Knowledge of Mothers about Side Effects of Obligatory Vaccines in Al-amyria Family Medicine Center, Cairo

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The most merciful, The Most Compassionate

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Mahmoud Mohamed Metwaly

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List of Abbreviations

ACIP	**:**	Advisory Committee on Immunization Practices
AEFI	**:**	Adverse Events Following Immunization
CDC	**:**	Centers for Diseases Control
CFS	**:**	Chronic Fatigue Syndrome
CVDPVs	**:**	Circulating Vaccine- Derived Polioviruses
DT	**:**	Diphtheria and Tetanus Toxoid
DTP	**:**	Diphtheria- Tetanus- Pertussis
GACVS	**:**	Global Advisory Committee on Vaccine Safety
GBS	**:**	Guillan- Barre Syndrome
HBV	**:**	Hepatitis B Vaccine
IPV	**:**	Inactivated Poliovirus Vaccine
iVDPVs	**:**	immunodeficient Vaccine- Derived Polioviruses
MMR	**:**	Mealses- Mumps- Rubella
MS	**:**	Multiple Sclerosis
OPV	**:**	Orally Administered Trivalent Polio- Vaccine
PATI	**:**	Positive Attitude Towards Immunization
SSPE		Subacute Sclerosing Pan Encephalitis
UNICEF	**:**	United Nations International Children's Emergency Fund

VAERS	**:**	Vaccine Adverse Event Reporting system
VAPP	**:**	Vaccine- Associated Paralytic Poliomyelitis
VDPVs	**:**	Vaccine- Derived Poliovirus
VIS	**:**	Vaccine Information Sheets
WHO	**:**	World Health Organization

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Introduction

Vaccination is a proven and one of the most cost-effective child survival interventions. All countries in the world have an immunization programme to deliver selected vaccines to the targeted beneficiaries, specially focusing on pregnant women, infants and children, who are at a high risk of diseases preventable by vaccines. There are at least 27 causative agents against which vaccines are available and many more agents are targeted for development of vaccines. The number of antigens in the immunization programmes varies from country to country; however, there are a few selected antigens against diphtheria, pertussis, tetanus, poliomyelitis, measles, hepatitis B which are part of immunization programmes in most of the countries in the world ***(Lahariya, 2014).***

Regarding Bacille Calmette–Guérin (BCG), an attenuated vaccine derived from *Mycobacterium bovis*, is the current vaccine of choice against tuberculosis (TB). Despite its protection against activeTB in children, BCG has failed to protect adults againstTB infection and active disease development, especially in developing countries where the disease is endemic. Currently, there is a

significant effort toward the development of a new TB vaccine ***(Mangtani, 2014)***

BCG immunization generally causes some pain and scarring at the site of injection. The main adverse effects are keloids—large, raised scars. The insertion of deltoid is most frequently used because the local complication rate is smallest when that site is used. Nonetheless, the buttock is an alternative site of administration because it provides better cosmetic outcomes ***(Govindarajan, 2011)***.

Uncommonly, breast and gluteal abscesses can occur due to haematogenous and lymphangiomatous spread. Regional bone infection (BCG osteomyelitis or osteitis) and disseminated BCG infection are rare complications of BCG vaccination, but potentially life-threatening. Systemic antituberculous therapy may be helpful in severe complications ***(Govindarajan, 2011).***

Regarding measles, mumps and rubella (MMR) vaccine, it is an immunization vaccine against measles, mumps, and rubella (also called German measles). It is a mixture of live attenuated of the three diseases, administered via injection.

The three vaccines (for mumps, measles, and rubella) were combined in 1971 to become the measles-mumps-rubella (MMR) vaccine.

The MMR vaccine is generally administered to children around the age of one year, with a second dose before starting school (i.e. age 4-5years). The second dose is a dose to produce immunity in the small number of persons (2–5%) who fail to develop measles immunity after the first dose.

The MMRV vaccine, a combined measles, mumps, rubella and varicella vaccine, has been proposed as a replacement for the MMR vaccine to simplify administration of the vaccines ***(Vesikari, 2010).***

Adverse effects rarely serious may occur from each component of the MMR vaccine. 10% of children develop fever, malaise and a rash 5–21 days after the first vaccination; 3% develop temporary joint pain. Older women appear to be more at risk of joint pain, acute arthritis, and even (rarely) chronic arthritis. Anaphylaxis is an extremely rare but serious allergic reaction to the vaccine. One cause can be egg allergy ***(Schattner, 2009).***

In the UK, the MMR vaccine was the subject of controversy after publication of a 1998 paper by Andrew Wakefield et al. reporting a study of twelve children who

had bowel symptoms along with autism or other disorders, including cases where onset was believed by the parents to be soon after administration of MMR vaccine. In 2010, Wakefield's research was found by the General Medical Council to have been "dishonest", and The Lancet fully retracted the original paper. The research was declared fraudulent in 2011 by the British Medical Journal. Several subsequent peer-reviewed studies have failed to show any association between the vaccine and autism ***(Godlee, 2011).***

Concerning the polio vaccine, two vaccines exist against polio; inactivated polio Vaccine (IPV) and Trivalent live Oral polio Virus (tOPV). tOPV with attenuated Sabin strains of poliovirus types 1, 2 and 3, has been the vaccine of choice for polio vaccination in most countries because it induces both systemic and intestinal immunity, can immunize or boost immunity of close contacts through secondary spread, and is inexpensive and easy to administer. However, one problem with OPV is that on rare occasions OPV can cause vaccine-associated paralytic poliomyelitis (VAPP) and/or can revert to a neurovirulent form of poliovirus which is believed to be as transmissible and virulent as wild polioviruses. Therefore, steps have been taken to discontinue OPV as a vaccine

against polio, rendering IPV the only realistic polio vaccine in the post-eradication era ***(Estivariz, 2013).***

The most common minor side effects from a polio vaccination include irritability up to 64.5 %, tiredness up to 60.7 %, tenderness at the injection site up to 29.4 %, loss of appetite up to 16.6 %, persistent crying up to 1.4 % and redness at the injection site up to 1% ***(Plotkin, 2012).***

Severe side effects occur very rarely with the polio vaccine (in less than one out of a million doses). One serious problem that can occur is a serious allergic reaction. Symptoms that may indicate an allergic reaction (or some other serious problem) include Trouble breathing, Hoarseness, Wheezing, Hives, Pale skin, Weakness, Fast heartbeat Dizziness, High fever and Behavior changes ***(Plotkin, 2012).***

Concerning the Hepatitis B (HB) vaccines, Hepatitis B virus (HBV) infection, which causes liver cirrhosis and hepatocellular carcinoma, is endemic worldwide. Hepatitis B vaccines became commercially available in the 1980s.

Hepatitis B (HB) vaccines, which are the first vaccines that have been proven to prevent cancer, have played a crucial role in preventing HB virus (HBV) infection worldwide since their development in the 1980s.