Endocrinology Committee of FOGSI
ENDOCRINE OUR LIFE LINE

Vaccines for Women

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Introduction

In 1736 Benjamin Franklin said "An ounce of prevention is worth a pound of cure". Meanwhile in 2020, when the whole world is trying hard to combat the pandemic caused by Covid-19, the mankind is in desperate need of a vaccine that is effective against coronavirus. In adult, the vaccination schedule depends on the individual's history of childhood vaccination (3).

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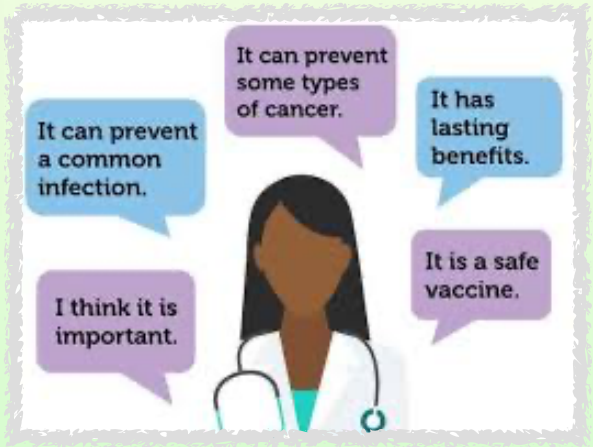
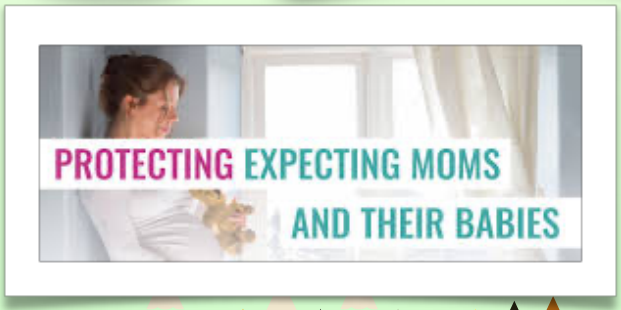
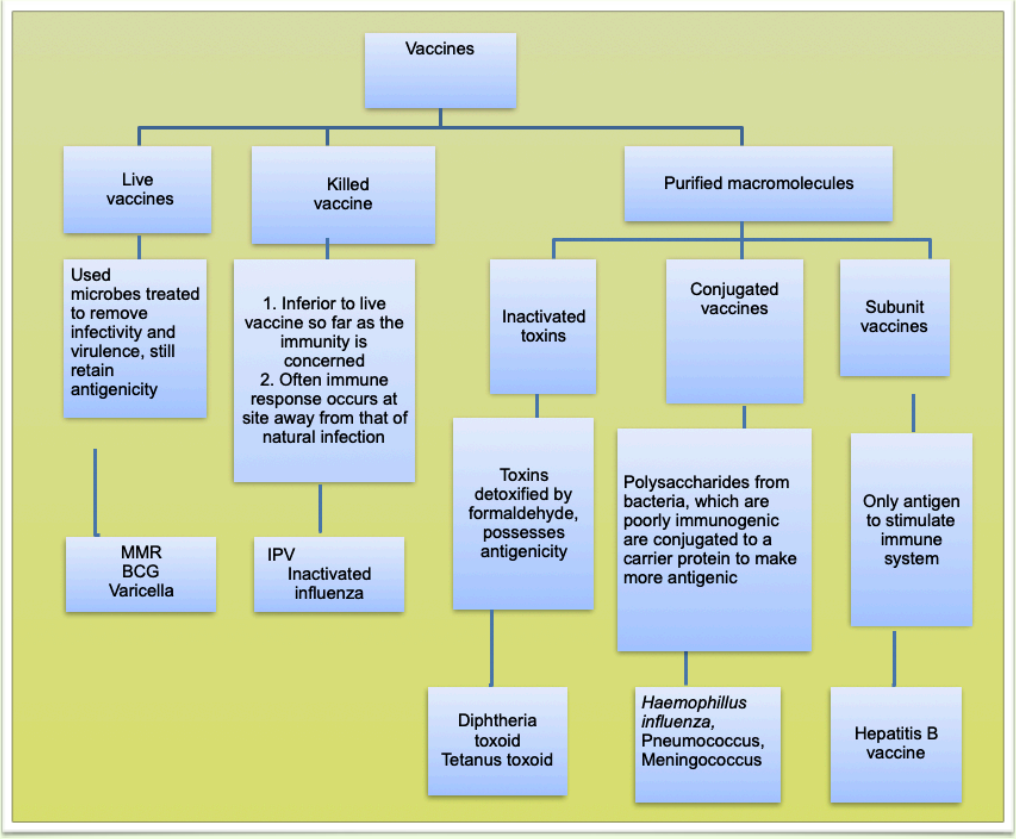






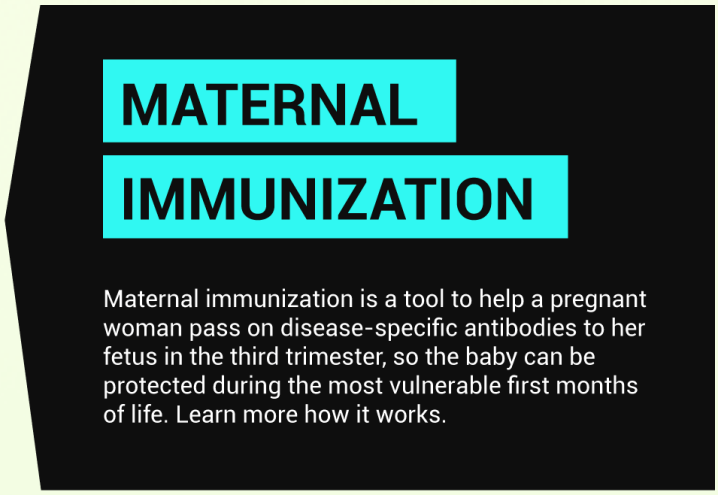
Types of vaccines (1, 3)

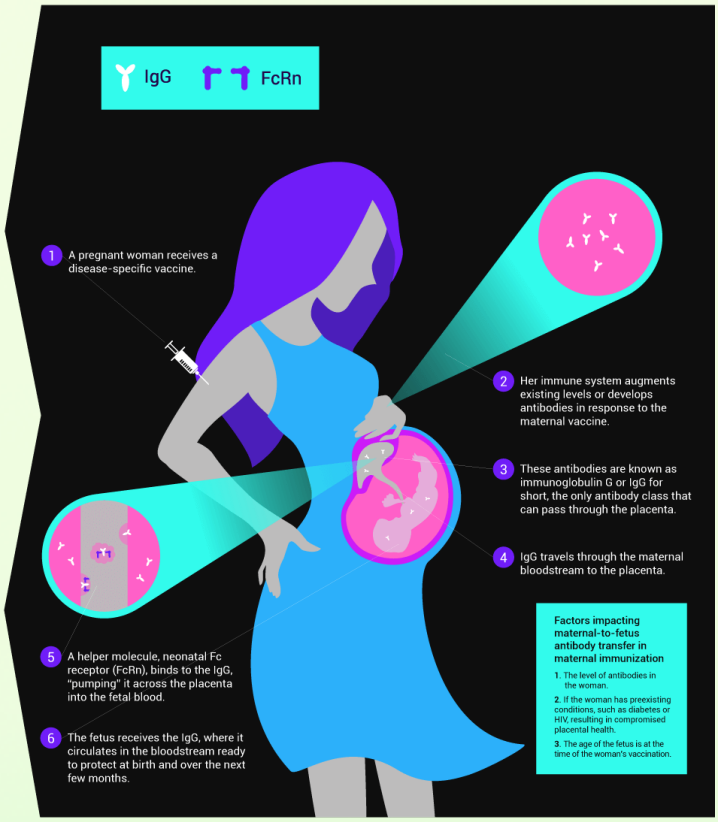
Vaccinations commonly recommended in adults in India (3, 4, 6)

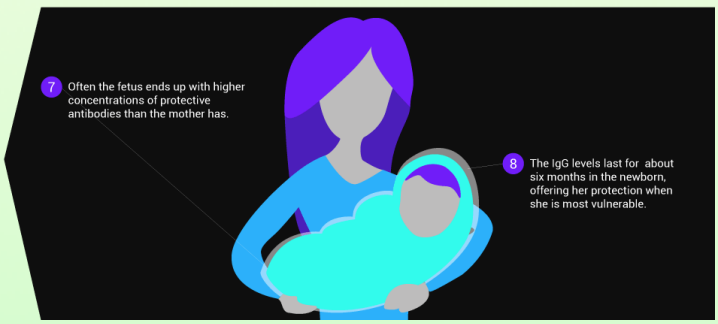
- Diphtheria, Pertussis and Tetanus (DPT)- 3 doses- 0,1,4 months
- Measles, Mumps and Rubella (MMR)- single dose
- Varicella (>60 years)- 2 doses 4-8 weeks apart
- Influenza (>50 years)- yearly
- **Human Papilloma Virus (HPV) vaccine-** There are two vaccines- bivalent and quadrivalent, both equally effective against prevention of lower genital tract neoplasia but the latter giving additional protection against the genital wart (2). In adolescent girls, 2 doses (0,6 months) of vaccination are now considered sufficient but in others 3 doses (0,1,6 months) are needed (2). However, the HPV vaccine is not the alternative to the cervical screening because the vaccine is not effective against all the strains (2). In some countries, boys are also vaccinated (2).

Vaccination advised in special circumstances

Hepatitis A vaccine- Formalin-inactivated vaccine	• Chronic liver disease • Haemophilia • intravenous (IV) drug abuse • working near sewage or with primates (1, 3)
Hepatitis B vaccine	• IV drug abuser and their partners • Multiple sex partners • Close family members or partners affected with hepatitis B virus • Regularly receiving blood and product transfusion • Chronic liver and kidney diseases • Health care workers (1, 3, 7)
Meningococcal vaccine It is available as conjugated group C vaccine and quadrivalent polysaccharide vaccine. The former is providing better and longer lasting immunity.	• Splenectomy (surgical or in sickle cell disease) • Immunocompromised individuals including those with complement deficiency • Travelling to high risk endemic areas and coming in contact with the infected individuals (1, 3, 7)
Pneumococcal vaccine	• Age >65 years • Splenectomy (surgical or in sickle cell disease) • Immunocompromised individuals including those with complement deficiency (1, 3, 7)
Rabies vaccine	Given the severity of the infection and safety of the vaccine, there should not be any contraindication including pregnancy. It is useful both as pre- (0,7,28 days) and post- (0, 3,7,14,28 days) exposure prophylaxis. (1, 3)
Typhoid vaccine, cholera, Japanese encephalitis and yellow fever	Should be given if an individual is travelling to the endemic area (1, 3)
Rotavirus	Solid organ transplantation (3)







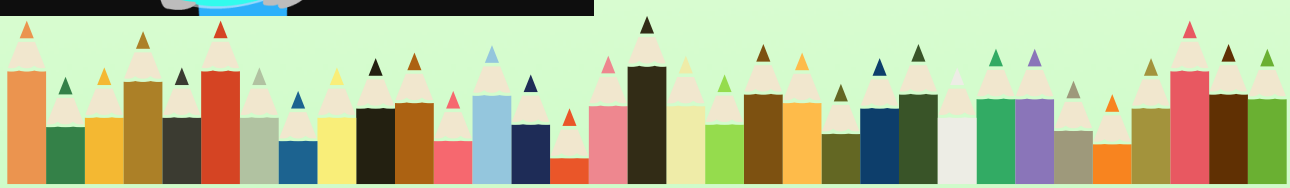
Vaccination before pregnancy

Ideally a woman should be vaccinated before planning for pregnancy, against all preventable diseases (1, 3). These include **MMR** and **varicella** (4, 6).. However, after MMR and varicella vaccination, the women should be asked to avoid pregnancy for one month for the theoretical concern, although there is no evidence that live attenuated rubella vaccine affecting the fetus causing congenital anomalies (1, 4, 5, 6). In women with sickle cell disease or splenectomy, **pneumococcus** vaccine is given every 5 years and **meningococcal** *and* ***H influenza*** vaccines are given as the single dose (7)

Vaccination in pregnancy

Live vaccines are generally contraindicated in pregnancy (1, 3). These include **MMR, varicella** and **BCG** vaccine (1, 6). Although **HPV** vaccine is “subunit vaccine” (virus-like particles- VLP), its safety has not been evaluated in pregnancy and is therefore withheld (1, 2). If a woman falls pregnant before completing the HPV vaccination regime, the remaining vaccine should be delayed till postpartum. **Yellow fever** vaccine is an exception, although it is a live attenuated vaccine (1). It should be given only under supervision by the infectious disease specialist (1).

Toxoids, immunoglobulins and inactivated vaccines can safely be given in pregnancy because there is no evidence of harm to the unborn fetus (1, 3). However, unless there is any immediate concern, it is better to postpone the administration till the second trimester when the organogenesis is completed (1).



- Instead of the plain tetanus vaccination, **diphtheria toxoid, tetanus toxoid and acellular pertussis (dTaP)** vaccination should be offered by 28-32 weeks in each pregnancy (1, 5). The importance of pertussis vaccine lies in the fact that the neonates are at risk of infection for first 2 months when they are vaccinated (1). Therefore, the passively passed maternal antibodies can protect the infants till 2 months of age (1).
- **Inactivated polio vaccine (IPV)** is offered along with dTaP in the countries like the UK at 28-32 weeks (1).
- **Inactivated influenza vaccine** is given to the mother to reduce the risk of severity of the infection and also to provide adequate antibody which can be transferred to the fetus to give adequate protection (1). This vaccine can be given at any time in pregnancy but can be given at the time of the dTaP for the convenience (1). However, ideally this vaccine should be administered before the influenza vaccine starts to circulate and is very important to give between October and January (1). However, live attenuated influenza vaccine is contraindicated in pregnancy (1).
- Whenever indicated, **pneumococcal, meningococcal, hepatitis A and B, rabies and inactivated (parenteral) typhoid vaccines** should be administered (1, 7).

Vaccination in postpartum

All vaccines including **varicella and MMR** can be given postpartum (1, 4, 5. 6). Breastfeeding is not a contraindication to any vaccination including live vaccines because most of the viruses have not been found in the breastmilk (1). However, **yellow fever** vaccine should be avoided in lactating mothers (1)

Conclusion

Although majority of the vaccinations are administered in the pediatric age group, the physicians taking care of the adult individuals including the obstetricians should have responsibility to prevent the communicable diseases (3).

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