

# MATERNAL NUTRITION AND YOUR BABY

## WHY IT MATTERS

What a mother eats and is exposed to during pregnancy helps shape the baby's metabolism and liver health. Poor nutrition or high sugar can increase the risk of fatty liver in children - even as early as age 2.

## HOW NUTRITION AFFECTS THE FETUS

- Everything the mother eats or drinks enters her bloodstream.
- Blood flows through the placenta.
- The placenta provides the baby with:
  - Nutrients
  - Hormones
  - Oxygen
  - Waste removal
- The placenta is the primary source of fetal nutrition after about the first trimester.

**MATERNAL  
HIGH GLUCOSE**  
=  
**BABY  
HIGH GLUCOSE**



When the mother's blood sugar is high, the baby's blood sugar becomes high as well. This results in the baby's pancreas producing high levels of insulin.

## THE RESULTS OF HIGH INSULIN IN A BABY

- Increased fat storage leading to a larger baby. This often increases fat around the chest, belly, and shoulders.
- Increased growth of organs like the heart and liver.
- Higher oxygen demand.
- After birth, the baby can develop low blood sugar due to the sugar supply stopping resulting in higher NICU admissions
- Other potential risks include a higher risk of early birth, more amniotic fluid, increased risk of preeclampsia, higher lifetime risk of obesity, and insulin resistance.

## TOP MATERNAL RISK FACTORS FOR INFANT FATTY LIVER

- Maternal obesity, gestational diabetes and excessive sugar consumption are the principal factors for infant fatty liver.
- Other risk factors are high consumption of fast foods and fried foods, excessive weight gain, metabolic syndrome, smoking, stress, poor sleep, and exposure to certain chemicals.

### Comparing Behaviors

#### HELPFUL CHOICES

Stable blood sugar levels  
Whole foods  
Healthy weight gain  
Regular physical activity  
Breastfeeding for 3-6+ months

#### HARMFUL CHOICES

Gestational diabetes  
High sugar & excessive fast foods & fried foods  
Excess weight gain  
Smoking  
Chemical exposure

## CHEMICAL EXPOSURE

Exposure to certain chemicals can also affect the fetus. Every day low-level exposure are less risky than high exposure levels. Some chemicals can interfere with growth, organ development or long-term health.

### Try to reduce exposure to:

- Heavy metals (lead, mercury, arsenic)
- "Forever chemicals" (nonstick cookware, stain-resistant fabrics, food wrappers)
- Pesticides

### Ways to reduce exposure:

- Use unscented / phthalate-free products
- Ventilate when painting or cleaning
- Avoid pesticide sprays
- Avoid high mercury fish
- Drink clean water (filter if needed)
- Wash hands often
- Sugar substitute powders



# BREASTFEEDING AND FORMULA



## A GUIDE FOR NEW MOTHERS

Breastfeeding helps protect long-term liver and metabolic health by:

- Reduced risk of childhood and adolescent obesity
- Diverse gut microbiome
- Better metabolic programming
- Lower risk of rapid weight gain in infancy
- Lower maternal metabolic risk

Infants are fed with breastmilk, formula or a combination of both. Breastfeeding should be mutually beneficial for the mother and baby. Working with a lactation consultant and your child's pediatrician to meet feeding goals can be helpful. It is best to establish a schedule no matter how the baby is fed.

## USE OF FORMULA

Always discuss formula choice with your pediatrician. When using a formula, it is essential to understand that a variety of mixtures are used in commercially available formulas.

### BEST TYPES OF FORMULAS

<b>Standard Cow's Milk</b>	First choice unless there is a medical reason to avoid	Similac 360 Total Care, Enfamil NeuroPro, similar store brands
<b>Gentle/Partially Hydrolyzed</b>	For gassy, fussy, or sensitive stomach babies	Enfamil Genlease, Similac Total Comfort, Gerber Good Start Gentle
<b>Extensively Hydrolyzed Hypoallergenic</b>	For babies with cow's milk protein allergy	Alimentum, Nutramigen, Gerber Extensive HA - All Expensive
<b>Amino Acid</b>	Only under medical care	Neocate, EleCare
<b>Soy Formula</b>	For lactose intolerance or specific needs	Enfamil ProSobee, Similac Soy Isomil

### FORMULAS TO AVOID

<b>Homemade</b>	Not nutritionally safe; high risk of harm
<b>Raw cow or goat milk</b>	Dangerous bacteria and a wrong nutrient balance
<b>Unregulated international</b>	Not FDA-approved; variable safety
<b>Toddler formula for infants</b>	Not complete nutrition
<b>Non-approved goat-milk</b>	Unsafe and unbalanced
<b>Low iron</b>	Risk of anemia
<b>Herbal/natural additives</b>	Not tested for infants
<b>Plant milks (almond/oat/rice)</b>	Not nutritionally complete

## BEST PRACTICES FOR FEEDING YOUR BABY

- Breastfeed on demand when with your baby. Otherwise, provide pumped breast milk or formula every 2-3 hours during the day.
- As the baby ages, they will wake fewer times at night.
- Breastmilk supply is highest in the early morning.
- To maintain a breast milk supply, direct feed or pump at regular intervals
- Offer 1 ounce of formula per month of baby's age for each feeding. (e.g. 2 ounces for a 2-month old)
- Let the baby stop when full, don't push them to finish a bottle.

