The Benefits of Breastfeeding

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Benefits of Breastfeeding: Term Infant

- Reduced infection
  - UTI
    - Exclusive breastfeeding 0-6 months 16% protective against hospital admission
  - Otitis media
    - 43% reduction, 0-2 years old
  - Respiratory
    - 57% reduction in hospital admissions
    - Protection against a third of all respiratory episodes
  - GI
    - Protection against 72% hospital admissions due to diarrhea
    - Protection against half of all diarrhea episodes
    - 14 Fold reduction of NEC
  - Asthma
    - 9% reduction, 0-2 years old
Benefits of BF: Term Infant, cont.

- **Body Mass Index (BMI)**
  - 26% reduction in odds of overweight/obese (long-term)

- **Type II Diabetes**
  - 24% reduction
  - Possibly protective against Type I Diabetes

- **Sudden Infant Death Syndrome (SIDS)**
  - BF associated with 36% reduction

- **Higher IQ**
  - Large RCT and non-randomized trials consistent with increase of 7 points in children aged 6.5 years
Benefits of BF: Premature Infant

- Shorter hospital stay
- Necrotizing enterocolitis
  - 14 fold reduction in incidence
- Reduced Infection
  - UTI
  - GI
- Infection-related death in low birth-weight infants
  - 45% lower risk with early initiation breastfeeding
Benefits of BF: Mothers

- Breast Cancer Prevention
  - Each 12 month increase in lifetime of BF assoc. with reduction of 4.8% incidence
  - Comparing longer to shorter BF durations, 7% reduction of incidence
- Ovarian Cancer Prevention
  - 30% reduction assoc. with longer BF duration
- BMI
  - Mean BMI 1% lower for every 6 months of breastfeeding
- Bonding with Infant
- Better spacing between children
Potential Life-long Impact to Mother/Baby Dyad

- Fetal origins of adult disease
  - Microbiome
  - Life-long metabolic consequences
- Cancer prevention
  - 19% reduction incidence of Childhood Leukemia
  - Childhood lymphoma
- Stem Cells
What Might Preclude Choice to Breastfeed

- Medication use
  - Short term vs. long term
  - Toxicity of drug
  - Exceedingly high dose of drug
  - Drugs that might suppress lactation
  - Drug-drug interactions
  - Drugs with cardiovascular side effects
Drugs that preclude breastfeeding

**Drugs:**
- Methotrexate (long-term)
- Ergot Alkaloids (cabergoline, methylergonovine)
- Anticancer drugs (briefly)
  - Cisplatin
  - Doxorubicin
  - Carboplatin
  - Tamoxifen
- Drugs of Abuse
  - Cocaine
  - Phencyclidine
  - LSD
  - Marijuana (???)
- Isotretinoin
- Metals: High mercury, High lead

**Radioactive**
- $^{131}$Iodine, $^{123}$Iodine (includes close-contact restrictions)
- High dose $^{99}$Technetium (Thyroid scan, lung perfusion)
- $^{14}$C –triolein and –GCA breath test
What Might Preclude Choice to Breastfeed, cont.

- Infectious Disease
  - HIV
  - Anthrax
  - HTLV-1
  - Zika
  - Herpes Simplex (primary or on nipple)
  - CMV (controversial)
  - Chickenpox (primary)
  - Pertussis (until treatment)

- Returning to work
- Infant unable to go to breast
- Unable to make milk
Barriers to Breastfeeding

• Knowledge of Physician
  o Obstetrician
  o Pediatrician
  o Neonatologist

• Access to Lactation Support
  o Lactation consultants
  o Le Leche League
  o Support groups (Baby Cafe)

• Misinformation


Mucosal Immunity in the Breastfed Infant

## Maternal Vaccinations

<table>
<thead>
<tr>
<th>Vaccination</th>
<th>Safety Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMR</td>
<td>Safe</td>
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<tr>
<td>Yellow Fever</td>
<td>Safer than getting disease</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>Safe</td>
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<tr>
<td>Hepatitis A</td>
<td>Safe</td>
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<tr>
<td>DPT</td>
<td>Safe</td>
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<tr>
<td>Flumist</td>
<td>Probably safe</td>
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<tr>
<td>Influenza</td>
<td>Safe</td>
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<tr>
<td>Varicella</td>
<td>Safe</td>
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<tr>
<td>Inactivated Polio</td>
<td>Safe</td>
</tr>
<tr>
<td>Gardasil (HPV)</td>
<td>Safe</td>
</tr>
</tbody>
</table>
Response of Prolactin to Breastfeeding as a Function of Stage of Lactation

![Graph showing the response of prolactin to breastfeeding as a function of stage of lactation. The graph includes data on milk production and plasma prolactin levels over time postpartum.](image)

- **Plasma Prolactin (μg/l)**
- **Time postpartum (months)**
- **Milk Production (ml/24 h)**

Legend:
- Black bars: immediately before suckling
- Gray bars: 45 minutes after commencement of suckling

**References:**