Currently, in Canada preimplantation genetic diagnosis (PGD) or embryo screening with in vitro pregnentation is widely practiced and quite common. The result of the diagnosis allows for the choice of selecting with embryo will be planted (if at all) according to the 'health' of the embryo, meaning the likelihood of the embryo developing into a healthy baby. This process is legal because it does not involve any direct alteration of the genetic material of the embryo. With the knowledge of the embryo's DNA sequence, the parents simply can make an informed decision on which one of many embryos will be planted out of the pool of embryos created in vitro. It is illegal though, to 'alter the genome of a cell of an in vitro embryo such that the alteration is capable of being transmitted to descendants [a]. This prohibition is one of 10 outlined in the Assisted Human Reproduction (AHR) Act. This act restricts parents from selecting the embryo of the sex that they prefer, just for the sake of wanting a daughter/son, but it is legal to do so if both the parents have hereditary diseases that are sex-linked such as muscular dystrophy or a blood-related disease called haemophilia [b]. The principles and prohibitions outlined in the AHR Act used to be regulated and enforced by a unique body called the 'Assisted Human Reproduction Canada', created in 2006. However, due to concerns about the organization being unconstitutional, the group was dismantled in 2013 and the enforcement was taken under the wing of Bill C-38, the 'Jobs, Growth and Long-Term Prosperity Act'. Currently, Health Canada in Ottawa is in charge of regulating Act, whereby anybody who does not comply, including accomplices (doctors, advisors, professionals, etc) can be punished with up to $500,000 in fine, a jail time of up to 10 years, or both [c][d]. According to a paper by the Canadian Medical Association published in 2009, in countries like Germany, Italy or Ireland, PGD is entirely illegal. In many major countries including the UK, Canada, Australia and New Zealand, genetically modifying an embryo and maintaining it in a laboratory for longer than 14 days is illegal [e] therefore in no country is it allowed to plant, carry to term and birth a genetically modified embryo. Most of the major countries around the world share the stance with Canada [f] in that embryo screening, much like a prenatal diagnosis, is an acceptable method to allow parents to prepare for the health conditions of their expected child. However, due to potentially detrimental unknown health and societal consequences of modifying an embryo's genetic material, it should be kept illegal for the safety and wellbeing of the future society.

Reference

[a] http://laws-lois.justice.gc.ca/eng/acts/a-13.4/page-1.html#h-2

[b] http://www.pgd.org.uk/resources/tests/pgd-sexing.pdf

[c] https://embryo.asu.edu/pages/assisted-human-reproduction-act-2004

[d] https://www.canada.ca/en/health-canada/services/drugs-health-products/biologics-radiopharmaceuticals-genetic-therapies/legislation-guidelines/assisted-human-reproduction/prohibitions-scientific-research-clinical-applications.html

[e] http://theconversation.com/destroying-research-embryos-within-14-days-limits-chance-of-medical-breakthroughs-71986

[f] http://www.cmaj.ca/content/suppl/2009/09/21/cmaj.080658.DC1/gen-bouffard-4-at.pdf