

Position Statement:

I strongly oppose mitochondrial DNA (mtDNA) replacement therapy at this time because the risks and uncertainties are simply too great. As much as I empathize with parents who want nothing more than to spare their children from suffering, I believe we must act with compassion as well as caution. The scientific, ethical, and societal challenges with this therapy are real and unresolved. Moving forward with mtDNA replacement now would mean putting hope ahead of safety, and that's a risk I cannot support—for families today or the generations yet to come.

Scientific and Actual Basis:

Mitochondrial DNA replacement therapy is designed to help women with mitochondrial diseases have healthy children by replacing faulty mitochondria with healthy ones from a donor egg. On paper, this feels like a lifeline—an incredible chance for parents to break the cycle of illness. But it's still highly experimental and surrounded by uncertainty. Mitalipov & Wolf (2014) point out that we simply don't know enough about long-term safety or effectiveness. There are no guarantees that swapping mitochondria won't cause unexpected problems for the child, or even for their children. When science is this unsettled, using such technology feels less like hope and more like a gamble with people's lives—especially when those lives include future generations who cannot weigh in on the decision.

Impact on Stakeholders:

It's only natural for parents with mitochondrial diseases to dream of having healthy, genetically related children. I feel their struggle—no one wants to pass pain to the next generation. But as much as my heart goes to these families, I cannot ignore the real possibility that children—and their descendants—could face lifelong health risks that no one can predict or control. Donors, too, deserve clarity and protection on the use of their genetic material. And for society, we are asked to open the door to changes that could last forever. That's a responsibility too heavy to take lightly, and it's why I believe we must pause and move forward with humility, not haste.

Moral and Social Dilemmas:

One of the biggest ethical challenges with mtDNA replacement therapy is that it changes the human germline—meaning those changes are passed down not just to a single child, but to all their descendants. It's hard not to worry about making choices that will forever affect people who have no voice in the decision. Even when we act out of love or hope, we risk crossing a line that could lead to further genetic modifications—for reasons that might not always be preventing suffering. That's a future I don't think we're ready for, and I believe we owe it to ourselves, and the generations after us, to think very carefully before taking that step.

Alternative Options and Their Evaluation:

There are other paths for parents who want to avoid mitochondrial diseases. Preimplantation genetic diagnosis (PGD) and using a donor egg are established options that don't involve altering the germline. While these choices might mean the child isn't genetically related to both parents, they come up with fewer unknowns and risks. Adoption is also a meaningful way to build a family and sidestep these scientific and ethical dilemmas altogether.

Strengths and Weaknesses of Alternatives:

PGD and donor egg options are widely accepted, and their safety is much better understood. Although they don't guarantee a child genetically related to both parents, the peace of mind and lower risk they offer is, for many, a worthwhile trade-off.

Conclusion:

In the end, I can't help but feel for the families facing mitochondrial disease and wishing for a solution. But the stakes here are simply too high, and the answers are too unclear. Until science can provide real reassurance—and until we're sure we're not creating new problems for future generations—it's kinder and wiser to wait. Our responsibility is not just to those hoping for help now, but also to those whose voices are still far in the future.