

Final Project Proposal

- 1. Study question:** To determine the long-term effects that puberty-suppressing medications have on bone health.
- 2. Design and participants:** Prospective cohort study with participants selected from parents seeking gender counselling for their child at the Boston Children's Hospital Gender Management Services Center. Participants will be divided into cohorts based on their decision of whether or not to initiate puberty-suppressing medication for their child.
- 3. Exposure:** Period of continuous treatment with puberty-suppressing medication, administered before the age of 18, lasting longer than six months.
- 4. Outcome:** Researchers will follow up with participants every five years to measure bone mineral density and check for early signs of osteoporosis.
- 5. Significance:** It is becoming more and more common for transgender youth to be treated with puberty-suppressing medications to stall the development of unwanted secondary sex characteristics until the age of 18, when they can formally consent to cross-sex hormone replacement therapy. Previous medical research shows that hormone-blocking medications such as GnRH cause a temporary reduction in bone mineral density. Short-term studies have shown that this effect is reversible, but it is not known whether these medications have any long-term effects on bone health.

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