Chairman Lipps, Vice Chair Stewart, Ranking member Liston and members of the Public Health Policy Committee, thank you for the opportunity to testify in favor of House Bill 68, otherwise known as the "SAFE Act."

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There is a growing body of evidence that the use of Puberty Blockers and Cross-Sex Hormones are not safe and are not fully reversible. The use of these medications can affect bone brain development, sterility and a host of chronic illnesses such as metabolic disorders (i.e. Diabetes) and Cardiac diseases.

Puberty Blockers like Lupron®(leuprorelin) are beneficial in the treatment of precocious puberty and certain types of cancers that are responsive to sex hormones. In the treatment of precocious puberty the puberty blocker is used to inhibit the surge of sex hormones that occurs during puberty. In precocious puberty the hormone surge begins at an age too young for puberty development which can result in the child having secondary sex traits at an early age (around 8 or 9 years of age), this can be traumatic enough at this age but, more importantly, their bone growth will stop as it does in puberty at the normal age. This means the child will be of shorter stature than they would have been if they had developed during the normal age range. When used in a youth experiencing gender dysphoria the medication is used on a physically healthy child at a time when their bodies are supposed to develop into adulthood. When an adolescent is prevented from experiencing the hormonal and physical changes of the body during puberty the body does not develop in a normal manner leading to long term, many times permanent, disability.

The brain continues to develop well into adulthood. Part of the brain's development is mediated by the sex hormones. Throughout adolescence, there are changes in the structure and function of the brain. Differences in the brains of female and male suggest a possible relationship to puberty and the hormones released at that time. Gonadal steroid hormones estrogen and testosterone, as well as their weaker adrenal counterparts, influence the physical appearance of the body. They also affect the brain and behavior. These effects are hypothesized to occur via two relatively distinct processes: organization and activation[1] [The role of puberty in the developing adolescent brain, Blakemore, Burnett, Dahl]. Organizational effects occur pre- and perinatally, whereas Activation effects occur primarily at puberty. Some of the brain changes occur before we are born and continues through adolescence and into early adulthood. Animal studies indicate that sex steroid hormones exert 3 main effects on behavior at puberty, facilitation of directly reproductive behaviors, reorganization of sensory and association regions of the brain, development of reward-related brain structures necessary for reward seeking behaviors. Gray matter development initially increases during childhood and reaches its peak in adolescence and declines steadily in adulthood. White matter development occurs between childhood and adolescence, with this increase slowing and stabilizing into adulthood. This increase differs between the sexes across adolescence.[1] The brain has a wide distribution of receptors for hormones like estrogen and testosterone, which allows these sex steroids to affect a multitude of brain circuits, influencing how, where, and when brain cells communicate[2]. It is clear that brain development could be adversely affected by use of puberty blockers and cross-sex hormones.

Bone development is also affected by the use of puberty blockers. Bone density goes down as a result therapy with puberty blockers. The addition of cross-sex hormones has been shown to build bone density but not to the level it should be. The Cleveland Clinic and the Mayo Clinic, both centers perform transgender procedures acknowledge the risk of lower bone mineral density.

Puberty cannot simply be paused and start back again at a later date without permanent consequences. In addition to the above mentioned complications cross-sex hormones carry side effects including, sterility, increased risk of cardiovascular disease, increased risk of breast and uterine cancers, mood swings and psychosis.[3] In a study published in The Lancet there has been a increased mortality risk in transgender people using hormone treatment, regardless of treatment type. This increased mortality risk did not decrease over time. The cause-specific mortality risk because of lung cancer, cardiovascular disease, HIV-related disease, and suicide give no indication to a specific effect of hormone treatment.[4]

Another study published in Medscape states that transgender individuals are twice as likely to die early as the general population.[5]

Sex Hormones carry adverse effects in any individual who receives them.

Testosterone: Problems with heart, brain, liver, endocrine and mental health systems, enlarged breasts, small testicles, infertility, high blood pressure, bone growth problems, addiction, aggressive and violent behavior.

Estrogen: Higher chance of developing liver tumors or cancer, glucose intolerance, high blood pressure, above normal levels of calcium in blood, blood clots.