Perché, quando e per quali malattie “conviene” vaccinare la gravida e la puerpera

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ASL4 Chiavarese – Regione Liguria

La vaccinazione in gravidanza
Considerazioni generali

Esiste una riluttanza nei confronti delle immunizzazioni in gravidanza:

- **Medici/Operatori sanitari**
- **Utenza**

Sicurezza e benefici della vaccinazione non sono generalmente oggetto di specifici trial clinici

GUIDA ALLE CONTROINDICAZIONI ALLE VACCINAZIONI

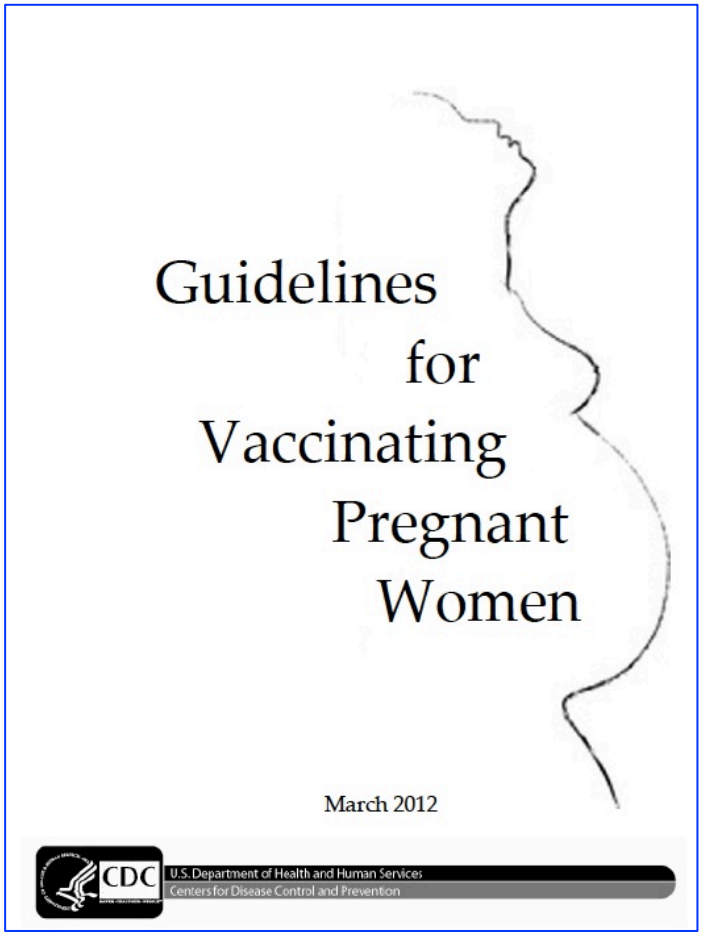
4°edizione

Dicembre 2008

Scheda anamnestica

DATA	...../...../.....	
1) Sta bene oggi ?	SI ☐	NO ☐
2) Ha o ha avuto malattie importanti ?	NO ☐	SI ☐
Se si, specificare se malattia neurologica		SI ☐
malattia con immunodeficienza		SI ☐
3) Ha mai avuto convulsioni ?	NO ☐	SI ☐
Se si, specificare se con febbre		SI ☐
senza febbre		SI ☐
4) Negli ultimi tre mesi ha assunto farmaci in continuità ?	NO ☐	SI ☐
Se si, specificare se CORTISONICI ad alte dosi		SI ☐
ANTINEOPLASTICI		SI ☐
5) Negli ultimi tre mesi è stato sottoposto a terapia radiante ?	NO ☐	SI ☐
6) Nell'ultimo anno ha ricevuto derivati del sangue come una trasfusione o immunoglobuline ?	NO ☐	SI ☐
7) E' allergico a qualche alimento, farmaco o vaccino ?	NO ☐	SI ☐
Se si, si tratta di un vaccino o di un suo componente ?		SI ☐
8) E' in gravidanza?	NO ☐	SI ☐
9) Ha avuto reazioni dopo le precedenti vaccinazioni ?	NO ☐	SI ☐
Se si, si è trattato di reazioni importanti ?		SI ☐
Se si, specificare (e compilare la scheda di segnalazione, di reazione avversa a vaccino se non ancora fatto):		
VACCINAZIONI PROPOSTE		
FIRMA DELL'OPERATORE SANITARIO		

Tutti i vaccini		
Controindicazioni -reazione allergica grave (anafilassi) dopo la somministrazione di una precedente dose -reazione allergica grave (anafilassi) a un componente del vaccino	**Precauzioni** -malattia acuta grave o moderata, con o senza febbre -reazione allergica grave al lattice (per i prodotti che contengono lattice nella siringa)	**False controindicazioni** -allattamento al seno (bambino o puerpera) -anamnesi familiare positiva per Sids -anamnesi positiva per allergia nei familiari -anamnesi positiva per allergia alla penicillina, alle proteine del latte e ad altre sostanze non contenute nei vaccini -anamnesi positiva per convulsioni febbrili -assenza di esame obiettivo in soggetti apparentemente sani -contatti non vaccinati -convalescenza dopo malattia -deficit selettivo IgA (escluso Ty21a) e IgG -dermatite atopica e seborroica -diabete tipo 1 e 2 -disturbi della coagulazione -esposizione recente a malattia infettiva o prevenibile con vaccino -fibrosi cistica -gravidanza nei contatti -immunodepressione nei contatti -malattia acuta lieve, con o senza febbre



Principles for Developing Pregnancy Recommendations

Formulating policy to guide vaccination of women during pregnancy and breastfeeding is challenging because the evidence-base to guide decisions is extremely limited.

In 2008, CDC published Guiding Principles for Developing ACIP Recommendations for Vaccination During Pregnancy and Breastfeeding to "provide guidance to help standardize both the process of policy formulation and the format and language of recommendations for pregnant and breastfeeding women" to CDC workgroups or subject matter experts developing vaccine statements subsequent to that date.

This document can be found online at http://www.cdc.gov/vaccines/recs/acip/downloads/preg-principles05-01-08.pdf.

La gravidanza - 1

- **Modifiche biochimiche, meccaniche, emodinamiche ed immunologiche, più pronunciate nel corso del 3° trimestre**

- **Diminuita capacità polmonare, aumentata portata cardiaca, maggiore consumo di ossigeno**

La gravidanza - 2

- **Immunità umorale adattativa rimane intatta con un aumento della risposta T-helper-2 anticorpo-mediata**

- **Soppressione selettiva della risposta T-helper-1 cellulo-mediata, che impatta sulla capacità della madre di rispondere alle infezioni**

- **Risk to a developing fetus from vaccination of the mother during pregnancy is theoretical.**

- **No evidence exists of risk to the fetus from vaccinating pregnant women with inactivated virus or bacterial vaccines or toxoids.**

- **Live vaccines administered to a pregnant woman pose a theoretical risk to the fetus; therefore, live, attenuated virus and live bacterial vaccines generally are contraindicated during pregnancy.**

- **Benefits of vaccinating pregnant women usually outweigh potential risks when the likelihood of disease exposure is high, when infection would pose a risk to the mother or fetus, and when the vaccine is unlikely to cause harm.**

GUIDA ALLE CONTROINDICAZIONI ALLE VACCINAZIONI

4°edizione

Dicembre 2008

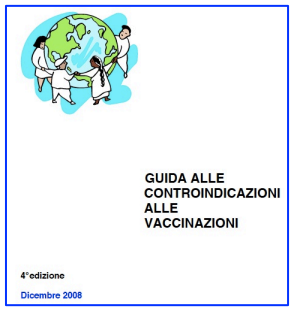
Gravidanza (28)

- vaccinazione nella gestante

BCG	no
MPR	no vedi nota 1 e 2
Rosolia	no vedi nota 1 e 2
VZV	no vedi nota 2 e 3
aP	vedi nota 4
Febbre gialla	vedi nota 5
HPV	vedi nota 6
IPV	vedi nota 7
Rabbia	vedi nota 8
Ep.B	si
Influenza	si
T	si
tutti gli altri	si vedi nota 9

Tetano, Difterite, Pertosse

Vaccinazione	Indicazione in gravidanza
Tetano	SI
Difterite	Precauzione
Pertosse	Precauzione



MMWR™
Morbidity and Mortality Weekly Report
www.cdc.gov/mmwr

Recommendations and Reports | May 30, 2008 / Vol. 57 / No. RR-4

Prevention of Pertussis, Tetanus, and Diphtheria Among Pregnant and Postpartum Women and Their Infants

Recommendations of The Advisory Committee on Immunization Practices (ACIP)

- **As with most inactivated vaccines and toxoids, pregnancy is not a contraindication for use of Tdap.**

- **Although the safety and immunogenicity of Tdap is expected to be similar in pregnant and nonpregnant women, few data on the safety of Tdap for women, fetuses, and pregnancy outcomes are available, and no information is available on the immunogenicity of Tdap in pregnant women.**

- **Vaccinating pregnant women with a single dose of Tdap might provide a degree of protection against pertussis to the infant in early life through transplacental maternal antibody, but evidence supporting this hypothesis is lacking.**

- **A concern is the unknown effect of potential interference by maternal antibody on the ability of the infant to mount an adequate immune response when the infant receives pediatric DTaP or conjugate vaccines containing tetanus toxoid or diphtheria toxoid.**

- **In special situations, administration of Tdap during pregnancy might be warranted for pregnant women who were not vaccinated previously with Tdap.**

Until additional information is available, CDC's Advisory Committee on Immunization Practices recommends that pregnant women who were not vaccinated previously with Tdap:

1) receive Tdap in the immediate postpartum period before discharge from hospital or birthing center

2) may receive Tdap at an interval as short as 2 years since the most recent Td vaccine

3) receive Td during pregnancy for tetanus and diphtheria protection when indicated, or 4) defer the Td vaccine indicated during pregnancy to substitute Tdap vaccine in the immediate postpartum period if the woman is likely to have sufficient protection against tetanus and diphtheria.

Although pregnancy is not a contraindication for receiving Tdap vaccine, health-care providers should weigh the theoretical risks and benefits before choosing to administer Tdap vaccine to a pregnant woman.

Morbidity and Mortality Weekly Report

Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine (Tdap) in Pregnant Women and Persons Who Have or Anticipate Having Close Contact with an Infant Aged <12 Months — Advisory Committee on Immunization Practices (ACIP), 2011

A decision analysis and cost effectiveness model was developed to assess the impact and cost effectiveness of maternal Tdap vaccination during pregnancy compared with immediately postpartum.

The model showed that Tdap vaccination during pregnancy would prevent more infant cases, hospitalizations, and deaths compared with the postpartum dose for two reasons:

1) **vaccination during pregnancy benefits the mother and infant by providing earlier protection to the mother, thereby protecting the infant at birth;**

2) **vaccination during late pregnancy maximizes transfer of maternal antibodies to the infant, likely providing direct protection to the infant for a period after birth.**

Morbidity and Mortality Weekly Report

Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine (Tdap) in Pregnant Women and Persons Who Have or Anticipate Having Close Contact with an Infant Aged <12 Months — Advisory Committee on Immunization Practices (ACIP), 2011

Maternal vaccination.

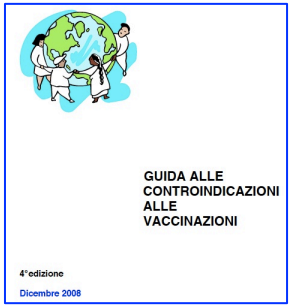
ACIP recommends that women's health-care personnel implement a Tdap vaccination program for pregnant women who previously have not received Tdap.

Health-care personnel should administer Tdap during pregnancy, preferably during the third or late second trimester (after 20 weeks' gestation).

If not administered during pregnancy, Tdap should be administered immediately postpartum.

Influenza

Vaccinazione	Indicazione in gravidanza
Influenza	**SI**



Influenza vaccination in pregnancy: current evidence and selected national policies

Tippi K Mak, Punam Mangtani, Jane Leese, John M Watson, Dina Pfeifer

Lancet Infect Dis 2008; 8: 44–52

In several countries, pregnant women are recommended seasonal influenza vaccination and identified as a priority group for vaccination in the event of a pandemic. We review the evidence for the risks of influenza and the risks and benefits of seasonal influenza vaccination in pregnancy. Data on influenza vaccine safety in pregnancy are inadequate, but the few published studies report no serious side-effects in women or their infants, including no indication of harm from vaccination in the first trimester. National policies differ widely, mainly because of the limited data available, particularly on vaccination in the first trimester. The evidence of excess morbidity during seasonal influenza supports vaccinating healthy pregnant women in the second or third trimester and those with comorbidities in any trimester. The evidence of excess mortality in two previous influenza pandemics supports vaccinating in any trimester during a pandemic.

Safety of influenza vaccination during pregnancy

Pranita D. Tamma, MD; Kevin A. Ault, MD; Carlos del Rio, MD; Mark C. Steinhoff, MD; Neal A. Halsey, MD; Saad B. Omer, MBBS, MPH, PhD

DECEMBER 2009 American Journal of Obstetrics & Gynecology

TABLE
Summary of data on safety outcomes of studies of influenza immunization during pregnancy

Study	Design	Study group	Control group	Follow-up period	Maternal outcomes	Infant outcomes
Zaman et al,[30] 2008	Prospective, randomized, double-blind controlled trial	172 pregnant women in third trimester	168 pregnant women who received 23-valent pneumococcal polysaccharide vaccine	7 d postvaccination; mother-infant pairs followed up to 24 wk of life	No serious adverse events or differences in pregnancy outcomes	No differences in gestational age, proportion with cesarean delivery, birthweight, or APGAR score
France et al,[31] 2006	Retrospective, matched cohort	3160 infants born to vaccinated mothers	37,969 infants born to nonvaccinated mothers	End of influenza season	Not assessed	No difference with regard to birthweight, gestational age, or length of stay for birth hospitalization
Munoz et al,[32] 2005	Retrospective, matched cohort	225 pregnant women in second and third trimesters	826 nonimmunized pregnant women	42 d after immunization; birth to 6 mo of age	No serious adverse events or differences in pregnancy outcomes	No differences in outcomes of pregnancy (cesarean delivery and premature delivery) and infant medical conditions
Black et al,[33] 2004	Retrospective cohort	3719 pregnant women immunized	45,866 women	Until delivery	No difference in cesarean section	No difference in cesarean section or preterm delivery
Yeager et al,[34] 1999	Prospective cohort	319 pregnant women immunized in second and third trimesters	None	Next prenatal visit	No preterm labor or other serious events	Not assessed
Englund et al,[35] 1993	Randomized, controlled trial	13 pregnant women in third trimester	13 pregnant women who received tetanus toxoid vaccine	Not specified	No significant adverse reactions, including fever, moderate or severe pain, or need to visit a physician noted in either group	Similar gestational ages in both groups; no health concerns in infants examined between 1-3 mo of age
Delnard and Ogburn,[36] 1981	Prospective cohort	189 pregnant women (13 prior to conception; 41, 58, and 77 in first, second, and third trimesters, respectively)	517 nonvaccinated pregnant women	48 h after immunization; pregnancy outcome to 8 wk of life	No differences in maternal health, pregnancy outcome, or postpartum course	No significant differences in adverse pregnancy outcomes (congenital anomalies, neonatal mortality)
Sumaya and Gibbs,[37] 1979	Retrospective, matched cohort	56 women in second and third trimesters	40 nonvaccinated pregnant women	24 h after immunization	No significant immediate reactions or differences in pregnancy course	No increased fetal complications associated with vaccine
Murray et al,[38] 1979	Prospective, matched cohort	59 pregnant immunized women (5, 22, and 32 in first, second, and third trimesters, respectively)	27 nonpregnant vaccinated women	Not specified	No significant side effects after immunization in any women	Not assessed
Heinonen et al, 1973,[39] and 1977[40]	Prospective cohort	2291 pregnant immunized women; up to 650 in first trimester	None	Up to 7 y of age		No suggestive associations for congenital malformations, malignancies, or neurocognitive disabilities
Hulka,[41] 1964	Retrospective and prospective cohort	225 pregnant immunized women (19 in first trimester)	44 nonpregnant influenza immunized; 104 pregnant and 25 nonpregnant immunized with placebo	Up to 3 d after vaccination and at delivery	Local pain at injection site and some systemic symptoms greater in women immunized with influenza vaccine	No association with fetal anomalies or miscarriage

Tamma. Safety of influenza vaccination during pregnancy. Am J Obstet Gynecol 2009.

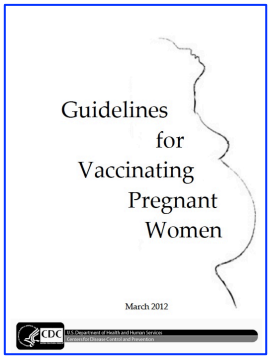
The Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) recommends routine influenza vaccination for all women who are or will be pregnant during the influenza season.

The basis for this unambiguous recommendation is clear.

During seasonal influenza epidemics, during previous pandemics, and with the ongoing influenza A (H1N1) pandemic, pregnancy places otherwise healthy women at increased risk for serious complications from influenza.

Influenza (LAIV)

Do not administer LAIV to . . . pregnant women



Vaccinazione antinfluenzale in gravidanza: l'evidence attuale

(*a cura della redazione di EpiCentro; revisione a cura di Caterina Rizzo –Cnesps Iss*)

- **I dati sulla sicurezza del vaccino antinfluenzale durante la gravidanza sono inadeguati, ma i pochi studi pubblicati non riportano né effetti collaterali significativi per le donne o per i neonati, né indicazioni di rischio per la vaccinazione durante il primo trimestre**

- **L'evidenza di un eccesso di morbosità durante l'influenza stagionale rafforza l'opportunità della vaccinazione delle donne incinte sane nel secondo o terzo trimestre e di quelle a rischio (presenza di co-morbidità) in qualsiasi trimestre. L'evidenza di un eccesso di mortalità in due precedenti pandemie influenzali sostiene l'utilità della vaccinazione in qualsiasi trimestre di gravidanza, durante una pandemia.**

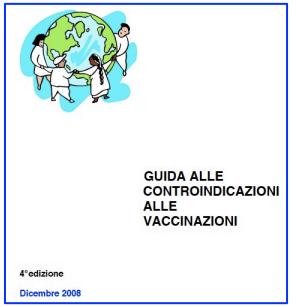
Piano Nazionale Prevezione Vaccinale 2012-2014

Elenco delle categorie per le quali la vaccinazione stagionale è raccomandata

4. Donne che all'inizio della stagione epidemica si trovino nel secondo e terzo trimestre di gravidanza

Epatite B

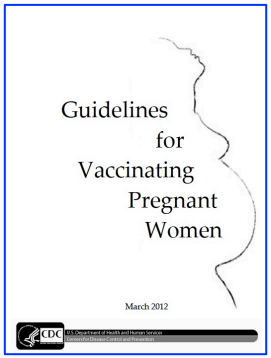
Vaccinazione	Indicazione in gravidanza
Epatite B	**SI**



Hepatitis B

- **Pregnancy is not a contraindication to vaccination. Limited data suggest that developing fetuses are not at risk for adverse events when hepatitis B vaccine is administered to pregnant women. Available vaccines contain noninfectious HBsAg and should cause no risk of infection to the fetus**

- **Pregnant women who are identified as being at risk for HBV infection during pregnancy (e.g., having more than one sex partner during the previous 6 months, been evaluated or treated for an STD, recent or current injection drug use, or having had an HBsAg-positive sex partner) should be vaccinated.**

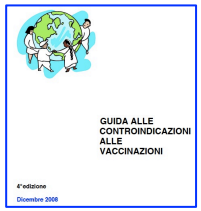


HPV

Vaccinazione	Indicazione in gravidanza
HPV	**Vedi nota**

Nota 6: il vaccino non è stato associato con danni alla donna in gravidanza o allo sviluppo del feto, tuttavia dato che la sicurezza non è stata adeguatamente determinata, la vaccinazione anti-HPV non va eseguita in gravidanza.

Se la donna inizia una gravidanza dopo aver iniziato il ciclo, le altre dosi devono essere spostate dopo il termine della gravidanza.
Se una donna è inavvertitamente vaccinata in stato di gravidanza questa non deve essere considerata una indicazione all'interruzione della gravidanza

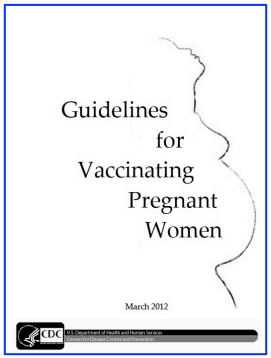


Human Papillomavirus

- **HPV vaccines are not recommended for use in pregnant women.**

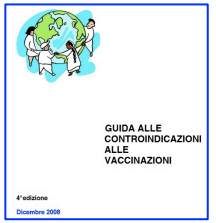
If a woman is found to be pregnant after initiating the vaccination series, the remainder of the 3-dose series should be delayed until completion of pregnancy. Pregnancy testing is not needed before vaccination. If a vaccine dose has been administered during pregnancy, no intervention is needed.

- Patients and health-care providers should report any exposure to HPV4 during pregnancy to Merck at telephone, 800-986-8999, and any exposure to HPV2 during pregnancy to GlaxoSmithKline at telephone, 888-452-9622.4



Morbillo, Rosolia, Parotite, Varicella

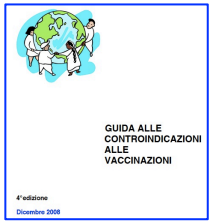
Vaccinazioni	Indicazioni in gravidanza
Morbillo	NO v. nota
Rosolia	NO v. nota
Parotite	NO v. nota
Varicella	NO v. nota



Morbillo, Rosolia, Parotite, Varicella

Nota 1: anche se non vi sono evidenze che il vaccino sia teratogeno, la vaccinazione MPR, MPRV e Rosolia è controindicata in gravidanza e va evitata la gravidanza nelle 4 settimane successive alla vaccinazione. Se una donna è inavvertitamente vaccinata in stato di gravidanza o nelle 4 settimane che ne precedono l'inizio, dovrebbe essere informata del rischio teorico di danno fetale. Tuttavia poiché finora non sono mai state osservate malformazioni fetali attribuibili a vaccinazione antirosolia in gravidanza, l'accidentale vaccinazione non costituisce un'indicazione alla interruzione della gravidanza

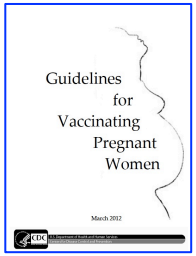
Nota 3: gli effetti del vaccino virus-varicella sul feto sono sconosciuti e pertanto le donne in gravidanza non devono essere vaccinate; inoltre è consigliato evitare una gravidanza nelle 4 settimane successive alla vaccinazione. Se una donna è inavvertitamente vaccinata in stato di gravidanza o nelle 4 settimane che ne precedono l'inizio, dovrebbe essere informata del rischio teorico di danno fetale e la vaccinazione non dovrebbe essere considerata una indicazione all'interruzione della gravidanza.



Measles, Rubella, Mumps

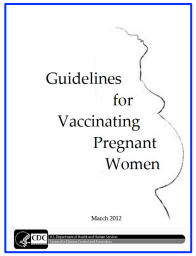
- Measles-mumps-rubella (MMR) vaccine and its component vaccines should not be administered to women known to be pregnant. …., women should be counseled to avoid becoming pregnant for 28 days after vaccination with measles or mumps vaccines or MMR or other rubella-containing vaccine

- If a pregnant woman is inadvertently vaccinated or becomes pregnant within 4 weeks after MMR or varicella vaccination, she should be counseled about the theoretical basis of concern for the fetus; however, MMR or varicella vaccination during pregnancy should not be considered a reason to terminate pregnancy



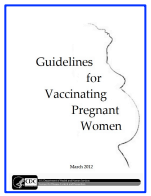
Measles, Rubella, Mumps

- A registry of susceptible women vaccinated with rubella vaccine between 3 months before and 3 months after conception – the "Vaccine in Pregnancy (VIP) Registry" – was kept between 1971 and 1989. No evidence of CRS occurred in the offspring of the 226 women who received the current RA 27/3 rubella vaccine and continued their pregnancy to term



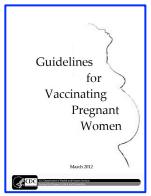
Varicella

- Because the effects of the varicella virus on the fetus are unknown, pregnant women should not be vaccinated. Nonpregnant women who are vaccinated should avoid becoming pregnant for 1 month after each injection. For persons without evidence of immunity, having a pregnant household member is not a contraindication for vaccination
- If a pregnant woman is inadvertently vaccinated or becomes pregnant within 4 weeks after MMR or varicella vaccination, she should be counseled about the theoretical basis of concern for the fetus; however, varicella vaccination during pregnancy should not be considered a reason to terminate pregnancy



Varicella

- In 1995, Merck and Co., Inc., in collaboration with CDC, established the VZV Pregnancy Registry to monitor the maternal-fetal outcomes of pregnant women who were inadvertently administered varicella vaccine 3 months before or at any time during pregnancy. During the first 10 years of the pregnancy registry no cases of congenital varicella syndrome or birth defects compatible with congenital varicella syndrome have been documented

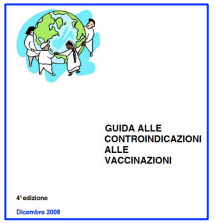


Poliomielite (IPV)

Vaccinazioni	Indicazioni in gravidanza
IPV	**Vedi nota**

Nota 7: non sono stati documentati eventi avversi ma, sulla base di un rischio teorico, la vaccinazione IPV dovrebbe essere rinviata a dopo il parto.

Il vaccino IPV può essere invece somministrato alle donne in gravidanza che sono a rischio di esposizione all'infezione dei poliovirus selvaggi



Febbre gialla

Vaccinazioni	Indicazioni in gravidanza
Febbre gialla	**Vedi nota**

Nota 5: le donne in gravidanza non devono essere vaccinate di routine e i viaggi verso aree endemiche per la febbre gialla rinviati a dopo il parto.

Se la vaccinazione è richiesta solo sulla base di esigenze internazionali ma non di reale aumentato rischio di infezione è opportuno rilasciare un certificato di esonero temporaneo

In caso non sia possibile rimandare il viaggio verso zone ad alto rischio la vaccinazione può essere somministrata perché il limitato teorico rischio della vaccinazione è significativamente controbilanciato dal rischio di infezione

L'immunogenicità del vaccino contro la febbre gialla in gravidanza può essere ridotta. Se una donna è inavvertitamente vaccinata in stato di gravidanza o nelle 4 settimane che hanno preceduto il suo inizio questo non deve essere considerato una indicazione all'interruzione della gravidanza

Rabbia

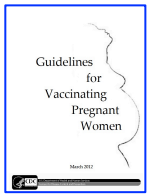
Vaccinazioni	Indicazioni in gravidanza
Rabbia	**Vedi nota**

Nota 8: la vaccinazione contro la rabbia in pre-esposizione può essere somministrata in gravidanza in caso di rischio reale e accesso ad eventuale profilassi post-esposizione difficile. La gravidanza non rappresenta controindicazione alla somministrazione di profilassi post esposizione se il rischio è reale

Non vi sono segnalazioni di malformazioni fetali associate alla vaccinazione

Rabies

Because of the potential consequences of inadequately managed rabies exposure, pregnancy **is not considered a contraindication to postexposure prophylaxis**. Certain studies have indicated no increased incidence of abortion, premature births, or fetal abnormalities associated with rabies vaccination. If the risk of exposure to rabies is substantial, **preexposure prophylaxis also might be indicated during pregnancy**. Rabies exposure or the diagnosis of rabies in the mother should not be regarded as reasons to terminate the pregnancy.



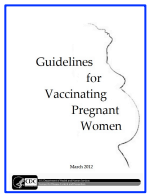
TBC

Vaccinazioni	Indicazioni in gravidanza
BCG	**NO**

BCG

BCG vaccination should not be given during pregnancy.

Even though no harmful effects of BCG vaccination on the fetus have been observed, further studies are needed to prove its safety.



Tutti gli altri vaccini

Vaccinazioni	Indicazioni in gravidanza
Tutti gli altri	**Si vedi nota**

Nota 9: la sicurezza delle altre vaccinazioni nelle donne in stato di gravidanza non è stata determinata, ma il vaccino non è controindicato.

Valutare rischi e benefici della vaccinazione in rapporto alla condizione individuale e alla situazione di rischio epidemiologico

Piano Nazionale Prevenzione Vaccinale 2012-2014

Le vaccinazioni indicate per i soggetti ad alto rischio

Vaccinazione MPR indicata per le puerpere e le donne che effettuano una interruzione di gravidanza senza evidenza sierologica di immunità o documentata vaccinazione

Breastfeeding and Vaccination

- **"Neither inactivated nor live-virus vaccines administered to a lactating woman affect the safety of breastfeeding for women or their infants.**

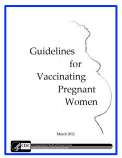
Although live viruses in vaccines can replicate in vaccine recipients (i.e., the mother), the majority of live viruses in vaccines have been demonstrated not to be excreted in human milk.

Varicella vaccine virus has not been found in human milk.

Although rubella vaccine virus might be excreted in human milk, the virus usually does not infect the infant.

If infection does occur, it is well tolerated because the virus is attenuated.

Inactivated, recombinant, subunit, polysaccharide, and conjugate vaccines, as well as toxoids, pose no risk for mothers who are breastfeeding or for their infants.

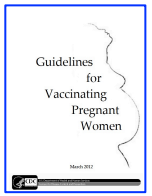


Breastfeeding and Vaccination

- **"Breastfeeding is a contraindication for smallpox vaccination of the mother** because of the theoretical risk for contact transmission from mother to infant**.**

- **Yellow fever vaccine should be avoided in breastfeeding women.**

However, when nursing mothers cannot avoid or postpone travel to areas endemic for yellow fever in which risk for acquisition is high, these women should be vaccinated."



Gravidanza

- vaccinazione nei contatti

MPR	si vedi nota 1
Rosolia	si vedi nota 1
VZV	si vedi nota 2
tutti gli altri	si

Nota 1: non c'è rischio documentato di trasmissione dei virus attenuati morbillo, parotite e rosolia.

Nota 2: il rischio di trasmissione del virus varicella-zooster vaccinale è trascurabile, la possibilità di trasmissione è rara e forse solo se il vaccinato sviluppa un rush, per cui è sicuro vaccinare i contatti di donne in gravidanza suscettibili alla varicella. In caso di esantema post-vaccinale è opportuno coprire le lesioni e ridurre i contatti della persona vaccinata con la donna gravida, se suscettibile alla varicella. In caso di esantema post-vaccinale è opportuno escludere il personale sanitario vaccinato dall'assistenza diretta di donne in gravidanza suscettibili, anche se il rischio di trasmissione sembra minimo.

Immunization & Pregnancy

Vaccines help keep a pregnant woman and her growing family healthy.

Vaccine	Before pregnancy	During pregnancy	After pregnancy	Type of Vaccine	Route
Hepatitis A	Yes, if at risk	Yes, if at risk	Yes, if at risk	Inactivated	IM
Hepatitis B	Yes, if at risk	Yes, if at risk	Yes, if at risk	Inactivated	IM
Human Papillomavirus (HPV)	Yes, if 9 through 26 years of age	No, under study	Yes, if 9 through 26 years of age	Inactivated	IM
Influenza TIV	Yes	Yes	Yes	Inactivated	IM, ID (18-64 years)
Influenza LAIV	Yes, if less than 50 years of age and healthy; avoid conception for 4 weeks	No	Yes, if less than 50 years of age and healthy; avoid conception for 4 weeks	Live	Nasal spray
MMR	Yes, avoid conception for 4 weeks	No	Yes, give immediately postpartum if susceptible to rubella	Live	SC
Meningococcal: • polysaccharide • conjugate	If indicated	If indicated	If indicated	Inactivated Inactivated	SC IM
Pneumococcal Polysaccharide	If indicated	If indicated	If indicated	Inactivated	IM or SC
Tetanus/Diphtheria Td	Yes, Tdap preferred	Yes, Tdap preferred if 20 weeks gestational age or more	Yes, Tdap preferred	Toxoid	IM
Tdap, one dose only	Yes, preferred	Yes, preferred	Yes, preferred	Toxoid/ inactivated	IM
Varicella	Yes, avoid conception for 4 weeks	No	Yes, give immediately postpartum if susceptible	Live	SC

For information on all vaccines, including travel vaccines, use this table with www.cdc.gov/vaccines

Get an answer to your specific question by e-mailing cdcinfo@cdc.gov or calling 800-CDC-INFO (232-4636) • English or Spanish

National Center for Immunization and Respiratory Diseases
Immunization Services Division

CS######_10/2011

Immunization & Pregnancy

Vaccines help keep a pregnant woman and her growing family healthy.

Before pregnancy

Before becoming pregnant, a woman should be up-to-date on routine adult vaccines. This will help protect her and her child. Live vaccines should be given a month or more before pregnancy. Inactivated vaccines can be given before or during pregnancy, if needed.

During pregnancy

Did you know that a mother's immunity is passed along to her baby during pregnancy? This will protect the baby from some diseases during the first few months of life until the baby can get vaccinated.

Flu Vaccine

It is safe, and very important, for a pregnant woman to receive the inactivated flu vaccine. A pregnant woman who gets the flu is at risk for serious complications and hospitalization. To learn more about preventing the flu, visit the CDC website www.cdc.gov/flu.

Tdap Vaccine

A pregnant woman should receive the adult tetanus, toxoid reduced diphtheria toxoid, acellular pertussis vaccine (Tdap) after 20 weeks gestational age if she has not already received the vaccine. Vaccinating at this gestational age will help prevent pertussis in mom and in the newborn infant.

Travel

Many vaccine-preventable diseases, rarely seen in the United States, are still common in other parts of the world. A pregnant woman planning international travel should talk to her health professional about vaccines. Information about travel vaccines can be found at CDC's traveler's health website at www.cdc.gov/travel.

Childhood Vaccines

Pregnancy is a good time to learn about childhood vaccines. Parents-to-be can learn more about childhood vaccines from the CDC parents guide and from the child and adolescent vaccination schedules. This information can be downloaded and printed at www.cdc.gov/vaccines.

After pregnancy

It is safe for a woman to receive vaccines right after giving birth, even while she is breastfeeding. A woman who has not received the new vaccine for the prevention of tetanus, diphtheria and pertussis (Tdap) should be vaccinated right after delivery. Vaccinating a new mother against pertussis (whooping cough) reduces the risk to her infant too. Also, a woman who is not immune to measles, mumps and rubella and/or varicella (chicken pox) should be vaccinated before leaving the hospital. If inactivated influenza vaccine was not given during pregnancy, a woman should receive it now because it will protect her infant. LAIV may be an option.

Visit CDC's website at WWW.cdc.gov for more information. Or get an answer to your specific question by e-mailing cdcinfo@cdc.gov or calling 800-CDC-INFO (232-4636) · English or Spanish

National Center for Immunization and Respiratory Diseases
Immunization Services Division

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grazie per l'attenzione!