.

2.6. TETANUS, DIPHTHERIA AND ACELLULAR PERTUSSIS (Tdap) VACCINATION AT 6 YEARS OF AGE

Booster vaccine against tetanus, diphtheria and whooping cough of reduced antigen content (Tdap) is recommended at 6 years of age, intramuscularly administered.

2.7. HUMAN PAPILLOMAVIRUS (HPV) VACCINATION

Immunisation of **12-year-old girls** against human papillomavirus (HPV) is recommended, with a two-dose scheme, intramuscularly administered at 0 and 6 months of vaccination. An interval of at least 6 months between doses is recommended.

The brand names of the three HPV vaccines currently marketed in Spain are: Gardasil, Gardasil 9 and Cervarix. The teenager will receive the vaccine that is available in the Public Health System of Andalusia.

Recommendations for girls who missed any dose, are to follow the scheme for girls aged 13 to 18 who have partially or not initiated HPV immunisation. They should be encouraged to start or continue the vaccine dose scheme to be fully protected. Dose scheme will be scheduled according to age of first dose given. Recommendations for girls aged 13 to 18 to start or complete HPV immunisation scheme are:

- **If dose scheme has not been initiated** (no previous dose given):
 - o If the girl is 13 years old: follow the same immunisation dose scheme for 12-year-olds.
 - o If the girl is 14 years old: 2 or 3-dose scheme.
 - o If the girl is 15 to 18 years old: 3-dose scheme.
- **If dose scheme has been initiated** (complete dose scheme in accordance to age of first dose given):
 - o If the first dose was given at 12 or 13 years of age: she will need a single dose.
 - o If the first dose was given at 14 to 18 years of age (inclusive): one or two doses, depending on the HPV vaccine formulation previously given and the one currently available.

Girls at greater risk of infection and/or complications from HPV, will follow specific [recommendations](#).

2.8. DIPHTHERIA AND TETANUS (Td) VACCINATION IN ADOLESCENTS

Booster vaccination against tetanus and diphtheria is recommended in all teenagers up to the **age of 14**. From that age, if he or she has not yet received this dose, it should be administered at any time.

2.9. OTHER VACCINES FOR GROUPS AT RISK

Under 18-year-olds at greater risk of certain infections and their complications might need to take into consideration other indications or dosing schemes, in addition to the indications described in point 2. For this purpose, further information and recommendations from the Regional Ministry of Health and Family Welfare concerning groups at risk for pneumococcal disease, hepatitis A and B, flu, human papillomavirus and meningococcal ACWY and B are available at this [link](#).

3. ROUTINE IMMUNISATION IN ADULTS

3.1. FLU VACCINATION IN ADULTS AGED 65 AND OVER

During the flu immunisation campaign, it is highly recommended that **all adults aged 65 and over** receive annual routine immunisation with one dose, intramuscularly administered, regardless of whether or not at risk. This immunisation may be given **at the same as the pneumococcal vaccine** or Td vaccine if indicated, in different anatomical sites.

For all other cases, such as adults under 65 at increased risk from flu and its complications, pregnant women or frontline health or social care workers, will follow current recommendations available at the [flu section](#) of the website from the Regional Ministry of Health and Family Welfare.

3.2. PNEUMOCOCCAL VACCINATION (PCV 13) AT 65 YEARS OF AGE

Routine immunisation with 13-valent pneumococcal conjugate vaccine (Prevenar 13) is recommended for all adults over 65 years of age born after 1 January 1954. Adults born after 1 January 1954 and aged 66 and over, who have not yet received Prevenar 13, are eligible to receive one dose of this vaccine.

The vaccine may be administered at the same time as the flu or Td vaccine.

People who are at greater risk of complications from a pneumococcal infection will follow specific recommendations. People not considered to be at a higher risk of developing an invasive pneumococcal disease, should not receive the 23-valent pneumococcal polysaccharide vaccine (Pneumovax 23), even if they are 65 or over.

3.3. TETANUS AND DIPHTHERIA (Td) VACCINATION IN ADULTS AGED 65 AND OVER

A dose of Td vaccine should be intramuscularly administered to adults aged 65 and over who received a series of 5 doses during childhood and adolescence. Verify vaccination status before starting or completing a primary vaccination scheme with Td in adults. For special situations, such as post-exposure prophylaxis against tetanus, consult the following document [Using Td vaccines](#), 2017, from the Regional Ministry of Health.

3.4. MMR VACCINATION

Immunisation against measles with the MMR vaccine, subcutaneously administered, is recommended for people born after 1970 who meet both of these two conditions:

- He or she has not had the disease or is not sure.
- He or she has not been given two MMR immunisation doses or is not sure.

If the person has previously received one dose, he or she will be given a second dose, provided there is a minimum interval of 4-weeks between the first and second dose. Women should avoid getting pregnant during the 4-week period after the administration of MMR vaccine.

3.5. VARICELLA (CHICKENPOX) VACCINATION

A serologic test will be carried out to determine immunisation status of adults aged up to 50 meeting none of the following criteria: history of chickenpox, history of shingles, two documented vaccination doses. If the person is susceptible to infection (IgG negative), he or she will be given two doses of immunisation against chickenpox with a 4-8 week-interval between both doses. If the person has previously received one dose, he or she will be given a second dose, provided there is a minimum interval of 4-weeks between the first and second dose. Women should avoid getting pregnant during the 4-week period after the administration of any dose of varicella vaccine.

3.6. OTHER VACCINES FOR GROUPS AT RISK

Adults at greater risk of certain infections and their complications might need to take into consideration other indications or dosing schemes, in addition to the indications described in point 3. For this purpose, further information and recommendations from the Regional Ministry of Health and Family Welfare concerning groups at risk for pneumococcal disease, hepatitis A and B, flu, human papillomavirus and meningococcal ACWY and B are available at this [link](#).

For specific situations, consult the following document [Immunisation for special risk groups of all ages and in certain special situations](#), 2018, from the Regional Ministry of Health.

4. ADMINISTRATION OF THE SCHEDULED VACCINES

The following guidelines include recommendations, according to age, of how the scheduled vaccines should be administered:

At 2 months of age:

- **Hexavalent vaccine (DTaP/IPV/Hib/HepB):**
 - Route and site of administration: intramuscular injection, in the anterolateral thigh.
- **13-valent pneumococcal conjugate vaccine:**
 - Route and site of administration: intramuscular injection, in the anterolateral thigh.

Recommendation:

- Hexavalent vaccine: right thigh.
- 13-valent pneumococcal conjugate vaccine: left thigh.

At 4 months of age:

- **Hexavalent vaccine (DTaP/IPV/Hib/HepB):**
 - Route and site of administration: intramuscular injection, in the anterolateral thigh.
- **13-valent pneumococcal conjugate vaccine:**
 - Route and site of administration: intramuscular injection, in the anterolateral thigh.
- **Meningococcal C vaccine:**
 - Route and site of administration: intramuscular injection, in the anterolateral thigh.

Recommendation:

- Hexavalent vaccine: right thigh.
- 13-valent pneumococcal conjugate vaccine: left thigh.
- Meningococcal C vaccine: left thigh.

Multiple injections given in the same extremity should be separated by a minimum of 2.5 cm, if possible.

At 11 months of age:

- **Hexavalent vaccine (DTaP/IPV/Hib/HepB):**
 - Route and site of administration: intramuscular injection, in the anterolateral thigh.
- **13-valent pneumococcal conjugate vaccine:**
 - Route and site of administration: intramuscular injection, in the anterolateral thigh.

Recommendation:

- Hexavalent vaccine: right thigh.
- 13-valent pneumococcal conjugate vaccine: left thigh.

At 12 months of age:

- **MMR vaccine (measles, mumps and rubella):**
 - Route and site of administration: subcutaneous injection, in the anterolateral thigh.
- **Meningococcal ACWY vaccine:**
 - Route and site of administration: intramuscular injection, in the anterolateral thigh.

Recommendation:

- MMR vaccine: right thigh.
- Meningococcal ACWY vaccine: left thigh.

At 15 months of age:

- **Varicella vaccine:**
 - Route and site of administration: subcutaneous injection, in the anterolateral thigh.

Recommendation:

- Varicella vaccine: left thigh.

At 3 years of age:

- **MMR vaccine (measles, mumps and rubella):**
 - Route and site of administration: subcutaneous injection, in the upper arm (deltoid or triceps region).
- **Varicella vaccine:**
 - Route and site of administration: subcutaneous injection, in the upper arm (deltoid or triceps region).

Recommendation:

- MMR vaccine: right arm.
- Varicella vaccine: left arm.

At 6 years of age:

- **Tdap vaccine:**
 - Route and site of administration: intramuscular injection, in the upper arm (deltoid region).

Recommendation:

- Tdap vaccine: non-dominant arm.

At 12 years of age:

- **Human papillomavirus (HPV) vaccine: in women, 2 doses**
 - Route and site of administration: intramuscular injection, in the upper arm (deltoid region).
- **Meningococcal ACWY vaccine:**
 - Route and site of administration: intramuscular injection, in the upper arm (deltoid region).

Varicella vaccine: do not forget catch-up vaccination at 12 years of age and above for individuals that are susceptible to infection (have not had chickenpox before and have not completed vaccination scheme).

Recommendation:

- -HPV in women, 2 doses:
 - o First dose: left arm.
 - o Second dose (with an interval of at least 6 months between doses): left arm.
- Meningococcal ACWY vaccine: right arm. In men, vaccine may be administered in the non-dominant arm.
- Varicella vaccine: in the upper arm, deltoid region separated by a minimum of 2.5 cm from MenACWY vaccine, or triceps region. Alternatively, varicella vaccine may be administered during a different visit.

At 14 years of age:

- **Td vaccine:**
 - Route and site of administration: intramuscular injection, in the upper arm (deltoid region).

Recommendation:

- Td vaccine: non-dominant arm.

At 15 to 18 years of age:

- **Meningococcal ACWY vaccine:**

- Route and site of administration: intramuscular injection, in the upper arm (deltoid region).

Recommendation:

- Meningococcal ACWY vaccine: non-dominant arm.

At 65 years of age:

- **13-valent pneumococcal conjugate vaccine:**

- Route and site of administration: intramuscular injection, in the upper arm (deltoid region).

Recommendation:

- 13-valent pneumococcal conjugate vaccine: left arm.

At 65 years of age and older:

- **Flu vaccine:**

- Route and site of administration: intramuscular injection, in the upper arm (deltoid region).

Recommendation:

- Flu vaccine: left arm (right arm if administered the same day as pneumococcal vaccine).

5. IMMUNISATION PRESCRIPTION AND REGISTRY

Vaccinations recommended in the routine immunisation schedule for childhood, adolescence and adulthood stem from the decision adopted by public health authorities, considering epidemiological risks, in an effort to protect the health of the global population and that of groups at greater risk of complications from vaccine-preventable infections, and depends on resources and vaccines available at the time. This also implies that routine vaccinations do not require prior medical prescription. In contrast, vaccinations that are not funded require medical prescription. Registration of vaccines is a professional and ethical obligation, regardless of whether these vaccines are publicly funded as part of the immunisation official schedule or for groups at risk, or not funded.

It is important to highlight that the Vaccines Program offers an immunisation scheme as a recommendation, but the decision to accept or modify this scheme is ultimately the responsibility of the health professional. If any mistake is made during vaccine registration, the "Undo" option of the program enables the professional to delete an action during the first 24 hours; after that time, one would have to request a history rectification following the ARCO protocol, via CGES Users Support Centre (SAU).

6. FURTHER INFORMATION AND LINKS OF INTEREST

- **Vaccines.** Regional Ministry of Health and Family Welfare. Andalusian Government. Available at: <https://www.juntadeandalucia.es/organismos/saludyfamilias/areas/salud-vida/vacunas.html>

- **Immunisation schedule for all ages. Andalusia 2020.** DGSPyOF-8/2019. Regional Ministry of Health and Family Welfare. Available at: <https://www.juntadeandalucia.es/export/drupaljda/csafaCalendarioVacunacion2020.pdf>
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- **Immunisation in adults.** September 2018. Vaccines Program and Registry. Public Health Commission of the Interterritorial Council of the National Health System. Ministry of Health, Consumer Affairs and Social Welfare. Available at: https://www.mscbs.gob.es/profesionales/saludPublica/prevPromocion/vacunaciones/docs/Vacunacion_poblacion_adulta.pdf
- **Vaccination in at-risk groups of all ages and in special situations.** July 2018. Vaccines Program and Registry. Public Health Commission of the Interterritorial Council of the National Health System. Ministry of Health, Consumer Affairs and Social Welfare. Available at: https://www.mscbs.gob.es/profesionales/saludPublica/prevPromocion/vacunaciones/VacGruposRiesgo/Vac_GruposRiesgo_todasEdades.htm