

We don't know how gender-affirming hormone treatments interact with commonly prescribed drugs

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The transgender population encounters numerous barriers to receiving proper medical care. Even when treatment is accessible, healthcare providers may lack comprehensive knowledge on how to treat them either due to insufficient training or lack of information available. In a review appearing April 26 in the journal *Trends in Pharmacological Sciences*, researchers describe what we don't know about interactions between commonly prescribed drugs and hormone therapy, a gap in

knowledge which may lead to unintended side effects in transgender individuals.

"Despite established effects of sex steroids on drug metabolizing enzyme expression and activity *in vitro* and in animal models, the effect of long-term, supraphysiologic sex hormone treatment on drug metabolism in transgender adults is not yet established," say the authors of the study, led by Lauren Cirrincione, an Assistant Professor of Pharmacy at the University of Washington.

Sex steroids, such as estrogen or testosterone, are commonly prescribed as a part of hormone replacement therapy for transgender patients. In both transgender and cisgender adults, sex steroids regulate enzymes involved in the detoxification step of drug metabolism. These enzymes are known to metabolize several commonly prescribed drugs, including anti-HIV agents like [protease inhibitors](#) and other antiretrovirals, the antidepressant bupropion, the opioid analgesic methadone, and even drugs as ordinary as acetaminophen.

Research in cisgender adults already shows that [genetic variability](#) in these enzymes can impact an individual's response to these drugs. Therefore, in a population of people who often have altered concentration of sex steroids, further study is needed to understand the impact on drug metabolism.

These gaps in knowledge reflect the lack of regulation in transgender medicine worldwide. "Neither the U.S. Food and Drug Administration nor other global regulatory agencies like the European Medicines Agency have approved any hormonal agents for transgender medicine," say the authors. "Therefore, care providers may prescribe hormone therapies 'off label' based on expert guidance from professional organizations like the Endocrine Society."

More information: Regulation of drug-metabolizing enzymes by sex-related hormones: clinical implications for transgender medicine, *Trends in Pharmacological Sciences* (2022). [DOI: 10.1016/j.tips.2022.03.006](https://doi.org/10.1016/j.tips.2022.03.006)

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