

# Out of Africa: Human Capital Consequences of In Utero and Prenatal Conditions

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## Abstract

This paper investigates the effects of environmental conditions during pregnancy on later life outcomes using quasi-experimental variation created by the immigration of Ethiopian Jews to Israel in the early 90's. Over the course of 36 hours (beginning on May 24th 1991) 14,400 Jews arrived to Israel from Ethiopia by Israeli airplanes, an operation organized by the Israeli government. This immigration wave happened abruptly and was unexpected and therefore its timing is unlikely to be correlated with timing of pregnancy and birth of immigrant families. Children in utero prior to immigration faced dramatic differences in medical care technologies, prenatal conditions, and prenatal care at the move from Ethiopia to Israel. We exploit this natural experiment to study how variation in the environmental conditions during pregnancy experienced by women who gave birth shortly after arrival to Israel affected the long term educational outcomes of their children. Using administrative data from the whole population of Ethiopian immigrants we analyze the effects of weeks of exposure in utero to improved conditions in Israel on the academic achievements of children by the end of high school at age 18. We focus only on children whom their pregnancy incepted in Ethiopia and were born in Israel. Therefore all these children experienced the same conditions at birth and at later life but faced dramatic differences in prenatal conditions in utero based on their gestational age upon arrival to Israel in May 1991. We find that children exposed in earlier stage of the pregnancy to better environmental conditions in utero (mainly during the critical period of the fetus brain development in utero - between weeks 8 and 25 of gestation) have a higher likelihood of completing high-school, obtaining a matriculation diploma and have a higher quality matriculation diploma. These effects are very large and robust to using an alternative identification strategy based on Difference-in-Differences estimation.

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