

# *MGI* *Practitioner* *Training*

MODULE 1



## How Maternal Genomics Can Change Outcomes

*Every mother's body has its own biological rhythm.*

*Genomic pathways influence how she responds to the hormones, demands, and physiological transitions of pregnancy, birth, and postpartum.*

**Our goal isn't to predict outcomes —  
it's to understand how her physiology  
communicates.**

By recognizing these patterns, birth  
workers can adapt support in ways that  
feel more aligned  
with her unique experience.



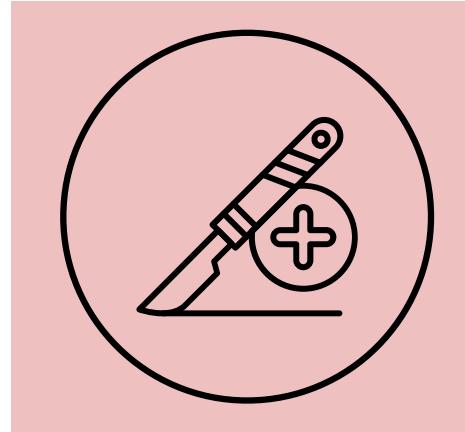
# *What You'll Learn:*

## **After this module, you will be able to:**

- Identify key maternal pathways that influence how mothers respond to the perinatal journey
- Recognize real-world signs when support strategies may need personalization
- Understand how genomics highlights a mother's strengths – not flaws

# *Why This Is A Safety Issue*

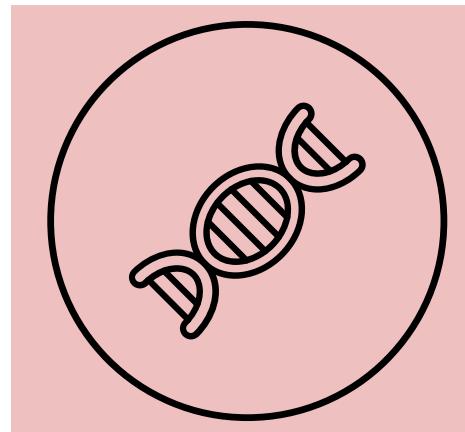
**WITHOUT GENOMIC  
CONTEXT, INTERVENTIONS  
BECOME TRIAL-AND-ERROR.**



**1 out of 3 births  
end in cesarean.**



**1 in 7 mothers faces  
postpartum depression.**



**Most of these outcomes  
show a genetic component,  
yet no one is screening.**

You cannot see genes —  
but **you can observe**  
**genomic red flags.**

Here are some examples:

Does she experience sugar crashes, dizziness, or brain fog easily?

Does she describe pain meds not working well, or working too strongly?

Does she have significant emotional shifts during cycle changes or postpartum?

Is this mother highly sensitive or resistant to Pitocin?

Does this mother have a history of weak tissue (tearing, prolapse, hypermobility)?

Does her body often need more time to heal than expected?

# Core Maternal Pathways



| Maternal Pathway            | What It Influences                         | How It Shows Up In Real Life  | Support Opportunities   |
|-----------------------------|--|---|---|
| Oxytocin Signaling          | Labor flow, bonding, breastfeeding letdown | Contractions stall under pressure; slow letdown; anxious separation | Safety, dim lights, warmth, skin-to-skin, nervous system care |
| Connective Tissue Integrity | Cervix change, pelvic floor, tearing       | Hypermobile joints, pelvic heaviness, history of tearing            | Hands-on support, positioning, postpartum pelvic care         |
| Stress Hormone Regulation   | Fight/flight vs. calm progression          | Fear slows labor, tension, overwhelmed early postpartum             | Grounding, breathwork, emotional attunement                   |
| Inflammation + Healing      | Recovery, lactation comfort                | Mastitis tendency, slow wound healing, swelling                     | Anti-inflammatory nourishment, warmth, lymph support          |
| Medication Response         | Pain relief experience                     | “Nothing works on me” or oversensitivity                            | Advocacy in medical settings + alternative comfort tools      |
| Mood + Neurotransmitters    | Emotional regulation, sleep                | Intense shifts around cycle/pregnancy                               | Early connection to mental/emotional resources                |
| Energy + Glucose Use        | Stamina during labor and postpartum        | Fatigue crashes, nausea, needs frequent snacks                      | Fueling strategies + pacing support                           |

# *Case Example: Implantation & Immune Balance*

**A MOTHER EXPERIENCES REPEATED  
EARLY PREGNANCY LOSS AFTER  
“NORMAL” FERTILITY WORKUPS.**

## **Traditional interpretation:**

“She’s just unlucky – keep trying.”

## **Genomic lens:**

Variations in progesterone signaling, folate metabolism, and immune tolerance pathways may make implantation and early placental development more vulnerable to stressors and micronutrient gaps.



# A MOTHER EXPERIENCES REPEATED EARLY PREGNANCY LOSS AFTER “NORMAL” FERTILITY WORKUPS.

## **What implantation & immune pathways help us understand:**

Early pregnancy requires a precise balance of progesterone, clotting factors, folate availability, and immune tolerance so the body recognizes the embryo as “safe,” not as a threat.

## **Variations in:**

- Progesterone receptor sensitivity
- Clotting and micro-circulation pathways
- Folate / methylation efficiency
- Immune tolerance and inflammation signaling

...may influence how easily the uterine lining stabilizes, how blood flow supports implantation, and how resilient early pregnancy is to stress, illness, or nutrient shifts.

Some bodies need more targeted support to feel “safe” sustaining pregnancy from the very beginning.



# A MOTHER EXPERIENCES REPEATED EARLY PREGNANCY LOSS AFTER “NORMAL” FERTILITY WORKUPS.

## Support Shift

Fertility care focuses on optimizing her specific pathways:

- Progesterone-supportive lifestyle and timing of conception
- Folate and methylation-supportive nutrients from food and supplements
- Gentle approaches that reduce inflammatory load (sleep, stress, blood sugar)
- Collaborative care to address clotting or immune patterns when indicated

## Outcome

Her care team understands that her body may require more precise, pathway-specific support — and fertility planning centers on creating the most biologically supportive window for implantation.



# *Case Example:* *Nausea, Detox &* *Nutrient Handling*

**SEVERE NAUSEA AND VOMITING  
DOMINATE HER FIRST TRIMESTER,  
DESPITE STANDARD SUPPORTS.**

## **Traditional interpretation:**

“That's just how pregnancy is for some women.”

## **Genomic lens:**

Estrogen detoxification, histamine, and serotonin-signaling pathways may be more sensitive, amplifying nausea when hormone levels rise.



# SEVERE NAUSEA AND VOMITING DOMINATE HER FIRST TRIMESTER, DESPITE STANDARD SUPPORTS.

## What hormone & detox pathways help us understand:

Rising pregnancy hormones are normal — but how the body processes them, and how the brain receives sensory signals, can vary.

## Variations in:

- Estrogen detoxification and liver enzyme activity
- Histamine breakdown (e.g., DAO support)
- Serotonin and nausea-center sensitivity
- Blood sugar regulation

...may influence how quickly hormones and food cues trigger nausea, dizziness, or aversion.

Some bodies interpret the same hormonal shift as overwhelming unless inputs are carefully adjusted.



# SEVERE NAUSEA AND VOMITING DOMINATE HER FIRST TRIMESTER, DESPITE STANDARD SUPPORTS.

## Support Shift

Care becomes tailored to her likely pathway sensitivities:

- Smaller, more frequent meals to stabilize blood sugar
- Attention to histamine load (leftovers, aged foods, additives) where appropriate
- Emphasis on hydration and electrolytes that she can tolerate
- Environment focused on scent reduction, fresh air, and nervous-system calm

## Outcome

By respecting how her body processes hormones and sensory input, she experiences more predictable windows of relief — and her care team frames her symptoms as physiology needing support, not “weakness.”



# *Case Example: Tissue + Transitions*

**CERVIX REMAINS UNCHANGED  
DESPITE STRONG MOVEMENT  
AND COPING.**

**Traditional interpretation:**

“She isn’t progressing.”

**Genomic lens:**

Collagen pathways + connective tissue behavior  
shape cervical ripening.



# CERVIX REMAINS UNCHANGED DESPITE STRONG MOVEMENT AND COPING.

## What tissue pathways help us understand:

The cervix is not just a muscle —  
it's connective tissue made primarily of collagen and elastin.

## Variations in:

- Collagen structure
- Cross-linking
- Elasticity
- Matrix remodeling

...may influence how soft and stretchy the cervix becomes in response to the same hormonal signals.

Some bodies simply need more time to prepare the tissues for safe opening.



# CERVIX REMAINS UNCHANGED DESPITE STRONG MOVEMENT AND COPING.

## Support Shift

- Positions that reduce tension on pelvic ligaments
- Bodywork that improves sacral mobility
- Rest when the body signals it
- Emotional safety (tension = tissue hold)

## Outcome

When tissue behavior is honored, dilation follows biological readiness, not an external schedule.



# *Case Example: Lactation & Metabolic Load*

**HER MILK SUPPLY REMAINS LOW DESPITE FREQUENT FEEDS, GOOD LATCH, AND STANDARD ADVICE.**

## **Traditional interpretation:**

“Her body just can’t make enough milk – offer formula.”

## **Genomic lens:**

Thyroid function, insulin sensitivity, and prolactin-receptor pathways may be impacting how well her body shifts energy toward milk production.



## HER MILK SUPPLY REMAINS LOW DESPITE FREQUENT FEEDS, GOOD LATCH, AND STANDARD ADVICE.

### **What metabolic & endocrine pathways help us understand:**

Lactation is an energy-intensive, hormone-driven process that relies on thyroid, insulin, and prolactin signaling.

### **Variations in:**

- Thyroid hormone activation and transport
- Insulin sensitivity and blood sugar balance
- Prolactin receptor responsiveness
- Inflammatory and stress-response pathways

...may influence how effectively calories, micronutrients, and hormonal messages are translated into milk volume.

Some bodies need deeper metabolic support to sustain breastfeeding, even with optimal technique.



## HER MILK SUPPLY REMAINS LOW DESPITE FREQUENT FEEDS, GOOD LATCH, AND STANDARD ADVICE.

### Support Shift

Postpartum care expands beyond latch alone:

- Screening for thyroid and metabolic patterns when appropriate
- Nutrient-dense meals, minerals, and steady blood sugar support
- Protection of sleep windows and nervous-system recovery
- Collaboration with lactation and medical teams to individualize options

### Outcome

Her experience is reframed from “failure” to physiology needing layered support –

and feeding plans can be built around both her baby’s needs and her body’s unique metabolic profile.



# *Case Example: Cycles, Induction & Sensitivity*

**AFTER SYNTHETIC OXYTOCIN IS STARTED,  
SHE EXPERIENCES INTENSE PAIN, PANIC,  
AND NON-REASSURING LABOR PATTERNS.**

## **Traditional interpretation:**

“She’s not tolerating labor – increase pain medication and keep upping the dose.”

## **Genomic lens:**

Variations in oxytocin receptor sensitivity, pain perception, and stress hormone pathways may amplify her response to synthetic oxytocin compared with physiologic surges.



**AFTER SYNTHETIC OXYTOCIN IS STARTED,  
SHE EXPERIENCES INTENSE PAIN, PANIC,  
AND NON-REASSURING LABOR PATTERNS.**

**What hormone & receptor pathways help us understand:**

Oxytocin does more than contract the uterus — it also shapes bonding, pain modulation, and stress buffering.

**Variations in:**

- Oxytocin receptor expression and sensitivity
- Pain signaling and endogenous opioid pathways
- Stress hormone (adrenaline/cortisol) regulation
- Autonomic nervous-system balance

...may influence how her body interprets rapid, high-dose oxytocin exposure and how easily stress overrides the comfort pathways. Some bodies require gentler dosing and strong safety cues for oxytocin to support, not overwhelm, the system.



**AFTER SYNTHETIC OXYTOCIN IS STARTED,  
SHE EXPERIENCES INTENSE PAIN, PANIC,  
AND NON-REASSURING LABOR PATTERNS.**

### **Support Shift**

Hormone use is paired with environment-centered care:

- Slow titration and careful monitoring of contraction pattern
- Dimmed lights, familiar support people, continuous reassurance
- Position changes and coping tools that reduce perceived threat
- Shared decision-making about continuing, pausing, or adjusting the plan

### **Outcome**

When her hormonal sensitivity is respected, the goal becomes balanced contractions within a regulated nervous system — so progress is supported by both medication and environment, not medication alone.



# *Case Example: Postpartum Mood & Overload*

**WEEKS AFTER BIRTH, SHE FEELS PERSISTENT ANXIETY AND OVERWHELM DESPITE “NORMAL” CHECKUPS.**

## **Traditional interpretation:**

“She's just a worried new mom – this is normal.”

## **Genomic lens:**

Serotonin, GABA, stress-response, and inflammation pathways may make her more sensitive to sleep loss, blood sugar swings, and environmental stress in the postpartum period.



# WEEKS AFTER BIRTH, SHE FEELS PERSISTENT ANXIETY AND OVERWHELM DESPITE “NORMAL” CHECKUPS.

## What neuro-inflammation & mood pathways help us understand:

Postpartum is a neuroendocrine transition — the brain, immune system, and hormones are recalibrating around a new role.

### Variations in:

- Serotonin transporter and receptor function
- GABA and calming-signal pathways
- Stress hormone feedback loops (HPA axis)
- Inflammation and microglial activation

...may influence how quickly her nervous system recovers from sleep disruption, blood loss, and emotional stress.

Some bodies are more vulnerable to feeling “stuck” in high alert, even when life looks stable from the outside.



# WEEKS AFTER BIRTH, SHE FEELS PERSISTENT ANXIETY AND OVERWHELM DESPITE “NORMAL” CHECKUPS.

## Support Shift

Care centers on nervous-system and mood pathways:

- Prioritizing sleep protection and practical community support
- Stabilizing meals, hydration, and movement to reduce physiologic stress
- Screening for mood changes and offering timely mental-health referrals
- Framing her experience as valid and biology-based, not a character flaw

## Outcome

Her symptoms are taken seriously, and support is tailored to how her brain and body may process stress — so recovery focuses on restoring safety, connection, and long-term mental health.



# *Practitioner Insight*

**Choose a recent mother you supported:**

- Which pathway(s) seemed most active for her?
- What support made her body respond positively?
- What could have amplified her strengths sooner?

**These insights become the foundation for personalized care.**

*Congrats!  
You have completed  
Module 2*

Please grab a drink and continue to Module 3

# *Case Example: Hormones & Environment*

**A MOTHER FEELS INTENSE  
WAVES OF FEAR WHEN SHE  
ARRIVES AT THE HOSPITAL.**

**Traditional interpretation:**

“She needs to stay calm – relax!”

**Genomic lens:**

Her stress response pathways may be more sensitive, causing adrenaline to override oxytocin.



## A MOTHER FEELS INTENSE WAVES OF FEAR WHEN SHE ARRIVES AT THE HOSPITAL.

### Oxytocin and adrenaline have opposite physiological roles:

- Oxytocin → calm, connection, contraction
- Adrenaline → alertness, tension, slowdown of labor

### Variations in:

- Stress hormone receptor sensitivity
- Stress recovery speed
- Hormone signaling balance

...may influence how quickly environmental changes affect labor progress.

Some bodies respond strongly to **safety cues** – and strongly to **disruption**.



# A MOTHER FEELS INTENSE WAVES OF FEAR WHEN SHE ARRIVES AT THE HOSPITAL.

## Support Shift

Environment + emotional grounding become primary intervention:

- Darkened room
- Familiar voices
- Low interruptions
- Rhythmic movement
- Touch and reassurance

## Outcome

Her labor rhythm returns naturally as safety signals restore hormonal balance — **her body progresses when it feels protected.**

