Epigenetics and Indigenous Wellness Frameworks: How Te Poutama o te Ora Advances Understanding Beyond Te Whare Tapa Whā

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Introduction

Modern epigenetic research confirms what Indigenous communities have long understood: experiences such as trauma and wellness can be passed down through generations, not only through genes but also through changes in how genes function (Yehuda & Lehrner, 2018). This paper explores how epigenetic science supports Māori health models and why expanded frameworks are needed to address the complexity of intergenerational transmission.

Epigenetics: How Life Experiences Leave Biological Marks

Epigenetics explains that environmental experiences—such as stress or trauma—can alter gene activity without changing the DNA sequence. These changes, often through chemical tags on DNA, can be passed to children and even grandchildren (Yehuda et al., 2014; Pilkay et al., 2024).

For example, studies of Holocaust survivors found that trauma in mothers affected their children's stress-response genes (Yehuda et al., 2014). Research on Syrian refugee families shows trauma before and after conception creates lasting changes in DNA activity across three generations (Mulligan et al., 2025). These effects differ by gender and by when the trauma occurred (Chou et al., 2024).

Indigenous peoples experience strong intergenerational impacts from colonization. Historical trauma can lead to health issues such as diabetes, obesity, and mental illness in descendants who never experienced the original harm (Skinner et al., 2023). This shifts the focus from individual problems to systemic, inherited effects of oppression.

Te Whare Tapa Whā: The Four Walls of Wellbeing

Sir Mason Durie's Te Whare Tapa Whā (1984) uses the image of a wharenui (meeting house) to explain health (Durie, 1998). It has four walls:

- **Taha Tinana (physical health):** The body's ability to grow and function.
- **Taha Wairua (spiritual health):** Connection to heritage, environment, and life force.

- **Taha Hinengaro (mental/emotional health):** Thoughts, feelings, and communication.
- **Taha Whānau (family health):** Belonging and social support.

The model insists spiritual and family health matter as much as physical health—a radical idea at the time. It also matches epigenetic findings: trauma affects stress systems, immunity, metabolism, and brain development all at once (Bhattacharya et al., 2019).

Te Poutama o te Ora: A Broader Framework for Today

Te Whare Tapa Whā is foundational; today's challenges need more detail. Te Poutama o te Ora adds nine elements (5+3+1):

Five Core Pillars

1. **Whakapapa (ancestry):** Names intergenerational patterns that science now proves exist.
2. **Tinana (body):** Includes modern insights like gut health and how maternal stress shapes babies' microbiomes (Szyf & Bick, 2013).
3. **Tuakiri (identity):** Separate from family because colonization fractured identity, creating unique biological stress markers (Raffington et al., 2021).
4. **Wairua (spirit):** Still vital—spiritual health influences stress and bonding chemicals like oxytocin.
5. **Hinengaro (mind):** Thoughts and emotions affect gene activity through stress pathways.

Three Transformation Stages

Healing takes time and repeated effort. Science shows single interventions don't work because gene expression changes need consistent support (Clark & Rager, 2020).

The Ninth Element: Stability

This is full balance—where wellness becomes the new inherited pattern. Research shows resilience can also be passed down, not just trauma (Kellerman, 2025).

Why Te Poutama o te Ora Matters

- **Intergenerational Focus:** It explicitly addresses inherited trauma (Jawaid et al., 2018).

- **Identity as Health:** Cultural disconnection creates real biological stress (Santos et al., 2019).
- **Targeted Action:** Modern stressors like financial strain or digital overload need specific responses (Cao-Lei et al., 2022).
- **Healing as a Process:** Matches science showing change happens during key life stages (Jawaid et al., 2018).
- **Heritable Wellness:** Positive changes can be passed on too (Kellerman, 2025).

Implications

- **Start Early:** Support parents before conception (Yehuda & Lehrner, 2018).
- **Think Holistically:** Assess all dimensions together, not separately.
- **Culture as Medicine:** Language and cultural practices reduce stress and improve health (Comtois-Cabana et al., 2021).
- **Generational Approach:** Work with families and communities, not just individuals.

Conclusion

Epigenetics confirms what Māori frameworks have said for decades: health is interconnected and passed through generations. Te Poutama o te Ora builds on Te Whare Tapa Whā by adding detail and processes that match what science now knows. Both show that wellness is cultural, systemic, and heritable. The challenge is whether health systems will adopt frameworks that are as sophisticated as the problems they aim to solve.

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