# Everything you ever wanted to know about puberty blockers but were afraid to ask



Puberty blockers, also known as gonadotropin-releasing hormone agonists (GnRHa), are medications designed to halt the production of estrogen and testosterone, thereby preventing the physical changes associated with puberty.

Initially introduced in the early 1980s to address early-onset puberty in young children, these medications found expanded usage in the 1990s to support transgender adolescents.

For many transgender youths, the onset of puberty can trigger significant anxiety due to unwanted physical changes. For those assigned female at birth, these changes might include breast development and menstruation. Those assigned male at birth might experience deepening voices, Adam's apple growth, facial hair, and a more muscular physique. These changes can be particularly distressing as they are often irreversible, potentially leading to gender dysphoria and misgendering—where individuals are mistaken for their birth-assigned gender.

The primary benefit of puberty blockers for transgender individuals is the prevention of these changes, which can reduce gender dysphoria and misgendering. Without the physical developments associated with puberty, the need for future surgeries to alter the body's appearance could also be lessened. Studies, including a systematic review published in 2024, have shown consistent evidence of the effectiveness of puberty blockers in suppressing puberty and improving psychological outcomes, such as reduced suicidal thoughts and actions in transgender adolescents.

Timing is crucial for the effectiveness of puberty blockers. Ideally, they should be administered in early to mid-puberty to prevent unwanted physical changes. However, in practice, many transgender adolescents commence treatment later in puberty or even after its completion. For instance, in England, transgender youths under the age of 18 were previously required to undergo at least 12 months of puberty-blocker treatment before accessing gender-affirming hormones like estrogen or testosterone, often resulting in delayed intervention. This delay can diminish the benefits since some irreversible changes may have already occurred.

Recent research, such as a study from Harvard University, has reinforced the importance of early intervention. Adolescents treated with puberty blockers in early to mid-puberty exhibited significant reductions in anxiety, depression, and suicidal thoughts.

While generally well-tolerated, puberty blockers can carry potential risks, including reductions in bone density and fertility, as well as changes in adult height. For those beginning treatment later in puberty, menopausal-like side effects, such as hot flashes, may occur due to reduced sex hormone production. The long-term impacts on cognitive development remain under examination, though initial studies in early-onset puberty cases have shown no effect on cognitive functioning.

Despite their widespread use, there have been no randomized controlled trials (RCTs) specifically evaluating puberty blockers for transgender adolescents. The lack of such RCTs has led to some criticism, with detractors labelling the treatment as experimental. However, the ethical implications of withholding treatment for research purposes complicate the possibility of conducting such trials.

Access to puberty blockers varies by country. In the United Kingdom, recent recommendations from the Cass review have constrained their availability to transgender adolescents through the National Health Service (NHS) and only within a research context. Critics have argued that this approach overlooks the potential harms of denying timely hormonal interventions. In contrast, Australia offers a comprehensive, team-based approach to accessing puberty blockers, ensuring that care is tailored to each individual's stage of puberty while considering the balance of potential benefits and risks.

These differences in implementation reflect the ongoing debate and politicization surrounding the treatment of transgender adolescents. Each country's healthcare system adopts unique standards and practices, tailored to their regulatory frameworks and the specific needs of their transgender youth populations.