

VACCINAL CALENDAR FOR LIFE OF THE SICILIAN REGION

Information brochure for users

Information leaflet for users and practitioners Vaccinations are one of the most important medical achievements and one of the most effective methods of combating many serious and potentially fatal infectious diseases. The administration of a vaccine is a simple, effective and safe action, and the medical staff, nurses and health care professionals working in the territorial health services of the Sicilian Region, and free choice pediatricians and general practitioners have long been strongly committed to providing all children and the general public with protection offered by vaccinations. The levels of adherence to vaccinations in the Sicilian infant population, in addition to rewarding the skilled activity of the operators, have demonstrated the cultural maturity of the population considering vaccinations as a health opportunity. This brochure is a tool to inform the population on childhood vaccinations and diseases that can be prevented in order to ensure a conscious choice of parents. We invite you to read this booklet carefully, which is just a first information tool; the staff of vaccine services, free choice pediatricians, or general medical practitioners are always available to deepen the subject and clarify any doubt.

Summary

Introduction

The Regional Vaccination Schedule currently in force

Vaccination against polio

Vaccination against diphtheria and tetanus

Vaccination against Hepatitis B

Vaccination against pertussis

Vaccination against haemophilus influenzae type b

Vaccination against measles, rubella, mumps and varicella

Vaccination against measles

Vaccination against rubella

Vaccination against mumps

Vaccination against the varicella

Vaccination against pneumococcal disease

Vaccination against meningococcal disease

Vaccination against papillomavirus infection

Vaccination against Rotavirus Infection

INTRODUCTION

to know more

Vaccination is one of the most important achievements of medicine. Sometimes we want to know more especially when we receive the invitation for our baby's first vaccinations.

What do vaccines contain?

The vaccines are different depending on the disease you want to fight. They may consist of inactivated (killed) or attenuated (harmless) microorganisms or parts thereof or substances produced by them (said toxins) which are rendered inactive.

How do vaccines work?

Vaccines act by stimulating a natural defense system of the body: the immune system. This system is designed to produce antibodies and protective cells that can prevent the occurrence of natural illness.

Throughout our lives, we have to defend ourselves from thousands of viruses and bacteria we meet because they are present everywhere in the environment around us.

What diseases are fighting

Vaccines combat dangerous infectious diseases for which there is no therapy (polio) or this is not always effective (diphtheria, tetanus, haemophilus meningitis, meningitis from meningococcal, pneumococcal invasive diseases, or diseases that can cause serious complications (measles, rubella, varicella, hepatitis B, pertussis). We also have it today

of vaccines to prevent infections caused by certain viruses that sometimes may be the cause of cancer (human papilloma virus, hepatitis B virus).

Before vaccination

To vaccinate consciously, parents should always seek information and clarification from the vaccine service and trusted pediatrician.

Before the vaccination, the health care provider checks that no contraindications are made and he / she looks at the child's health documentation (health booklet personal, ...)

Parents are encouraged to report to the vaccine service and to the pediatrician any doubts and observations deemed useful.

When postponing the vaccination

Vaccination is delayed in case of acute illness with fever or general symptoms considered important and in the case of recent immunoglobulin administration (only for live vaccines).

Mild common diseases (colds, diarrhea, high respiratory tract infections) do not represent contraindications to vaccination.

After vaccination

After vaccination, in some cases, swelling, redness or pain at the injection site may occur, which can be treated simply by applying cold wet cloths.

Sometimes fever may appear that, if it is greater than 38.5 $^{\circ}$ C rectally, it should be treated by the administration of an antibacterial drug.

Rarely after the vaccination, other unwanted events may occur. In these cases, it is recommended that the pediatrician and / or the vaccine service be informed promptly

and the most appropriate treatment.

It's important to know that

Vaccination is a safe and effective preventive act and is practiced around the world thanks to the help of humanitarian organizations such as UNICEF, Doctors Without Borders and many more.

With this intervention some illnesses are under control and others can be eradicated.

A high number of vaccinated people, it reduces the circulation of the infectious agent and therefore protects even those few subjects who, for various reasons, have not been vaccinated.

And for the future?

As with smallpox, it is expected that polio can also be eliminated if high vaccine coverage is reached in the population around the world. From that moment on, it will no longer be necessary to vaccinate against polio.

Another short-term goal is to reach the elimination of measles at the national level, interrupting their transmission at the local level, and to reduce and maintain the incidence

of congenital rubella at values lower than 1 case per 100,000 live births.

VACCINAL CALENDAR FOR LIFE OF THE SICILIAN REGION

				REGIONE	SICILIA -	" CALEND	ARIO VAC	CINA	E PER	LA VITA" a	recep	imento, co	on inte	egraz	ioni,				
										accinale 20°									
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IPV			IPV			IPV		IPV											
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Hib			Hib			Hib		Hib											
PCV13			PCV13			PCV13		PCV13											
Rotavirus			1 dose			2 dose													
Anti Meningo B				1º dose Men B	2º dose Men B		3º dose Men B			4º dose Men B		Men B - Soggetti mai Vaccinati Nº due dosi distanziate di almeno 30 giorni							
Meningo ACW136Y conlugato									Men. ACW136Y			Men. ACW135Y							
MPR + Varioella									MPRV/ MPR + Var		MPRV/ MPR + Var - Recupero suscettibili								
dTpa															dTpa				
DTPa + IPV											DTPa + IPV/ DTPaIPV								
dTpa + IPV													dTpa+ IPV/ dTpaIPV						
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Anti-Influenzale	Influenza																		
Anti- Pneumoccoolco	PCV13/PPV23 Per tutti i soggetti a riohio di qualunque età Pazienti a risohio p patologia patologia												PCV13/PP V23			PCV13/I			
Anti Zoster															Zoster pazienti a rischio		Zoster		

Legend:

DTaP: pediatric acellular anti-diphtheria-tetanus pertussis vaccine

dTap: diphtheria-tetanus-pertussis vaccine for ages greater than 4 years

IPV: Inactivated polio Vaccine

Hib: invasive infection vaccine from Haemophilus influenzae b

PCV: conjugated anti-pneumococcal vaccine

Men B: meningococcal B vaccine

Men ACWY: ACWY conjugated vaccine

HBV: Antiepatitis B vaccine

MPR: measle- mumps-rubella vaccine

MPRV: measle-mumps-rubella -varicella vaccine

V: varicella vaccine

HPV: antipapillomavirus vaccine

Accompanying notes

1st year of life

- In children born to a positive HbsAg mother, vaccination with monovalent anti-HBV should be administered as soon as possible after birth, at the same time as administration to another specific anatomic site of Igs. One month later will follow the second dose of the monovalent vaccine. From the third dose, which should be done from the 61st day, the calendar with the hexavalent combined vaccine is followed;
- second doses of hexavalent vaccine and pneumococcal should be administered after at least 2 months from the first while the third dose is given after at least 6 months after the second;
- the first dose of rotavirus vaccine may be administered from the 6th week of life and no later than the 15th week (105th day). A minimum interval of 4 weeks should be observed between the doses and the cycle must be completed in any case not later than 24th week (168th day), as per the technical datasheet of the vaccine in use. The vaccine can be co-administered with hexavalent and PCV13. The risk of intestinal invagination within seven days of the administration of the vaccine, albeit very rare, should always be reported to parents during pre-vaccination counseling, for timely recognition of premonitor symptoms;
- the co-administration with other vaccines should be avoided for the vaccine against meningococco B. Therefore, it is not considered useful to move hexavalent routine vaccines, pneumococcal, rotavirus, offer an active and free offer for all newborns, with a four-dose schedule interlaced with the Men-B vaccine, administered with 15-day intervals over routine sessions. In case the anti-men-B vaccination was started after the sixth month of life, the schedule of three or two doses should be followed.

2nd year of life:

- for the vaccination against measles-mumps-rubella and varicella, in addition to using monovalent vaccines (MPR and VAR), it is considered useful to administer the combined vaccine (MPR-V), with an accurate history of personal and / or family febrile convulsions;
- In replacement of the conjugate anti-meningococcal C vaccine, the tetravalent anti-renal anti-inflammatory vaccine (A-C-W135-Y) is offered during the 2nd year of life.

6th year of life:

- in co-administration with the diphtheria-Tetanus-Pertussis-Polio (DTPa-IPV) vaccine, the MPR-V vaccine will be used
- Recovery of the susceptible for MPR and Varicella will be performed and two doses of vaccine administered at least one month

- after the age of 6, the Diphtheria-Tetanus-Pertussis-Polio vaccine (dTpa-IPV) will be used in adult formulation. This type of vaccine may also be used from the age of 4 years provided parents are adequately informed about the importance of recall in adolescence and high dTpa coverage in adolescence is guaranteed.

12th year of life:

- Vaccination against HPV (papilloma virus) should be provided with its two or three dose vaccination schedule. The schedule for two doses, 0 to 6 months, if the first dose is administered within 14 years of life, followed by the second dose after six months. The three-dose schedule, 0 2 6, should be done by 15 years of age. With the marketing of the new nine components vaccine, subjects who started the vaccine cycle with the tetravalent, will complete the cycle with the same vaccine for all subjects who have never been vaccinated and are entitled to vaccination will be given the nine components, with two and three doses;
- The gratuity of HPV vaccination and the active offer affects female subjects from the 1996 cohort and male subjects from the 2003 cohort. Vaccination can be extended to 45-year co-payment in females and up to 26 years in males; in females aged 27 to 45, vaccination will be carried out with the quadriceps vaccine. The gratuity of vaccination is always guaranteed to those who are late for vaccination;
- At 12 years of age, the vaccination status of all adolescents must be verified; all subjects not in accordance with the vaccination schedule will be invited to active vaccination;
- vaccination with ACW135Y four-dimensional against meningococcal vaccine should be performed for both unvaccinated and those who have already received a previous C or tetravalent vaccine dose. In the latter case, to extend the antibody coverage that tends to decrease over time, a five-year time interval between the two doses is indicated;
- vaccination against meningococcal B, to uninitiated subjects, is offered free of charge during the twelfth year of life (eleven years and one day) from the 2006 cohort.

14 $^{\circ}$ / 18 $^{\circ}$ year of life

- confirmation of the fifth dose of the anti-polio vaccine using vaccines combined with dTpa and adult antigen content
- the call with dTpa should also be proposed to those who have never vaccinated against the pertussis
- on any useful occasion, prior or subsequent, the vaccination status or susceptibility to MPR and Varicella should always be verified and two doses of vaccine administered at least one month away. All those who have a bad history and MPR will be vaccinated against all varicella, all those with a bad history even for one of the three preventable vaccine-related diseases.

Adulthood (19-64 years)

- Every ten years the call for dTpa vaccination should be made with adult formulation
- the first call can be offered to the dTpa-IPV vaccine to those who did not take the fifth dose of anti-polio vaccine
- In order to prevent pertussis in the infant, often very serious or fatal, mother vaccination is only recommended against dTpa during the last weeks of pregnancy, ideally around $28\,^{\circ}$, so that the transfer passive antibodies can immunize the infant until it is vaccinated
- As foreseen by the cocoon strategy, both parents should be actively offered a dose of Diphtheria-Tetanus-Pertussis (dTpa) vaccine before or immediately after the baby's birth and the proposal could be extended to other family members close to the newborn
- All women of childbearing age must absolutely be protected against measles-mumps-rubella and varicella. If a woman does not become immunized during pregnancy, she should be vaccinated in the immediate post-partum.

In addition, in order to reduce the risk of rubella in pregnancy and congenital rubella, vaccination should be proposed to all women of childbearing age who do not have vaccine documentation or positive serum for rubella, delaying at least one month the possibility to undertake a pregnancy.

- In order to prevent hospitalization, premature birth, low birth weight and pregnancy interruptions, it is important that the woman be immunized against influenza during the second or third trimester of pregnancy
- the vaccination status or susceptibility to MPR and Varicella will always be verified, including in adults, and will be continued with the administration of two vaccine doses of at least one month. All those with a bad history and against MPR will be vaccinated against all varicella with a history of a negative one, even for one of the three preventable diseases with vaccination.
- It is considered an important act of awareness raising on primary and secondary prevention to invite HPV vaccination to all women at the time of first call for cervical cytology at the age of 25;
- All risk subjects under the annual Ministerial Circular must be vaccinated against influenza;
- anti-zoster vaccination will be offered free of charge to all people at risk for pathology, starting at 50 years of age. The condition of the disease for pathology must be attested by the treating physician.

Adulthood (> 64 years)

- Influenza vaccination for all subjects regardless of the existence of particular risk situations
- anti-pneumococcal vaccination will be offered actively and free of charge to the cohort at 60 ° and 65 ° year of age, both simultaneously with influenza vaccination and during the year, as this vaccination is seasonally adjusted. In non-vaccinated subjects, sequential vaccination will be carried out, with a dose of 13 conjugated anti-pneumococcal vaccine and then, after one year, a valid dose of a polysaccharide vaccine. For those who received a single vaccine dose, they will complement each other. For those who have received both vaccine doses, no additional doses will be required;
- gratuity is always guaranteed for those who are late for vaccination
- For all subjects, at the age of 65, active vaccination against Herpes Zoster will be offered actively and free of charge. Always free of charge, but not in active form, vaccination will be offered to all subjects between the ages of 65 and 75; there is no free vaccine offer for those over 75 years of age.

Vaccination against

Polio

What is polio?

Polio is an infectious disease caused by three different types of viruses that enter the body predominantly through the digestive system. It is a very dangerous disease that in the most serious cases can cause paralysis, mostly of the limbs, and sometimes even death. There are no medicines that can cure polio; the only real possibility to avoid the terrible effects is prevention. Improving the sanitary conditions of our country has helped reduce the spread of many infectious diseases, including polio, but this is not enough: only with vaccination you are sure of the protection of children and are able to completely eliminate the epidemics. In Italy, before vaccination was adopted, compulsory since 1966, several epidemics of polio occurred with thousands of cases of paralysis; In 1958, shortly before the start of the vaccination, 8,000 cases of illness with this outbreak occurred. After years of vaccination, the result was extremely positive: the last 2 cases of polio were recorded in Italy in 1982 in unvaccinated children. Since polio is still present in some countries of the world (especially in Africa and Asia and people are moving very quickly from one continent to another, there is a risk that viruses may also come in our country.) The vaccine There are two Types of polio vaccine, both capable of effectively protecting the disease: one called Salk (or IPV) and the other Sabin (or OPV), by the names of scholars who developed them in the 1950s and 1960s Since 2002, vaccine against polio in Italy has

been administered by injection of Salk vaccine, containing killed poliomyelitis virus, generally administered with a single injection along with other vaccines. live vaccines are attenuated. The effectiveness of vaccination is very high: virtually all vaccinated people respond positively and maintain protection for many yes, maybe for the rest of your life.

Side effects

For premature or low birth weight children, the vaccination schedule and times should not be altered except in very special cases (administration of anti-hepatitis B vaccine to children weighing less than 2 kg)

The Salk vaccine has a very high degree of safety. Most children do not charge any discomfort after administration. Reactions are rare such as pain or swelling at the injection site, fever or malaise. With the use of Salk vaccine throughout the vaccine cycle, the risk of paralysis that could very rarely appear with the Sabin vaccine, especially after the first dose (approximately 1 case every 500,000 prime doses) or the second (1 case on tens of millions of doses). Allergic reactions to vaccine components are exceptional as with all vaccines

When to postpone

Anti-polio vaccination should be temporarily postponed if the child has an acute illness with generalized fever or general disorders clinically relevant.

When you do not have to vaccinate

The Salk vaccine should not be given if the baby has had severe allergic reactions to the vaccine or after previous administration of the same vaccine.

Vaccination against

Diphtheria and tetanus

Diphtheria is a very serious infectious disease that is mostly transmitted by air and is caused by a substance produced by a microbe (Corynebacterium diphtheriae). This toxic substance (diphtheria toxin) causes severe injuries in many organs (including the heart and the kidneys) and causes the formation of particular membranes in the nose, throat and larynx, which can lead to

suffocation. About one case per 10 can be fatal, even if treated with antibiotics. In Italy, in the early 1900s, 20-30,000 diphtheria cases were registered each year in the infant population with about 1,500 deaths. After extensive diffusion of vaccine against diphtheria, there was a drastic reduction of disease in Italy: the last case of childhood occurred in 1991 in an unvaccinated child, causing death. In recent years, in the countries of eastern Europe, the collapse of diphtheria vaccination associated with the severe economic crisis has caused a major epidemic, which lasted several years (1995 to 1998) and caused thousands of deaths. In the 1990s, 3 cases of diphtheria were also reported in Italy, all in non-people vaccinated. Two cases in a Spanish child in 2015 and a Belgian baby in 2016 that have not yet been vaccinated show that the microbe still circulates in Europe.

Tetanus is a very serious disease due to a microbe (Clostridium tetani) that can enter the body through a wound, especially if it is dirty of soil or dust, and produce a toxic substance (tetanus toxin). This toxin causes severe and painful muscular contractions and, in about one in six, can lead to death. Tetanus often requires long hospital admissions mostly in resuscitation departments. Since 1968 in Italy it is mandatory to vaccinate all children against tetanus. That is why tetanus affects almost exclusively adults and the elderly today. Every year in Italy about 60 people are ill; this is for most women over the age of 65 who are not vaccinated or with incomplete vaccination. There are less cases among men, as in the past there was a vaccine obligation for military service.

The vaccine

Diphtheria and tetanus vaccines are prepared from diphtheria and tetanus toxins, modified so as not to be more dangerous but equally capable of stimulating the body to produce valid defense against the two diseases. Both vaccines are administered through an injection; they are mostly contained in a single vial together with others. The efficacy of vaccination against diphtheria and tetanus is very high: almost 90% of vaccines are protected against diphtheria and even almost 100% of vaccines are protected from tetanus. References to these vaccines are provided: the first to 5-6 years of age and the subsequent every 10 years.

Side effects

The vaccine is well tolerated and does not usually cause any reactions. At the point where it was injected, within 48 hours, a passing irritation occurs with swelling, redness, and pain. Fever may appear rarely, mostly modest. Adults may rarely experience neuritis that is manifested with sensitivity and movement disorders. Allergic reactions to vaccine components are exceptional as with all vaccines

When to postpone

This vaccination should be temporarily postponed when the child has an acute illness with generalized fever or general disorders clinically relevant.

When you do not have to vaccinate

There are no special health conditions that will not allow this vaccination to take place, with the exception of previous serious allergic reactions to substances contained in the vaccine or prior administration of the same vaccine.

Even pregnant women can be vaccinated.

Vaccination against Hepatitis B

Hepatitis B is an infectious disease affecting the liver and is caused by a virus called "hepatitis B virus". In many cases, the virus does not cause any problems because the organism manages to defend itself effectively. In some cases, the symptoms of a serious illness manifest themselves: weakness, joint pain, nausea, vomiting, fever, yellowish skin and eyes (jaundice). These symptoms do not always appear, especially in children. Even the evolution of infection is not always the same. Most people (85-90%) heal completely. In some cases, especially in adults, the disease may be lethal, while others may have very serious liver disease, such as liver cirrhosis or liver cancer. You can stay chronic carriers of the virus, even without developing the disease. Hepatitis B virus is transmitted by sick people or chronic carriers through blood and sexual intercourse. It is established that people who live with a sick or with a carrier are still at risk of contagion. Children born from a chronic carrier mother have a high chance of being infected if they are not vaccinated as soon as possible. Transfusions today are very safe and no longer constitute a major risk factor for infection. Vaccination of children and adolescents started in 1991 resulted in a decline in hepatitis B, especially in people aged 15 to 24 who were the most affected by the disease. Aged only concerned non-vaccinated children.

The current hepatitis B vaccine contains only one part of the virus and is obtained in the lab by refined genetic engineering techniques. It is highly effective, especially in children, which are protected in almost all (up to 98%).

The vaccine is administered with an injection and is generally combined in the same vial with other vaccines. The administration of this vaccine is compulsory in Italy since 1991 for all

children in the first months of life. Until 2004 it was also for teenagers (11-12 years). The vaccine is offered free of charge to people at particular risk of contracting this infection. Children of "chronic wear" women are given the first dose of vaccine on the day of birth.

Side effects

The vaccine is well tolerated. At the point where the injection is performed, usually mild pain, redness and swelling may appear that disappear within a few days. Severe fever, headache, nausea, dizziness, muscle and joint pain of moderate to moderate intensity may rarely occur. Even more rarely, only children and adults have been reported, peripheral neuritis, which is manifested with sensitivity and movement disorders. Allergic reactions to the components of the vaccine are exceptional as a whole (up to 98%). The vaccine is administered with an injection and is generally combined in the same vial with other vaccines. The administration of this vaccine has been compulsory in Italy since 1991

When to postpone

This vaccination should be temporarily postponed when the child has an acute illness with generalized fever or disorders that is clinically relevant.

When you do not have to vaccinate

Vaccination should not be given to subjects who have had serious allergic reactions to substances contained in the vaccine (eg beer yeast) or prior administration of the same vaccine.

Vaccination against Pertussis

Pertussis is an infectious disease caused by a microbe (Bordetella pertussis) that is transmitted by air and occurs with epidemics every 3-4 years. After the fusion of vaccination, the number of cases has fallen far across Italy. The pertussis lasts for a few weeks (in China they call it the 100-day illness). At first it manifests itself with sneezing, nasal secretions, mild fever, coughing with catarrh. The cough is later accentuated with real "gusts", sometimes followed by vomiting. This stage is called convulsive and lasts about 4 weeks. It is followed by the convalescence phase, in which the cough attacks gradually become less intense and frequent. Generally the pertussis heals without consequences. It is possible, however, that it suffers with laryngitis, pneumonia, seizures and brain damage. The disease is particularly severe in the first year of life: infants and infants often experience a real suffocation crisis, which force hospital admission. At this age are also more frequent severe brain disorders, which can cause permanent damage and, in the most serious cases, death as well. Even in the absence of complications, pertussis brings considerable disruption to children. In adults the disease is lighter but longer lasting. These "attenuated" forms that are often unrecognized can easily infect smaller children. Vaccine For several years, the so-called acellular vaccine is used, consisting only of a few highly "purified microbial" parts of the microbe. Therefore its side effects are even rarer than those recorded with the old vaccine (called cellular, or whole cell). It is administered with a single injection along with other vaccines. Vaccination is strongly recommended since the age of 2 months in order to ensure the child's protection during the first few months of life, that is when the disease may be more dangerous. The defenses transmitted possibly by the mother who has already had the pertussis are unable to protect the disease. About 85% of the vaccinated children are well protected from the disease, especially in its worst case. After the 3 doses provided in the first 12 months of life, the protection lasts at least 5 years of age. To protect young children who are not yet vaccinated or undergoing vaccination, it is recommended that brothers or older children be vaccinated, especially if they attend school so that they cannot transmit the disease.

Side effects

At the point where injection is made, it may appear that within 24/48 hours pain, redness and swelling occur. These are usually mild and short-lived reactions. In the first two days after injection, the baby may experience fever (usually low), irritability, or drowsiness. These very rare reactions can last for one to two days. Reactions such as fever over 40.5 ° C, uncomfortable cry that lasted for more than three hours, episodes similar to collapse, convulsions, were already rare with the old full cell vaccine, today they have become very rare with new vaccines acellular. They leave no consequences, but in some cases they are a reason to avoid subsequent hypertensive vaccinations. If children have presented fever-related convulsions (so-called febrile convulsions) in the past, there are no reasons to exclude vaccination, but the pediatrician will be able to evaluate specific cases and indicate the most appropriate behavior. Allergic reactions to vaccine components are exceptional as with all vaccines

When to postpone

Vaccination against pertussis should be temporarily postponed when the child presents an acute illness with generalized fever or disorders that is clinically relevant. The vaccine doctor will evaluate the possibility of postponing the execution of anti-stress vaccination even in the case of neurological disorders whose cause has not yet been sufficiently clarified, to clarify the problem or to define the diagnosis.

When you do not have to vaccinate

If the child is suffering from a severe neurological disorder that may worsen over time, the vaccine doctor will evaluate each case if it is advisable to proceed to this vaccination. The vaccine can also be given to children who have experienced "febrile seizures" in the past with the warning to check for possible fever.

Do not vaccinate subjects who have undergone serious allergic reactions to vaccine substances or severe reactions to previous administration of the same vaccine.

The vaccine is mandatory since 2017

Vaccination against Disease from

Haemophilus influenzae type b

Hemophilia (Haemophilus influenzae type b) normally lies in the throat or nose where it does not bother you and transmitted from person to person by air. Nearly all children during the first 5 years of life sooner or later encounter hemophilia. Usually this contact does not cause any harm.

However, in some children, hemophilia does not just "colonize" the throat but may blend into the body causing very serious illness. Among these diseases, the most common is meningitis, still deadly today, and which, however, can cause severe permanent damage such as convulsions, deafness, blindness, paralysis, mental retardation. Other times, the haemophilus hits the throat and can cause such severe inflammation (epiglottis) to cause death by suffocation, or the lung (bronchopneumonia), or the entire body (sepsis). These diseases affect mainly children from the age of 3 months to 5 years, with the highest incidence in those who are less than 2 years old. All children may experience serious hemorrhagic infection. Some, however, have a greater risk:

- children living in large families, with older brothers, especially if they are attending kindergartens or schools; children attending kindergarten;
- children with defects in immune defenses caused, for example, by certain drugs, congenital diseases, cancer, lack of spleen, leukemia, or HIV infection. Cases of serious hemophilic illnesses have dropped dramatically throughout Italy after the introduction of vaccination in the second half of the 1990s. It contains a portion of the microbe modified so as not to be more dangerous but equally capable of stimulating good protection from the disease. The administration of this vaccine is recommended to all children from 2 months of age to protect them when they are more exposed to this infection. If the child is in a particular risk situation (such as those mentioned above), of course, vaccination is even more important. The vaccine is administered with an injection along with other vaccines. The effectiveness of hemophilia vaccination is very high, at 99%. Vaccination is recommended for all children up to the age of 5 years and in later years only to high risk people such as those with spleen or special immune conditions.

Side effects are rare and mild.

At the injection site, there may be redness, swelling or pain; this is usually a modest and transient phenomenon, more frequent in older children. Fever may also appear, typically below 38.5 ° C, slight irritability, somnolence, sometimes vomiting or diarrhea. These phenomena are very rare and noticeable in small children, of mild intensity and disappear within 1-2 days of vaccination. Allergic reactions to vaccine components are exceptional as with all vaccines.

When to postpone

This vaccination, like the other, should be temporarily postponed when the child has an acute illness with generalized fever or general disorders clinically relevant.

When you do not have to vaccinate

There are no clinical situations that do not allow this vaccination to take place, except for very serious allergic reactions to substances contained in the vaccine or prior administration of the same vaccine.

The vaccine is mandatory since 2017

Vaccination against

Measles, rubella, mumps and Varicella

Vaccination against measles, rubella, mumps and varicella is currently mandatory since the 2001 cohort. For the born in 2017, the varicella is also obligatory

In addition to the "triple" vaccine against measles, mumps and rubella, the "quadruple" vaccine is also available in which, besides measles, rubella and mumps, the component to prevent the varicella has been added. These vaccines are made up of the association in the same vial of the three or four live viral strains and "attenuated", that is, subjected to appropriate modifications that make them unable to cause the disease and equally capable of stimulating the production of effective antibodies.

The use of "triple" or "quadruple" formulations is recommended for several reasons:

it is a benefit for the child because it is simultaneously vaccinated against these infections with one injection

is a benefit to the community because the reduced circulation of viruses also indirectly protects the other older children and adults.

The vaccine is administered to the upper arm of the subcutaneous arm.

The combined vaccine is recommended for all newborns and can be given from the first year of life (365th day of life

onwards) or even before in special cases. To complete the immunization, a second dose of 5-6 years of age is administered. The vaccine may be administered simultaneously with other vaccines.

Vaccination with the combined vaccine can also be carried out in subjects who have already had one or more natural conditions (perhaps without knowing it, as is often the case for rubella and mumps) or have already been vaccinated against one of these diseases.

The precautions, contraindications and possible side effects of this vaccine are those reported in the leaflets describing single vaccines.

Vaccination against Measles

What is measles?

Morbid is a very contagious infectious disease caused by a virus that is transmitted through the first respiratory tract. It manifests itself with high fever, persistent cough, rhinitis, conjunctivitis, and a typical rash (rash).

The baby is always very experienced by measles, which is rightly considered to be the most serious of "common" infectious diseases of childhood due to its acute symptomatology and possible complications.

These may be: otitis, laryngitis, pneumonia, platelet count (decreased number of platelets), convulsive seizures and, above all, encephalitis. The latter occurs on average in 1 case every 1,000 children affected by measles and consists of severe brain inflammation that can leave permanent results (15% of cases) such as convulsive

seizures, deafness and mental retardation. The disease may be fatal in 1-2 cases every 1,000 for its complications. More rarely (1 case per 100,000) it is possible that irreversible neurological damage occurs 5-15 years after the disease due to a persistent infection associated with the morbid virus (PESS).

The measles vaccine

The measles vaccine is a live measles virus but it is attenuated to make it unable to cause the disease while retaining the ability to stimulate the production of protective antibodies.

Vaccination against measles is carried out simultaneously with rubella and mumps ("triple vaccine") and vice versa ("quadruple vaccine"). The vaccine is administered by injection subcutaneously into the upper arm. The single formulation of the vaccine is not currently available on the market.

Vaccination vaccination is recommended starting on the first year of life (365 days a day) or even before in special cases.

In any case, at any age after the first year, it is useful to undergo this vaccination if the disease has not yet been contracted.

The vaccine is extremely effective as it causes the appearance of protective antibodies in 95% of the vaccinated children and this percentage is even higher after

a second dose. The protection appears already after 7-10 days of vaccination.

For its rapid action, the measles vaccine is able to prevent the disease even after contagion, as long as it is administered within the first 2-3 days of the child's contact with the patient.

A 2nd dose of 5-6 year old vaccine should be used to increase the percentage of children with good protection

When to postpone

The circumstances in which this vaccination should be postponed are:

• acute pancreatitis with generalized fever or turbe that is clinically relevant;

recent administration of immunoglobulins, blood or plasma, products that may hinder a good immune response to the vaccine;

recent administration of another live virus-based vaccine.

When you do not have to vaccinate

This vaccine should not be given in the following cases:

severe defect in the immune system due to illness or serious allergic therapies to vaccine constituents (eg neomycin or gelatin) or previous administration of the same vaccine.

Side effects

The vaccine is well tolerated. The side effects attributed to the anti-tumor vaccine are not very frequent.

Local reactions (redness, swelling) at the injection site are possible.

At 7-14 days after vaccination, the baby may experience moderate and short-lived febrile elevations (1-2 days), but in the 5-15% of the

vaccinated can reach 39 ° C.

Sometimes signs of a common cooling disorder or a mild-to-morbid-like disorder may occur, with reddish macset on the skin, cough and reddening of the eyes, short-term and rapid spontaneous resolution, non-contagious, and which does not cause complications. Major adverse reactions such as platelet count (ie decrease in the number of platelets) are very rare and favorably evolving; while natural illness can cause severe and permanent complications.

Like any other substance alien to the body, this vaccine may rarely cause specific allergic reactions.

Vaccination against rubella

Rubella vaccine is recommended for all children starting on the first year of life (365th day onwards).

It is also strongly recommended for women who are not immune before planning a pregnancy or just after giving birth to protect them from infection in the event of subsequent pregnancies.

Today, males are also vaccinated, not so much for their individual protection, but to lessen the circulation of rubella virus in the population and make it even more unlikely that pregnant women will be infected.

The vaccine is very effective as it gives an estimated 95% higher protection.

When to postpone

The circumstances in which this vaccination should be postponed are:

- acute pancreatitis with generalized fever or disorders that are clinically relevant;
- Recurrent administration of immunoglobulin, blood or plasma, products that may hinder a good immune response to the vaccine;
- Recognizing the administration of another live-attenuated and live virus vaccine.

When you do not have to vaccinate

The antioxidant vaccine, single or combined, should not be administered in the

following circumstances:

severe defect in the immune system due to illnesses or therapies;

severe allergic reactions to vaccine constituents (ex: neomycin or gelatin) or previous administration of the same vaccine.

Side effects

The rubella vaccine, both in single form and in combination with antitumor, antiparotite and antibacteria, is well tolerated.

The side effects attributed to the antioxidant vaccine are uncommon.

In a small number of vaccinated children (5-15%) it is possible to observe slight feverishness, a few spots on the skin, and enlargement of the neck lymph nodes 5-12 days after vaccination.

Very rarely in children, more frequently in adolescents and adult women, it is possible to appear short-term joint pains 1-3 weeks after vaccination.

Chronic arthritis has been reported more rarely in adult subjects.

Like any other substance alien to the body, this vaccine may rarely cause allergic reactions.

Vaccination against

Mumps

What the heck?

Mumps, commonly called "ears", is an infectious disease caused by a virus that is transmitted by air. It usually appears with an enlarged area in front of the ear caused by inflammation of the salivary gland called parotid, by one or both sides. Salivary glands may also swell and often headaches, more or less fever and abdominal pain occur simultaneously. The importance of this disease is due to its possible complications: meningitis-encephalitis, damage to the auditory organ, pancreatitis and, if it occurs after puberty, orchitis and ovarian (inflammation of the testicles and ovaries) with a risk of sterility.

The vaccine against mumps

The vaccine against mumps is made up of live virus but attenuated so as to render it unable to cause the disease while retaining the ability to stimulate the production of protective antibodies.

Vaccination against parotitis is carried out simultaneously with measles, rubella and / or varicella vaccine ("triple" or "quadruple" vaccine). Both vaccines are administered by subcutaneous injection into the upper arm.

The vaccine against mumps is recommended for all children starting on the first year of life (365th day onwards). However, the vaccine may be administered at any age and the vaccination of an already immunized subject (for prior vaccination or for overcoming the disease) is well tolerated.

When to postpone

The circumstances in which this vaccination should be postponed are:

acute illness with generalized fever or disorders clinically relevant;

recent administration of immunoglobulins, blood or plasma, products that may hinder a good immune response to the vaccine; recent administration of another live virus-based vaccine.

When you do not have to vaccinate

The anti-parotid vaccine should not be administered under the following conditions:

severe defect in the immune system due to illnesses or therapies;

severe allergic reactions to vaccine constituents (eg neomycin or gelatin) or previous administration of the same vaccine.

Side effects

The side effects attributed to the anti-parotid vaccine are rare: at a distance of days it is possible for the baby to show a slight swelling of the parotid gland and short-lived fever, exceptionally benign meninges inflammation.

Like any other substance foreign to the body, this vaccine may rarely cause specific allergic reactions.

Vaccination against

Varicella

What's the crawfish?

Varicella is an infectious disease, particularly contagious, caused by a virus that is transmitted by direct contact with skin lesions or by respiratory tract.

It generally manifests itself with very high fever, general malaise and a typical exanthema, characterized by small pink papules that appear to wavelengths for 3-4 days, on the chest, face, limbs, but also in the mouth anus, vagina and ears.

These papules cause strong itching and evolve into vesicles, pustules and finally granular crusts that are likely to fall. In some cases these symptoms can be accompanied by strong coughs.

Complications in the baby are not frequent. If the varicella is contracted at the beginning of a pregnancy, it can cause fetal malformations (ocular lesions, limb alteration, mental retardation), and if contracted in the last days of pregnancy, it can cause a very severe form of varicella in the mother in the child, with a risk of death.

In subjects who have a compromised immune system and, to a lesser extent, in adolescents and adults, the varicella begins in the most severe form, with a higher risk of lung and neurological complications than the baby.

A late manifestation of the infection is herpes zoster observed in 15 cases of 100 people who had the varicella; is due to the persistence of the virus in the nervous ganglia that is reactivated and this risk increases with age.

The vaccine against the varicella

The vaccine against the varicella is made up of live and attenuated virus. It can be given after 12 months of life alone or in combination with the measles, mumps and rubella vaccine ("quadruple vaccine"). In our region, vaccination against cannabis is offered to all newborns, adolescents and adults who have not previously had the disease.

The vaccine should be administered subcutaneously and two doses are provided.

When to postpone

The circumstances in which this vaccination should be postponed are:

acute illness with fever or general disorders considered clinically important;

recent administration of immunoglobulins, blood or plasma, products that may hinder a good immune response to the vaccine;

recent administration of another vaccine based on live attenuated viruses.

When you do not have to vaccinate

The vaccine should not be given under the following conditions:

severe defect of the immune system due to illnesses or therapies

severe allergic reactions to vaccine constituents or prior administration of the same vaccine.

Side effects

The vaccine against varicella, either in single form or in combination with measles, mumps and rubella vaccine, is generally well tolerated. The reactions attributable to the vaccine are mild (redness and swelling at the inoculum site); at a distance of 6 to 12 days after vaccination, the baby may experience feverish, usually modest and short-term elevations, which in the 5-15% of the vaccine can reach 39 $^{\circ}$ C.

In 5% of the vaccine there may be slight malaise. In this case it is possible that the subject being vaccinated, albeit seldom, is contagious.

Like any other substance foreign to the body, this vaccine may rarely cause allergic reactions.

Vaccination against Disease from

pneumococcal

(streptococcus pneumoniae)

What is pneumococcal?

It is a widespread bacterium and can be present without giving any sign of self, in the throat and in the nose of healthy children and adults. The streptococcus pneumoniae is transmitted from person to person by respiration through close contact.

There are many different types (serotypes) of this germ, distinguished by a number.

Some of these are more frequently called into question when, in some cases, the germ invades the bloodstream (invasive disease) and causes serious illnesses and even death.

Pneumococcus is one of the main causes of sepsis (also known as blood infection for the massive concentration of bacteria and their toxic products, a condition that can pose a serious life threatening) and meningitis (infection of the membranes surrounding the brain), always very serious illness that can leave permanent damage such as convulsive seizures, deafness, motor paralysis,

mental delay. This bacterium can also cause other diseases such as pneumonia, otitis, sinusitis. The pneumococcus has in some cases also shown resistance to the most commonly used antibiotics.

The most vulnerable age groups of "invasive" disease are children 0 to 5 years old and adults over 64 years of age. Every year in Italy there are about 5 cases of pneumococcal meningitis per 100,000 children under 5 years, more frequently for those in the first year of life.

The pneumococcal vaccine

The anti-pneumococcal vaccine is the only way to prevent diseases such as meningitis and pneumococcal blood (septicemia) infections. It can also prevent some pneumococcal otitis. In our region vaccine against pneumococcus is offered free of charge to all newborns. In addition, vaccination is strongly recommended and free of charge for children, adolescents and adults) who are at increased risk of serious pneumococcal illness due to health problems such as sickle cell anemia and thalassemia, functional or anatomic asplenia (ie insufficient functionality or lack of spleen), chronic bronchitis and lung diseases, conditions associated with immunosuppresion, chronic cardiovascular disorders, diabetes mellitus, insufficiency

kidney, chronic liver disease (cirrhosis), cerebrospinal fluid loss.

The conjugated pneumococcal vaccine is composed only of parts of the microorganism, and it is called multivalent as it protects from multiple (serum) types. It is conjugated with specifications

proteins so that they can be effective and lasting protection at all ages. It is administered intramuscularly; the number of doses required varies according to the age of the start of the vaccine cycle and is offered since the 2nd month of life

When to postpone

This vaccination, like the other, should be temporarily postponed when the child has an acute illness with generalized fever or general disorders clinically relevant.

When you do not have to vaccinate

There are no clinical situations that do not allow this vaccination to be carried out, except for subjects who have had very serious allergic reactions to substances in the vaccine or previous doses of the same vaccine.

Side effects

In the injection site it is possible to appear pain, swelling, redness;

phenomena usually mild and of short duration.

General symptoms may be feverish, generally below 38.5 $^{\circ}$ C, slight irritability or somnolence, temporary loss of appetite.

Like any other substance alien to the body, this vaccine may also cause, rarely, allergic reactions.

Vaccination against Disease from

Meningococcus

(neisseria meningitidis)

What is the meningococcus?

Meningococcus is a bacterium that is found quite frequently in the throat and nose, where it usually does not cause any problems. There are different types of this germ, distinguished by the letters of the alphabet and the most frequent are the A, B, C, Y, W135. Transmission takes place person-to-person through the respiratory droplets. In some cases meningococcus reaches the blood and, through this, other organs, causing invasive diseases, particularly meningitis or sepsis

(widespread infection in the blood). These diseases are always severe and can leave permanent neurological and behavioral damage or lead to death. Less frequent are other meningococcal diseases such as pneumonia and conjunctivitis.

The disease affects especially children under the age of 5 and above all is more common in children under the age of two. Another age group, though less frequently, is that of teenagers and young adults. In Italy the frequency of meningococcal invasive diseases is lower than other countries, especially Anglo-Saxons.

Vaccines against meningococcus

Vaccination is the most effective means of reducing the risk of death and permanent damage from meningococcal disease caused by serotypes A, B, C, Y, W-135. The vaccine contains only parts of the microorganism.

The following vaccines are available on the market:

The anti-meningococcal vaccine A, C, Y, W135. It is administered intramuscularly and results in long-term protection. It is offered free of charge to children at the 13th month of life, to 14-15 year-old teenagers who have not previously been vaccinated and to people with pathologies who may predispose to a greater risk of developing meningococcal disease.

The against meningococcus C vaccine is administered intramuscularly and results in long-term protection. It is very effective against the serum-type C meningococcus; the number of doses required varies according to the age of the start of the vaccine cycle.

In our region it is administered only in particular situations.

The anti-meningococcal vaccine B. It is administered intramuscularly and results in long-term protection. It is offered free of charge to newborns starting on the 4th month of life. The number of doses required varies according to the age of the start of the vaccine cycle.

When to postpone

These vaccinations like the others should be temporarily deferred when the child has an acute illness with generalized fever or disorders that are clinically relevant.

When you do not have to vaccinate

There are no clinical situations that do not allow these vaccinations, except for subjects who have had very serious allergic reactions to substances in the vaccine or previous doses of the same vaccine.

Side effects

In the injection site it is possible to appear pain, swelling, redness, usually mild and short-term phenomena.

General symptoms may be feverish, generally below 38.5 $^{\circ}$ C, slight irritability or somnolence, headache, tears, appetite and malaise.

Like any other substance alien to the body, this vaccine may also rarely cause specific allergic reactions.

Vaccination against infection by

Papilloma virus

What is papillomavirus?

The papilloma virus is frequently found on the skin and mucous membranes (oral cavity, genital organs). It is estimated that about 75% of people (men and women) will come into contact with the virus during their lifetime. There are different types (serotypes) of this virus, distinguished by a number. Transmission takes place person-to-person through sexual contact. In most of them

cases the virus is eliminated from the natural defenses of our organism; sometimes, however, these viruses can cause illness.

Some types of viruses are cause of non-malignant but very annoying and difficult to treat (genital warts also known as warts). Other types, called "high risk", are the cause of some types of cancer, first of all cervical cancer. High-risk papillomaviruses are capable of transforming normal nerve cell cells into abnormal cells that, after a long period of time, can evolve in cancer.

For many years, the prevention of this tumor also uses Pap test screening, which consists in taking a sample of cells from the uterus's neck, with the aim of detecting those anomalies that precede the tumor. Another test, called HPV test, is now in the pap test, aimed at detecting the presence of the virus in the cells of the neck of the uterus.

The Sicilian Region offers these tests free of charge to women aged between 25 and 64 years, according to well-defined criteria, with the aim of identifying and dealing with any identified problems early and successfully.

These types of viruses also cause other genital cancers in the woman (vagina, vulva) and the male (penis) and some cancers in both sexes (anus, mouth, throat).

The latest epidemiological data show that about 1/3 of HPV cancers are male. For this reason, since 2015, the Sicilian Region has decided to offer this opportunity to health even for twelve-year-old males as well as females of the same age.

Vaccines against the papillomavirus

HPV is a very common virus. Types of viruses that can infect both man and woman at least 15 types may be responsible for sometimes serious illnesses such as cancer.

The current availability of specific, safe and effective vaccines provides a valuable form of prevention against precancerous lesions and tumors affecting the neck of the uterus, the vulva, the vagina and the anus caused by the HPV subtypes contained in the vaccine.

The totally free vaccination offer had been launched in our Region since August 2008 only for girls after 11 years of age.

The Assessor Act 12 January 2015 "Modification and Integration of the Vaccine Lifecycle for Life" extended the vaccine's offer to children, even after 11 years of age.

This new strategy (vaccination of both sexes) will also help reduce HPV circulation and hence its transmission potential.

The choice of vaccination from that age is beneficial, as the vaccine can provide greater protection before the onset of sexual activity and its effectiveness is less than 13-14 years.

The vaccine, as a rule, is well tolerated, does not cause infection or natural illness because it does not contain the live virus.

Intramuscular (arm) administration is provided for two doses at a distance of 6 months if the start of the vaccination is performed by the age of 15, three doses after that age, up to the limit indicated for the two sexes in the summary of the product characteristics.

In our region, the vaccine has been used since the beginning of the vaccination against viral types 6, 11, 16 and 18, which also allowed the prevention of 90% of genital warts. Currently there is also an additional protective vaccine for 9 HPV serotypes, the four already present in the quadrivalent and more 5 preventive serotypes against high risk oncogenes 31, 33, 45, 52 and 58.

The vaccine is able to protect us from infection by preventing the virus from penetrating into the cells but cannot eliminate the virus once it has already infected the mucous membrane. That is why the adolescent age, before coming into contact with the virus, is the most appropriate time to undergo vaccination. At this age the vaccine is most effective.

The vaccine is offered free of charge to both boys and girls during the twelfth year of life. Since the vaccine protects most, but not all, "high risk" viruses, pap test or HPV test will continue to be an indispensable test for every woman.

When to postpone

This vaccination, like the other, should be temporarily postponed in case of acute illness with generalized fever or general disorders clinically relevant.

When you do not have to vaccinate

There are no clinical situations that do not allow this vaccination to be carried out, except for subjects who have had very serious allergic reactions to substances in the vaccine or previous doses of the same vaccine.

Side effects

In the injection site it is possible to appear pain, swelling, redness;

usually mild and short-lived phenomena or general symptoms such as feverish, generally below 38.5 $^\circ$ C.

Like any other substance alien to the body, this vaccine may also rarely cause specific allergic reactions.

Vaccination against infection by

Rotavirus

What is rotavirus?

The rotavirus is a virus that causes a form of gastroenteritis.

The main transmission path of the virus is gold-fecal, but sometimes diffusion can also occur by contact and respiratory. Because the virus is stable in the environment, transmission may occur through the ingestion of contaminated water or food or because of contact with contaminated surfaces.

In Europe and in the rest of the temperate areas of the planet, the virus has seasonal spikes that, at our latitudes, occur in the winter months between November and March.

Rotavirus is present in the environment in 6 different species and is the most common cause of viral gastroenteritis among infants and children under 5 years of age. In particular, in very young children (between 6 and 24 months) the virus may cause severe diarrhea and dehydration. Having contracted the virus once does not give enough immunity, even if the infections that contract in later years and in adulthood tend to appear in a lighter form.

Vaccines against rotavirus

Vaccination is one of the weapons available today to combat this infection.

There are 2 vaccines in the Italian market, one in two doses and one in three doses.

Both should be administered by mouth.

Administration should take place early; the first dose from 6 weeks of life and the last dose within 24 or 32 weeks of life based on the type of vaccine.

The vaccine is offered free of charge to children with risk factors:

immunotherapies, (except for severe forms), premature infants, children with significant pathologies (cardiopathy, nephropathy).

When to postpone

Acute and severe febrile illness and acute diarrhea or vomiting require postponement of vaccination.

When you do not have to vaccinate

There is contraindication to vaccination for intestinal intussusception, asymptomatic HIV infection, or severe allergic reactions to substances contained in the vaccine or to previous doses. It is recommended to pay attention to infants with immune depression. Caution should be exercised when administering subjects who are in close contact with immune depressed individuals as transmission of the vaccine virus to non-vaccinated contacts has been observed.

Side effects

Very common is the appearance of fever, diarrhea and vomiting.

Like any other substance introduced in the body, this vaccine may also cause specific allergic reactions.

If a major vaccine-related side effect occurs, contact the vaccine service or your doctor.

Some helpful advice ...

if after vaccination:

- Your baby is restless

After vaccination, children may become restless as they experience pain in the injection site or have fever. In this case you can administer them a drug, "paracetamol", which helps to reduce pain and fever.

- Your child has a warm, swollen or reddened leg (or arm)

At the point of injection the leg (or arm) may flush or swell. To relieve the hassle

just apply a clean, fresh cloth to the painful and inflamed area. If you feel that the baby has a lot of pain because it responds to the minimum pressure you can administer paracetamol.

- Your child has fever

If after the vaccination the baby looks warm and reddened, check the temperature. It is advisable to measure rectal temperature; the axillary temperature is generally lower and less reliable.

If the baby has fever:

- from drinking in abundance
- dress it lightly without covering it over
- make a bath in lukewarm water (not cold)
- administer paracetamol (non-acid-acetylsalicylate) if the fever exceeds 38.2 $^{\circ}$ C-38.5 $^{\circ}$ C (38.7 $^{\circ}$ C-39 $^{\circ}$ C rectal).

Some useful addresses to find out

more through internet sites:

www.vaccinarsi.org

www.epicentro.iss.it/problemi/vaccinazioni/vaccinazioni.asp

www.pediatria.it

www.osservatorionazionalescreening.it/content/le-100-domande-sullhpv

www.salute.gov.it/malattieInfettive/malattieInfettive.jsp

www.cdc.gov/vaccines/pubs/pinkbook

www.who.int

The Regions of Veneto and Emilia Romagna are thankful, as a source of data