



الكلية : الطب

القسم او الفرع : طب الاسرة والمجتمع

المرحلة: الرابعة

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اسم المادة باللغة الإنكليزية : **Child Health**

اسم المحاضرة الخامسة باللغة العربية: مؤشرات الصحة عند الاطفال

اسم المحاضرة الخامسة باللغة الإنكليزية: **Child Health Indicators**

## Vaccinations of Children

- Vaccination is one of the most effective public health interventions.
- Aim: to protect children from **vaccine-preventable diseases**.
- Achieving **90–95% coverage** ensures **herd immunity** → indirect protection for non-vaccinated children by cutting transmission cycles.

### National Immunization Schedule in Iraq

**At Birth (First Day):** BCG (for TB) – intradermal, 0.1 ml, live attenuated, **OPV1** (Oral Polio Vaccine – 3 drops, live attenuated), **Rota Virus 1**, and **(DPT + Hib + HBV1)** – intramuscular, 0.5 ml.

**End of 2nd Month:** OPV2, Rota Virus 2, and **(DPT + Hib + HBV2)**.

**End of 4th Month:** OPV3, Rota Virus 3, and **(DPT + Hib + HBV3)**.

**End of 6th Month:** Measles vaccine (s.c., 0.5 ml, live attenuated) with **Vitamin A** (200,000 IU).

**End of 9 Months:** MMR1 (Measles, Mumps, Rubella).

**End of 15 Months:** **(DPT + Hib booster)**, **OPV 1st booster** with **Vitamin A** (200,000 IU).

**End of 18 Months:** **DPT booster**, **OPV 2nd booster**, and **MMR2**.

### Types of Vaccines Used

Disease	Route	Dose	Type
Diphtheria	i.m.	0.5 ml	Toxoid
Tetanus	i.m.	0.5 ml	Toxoid
Pertussis	i.m.	0.5 ml	Whole killed bacteria
Hepatitis B	i.m.	0.5 ml	Recombinant DNA
Measles	s.c.	0.5 ml	Live attenuated virus
BCG (TB)	i.d.	0.1 ml	Live attenuated
Polio	Oral (3 drops) –		Live attenuated virus
Rubella	s.c.	0.5 ml	Live attenuated virus

## Contraindications

### To Killed Vaccines & Toxoids

- **Diphtheria toxoid:** no full dose >6 years.
- **Pertussis vaccine:** contraindicated if:
  - CNS abnormalities (e.g., spina bifida).
  - Acute febrile illness.
  - Severe previous vaccine reaction.
  - Convulsions (personal or family history, though controversial).

### To Live Vaccines (General)

- Within 3 weeks of another live vaccine.
- Pregnancy.
- Acute febrile illness.
- Immunodeficiency (e.g., hypogammaglobulinemia).
- Malignant disease (leukemia, Hodgkin's).
- Immunosuppressive therapy (steroids, radiotherapy).

### Specific Contraindications

- **Oral Polio:** diarrhea, vomiting.
- **Measles:** active TB, allergy to polymyxin/neomycin, family convulsions.
- **BCG:** septic conditions, prematurity, low birth weight, chronic skin disease.
- **Rubella:** pregnancy, allergy (neomycin, polymyxin), thrombocytopenia.

## The Extended Program on Immunization (EPI)

- Introduced globally in the **1980s**.
- Objective:
  1. Immunize **all children** against major killer diseases.
  2. Reduce morbidity & mortality.
- Target diseases: **Polio, TB, Diphtheria, Pertussis, Tetanus, Measles, Hepatitis B**.
- In Iraq, HBV was introduced in **1992**.

## Cold Chain System

### Definition

- System of **people + equipment** ensuring vaccines are stored & transported at the correct temperature (usually 2–8°C).
- Heat or freezing damages vaccines.

## Equipment

- Refrigerators.
  - Cold boxes.
  - Vaccine carriers.
  - Thermometers.
  - Cold rooms.
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## Strategies for Immunization

1. **Routine Immunization**
  - Minimum coverage of **90%** at national & district level.
2. **Polio National Immunization Days (NIDs)**
  - Two rounds annually (spring & autumn).
  - Goal: interrupt poliovirus circulation.
  - Every child immunized, even if already received many doses (up to 15 doses safe).
  - Often conducted **cross-border** with neighboring countries.

## 8. Conclusion

- Vaccination is essential for reducing **child morbidity and mortality**.
- High coverage ensures **herd immunity**.
- Success depends on:
  - **Strong immunization schedule.**
  - **Cold chain maintenance.**
  - **Community participation.**
  - **Sustained EPI strategies.**