

February 2020

Let She Who has the Womb Speak: Regulating the use of Human Oocyte Cryopreservation to the Detriment of Older Women

Browne C. Lewis
Cleveland State University

Follow this and additional works at: <https://scholarworks.uark.edu/alr>



Part of the [Family Law Commons](#)

Recommended Citation

Browne C. Lewis, *Let She Who has the Womb Speak: Regulating the use of Human Oocyte Cryopreservation to the Detriment of Older Women*, 72 Ark. L. Rev. 597 (2020).

Available at: <https://scholarworks.uark.edu/alr/vol72/iss3/2>

This Article is brought to you for free and open access by ScholarWorks@UARK. It has been accepted for inclusion in Arkansas Law Review by an authorized editor of ScholarWorks@UARK. For more information, please contact ccmiddle@uark.edu.

**LET SHE WHO HAS THE WOMB SPEAK:
REGULATING THE USE OF HUMAN OOCYTE
CRYOPRESERVATION TO THE DETRIMENT OF
OLDER WOMEN**

Browne C. Lewis*

INTRODUCTION

“Inequality starts in the womb.”¹ When it comes to childbearing, advances in assisted reproductive technology (ART) may negate the veracity of this quote. In her autobiography *Becoming*,² former First Lady Michelle Obama discusses her struggles with infertility.³ Mrs. Obama’s difficulty getting pregnant may have stemmed from the fact that she postponed motherhood to focus on her career as a high-powered attorney.⁴ At that time, for Mrs. Obama and women of her generation, the focus was on pregnancy prevention instead of procreation preservation.⁵ Women feared being placed on the “mommy track,”⁶ so they waited to have children until after they had achieved success in their careers.⁷ Some of those women paid

* B.A., Grambling State University, M.P.P., Humphrey Institute; J.D., University of Minnesota School of Law; University of Houston Law Center. Browne Lewis is the Leon M. and Gloria Pelvin Professor of Law at Cleveland-Marshall College of Law. Thanks to the Cleveland Marshall Fund for financial support during the course of preparing this article and Elizabeth Sparks for providing research assistance.

1. Simon Hattenstone, *Filthy, Funny and Christian: The Many Sides of Chewing Gum’s Michaela Coel*, THE GUARDIAN (Oct. 4, 2015), [<https://perma.cc/P362-M3PD>] (quoting Michaela Coel).

2. MICHELLE OBAMA, *BECOMING* 187 (1st ed. 2018).

3. Colby Itkowitz, *Michelle Obama is One of Millions Who Struggled with Infertility. Here’s Why Her Broken Silence Could Matter*, WASH. POST (Nov. 9, 2018), [<https://perma.cc/7MCB-SQ6J>].

4. See OBAMA, *supra* note 2, at 118.

5. *Id.* at 187.

6. Heather M. Kolinsky, *Taking Away an Employer’s Free Pass: Making the Case for a More Sophisticated Sex-Plus Analysis in Employment Discrimination Cases*, 36 VT. L. REV. 327, 327-28 (2011) (discussing discrimination against mothers in the workplace).

7. Gretchen Livingston, *For Most Highly Educated Women, Motherhood Doesn’t Start Until the 30s*, PEW RES. CTR. (Jan. 15, 2015), [<https://perma.cc/3VEN-7JPC>].

the price for their ambitions by being unable to conceive when they were ready to do so.⁸ No one warned them that their fertile years might be limited because fertility declines with age.⁹ Infertility was not something that was publicly discussed because of the stigma linked to the inability to have a child.¹⁰ Young women of this generation are just as ambitious as their mothers and grandmothers. However, because of advancements in ART, they do not have to sacrifice motherhood for their careers. One of those advancements is the ability to have their oocytes frozen for later use.¹¹

It has not always been feasible for a woman to conceive a child using frozen oocytes. When scientists first tried to freeze oocytes, they used a slow-freezing method.¹² Because human oocytes are mainly made of water, they were frequently damaged during the freezing and thawing stages of the slow-freezing procedure.¹³ Presently, doctors rely on vitrification, a new process that permits them to flash-freeze the oocytes.¹⁴ This process maintains the integrity of the oocytes, so doctors can implant them years or decades later.¹⁵ Further, this new high-speed process improves pregnancy success rates among women who use frozen oocytes to conceive.¹⁶

When my niece got her first job, I helped her review the paperwork for health insurance, retirement, personal leave, and

8. Denis Campbell, *Women Who Postpone Having Babies May Stay Childless, Warns Medical Chief*, THE GUARDIAN (Jan. 17, 2014), [<https://perma.cc/7HQM-PLLU>].

9. Kerry Lynn Macintosh, *Teaching About the Biological Clock: Age-Related Fertility Decline and Sex Education*, 22 UCLA WOMEN'S L.J. 1, 1-2 (2015).

10. Nizan Geslevich Packin, *The Other Side of Health Care Reform: An Analysis of the Missed Opportunity Regarding Infertility Treatments*, 14 SCHOLAR 1, 54 (2011).

11. Catrin E. Argyle et al., *Oocyte Cryopreservation: Where Are We Now?*, 22 HUM. REPROD. UPDATE 440, 441 (2016).

12. Fawaz Edris et al., *Compared to Vitrification, Slow Freezing Technique Is Associated with a Higher Post-Thawed Embryos Survival and Clinical Pregnancy Rates. Is This a Myth or a Fact?*, 2 MED. J. OBSTETRICS & GYNECOLOGY 1046, 1047 (2014).

13. Yun-Xia Cao et al., *Comparison of Survival and Embryonic Development in Human Oocytes Cryopreserved by Slow-Freezing and Vitrification*, 92 FERTILITY & STERILITY 1306, 1306, 1310 (2009).

14. Tae Ki Yoon et al., *Survival Rate of Human Oocytes and Pregnancy Outcome After Vitrification Using Slush Nitrogen in Assisted Reproductive Technologies*, 88 FERTILITY & STERILITY 952, 952, 955 (2007).

15. Lisa Campo-Engelstein, *Insurance Coverage for Cancer Treatment-Induced Conditions: Comparing Fertility Preservation Technology and Breast Reconstructive Surgery*, 61 DEPAUL L. REV. 849, 857 (2012).

16. Yoon, *supra* note 14, at 955.

other traditional employee benefits. The one unique benefit she was offered was the option to have the company pay for her to have her oocytes extracted and frozen. At twenty-two, she was not in a committed relationship and was unsure if she wanted children. She decided not to take the company up on its offer, but some of the other young women utilized the benefit. The number of women who are having their oocytes frozen for later use has risen steadily over the last few years.¹⁷ The reasons why women freeze their oocytes are as varied as the women who do so.¹⁸

The two main classifications of oocyte freezing are medical and non-medical.¹⁹ Medical oocyte freezing refers to the act of harvesting and freezing oocytes because of a pressing medical situation.²⁰ For some women, oocyte freezing is not an elective procedure. It is a medical necessity if the woman wants to retain her ability to conceive a child who is genetically related to her.²¹ These women take action because something is putting their fertility at risk. Women with medical conditions that may adversely impact their capacity to procreate may use oocyte cryopreservation as a fertility insurance policy.²² For example, a woman may freeze her oocytes prior to undergoing cancer treatments like radiation and chemotherapy because those procedures may cause infertility.²³ Once the woman successfully undergoes treatment, she can use her frozen oocytes if she wants to conceive a child.²⁴ Women who suffer from lupus, rheumatoid arthritis, or other fertility-threatening conditions may also elect to have their oocytes harvested and frozen before the disease

17. Argyle et al., *supra* note 11, at 440.

18. *Egg Freezing*, MAYO CLINIC (Feb. 1, 2019), [<https://perma.cc/XF2A-J2HW>].

19. Gary A. Debele & Susan Crockin, *Legal Issues Surrounding Embryos and Gametes: What Family Law Practitioners Need to Know*, 31 J. AM. ACAD. MATRIM. L. 55, 56-57 (2018).

20. Marcia C. Inhorn et al., *Medical Egg Freezing: How Cost and Lack of Insurance Cover Impact Women and Their Families*, 5 REPROD. BIOMEDICINE AND SOC'Y ONLINE 82, 83 (2018), [<https://perma.cc/5SAJ-U5DF>].

21. Seema Mohapatra, *Fertility Preservation for Medical Reasons and Reproductive Justice*, 30 HARV. J. RACIAL & ETHNIC JUST. 193, 198-99 (2014) (discussing the field of oncofertility that has developed to help cancer patients preserve their fertility).

22. Ali L. Nicolette, *Empty Benefits: Employer-Sponsored Oocyte Cryopreservation and Potential for Employment Discrimination*, 27 HASTINGS WOMEN'S L.J. 341, 344-45 (2016).

23. *Id.* at 345.

24. Dorothy E. Roberts, *The Social Context of Oncofertility*, 61 DEPAUL L. REV. 777, 777 (2012).

negatively impacts their ability to conceive children.²⁵ Moreover, women who have a family history of early menopause or endometriosis may freeze their oocytes to preserve their chances of having children in the future.²⁶

There are also non-medical reasons why women might freeze their oocytes. One of the most common reasons is to postpone motherhood to focus on jobs or careers.²⁷ Some women cannot afford to have children when they are younger because they have low-paying, entry-level jobs that do not pay enough for them to afford child care, and/or rising student loan debt.²⁸ For women facing that predicament, oocyte freezing may be the best route to motherhood. Also, a woman may freeze her oocytes because she has not yet met the person with whom she wants to procreate.²⁹ Even a woman who is not sure if she wants to have children may freeze her oocytes to leave open the possibility of motherhood.³⁰ Women with jobs that may expose them to chemicals or toxins that threaten their fertility may decide to freeze their oocytes for later use.³¹ For years, before men went away to war, they had their sperm frozen in case they did not return home or returned home sterile.³² Thanks to technological advances, in recent years, women in the military have started doing the same thing with their oocytes.³³ Some women who object to embryo freezing for religious or ethical reasons may be

25. See Virginia Godoy, *Where Is Biotechnology Taking the Law? An Overview of ART, Research on Frozen Embryos and Human Cloning*, 19 J. JUV. L. 357, 368 (1998).

26. Gautam N. Allahbadia, *Social Egg Freezing: Developing Countries Are Not Exempt*, 66 J. OBSTETRICS & GYNECOLOGY INDIA 213, 214, 216 (2016).

27. Caraline Rickard, *Getting Off the Mommy Track: An International Model Law Solution to the Global Maternity Discrimination Crisis*, 47 VAND. J. TRANSNAT'L L. 1465, 1474 (2014).

28. Jessica Dickler, *More Women Say They Can't Afford Kids Because of Their Student Loans*, YAHOO! FIN. (May 22, 2018), [https://perma.cc/25NG-8MV3].

29. Sarah Boseley, *Egg-freezing Should Be Available to All U.K. Women, Experts Urge*, THE GUARDIAN (Oct. 2, 2014), [https://perma.cc/KVL2-P3RA]; Heather Murphy, *Lots of Successful Women Are Freezing Their Eggs. But It May Not Be About Their Careers*, N.Y. TIMES (July 3, 2018), [https://perma.cc/HYU3-HFSZ].

30. Anna Gorman, *Sip Wine and Chat About Postponing Motherhood—at an 'Egg Social'*, USA TODAY (Nov. 13, 2017), [https://perma.cc/57QR-NTBX].

31. Yella Hewings-Martin, *Fertility Preservation: What Are Women's Options?*, MED. NEWS TODAY (Oct. 28, 2017), [https://perma.cc/8HL8-H5QL].

32. Browne Lewis, *Graveside Birthday Parties: The Legal Consequences of Forming Families Posthumously*, 60 CASE W. RES. L. REV. 1159, 1169 (2010).

33. Natalie Lampert, *New Fertility Options for Female Soldiers*, THE ATLANTIC (Feb. 29, 2016), [https://perma.cc/Y9ZR-4QNS].

comfortable using frozen oocytes to conceive.³⁴ Consequently, those people may select oocyte freezing.

The ability to freeze oocytes for later use has numerous benefits. After a child was successfully conceived using frozen oocytes, the medical community considered human oocyte cryopreservation to be another tool in the arsenal available to fight infertility.³⁵ The ability to have their oocytes frozen for later use puts women on par with men when it comes to postponing parenthood. As a result, women will be better able to compete with men for professional promotions.³⁶ Oocyte freezing may also take the pressure off women to find a man with whom to have children.³⁷ Hence, they will be able to take time to enjoy dating without worrying about the ever-ticking biological clock. In addition, the oocyte freezing option may ease some of the psychological stress felt by women battling cancer.³⁸ Those women may get some comfort from the fact that they may be able to become mothers after they defeat cancer.

Nonetheless, persons singing the praises of clinics that provide human oocyte cryopreservation are often interrupted by the voices of people who state that there are serious ethical concerns raised by the use of the procedure.³⁹ The scope of this article does not permit me to discuss all of the potential ethical issues raised by the availability of human oocyte cryopreservation. Thus, I will limit my discussion to two potential contentions. First, one may claim that human oocyte cryopreservation should be banned because it is unethical to encourage young women to defer motherhood.⁴⁰ Second, some persons may assert that the use of frozen oocytes should be a privilege reserved for women of childbearing age because it is unethical for a woman to have a child after the sand in her

34. Kathryn C. Miehle, *Pre-Embryos: The Tiniest Speck of Potential Life Carrying Seeds for Sweeping Change*, 4 U. PITT. J. TECH. L. & POL'Y art. 3, at 1, 32.

35. Hewings-Martin, *supra* note 31.

36. Nicolette, *supra* note 22, at 341-42.

37. Boseley, *supra* note 29.

38. *See* Godoy, *supra* note 25, at 368.

39. Stephanie Bernstein & Claudia Wiesemann, *Should Postponing Motherhood via "Social Freezing" Be Legally Banned? An Ethical Analysis*, 3 LAWS 282, 283 (2014), [<https://perma.cc/UJJ3-2TPP>].

40. Anne L. Goodwin, *Oh, Brave New World of Parenthood*, 12 DEL. LAW. 25, 29 (1994).

biological hourglass has run out.⁴¹ Both of these ethical arguments raise legal issues pertaining to a woman's right to procreate and a woman's right to be treated the same as a similarly situated man.

This article is divided into three parts. Part I examines the arguments in favor of banning human oocyte cryopreservation. Part II explores the reasons some opponents of human oocyte cryopreservation might give to support restrictions on the use of frozen oocytes. Part III analyzes the possible ethical and legal challenges that may arise in the event that the government seeks to ban the use of frozen oocytes or restrict the use of frozen oocytes based solely on the age of the potential mother.

I. BANNING HUMAN OOCYTE CRYOPRESERVATION

The law consistently lags behind science, so the fertility industry is not heavily regulated.⁴² Because of the lack of regulation, healthcare providers have pushed the envelope when it comes to creating children using ART. Currently, postmenopausal women are able to conceive using donor oocytes.⁴³ Women who have had a hysterectomy may be able to gestate an embryo with the use of an artificial womb.⁴⁴ Widows can give birth to their dead husbands' children using posthumous reproduction.⁴⁵ The latest trend in ART is human oocyte cryopreservation,⁴⁶ which permits women to have their oocytes frozen for later use.⁴⁷ However, despite its legality, the process is not without controversy.

41. *Id.*

42. Yehezkel Margalit et al., *The New Frontier of Advanced Reproductive Technology: Re-evaluating Modern Legal Parenthood*, 37 HARV. J.L. & GENDER 107, 125-26 (2014).

43. Lisa Hird Chung, *Free Trade in Human Reproductive Cells: A Solution to Procreative Tourism and the Unregulated Internet*, 15 MINN. J. INT'L L. 263, 269 (2006).

44. Margalit, *supra* note 42, at 126 n.72.

45. Browne C. Lewis, *Dead Men Reproducing: Responding to the Existence of Afterdeath Children*, 16 GEO. MASON L. REV. 403, 404-05 (2009).

46. Nicolette, *supra* note 22, at 341-42.

47. Gloria Y. Liu, *A Call to Arms: The Department of Defense's Egg Freezing Benefit Summons Increased Reporting Regulations*, 25 DUKE J. GENDER L. & POL'Y 129, 130 (2017).

A doctor's calling is to provide care for the sick and the dying.⁴⁸ Thus, one may argue that it is unethical for physicians to waste valuable time and resources performing invasive medical procedures on healthy people.⁴⁹ In cases involving sick people who select medical egg freezing, one may maintain that it is unethical for physicians to concentrate on preserving their fertility instead of treating their underlying illnesses.⁵⁰ Several arguments can be made to justify banning human oocyte cryopreservation, with most of them focusing on the safety and cost of the procedure.⁵¹

A. Safety Concerns

There are concerns about the safety of the procedure. The human oocyte cryopreservation process may pose risks to the woman, the oocyte, and the child.⁵² Prior to the cryopreservation process, the oocytes must be retrieved from the woman before they can be frozen.⁵³ The oocyte recovery process is more invasive and causes greater risk than sperm retrieval.⁵⁴ In order to obtain sperm to freeze, the physician simply gives the man a cup and a porn magazine. Obtaining oocytes from a woman is far more complicated.

48. See Russell Noyes Jr. & John Clancy, *The Dying Role: Its Relevance to Improved Patient Care*, 79 PSYCHIATRY: INTERPERSONAL & BIOLOGICAL PROCESSES 199, 199-200 (2016).

49. M. Fox & M. Thomson, *A Covenant with the Status Quo? Male Circumcision and the New BMA Guidance to Doctors*, 31 J. MED. ETHICS 463, 468 (2005) (looking at the ethics of performing circumcisions on infant males and determining that it is an unethical practice because of its unnecessary and invasive nature).

50. See Ina N. Cholst, *Oncofertility: Preservation of Reproductive Potential*, 61 DEPAUL L. REV. 763, 765 (2012).

51. Liu, *supra* note 47, at 136-41.

52. *Id.* at 141-43.

53. *Id.* at 134.

54. See Bruce L. Wilder, *Assisted Reproductive Technology: Trends and Suggestions for the Developing Law*, 18 J. AM. ACAD. MATRIM. L. 177, 191-92 (2002).

1. *The Woman*

Oocyte extraction involves hormones and major surgery.⁵⁵ Like with any serious surgery, the woman faces the risk of infection and hemorrhaging.⁵⁶ The purpose of the procedure is to get as many healthy oocytes as possible, which is facilitated by administering medication prior to oocyte extraction.⁵⁷ Specifically, a doctor gives the woman hormones to stimulate the development of oocytes in her ovaries.⁵⁸ Those hormones may cause enlarged ovaries, bloating, and abdominal pain.⁵⁹ In some cases, the woman may develop Ovarian Hyperstimulation Syndrome (OHSS).⁶⁰ The symptoms of OHSS may range from mild to severe.⁶¹ Some women only experience swollen and painful ovaries,⁶² while other women may develop kidney failure.⁶³ Given the risks involved in the procedure, companies should not offer it to women as if it is just another corporate benefit.

Some of the medications involved in the in vitro fertilization (IVF) process have been linked to breast cancer⁶⁴ and other types

55. Emilie W. Clemmens, *Creating Human Embryos for Research: A Scientist's Perspective on Managing the Legal and Ethical Issues*, 2 IND. HEALTH L. REV. 93, 96 (2005).

56. Ellen Waldman & Marybeth Herald, *Eyes Wide Shut: Erasing Women's Experiences from the Clinic to the Courtroom*, 28 HARV. J. L. & GENDER 285, 321-22 (2005).

57. Cholst, *supra* note 50, at 765; Morgan De Ann Shields, *Which Came First the Cost or the Embryo? An Economic Argument for Disallowing Cryopreservation of Human Embryos*, 9 J.L. ECON. & POL'Y 685, 688 (2013).

58. Shields, *supra* note 57, at 688.

59. Andrew Zacher, *Oocyte Donor Compensation for Embryonic Stem Cell Research: An Analysis of New York's "Payment for Eggs Program"*, 21 ALB. L.J. SCI. & TECH. 323, 335 (2011).

60. Liu, *supra* note 47, at 141.

61. Jacqueline Mroz, *High Doses of Hormones Faulted in Fertility Care*, N.Y. TIMES (July 16, 2012), [<https://perma.cc/D9BB-3KKE>].

62. *Id.*

63. Michelle Bercovici, *Biotechnology Beyond the Embryo: Science, Ethics and Responsible Regulation of Egg Donation to Protect Women's Rights*, 29 WOMEN'S RTS. L. REP. 193, 195 (2008).

64. Ronald Burkman et. al., *Infertility Drugs and the Risk of Breast Cancer: Findings from the National Institute of Child Health and Human Development Women's Contraceptive and Reproductive Experiences Study*, 79 FERTILITY & STERILITY 844, 848 (2003).

of cancer.⁶⁵ If a woman is undergoing chemotherapy or another medical treatment that endangers her fertility, she may conclude that it is worth it to submit to the oocyte retrieval process. Nonetheless, a woman suffering from a condition like breast cancer may be negatively impacted by having hormones pumped into her body.⁶⁶ Opponents of non-medical egg freezing argue that it is unethical for doctors to expose healthy women to so many negative side effects.⁶⁷ Because there have been no long-term studies on the health impacts of the hormones used in oocyte retrieval, it is arguable whether the woman can give true informed consent to human oocyte cryopreservation.⁶⁸ This argument is bolstered by the fact that women undergo the procedure without enough information to give adequate consent.⁶⁹

2. *The Oocyte*

The oocyte may be damaged during the freezing, storing, and thawing stages of the process.⁷⁰ The two main types of injury the oocyte can suffer throughout the freezing process are intracellular ice formation and cellular dehydration.⁷¹ When it is frozen, ice chips may develop inside of the oocyte resulting in intracellular ice formation because the oocyte is made up mostly of water.⁷² Cellular dehydration may occur when the ice forms in

65. Danielle A. Vera, *R-Egg-ulation: A Call for Greater Regulation of the Big Business of Human Egg Harvesting*, 23 MICH. J. GENDER & L. 391, 397-98 (2016).

66. See Kenny A. Rodriguez-Wallberg & Kutluk Oktay, *Fertility Preservation and Pregnancy in Women with and Without BRCA Mutation-Positive Breast Cancer*, 17 ONCOLOGIST 1409, 1415 (2012); see also John A. Robertson, *Egg Freezing and Egg Banking: Empowerment and Alienation in Assisted Reproduction*, 1 J.L. & BIOSCIENCES 113, 119 (2014).

67. See Eleanor Morgan, *I Had My Eggs Frozen. I Wish Someone Had Told Me How Difficult It Was*, THE GUARDIAN (Oct. 21, 2015), [<https://perma.cc/2GZ6-WYL7>] (describing a woman's adverse side-effects suffered during the egg freezing process).

68. See *Andersen v. Khanna*, 913 N.W.2d 526, 536 (Iowa 2018) (affirming that under the informed consent doctrine, patients must be given enough information to make a "truly informed and intelligent decision").

69. Karey A. Harwood, *On the Ethics of Social Egg Freezing and Fertility Preservation for Nonmedical Reasons*, 5 MEDICOLEGAL & BIOETHICS 59, 66 (2015) (arguing for better informed consent, including discussions about the probability of successful thawing, fertilization, implantation, and live birth).

70. Browne Lewis, *"You Belong to Me": Unscrambling the Legal Ramifications of Recognizing a Property Right in Frozen Human Eggs*, 83 TENN. L. REV. 645, 658-59 (2016).

71. *Id.* at 658.

72. *Id.* at 658-59.

the extracellular solution.⁷³ In both instances, the oocyte suffers a direct injury and is unable to be used.⁷⁴ The likelihood of oocyte injury is reduced by the use of the fast-freezing process; however, the risk of injury still exists.⁷⁵

The greatest danger to the oocytes occurs during the storage period.⁷⁶ The oocytes may be stored indefinitely for several reasons. Because a woman usually stores her oocytes with the intention of using them later in life or if she survives an illness, a woman may die before she is able to have the oocytes fertilized and implanted.⁷⁷ Furthermore, when she matures, the woman may decide that she does not want to have children and abandon the oocytes.⁷⁸ In addition, after she pays all of the other expenses related to egg freezing, the woman may be financially unable to afford the storage fees, so she may choose to have the oocytes discarded.⁷⁹ If the woman fails to pay the storage fees, the clinic may go to court and get the authority to sell or discard the oocytes.⁸⁰ Moreover, even at a mature age, the woman may still be able to have children naturally; therefore, she may not have a need for the frozen oocytes.⁸¹ Finally, an infertile woman may not need all of the frozen oocytes because she may have a successful pregnancy during the first cycle of IVF.⁸² If, for

73. *Id.* at 659.

74. Bumsoo Han & John C. Bischof, *Direct Cell Injury Associated with Eutectic Crystallization During Freezing*, 48 CRYOBIOLOGY 8, 9 (2004); Rebecca Mead, *Cold Comfort: Tech Jobs and Egg Freezing*, NEW YORKER (Oct. 17, 2014), [<https://perma.cc/VX6M-EVF6>].

75. Argyle et al., *supra* note 11, at 442.

76. Mina Alikani, *Cryostorage of Human Gametes and Embryos: A Reckoning*, 37 REPROD. BIOMEDICINE ONLINE 1, 1 (2018), [<https://perma.cc/8SBB-69PE>].

77. See Heidi Mertes, *The Portrayal of Healthy Women Requesting Oocyte Cryopreservation*, 5 FACTS VIEWS & VISION OBGYN 141, 141 (2013).

78. Samuel B. Casey & Nathan A. Adams, IV, *Specially Respecting the Living Human Embryo by Adhering to Standard Human Subject Experimentation Rules*, 2 YALE J. HEALTH POL'Y L. & ETHICS 111, 113 (2001).

79. See Kristen Bahler, *Women Are Spending Up to \$20,000 to Freeze Their Eggs. Is It Worth It?*, MONEY (June 28, 2018), [<https://perma.cc/P6G8-8FNB>].

80. At the time of this writing, there are no known cases where the fertility clinic has sought to get unpaid fees. Nonetheless, there may be the possibility of such an action in the future.

81. Eli A. Rybak & Harry J. Lieman, *Egg Freezing, Procreative Liberty, and ICSI: The Double Standards Confronting Elective Self-Donation of Oocytes*, 92 FERTILITY & STERILITY 1509, 1511 (2009).

82. See Rachael Rettner, *Most Women Who Freeze Their Eggs Don't Use Them*, LIVE SCI. (Jan. 19, 2017), [<https://perma.cc/LPF4-UBRF>].

whatever reason, the oocytes are not used, the fertility clinic may be left with the dilemma of deciding what to do with them.⁸³

The thawing process also poses risks to the oocytes. The microtubular spindles of the oocytes are temperature sensitive.⁸⁴ If the oocytes are not maintained at the ideal temperature, chromosomal loss may occur.⁸⁵ Thus, the oocytes may not survive the thawing process.⁸⁶ Like any other stored property, frozen eggs may be destroyed because of human error or equipment malfunction.⁸⁷ Damage to the oocytes could have negative consequences for the conceived child.

3. The Child

Currently, there is not enough information available to determine if oocyte freezing poses safety concerns for the resulting child.⁸⁸ In 2012, the American Society for Reproductive Medicine (ASRM) declared that human oocyte cryopreservation should no longer be considered an experimental practice.⁸⁹ In addition, ASRM concluded that the procedure is relatively safe.⁹⁰ It based its conclusion on the fact that studies have shown that children conceived using frozen oocytes do not have any more birth defects, development disorders, or chromosomal abnormalities than children conceived through IVF using fresh

83. Susan Crockin, *Egg Freezing Raises Fundamental Issues of Ethics and Fairness*, N.Y. TIMES (Oct. 15, 2014), [https://perma.cc/TS8Y-RS7Y].

84. Kevin U. Stephens, Sr., *Reproductive Capacity: What Does the Embryo Get?*, 24 S.U. L. REV. 263, 268 (1997).

85. *Id.*

86. Ariana E. Cha, *The Struggle to Conceive with Frozen Eggs*, WASH. POST (Jan. 27, 2018), [https://perma.cc/ZL7U-GERR].

87. In March of 2018, thousands of frozen eggs and embryos were destroyed as a result of storage tanks malfunctioning at fertility clinics in Cleveland and San Francisco. Anna Almendrala, *No One Knows How Many Frozen Embryos Are Lost or Destroyed Each Year*, HUFFINGTON POST (Mar. 19, 2018), [https://perma.cc/S696-MG8U]; Alexa Lardieri, *Malfunctioning Tank Potentially Damages Frozen Eggs at Fertility Clinic*, U.S. NEWS & WORLD REP. (Mar. 12, 2018), [https://perma.cc/3NSK-KL8L].

88. MAYO CLINIC, *supra* note 18.

89. Alison P. Barbiero, *What to Expect Before You're Expecting: Clarifying Florida's Statute Governing Pre-Embryo Disposition Agreements and Divorce*, 40 NOVA L. REV. 257, 282 (2016).

90. Ethics Comm. of the Am. Soc'y for Reprod. Med., *Planned Oocyte Cryopreservation for Women Seeking to Preserve Future Reproductive Potential: An Ethics Committee Opinion*, 110 FERTILITY & STERILITY 1022, 1023 (2018) [hereinafter *Planned Oocyte Cryopreservation Opinion*].

oocytes.⁹¹ However, ASRM's declaration has not erased the concerns of persons opposing the use of human oocyte cryopreservation.⁹² For instance, ASRM's impartiality may be questioned because some of its members have a financial interest in promoting human oocyte cryopreservation.⁹³ In addition, ASRM has made it clear that it does not endorse elective oocyte freezing.⁹⁴

Many have concerns about oocyte freezing because so little research has been done on the procedure.⁹⁵ Human oocyte cryopreservation is a relatively new process compared to other forms of assisted reproduction.⁹⁶ Thus, there is not enough long-term data available because most women who have frozen their oocytes have not yet started to have them thawed for use.⁹⁷ It may take at least another decade to see if children conceived using frozen oocytes have any unique physical and/or emotional challenges.⁹⁸ In addition to safety concerns, opponents of human oocytes cryopreservation are troubled by the potential costs of the procedure.

91. *Id.* at 1024.

92. *Id.* at 1024-26.

93. Robertson, *supra* note 66, at 132.

94. Rachel Rettner, *Some Women Regret Freezing Their Eggs, and Doctors Are Worried*, LIVE SCI. (May 18, 2018), [<https://perma.cc/GDC9-JKB6>]. *But see Planned Oocyte Cryopreservation Opinion*, *supra* note 90 (The Ethics Committee labeled planned oocyte cryopreservation as an "ethically permissible procedure that may help women avoid future infertility.>").

95. June Carbone & Naomi Cahn, *The Gender Class Divide: Reproduction, Privilege, and the Workplace*, 8 F.I.U. L. REV. 287, 289 (2013); *see also Planned Oocyte Cryopreservation Opinion*, *supra* note 90, at 1024.

96. Greer Gaddie, *The Personhood Movement's Effect on Assisted Reproductive Technology: Balancing Interests Under a Presumption of Embryonic Personhood*, 96 TEX. L. REV. 1293, 1320 (2018).

97. Cotton Codinha, *The Rise of Egg Freezing as a Fertility Choice*, ALLURE (Oct. 15, 2018), [<https://perma.cc/7YLU-SVW6>] (more than 85% of the women who have frozen eggs have not yet attempted to thaw them to use them).

98. *See Planned Oocyte Cryopreservation Opinion*, *supra* note 90, at 1024 (noting that data on the long-term safety is incomplete because it takes time for women to return to use their preserved oocytes and for the resulting children to grow up).

B. Special Costs

Persons who oppose the use of human oocyte cryopreservation argue that it is unethical for doctors to offer the process to healthy women because the costs are too great.⁹⁹ Opponents also further maintain that women fighting cancer and other medical conditions pay too great a price when they delay treatment to have their oocytes frozen.¹⁰⁰ The costs to women who have their oocytes frozen so that they can have children later in life include emotional costs, financial costs, and opportunity costs.¹⁰¹ In addition, using this procedure may also pose some costs to society.¹⁰²

1. Emotional Costs

Some fertility clinics may be giving women false hope.¹⁰³ The chances of a woman conceiving a child using frozen oocytes is fairly low.¹⁰⁴ However, the Internet is full of websites from companies that appear to promise a woman that if she freezes her oocytes, she will be able to have a child in the future.¹⁰⁵ Some companies are even giving egg-freezing parties to encourage young women to undergo the procedure.¹⁰⁶ The fertility clinics focus on pregnancy rates, rather than live birthrates, to make

99. *Id.* at 1024-25.

100. *Female Cancers, Cryopreservation, and Fertility*, AM. SOC'Y REPROD. MED. (March 10, 2017), [https://perma.cc/EU3C-967P].

101. Nicolette, *supra* note 22, at 342; *Planned Oocyte Cryopreservation Opinion*, *supra* note 90, at 1025.

102. Nicolette, *supra* note 22, at 342.

103. Imogen Goold, *Trust Women to Choose: A Response to John Robertson's 'Egg Freezing and Egg Banking: Empowerment and Alienation in Assisted Reproduction'*, 4 J.L. & BIOSCIENCES 507, 511 (2017); *see also* Josephine Johnston & Miriam Zoll, *Is Freezing Your Eggs Dangerous? A Primer*, THE NEW REPUBLIC (Nov. 1, 2014), [https://perma.cc/GC5J-UV27] (The ASRM stated that “[m]arketing this technology for the purpose of deferring childbearing may give women false hope.”).

104. *See* Nicolette, *supra* note 22, at 347-48; *see also* Alicia J. Paller, *A Chilling Experience: An Analysis of the Legal and Ethical Issues Surrounding Egg Freezing, and a Contractual Solution*, 99 MINN. L. REV. 1571, 1584 (2015) (noting that “egg freezing cannot ensure women the ability to achieve pregnancy later in life”).

105. *Growing Crop of Companies Suggest Young Women Protect Themselves Against Infertility*, CBS NEWS (Jan. 12, 2019), [https://perma.cc/YS6D-TWZR].

106. Jessica Glenza, *Fertility and Canapés: Why Egg Freezing Parties Are a Hot Item on Wall Street*, THE GUARDIAN (Jan. 2, 2018), [https://perma.cc/EHF7-35CD].

themselves appear to be successful.¹⁰⁷ However, they also do not reveal the unsuccessful attempts.¹⁰⁸ Moreover, the clinics do not disclose that some of the live births are produced by implanting multiple embryos into the same woman.¹⁰⁹ This can be devastating for a woman who bases her family planning upon the belief that, when she is ready to have a child, she will be able to use her frozen oocytes to achieve that goal.¹¹⁰ For example, a forty-year-old woman who tries to conceive using oocytes she had frozen when she was in her twenties may discover that their eggs are not viable.¹¹¹ In addition to grieving the loss of her potential children, the woman may feel guilty because she deferred motherhood in order to focus upon her career.¹¹²

2. *Financial Costs*¹¹³

The number of companies that will pay for egg freezing as part of medical benefits for employees are still relatively small.¹¹⁴ Therefore, a woman who chooses human oocyte cryopreservation also pays a financial cost.¹¹⁵ Because most insurance plans do not cover assisted reproductive procedures, the woman will be forced to pay for the cost of the oocyte retrieval procedure, the storage fees, the thawing procedure, and the IVF out of her often-limited financial resources.¹¹⁶ Depending upon the woman's

107. Jane E. Brody, *The Misleading Promise of I.V.F. for Women over 40*, N.Y. TIMES (Oct. 17, 2016), [https://perma.cc/9KJ6-HGMK].

108. Elizabeth O'Brien, *10 Things Fertility Clinics Won't Say*, MARKETWATCH (June 12, 2014), [https://perma.cc/8JX6-ZG4N].

109. Camille M. Davidson, *Octomom and Multi-Fetal Pregnancies: Why Federal Legislation Should Require Insurers to Cover In Vitro Fertilization*, 17 WM. & MARY J. WOMEN & L. 135, 153 (2010).

110. Ariana Eunjung Cha, *The Struggle to Conceive with Frozen Eggs*, WASH. POST (January 27, 2018), [https://perma.cc/VZV7-VCV9].

111. Charlotte Alter et al., *What You Really Need to Know About Egg Freezing*, TIME (July 16, 2015), [https://perma.cc/L3B8-4KG6].

112. Elizabeth Keenan, *The No-Baby Penalty*, CHRONICLEVITAE (June 19, 2014), [https://perma.cc/44AL-GYPT].

113. Kerry Lynn Macintosh, *Teaching About the Biological Clock: Age-Related Fertility Decline and Sex Education*, 22 UCLA WOMEN'S L.J. 1, 9-10 (2015) (discussing the costs related to egg freezing).

114. Seema Mody & Harriet Taylor, *Egg Freezing Has Become the Go-To for Delayed Parenthood*, CNBC NEWS (May 9, 2019), [https://perma.cc/92E7-PAB6].

115. Macintosh, *supra* note 113, at 10.

116. Kimberly Mutcherson, *Regulating the Right to Procreate*, 2017 N.J. LAW. 5, 46, 47 (2017) (discussing the high cost of making babies); Caroline Praderio, *There Is a Dark*

circumstances, she may have the added cost of obtaining sperm and/or a surrogate.¹¹⁷ If the woman waits too long to use her frozen egg, she may have a high-risk pregnancy that causes her to miss work and incur additional medical costs.¹¹⁸ The money committed to the procedure may be recouped, but the intangible costs are lost forever.

3. Opportunity Costs

A woman who avails herself of human oocyte cryopreservation may also incur opportunity costs. Opportunity cost is an economic term that refers to the price of a lost opportunity.¹¹⁹ In the case of elective oocyte freezing, the woman's opportunity cost may be the loss of the chance to naturally conceive a child when she is in her early childbearing years.¹²⁰ If a woman loses that opportunity, she will not be able to get it back. Even proponents of human oocyte cryopreservation would concede that the most effective way to conceive a child is for a woman and a man to have sexual intercourse when they are at their age of peak fertility.¹²¹ When a woman postpones motherhood and chooses to freeze her oocytes in reliance on the promises made by a fertility specialist, she may lose her opportunity to have a child that is genetically related to her. Likewise, a woman who elects human oocyte cryopreservation for medical reasons may also incur opportunity costs.¹²² In order to have her oocytes retrieved for freezing, the woman may have to postpone treatment for her medical condition.¹²³ Thus, her opportunity cost is that she may lose the

Side to Egg Freezing That No One Is Talking About, INSIDER (Mar. 22, 2017), [https://perma.cc/EZ9B-EG68].

117. Rachel Gurevich, *How Much Does IVF Really Cost?*, VERYWELL FAM. (Mar. 20, 2019), [https://perma.cc/2VN7-EXAG].

118. Ashley May, *Having a Baby Past 35: What Women Should Know*, USA TODAY (Mar. 3, 2017), [https://perma.cc/FT9M-7UNP] (describing the pregnancy complications of women over 35).

119. See J. Gregory Sidak & Daniel F. Spulber, *The Tragedy of the Telecommons: Government Pricing of Unbundled Network Elements Under the Telecommunications Act of 1996*, 97 COLUM. L. REV. 1081, 1132 (1997).

120. Debele & Crockin, *supra* note 19, at 117-18; Johnston & Zoll, *supra* note 103.

121. See Michele Goodwin, *Assisted Reproductive Technology and the Double Bind: Illusory Choice of Motherhood*, 9 J. GENDER RACE & JUST. 1, 46 (2005).

122. Cholst, *supra* note 50, at 774-75.

123. See *id.* at 765.

opportunity to have the doctors aggressively treat her medical condition or use more effective treatments at the early stages of the illness.

4. Societal Costs

The availability and use of human oocyte cryopreservation may come with some societal costs. Some commentators contend that, when women are encouraged to freeze their oocytes so they can be successful in their careers, society avoids addressing the disparate treatment of women in the workplace.¹²⁴ The cost to society is that we continue to have a system that discriminates against women by placing them on the “mommy track” if they choose to have children at the start of their careers.¹²⁵ The availability of the procedure may also lead young women to feel pressured to preserve their ability to procreate even if they are not sure if they want to have children.¹²⁶ Another major cost to society is the possibility that oocytes will be treated like other products sold in the marketplace.¹²⁷ After a woman has her desired number of children, nothing prevents her from selling her remaining frozen oocytes to the highest bidder. Given the shortage of donor oocytes and the desperation of infertile people, the woman may be able to start a bidding war.¹²⁸ This has already occurred in oocyte donation to a certain extent. For example, attractive women attending Ivy League schools have started asking a premium for their oocytes.¹²⁹ The further commodification of human oocytes could have far-reaching societal consequences.

124. Goodwin, *supra* note 121, at 50.

125. Rebecca Korzec, *Working on the “Mommy-Track”: Motherhood and Women Lawyers*, 8 HASTINGS WOMEN’S L.J. 117, 117-18 (1997).

126. See Laura Sydell, *Silicon Valley Companies Add New Benefit for Women: Egg-Freezing*, NPR (Oct. 17, 2014), [<https://perma.cc/3QES-RSF6>].

127. Lewis, *supra* note 70, at 656-57.

128. See Andrew Wancata, *No Value for a Pound of Flesh: Extending Market Inalienability of the Human Body*, 18 J.L. & HEALTH 199, 221 (2003-2004); Tamar Lewin, *Egg Donors Challenge Pay Rates Saying They Shortchange Women*, N.Y. TIMES (Oct. 16, 2015), [<https://perma.cc/MB8C-MNJY>].

129. V. Noah Grimbél, *Fetal Tissue Research & Abortion: Conscriptio, Commodification, and the Future of Choice*, 40 HARV. J. L. & GENDER 229, 283-84 (2017).

Sooner or later, there may be an illegal market for frozen oocytes.¹³⁰ This could also lead to exploitation of low-income women in the United States and in developing countries.¹³¹ This has already happened in surrogacy situations. For instance, surrogacy in India and other developing countries has been a booming industry.¹³² It appears to be a win-win situation. Surrogacy costs in developing countries are much cheaper than in the United States,¹³³ and the surrogates use the money they receive to provide for their families.¹³⁴ Nonetheless, the big losers in “reproductive tourism”¹³⁵ may be the low-income women who rent their wombs to raise their families out of poverty.¹³⁶ In light of the potential problems, it may be argued that the government has an obligation to ban the use of human oocyte cryopreservation.¹³⁷ Even bioethicists who find the use of human oocyte cryopreservation acceptable may believe that the government should restrict the use of the procedure.¹³⁸

130. See Rebecca Oas, *China's Black Market for Human Eggs Lures the Young*, LIFESITE (Jan. 16, 2015), [https://perma.cc/2NHU-PGKR] (China has a robust black market for egg retrieval.); Olivia Campbell, *This New App Is Tinder for Sperm and Egg Donors*, HUFFINGTON POST (May 8, 2017), [https://perma.cc/4ST9-2VYN] (Australia has a thriving black market for donor eggs.).

131. See Lewin, *supra* note 128; *Egg Donation and Exploitation of Young Women Results in Death*, CISION (Jul. 13, 2012), [https://perma.cc/9PGP-EGCE].

132. Elo Luik, *Cross-Border Surrogacy: Exploiting Low-Income Women as Biological Resources?*, THE GUARDIAN (Mar. 28, 2017), [https://perma.cc/C5GC-MHKM]; *As Demand for Surrogacy Soars, More Countries Are Trying to Ban It*, THE ECONOMIST (May 13, 2017), [https://perma.cc/Y8ZV-KPB8].

133. Christopher White, *The Hidden Costs of Surrogacy*, NAT'L REV. (Jan. 27, 2015), [https://perma.cc/L45V-XEE5].

134. See Kevin Ponniah, *In Search of Surrogates, Foreign Couples Descend on Ukraine*, BBC NEWS (Feb. 13, 2018), [https://perma.cc/UT8G-9MVJ].

135. Seema Mohapatra, *Stateless Babies & Adoption Scams: A Bioethical Analysis of International Commercial Surrogacy*, 30 BERKELEY J. INT'L L. 412, 413 (2012).

136. In 2018, the Indian government banned commercial surrogacy to protect vulnerable women from being exploited. Saptarshi Ray, *India Bans Commercial Surrogacy to Stop 'Rent a Womb' Exploitation of Vulnerable Women*, THE TELEGRAPH (Dec. 20, 2018), [https://perma.cc/2V3D-FE3C].

137. See Lewis, *supra* note 70, at 673.

138. *Id.*

II. RESTRICTING HUMAN OOCYTE CRYOPRESERVATION

After more than a decade of unsuccessful IVF attempts, Brigitte Nielsen gave birth to her fifth child at the age of fifty-four.¹³⁹ When she announced the pregnancy on Twitter, she received harsh comments from people who felt she was too old to have a child.¹⁴⁰ In the United States, oocytes can be frozen for an indefinite period of time.¹⁴¹ Therefore, a woman could use her frozen oocytes to conceive a child when she is way beyond her natural reproductive years.¹⁴² This is a possibility because, according to some experts, the uterus does not lose its function with age.¹⁴³

Due to the health risks, some people think that it is unethical for a physician to help a woman get pregnant later in life.¹⁴⁴ Older pregnant women are more likely to experience conditions like hypertension, pre-term delivery, vaginal bleeding, pre-eclampsia, and gestational diabetes.¹⁴⁵ Fertility clinics are hesitant to perform IVF on older women using their own oocytes because women over the age of forty often have few viable eggs, respond poorly to conventional ovarian stimulation, and have lower pregnancy rates.¹⁴⁶ In addition to being concerned about the health of the women, some clinics are worried that IVF performed on older women will be unsuccessful and lower their reportable

139. Amy Nicholson, *Brigitte Nielsen on Giving Birth at 54: "I Was Trying Until There Were No Embryos Left"*, THE GUARDIAN (Feb. 11, 2019), [<https://perma.cc/H76G-FV3S>].

140. Dave Quinn, *Brigitte Nielsen Worries She'll Be Mistaken for 'Grandmother' When New Daughter Goes to School*, PEOPLE (July 26, 2018), [<https://perma.cc/QW2M-QU3W>].

141. Cyrene Grothaus-Day, *From Pipette to Cradle, From Immortality to Extinction*, 7 RUTGERS J.L. & RELIGION 2, ¶ 16 (2005).

142. *Id.* ¶ 17.

143. Elizabeth Cohen, *Pregnant at 47: Can I Do That?*, CNN (June 3, 2010), [<https://perma.cc/M7DU-NN3J>].

144. Marcia Angell, *Pregnant At 63? Why Not?*, N.Y. TIMES (Apr. 25, 1997), [<https://perma.cc/NMM9-3E7R>].

145. Yvonne Roberts, *Late Motherhood Is on the Rise, but as One Who Knows, It Has Its Downsides*, THE GUARDIAN (Mar. 31, 2018), [<https://perma.cc/QD36-DYGT>]; Hannah Nichols, *Pregnancy After 35: What Are the Risks?*, MEDICAL NEWS TODAY (June 9, 2017), [<https://perma.cc/CL97-EYFN>].

146. Sherman J. Shilber, *IVF Treatment for Women over 40*, INFERTILITY CTR. ST. LOUIS, [<https://perma.cc/77GM-CJDP>] (last visited Oct. 1, 2019).

statistics.¹⁴⁷ This is a valid concern because a fertility clinic has to produce good results to remain competitive.¹⁴⁸ In an industry where there are no guarantees, women are more apt to select a fertility clinic that has a good reputation.¹⁴⁹ Because their bodies are not equipped or designed to produce a lot of eggs, older women must be given higher doses of hormonal drugs.¹⁵⁰ As a result of the cost of that extra medication, older women typically pay more than the cost of conventional IVF.¹⁵¹ With insurance coverage of IVF and other fertility treatments already limited,¹⁵² some states have used age to further restrict insurance companies' coverage of fertility treatment.¹⁵³

Like any other industry, the fertility industry is sensitive to consumer demand.¹⁵⁴ Therefore, fertility clinics have taken steps to meet the demands of women over forty.¹⁵⁵ One of those actions is to offer IVF using donor oocytes because older women who cannot produce oocytes can still gestate them.¹⁵⁶ By using oocytes from young donors, fertility clinics hope to address some of the health issues older women may face when using their own

147. *Id.* The Fertility Clinic Success Rate Act of 1992 requires American fertility clinics to report data to the CDC annually on every assisted reproduction procedure they perform. See 42 U.S.C. 263a, -1, -5 (1992).

148. Jeremy Olson, *U Infertility Clinic to Close This Summer as Competition Closes In*, STAR TRIBUNE (Apr. 27, 2015), [https://perma.cc/9YX8-KZUS].

149. See Hannah Huhman, *The Ultimate Guide to Choosing a Fertility Clinic . . . and Knowing When to Get a Second Opinion*, HUFFINGTON POST (Dec. 6, 2017), [https://perma.cc/GX9Y-HFPK].

150. Sarah Boseley, *High Doses of IVF Drugs May Cause Harm to Eggs*, THE GUARDIAN (Jul. 3, 2011), [https://perma.cc/6ARD-6E38].

151. Nina Bahadur, *The Cost of Infertility: This Is How Real People Pay for IVF*, SELF (Jan. 8, 2018), [https://perma.cc/5D7X-LW9Y].

152. Jillian Casey et al., eds., *Assisted Reproductive Technologies*, 17 GEO. J. GENDER & L. 83, 112-13 (2016).

153. Briana K. Fundalinski, *Limitations on Insurance Coverage for Fertility Treatment: Arguments for and Against Capping the Age and Restricting the Marital Status*, 23 ALB. L.J. SCI. & TECH. 625, 632 (2013).

154. See Rebecca Robbins, *Investors See Big Money in Infertility. And They're Transforming the Industry*, STAT NEWS (Dec. 4, 2017), [https://perma.cc/U96E-DGH4].

155. Elizabeth Segran, *The Quest to Extend Women's Fertility to 50*, FAST CO. (May 5, 2019), [https://perma.cc/X85G-WDUM].

156. Joe Brownstein, *Pregnant Women over 50 'Do Pretty Well' Study Finds*, LIVE SCI. (Feb. 3, 2012), [https://perma.cc/R8W5-2859].

oocytes.¹⁵⁷ Dr. Lawrence C. Udoff, medical director of the Genetics and IVF Institute in Fairfax, Virginia, and a proponent of IVF for older women, has stated, “Fortunately, the uterus does not age in the same way that eggs do.”¹⁵⁸ “This makes the goal of carrying a child after menopause easier to achieve, with the use of appropriate replacement hormones.”¹⁵⁹ Dr. Udoff does not dispute the fact that older women have more pregnancy complications.¹⁶⁰ Nonetheless, he believes that using donor oocytes can minimize those risks.¹⁶¹ The results of some studies support Dr. Udoff’s theory.

One such study was conducted in California.¹⁶² In that study, physicians from Southern California performed IVF on seventy-seven women between the ages of fifty and sixty-three.¹⁶³ The physicians implanted embryos created using oocytes from donors under the age of thirty-three into the women.¹⁶⁴ As a result, forty-two of the women conceived and delivered babies.¹⁶⁵ When reporting the outcome of the study, Dr. Richard Paulson, the lead researcher stated, “We cannot beat the biological clock of the aging egg We are beating the biological clock of pregnancy.”¹⁶⁶ Studies like the one conducted by Dr. Paulson have not lessened the criticism of doctors using IVF to help older women have children.¹⁶⁷ Some might argue that, because donor oocytes are in such short supply, physicians should reserve those oocytes for younger infertile women. As the next example

157. See Ethics Comm. of the Am. Soc’y for Reprod. Med., *Oocyte or Embryo Donation to Women of Advanced Reproductive Age: An Ethics Committee Opinion*, 106 FERTILITY & STERILITY e3, e3 (2016).

158. C. Claiborne Ray, *Very Late Motherhood*, N.Y. TIMES (May 27, 2013), [<https://perma.cc/BCK8-ELC5>]; see also Lewis, *supra* note 70, at 673-75 (for a discussion of this study and the issues surrounding post-menopausal women using donor eggs in IVF to have children).

159. Ray, *supra* note 158.

160. *Id.*

161. *Id.*

162. *In Vitro Fertilization Makes Motherhood Possible for Women After Menopause*, VOA NEWS (Oct. 27, 2009), [<https://perma.cc/Z7XC-PUTM>] [hereinafter *Motherhood Possible for Women After Menopause*].

163. *Id.*

164. *Id.*

165. *Id.*

166. *Id.*

167. See Rita Rubin, *Study: Older Women Can Have Babies with Donated Eggs*, USA TODAY (Nov. 12, 2002), [<https://perma.cc/3US9-AEPL>].

illustrates, in spite of the positive results of studies involving older women, it is still difficult for a woman over the age of fifty to get assistance conceiving even when she uses donor oocytes.¹⁶⁸

In 2007, when she was sixty years old, Frieda Birnbaum became the oldest American woman to give birth to twins.¹⁶⁹ Birnbaum became pregnant by undergoing IVF, possibly using donor eggs.¹⁷⁰ American doctors refused to perform the procedure because of Birnbaum's advanced age.¹⁷¹ Birnbaum admits she "may have" lied about her age to get doctors in a South African fertility clinic to perform the procedure.¹⁷² Birnbaum and her husband were excited about the birth of their twins.¹⁷³ However, their oldest son disagreed with his parents' decision to have another child.¹⁷⁴ Some scholars in the field were also outraged by Birnbaum's actions.¹⁷⁵ For example, Dr. Arthur Caplan, a bioethicist at the University of Pennsylvania, felt that Birnbaum was too old to have children.¹⁷⁶ When commenting on the birth, Dr. Caplan stated, "The central question is what can we do to ensure the best interests of the children. And if you're going to be entering a nursing home when your child is entering junior high school, I think that's trouble."¹⁷⁷ It is clear that Dr. Caplan would not have supported Birnbaum's decision to have a child even if she had used her own previously frozen younger oocytes. Dr. Caplan's objections to the pregnancy were based on his belief that the mother's chronological age would negatively impact the child.¹⁷⁸

Like Dr. Caplan, opponents of older women using ART to become pregnant would object to a woman over the age of fifty using her own previously stored oocytes to conceive a child. For those people, it is not about the woman's reproductive rights or

168. See Sean Dooley, *Oldest U.S. Mom of Twins Is 65 and 'More Excited' Than Ever*, ABC NEWS (Aug. 31, 2012), [<https://perma.cc/ADT5-48QP>].

169. *Id.*

170. *Id.* Birnbaum will not disclose whether she used her own eggs or donor eggs. *Id.*

171. *Id.*

172. *Id.*

173. Dooley, *supra* note 168.

174. *Id.*

175. *Id.*

176. *Id.*

177. *Id.*

178. Susannah Cahalan, *Pushing the Limits of Motherhood into the 60s*, N.Y. POST (Aug. 1, 2010), [<https://perma.cc/XV5M-J2K4>].

her health; it is about the government's obligation to promote the best interests of children.¹⁷⁹ If a woman becomes pregnant when she is in her fifties, she is more likely to have a high-risk pregnancy.¹⁸⁰ As a result, there is a chance that she could die in childbirth, so the child could be motherless. If the woman is single, the child could be an orphan. Older women are more likely to have low-weight and premature babies.¹⁸¹ Thus, their children might face a lifetime of medical problems.¹⁸²

Even if both the child and the mother come through the ordeal healthy, the child may still be negatively impacted because of his or her mother's advanced age.¹⁸³ For instance, the child may be forced to become a caretaker for his or her aging parent.¹⁸⁴ The media has paid a lot of attention to the problems of people classified as being members of the "sandwich generation."¹⁸⁵ To be a part of the "sandwich generation," an adult must have a living parent sixty-five or older and must be either raising a child under the age of eighteen or supporting a grown child.¹⁸⁶ People in that situation may suffer financially and emotionally because they are pulled in so many directions.¹⁸⁷ Children born to older women may find themselves facing some of the same pressures as members of the sandwich generation. For example, if a woman has a child when she is fifty years old, by the time the child turns eighteen, the woman will be sixty-eight years old. Like many people that age, the woman may suffer from declining physical and mental health. As a consequence, the child may be torn

179. See Judith A. Hoechst, *Fifty-Something and Pregnant: How ART Has Extended Fertility—and Generated New Legal Concerns For Parents and Children*, 39 FAM. ADVOC. 6, 6-7 (2017).

180. *Id.*

181. Melissa Reynolds, *How Old Is Too Old? The Need for Federal Regulation Imposing a Maximum Age Limit on Women Seeking Infertility Treatments*, 7 IND. HEALTH L. REV. 277, 285-86 (2010).

182. UNIV. OF R.I., *Effects of Premature Birth Can Reach into Adulthood*, SCI. DAILY (June 16, 2011), [<https://perma.cc/9G7F-73BE>].

183. Godoy, *supra* note 25, at 369-70.

184. Nona Willis Aronowitz, *More People Are Putting Off Parenthood. What Will That Mean for Their Kids?*, WASH. POST (July 6, 2012), [<https://perma.cc/R6NW-5WX5>].

185. Janice I. Wassel & Neal E. Cutler, *Family Aging and the Practice of Elder Law: A Financial Gerontology Perspective*, 3 NAELA J. 67, 69 (2007).

186. Kim Parker & Eileen Patten, *The Sandwich Generation—Rising Financial Burdens for Middle-Aged Americans*, PEW RES. CTR. (Jan. 30, 2013), [<https://perma.cc/E4DZ-NJX9>].

187. *Id.*

between taking college classes and taking care of his or her aging mother.

To address the issues mentioned above, some legal and bioethics scholars recommend that the government impose a maximum age limit on women seeking access to fertility treatments. The United Kingdom has taken steps to regulate the use of frozen eggs by limiting the length of time they may be stored.¹⁸⁸ To achieve that goal in the context of human oocyte cryopreservation, Congress would have to pass regulations restricting the length of time the frozen oocytes could be stored before they are used or discarded. If the woman did not use the oocytes within the permitted time period, she would lose the right to have them fertilized and implanted into her body. At first glance, the age limit appears to be a reasonable solution. After all, adoption agencies currently have set age limits on people seeking to adopt.¹⁸⁹ Nevertheless, this situation is different from adoption. It is one thing for an adoption agency to have a policy that prevents a fifty-year-old man or woman from adopting someone else's child. It is another more troubling thing for the government to enact a law stating that a fifty-year-old woman cannot use her own oocytes to conceive a child. A law of that nature would probably be challenged as soon as it became effective.

III. POSSIBLE ETHICAL AND LEGAL CHALLENGES

If the government enacted a law that banned or restricted the use of human oocyte cryopreservation, that law would bring up several ethical and legal questions. I will address three of those questions: (1) would a statute that banned or restricted a woman's opportunity to use her frozen oocytes violate the principles of bioethics?; (2) if the woman has a fundamental right to procreate, how can the government prevent her from using her oocytes to conceive a child?; and (3) if a fifty-year-old man can decide to

188. In the U.K., frozen eggs must be destroyed after ten years unless the woman had been rendered prematurely infertile because of a medical condition. Josephine McDermott, *Women's Frozen Eggs 'Should Be Stored for Longer'*, BBC (Jan. 21, 2019), [<https://perma.cc/T2JZ-3FRZ>].

189. See, e.g., *Adoption Requirements in the U.S.*, AM. ADOPTIONS, [<https://perma.cc/6KXH-PX7R>] (last visited Sept. 17, 2019) (upper age limit set at fifty years old).

have a child, how can the government fairly take that option away from a fifty-year-old woman?

A. The Principles of Bioethics¹⁹⁰

The primary principles of bioethics are autonomy, beneficence, non-maleficence, and justice.¹⁹¹ Autonomy refers to the right of an individual to decide what happens to his or her body.¹⁹² It is all about self-determination.¹⁹³ The principle of autonomy is one of the reasons why the law requires that a patient give informed consent before undergoing a medical procedure.¹⁹⁴ A physician who fails to obtain informed consent before acting may also be liable for medical battery.¹⁹⁵ A law that prevents a competent woman from using human oocyte cryopreservation to conceive a child would probably violate the principle of autonomy. The law recognizes patient autonomy by permitting a competent patient to refuse life-sustaining medical treatment.¹⁹⁶ Concern for a woman's health should not be enough to overcome her autonomy. As long as the health care provider informs the woman about the risks involved in the procedure, she has the right to give her consent to having her oocytes harvested and frozen. That consent must be respected.

On the other hand, autonomy is not absolute because there are laws that regulate the use of the body. For example, a person cannot legally sell his or her body for sex without facing a criminal penalty.¹⁹⁷ The law even prohibits a person from selling

190. I have included the principles of bioethics because the law would impact the manner in which doctors treat their patients.

191. George P. Smith, II, *Applying Bioethics in the 21st Century: Principalism or Situationism?* 30 J. CONTEMP. HEALTH L. & POL'Y 37, 38 (2013).

192. Hailey Akah, *Expanding the Scope of Bioethics Mediation: New Opportunities to Protect the Autonomy of Terminally Ill Patients*, 31 OHIO ST. J. DISP. RESOL. 73, 75 (2016).

193. Donald N. Bersoff, *Autonomy for Vulnerable Populations: The Supreme Court's Reckless Disregard for Self-Determination and Social Science*, 37 VILL. L. REV. 1569, 1569-70 (1992).

194. Erin Talati, *When a Spoonful of Sugar Doesn't Help the Medicine Go Down: Informed Consent, Mental Illness, and Moral Agency*, 6 IND. HEALTH L. REV. 171, 199 (2009).

195. Clinton L. Kelly, *The Rise of Medical Battery and Informed Consent*, 52 TENN. B.J., Aug. 2016, at 19, 20-21.

196. *Myers v. Schneiderman*, 85 N.E.3d 57, 63 (N.Y. 2017).

197. Arianne Plasencia, ed., *Prostitution and Sex Workers*, 9 GEO. J. GENDER & L. 699, 699-700 (2008).

his or her organs for transplantation.¹⁹⁸ Nonetheless, the banned activity in both of these examples has the potential to adversely impact the public's health. A prostitute might spread a sexually transmitted disease.¹⁹⁹ Poor people might disproportionately sell their organs and not have the resources to buy organs.²⁰⁰ There is no evidence that allowing a woman to use her frozen oocytes to have a child will negatively impact the public's health.²⁰¹ Consequently, the government should not be permitted to unduly interfere with a woman's choice to use human oocyte cryopreservation to start her family.

Part of the original Hippocratic Oath states: "I will apply dietetic measures for the *benefit* of the sick according to my ability and judgment; I will *keep them from harm and injustice*."²⁰² This places a duty on physicians to work to benefit their patients, to avoid bringing harm to their patients, and to treat their patients fairly.²⁰³ Beneficence mandates that the health care providers act in the best interests of their patients.²⁰⁴ The principle of non-maleficence requires the physician to do no harm.²⁰⁵ Any actions physicians take that harm patients are unethical. One of the legal penalties for violating the principles of beneficence and non-maleficence is the patient's ability to file a medical malpractice claim.²⁰⁶ A law restricting or banning the use of human oocyte cryopreservation would run counter to the

198. Adam Crepelle, *A Market for Human Organs: An Ethical Solution to the Organ Shortage*, 13 IND. HEALTH L. REV. 17, 20-21 (2016).

199. Carol H. Hauge, *Prostitution of Women and International Human Rights Law: Transforming Exploitation into Equality*, 8 N.Y. INT'L L. REV. 23, 43-44 (1995).

200. Steve P. Calandrillo, *Cash for Kidneys? Utilizing Incentives to End America's Organ Shortage*, 13 GEO. MASON L. REV. 69, 93-94 (2004).

201. Ana Borovecki et al., *Social Egg Freezing Under Public Health Perspective: Just a Medical Reality or a Woman's Right? An Ethical Case Analysis*, 7 J. PUB. HEALTH RES. 101, 104 (2018).

202. Lisa R. Hasday, *The Hippocratic Oath as Literary Text: A Dialogue Between Law and Medicine*, 2 YALE J. HEALTH POL'Y L. & ETHICS 299, 299 (2002) (emphasis added).

203. *See id.*; *see also In re Application of M.S. Hershey Med. Ctr.*, 595 A.2d 1290, 1295 (Pa. Super. Ct. 1991).

204. Thomas L. Hafemeister & Selina Spinos, *Lean on Me: A Physician's Fiduciary Duty to Disclose an Emergent Medical Risk to the Patient*, 86 WASH. U.L. REV. 1167, 1184 (2009).

205. V. Chandis & T. Williams, *The Patient, The Doctor, The Fetus, and the Court-Compelled Cesarean: Why Courts Should Address the Question Through a Bioethical Lens*, 25 MED. & L. 729, 743 (2006).

206. *See* Christian Nordqvist, *Medical Malpractice: What Does It Involve?*, MED. NEWS TODAY (Apr. 5, 2017), [<https://perma.cc/XAD5-6AFE>].

principle of beneficence because it would prevent health care providers from acting in the best interests of their patients. If a health care provider takes steps to help a woman achieve her goal of having a child in the future using her oocytes, he or she has acted in a way that benefits that patient. Consequently, if a law interferes with that person's ability to provide that service, that law violates the principle of beneficence.²⁰⁷ The law may also undermine the principle of non-maleficence because anything that impedes a woman from fulfilling her dream of motherhood causes her harm.²⁰⁸ Requiring a healthcare provider to contribute to the distress of a patient goes against his oath to do no harm.

The principle of justice directs doctors to treat patients fairly. The quest to ensure that patients are fairly treated led to the passage of several anti-discrimination laws, including the Americans with Disabilities Act (ADA).²⁰⁹ A law restricting or banning the use of human oocyte cryopreservation while permitting the conception of children using frozen sperm would be unfair to women. That inequity would cause healthcare providers to violate the principle of justice. Legal arguments based upon the principles of bioethics would likely be framed as public policy contentions. Courts may consider those arguments when evaluating the validity of a law that bans or restricts the use of human oocyte cryopreservation.²¹⁰ However, persons challenging such a law have strong legal precedent on which they can rely.

B. The Right to Procreate

If the government chooses to ban or restrict the use of human oocyte cryopreservation, it may disadvantage women who want to wait to have children. From a legal perspective, the woman may be able to successfully argue that the government's action is unconstitutional because it violates her right to privacy and her fundamental right to procreate. In 1942, when the United States Supreme Court invalidated a law that permitted the state to

207. See Hafemeister & Spinos, *supra* note 204, at 1184.

208. See Chandis & Williams, *supra* note 205, at 743.

209. Sharona Hoffman, *Settling the Matter: Does Title I of the ADA Work?*, 59 ALA. L. REV. 305, 306 (2008).

210. See *Skinner v. Oklahoma*, 316 U.S. 535, 541 (1942) (establishing that government involvement in reproductive matters could violate one's basic liberty).

sterilize habitual criminals, it recognized that individuals have the right to have offspring.²¹¹ The decision established that individuals have a fundamental right to make reproductive decisions without governmental interference.²¹² Since that time, the courts have consistently held that people have a right to decide to procreate or to not procreate without impermissible state interference.²¹³ The government does not have to provide resources to infertile people to help them procreate. Nonetheless, the government should not be permitted to impede a woman's attempt to become a mother using her frozen oocytes.

However, the right to make reproductive decisions is not unrestricted. For example, the United States Supreme Court has upheld federal laws placing limitations on a woman's right to have an abortion,²¹⁴ and some states have passed laws banning cloning.²¹⁵ The main reasons given for permitting the government to intervene in certain reproductive decisions are the government's interest in protecting human life²¹⁶ and the government's authority to promote public health.²¹⁷ Neither of those reasons seem applicable to cases involving the use of human oocyte cryopreservation. In fact, the availability of human oocyte cryopreservation may help promote the government's interest in protecting human life. It is probably better for the frozen oocyte to become a child than for it to be destroyed. Because the government has not held the use of assisted reproduction to be against public policy, there appears to be no good reason to believe that a ban on human oocyte cryopreservation is necessary to promote the greater good.²¹⁸ Individuals have a constitutionally protected right to procreate without

211. *Id.* at 541.

212. *Id.*

213. *Griswold v. Connecticut*, 381 U.S. 479, 484-85 (1965); *Eisenstadt v. Baird*, 405 U.S. 438, 448 (1972); *Carey v. Population Serv. Int'l*, 431 U.S. 678, 685 (1977).

214. *Gonzales v. Carhart*, 550 U.S. 124, 168 (2007).

215. Meredith Lewis, Book Note, *Age of Human Cloning and the Constitutional Crisis That May Result*, 6 J.L. & FAM. STUD. 171, 173 (2004).

216. Reva B. Siegel, *Dignity and the Politics of Protection: Abortion Restrictions Under Casey/Carhart*, 117 YALE L.J. 1694, 1738-39 (2008).

217. Maya Manian, *The Irrational Woman: Informed Consent and Abortion Decision-Making*, 16 Duke J. Gender L. & Pol'y 223, 224 (2007).

218. See generally Paul R. Brezina & Yulian Zhao, *The Ethical, Legal, and Social Issues Impacted by Modern Assisted Reproductive Technologies*, 2012 OBSTETRICS & GYNECOLOGY INT'L, at 1 (discussing the many unanswered legal questions in the field of assisted reproduction).

governmental assistance or interference.²¹⁹ Thus, the government may be able to restrict the use of the procedure, but a ban on the use of the process may not pass constitutional muster. This is especially true if the regulation disadvantages members of one gender.

C. Unequal Treatment

As previously mentioned, men frequently have children later in life. The availability of human oocyte cryopreservation may enable women to have that option. Thus, a law that prevents women from enjoying the same procreative opportunity as men may be challenged on equal protection grounds. The Fourteenth Amendment forbids states from denying persons the equal protection of the law.²²⁰ Whenever a law draws a distinction among people, it is susceptible to an equal protection challenge.²²¹ In this case, older women may claim to be discriminated against because the government has passed a law banning or restricting their ability to conceive children using frozen oocytes. In order to resolve an equal protection case, the court is required to resolve three key issues: (1) what is the classification?; (2) what level of scrutiny should be applied?; and (3) does the particular government action meet the level of scrutiny?²²²

Equal protection analysis starts by identifying how the government is distinguishing among people.²²³ There are two basic ways to establish a classification. One is where the classification exists on the face of the law; that is, where the law in its very terms draws a distinction among people based on a particular characteristic.²²⁴ Alternatively, sometimes a law is facially neutral, but a discriminatory impact or discriminatory

219. See *Skinner v. Oklahoma*, 316 U.S. 535, 541 (1942).

220. U.S. CONST. amend. XIV, § 1; *Hunter v. Erickson*, 393 U.S. 385, 392-93 (1969); Richard B. Saphire, *Equal Protection, Rational Basis Review, and the Impact of Cleburne Living Center, Inc.*, 88 KY. L.J. 591, 599-600 (1999-2000).

221. Ryan S. James & Jane Zara, *Equal Protection*, 4 GEO. J. GENDER & L. (SPECIAL ISSUE) 1, 4-5 (2002).

222. *Id.*

223. *City of Cleburne v. Cleburne Living Ctr., Inc.*, 473 U.S. 432, 444 (1984).

224. *Washington State Grange v. Washington State Republican Party*, 552 U.S. 442, 449 (2008).

effect occurs as a result of the law's administration or implementation.²²⁵

Women would probably bring a facial challenge of a law that prohibits or restricts a woman's ability to use human oocyte cryopreservation to counteract infertility. The argument would be that the classification is based upon gender and age. The comparison would have to be between older infertile women and older infertile men as similarly situated groups.²²⁶ Thus, a law that stated that an older woman could not use her frozen oocytes to conceive a child would also have to prohibit an older man from using his frozen sperm to conceive a child. Prior to undergoing chemotherapy or some other medical treatment that causes infertility, some men may have their sperm frozen for later use.²²⁷ Further, men who are going to war may have their frozen sperm stored, so that they can become fathers if they survive.²²⁸ No one has proposed enacting a law that would prevent those men from using their frozen sperm to become fathers regardless of how old the men would be when the children are conceived. As a result, a law that denies women the same opportunity to become parents would require women to be treated differently just because of their gender.

Once the classification is identified, the next step is to identify the level of scrutiny to be applied. Discrimination based upon race or national origin is subject to strict scrutiny.²²⁹ In addition, strict scrutiny is applied when the government discriminates among people as to the exercise of a fundamental right.²³⁰ Under strict scrutiny, a law is upheld if it is proven necessary to achieve a compelling government purpose.²³¹ Intermediate scrutiny is used for discrimination based on gender.²³² Under intermediate scrutiny, a law is upheld if the

225. *Yick Wo v. Hopkins*, 118 U.S. 356, 366-68, 374 (1886).

226. A comparison between older women who seek to conceive using assisted reproductive technology and older men who conceive naturally would be inaccurate.

227. See, e.g., Joseph H. Karlin, *Daddy Can You Spare a Dime?: Intestate Heir Rights of Posthumously Conceived Children*, 79 TEMP. L. REV. 1317, 1322 (2006).

228. *War-Bound Soldiers Urged to Bank Sperm Before Deployment*, CRYOBANK.COM (Nov. 3, 2008), [<https://perma.cc/Q4UG-SN2M>].

229. *Wright v. Incline Vill. Gen. Improvement Dist.*, 665 F.3d 1128, 1141 (9th Cir. 2011).

230. *Massachusetts Bd. of Ret. v. Murgia*, 427 U.S. 307, 312 (1976).

231. *Plyler v. Doe*, 457 U.S. 202, 217 (1982).

232. *Craig v. Boren*, 429 U.S. 190, 197 (1976).

government can show that it is substantially related to an important governmental purpose.²³³ The means used need not be necessary but must have a substantial relationship to the end being sought.²³⁴ Finally, there is a rational basis test. Under rational basis review, a law will be upheld if it is rationally related to a legitimate governmental purpose.²³⁵ The means chosen to accomplish the governmental purpose must merely be rational.²³⁶ Because the statute at issue in this case would involve the right to procreate, the court will probably evaluate it using strict scrutiny.²³⁷ If the government can successfully argue that the right to procreate *naturally* is not at issue, the court would probably apply intermediate scrutiny because gender is involved.²³⁸

Regardless of whether the court applies strict or intermediate scrutiny, it may be difficult for a statute restricting a woman's ability to use her frozen oocytes to be upheld. The government's purpose in enacting such a law would be two-fold. First, the government may be concerned about the risks that pregnancy poses to a woman who is beyond her childbearing years.²³⁹ In order to protect the woman, the government may restrict the use of the woman's frozen oocytes once she reaches a certain age. Second, the government may be concerned about the welfare of the child.²⁴⁰ A child born using frozen oocytes may suffer developmental and physical disabilities.²⁴¹ In addition, the child may become motherless, or be forced to be a caregiver, at a young age.²⁴² To promote the best interests of the child, the government may prohibit or restrict the use of human oocyte cryopreservation. These purposes may be important but, nonetheless, may not be compelling enough to overcome the woman's right to have an equal opportunity to procreate.

233. *Adarand Constructors, Inc. v. Peña*, 515 U.S. 200, 220 (1995).

234. *Craig*, 429 U.S. at 204.

235. *Kimel v. Fla. Bd. of Regents*, 528 U.S. 62, 84 (2000).

236. *Dandridge v. Williams*, 397 U.S. 471, 485 (1970).

237. *Skinner v. Oklahoma*, 316 U.S. 535, 541 (1942).

238. *Craig*, 429 U.S. at 197.

239. *Reynolds*, *supra* note 181, at 288.

240. *Lassiter v. Dep't of Soc. Servs.*, 452 U.S. 18, 27 (1981).

241. *See Reynolds*, *supra* note 181, at 286-88 (discussing potential developmental and physical disabilities).

242. *See id.* at 296.

In evaluating the relationship of the means of a law to its end, the United States Supreme Court often examines whether the law is under inclusive and/or over inclusive.²⁴³ A law is under inclusive if it does not apply to individuals who are similar to those to whom the law applies.²⁴⁴ A law is over inclusive if it applies to those who need not be included in order for the government to achieve its purpose.²⁴⁵ The proposed law at issue here is under inclusive and over inclusive. It is under inclusive because it does not apply to similarly situated men. The law would prevent older women from using their frozen oocytes to procreate, but it would not place the same prohibition on older men who use their frozen sperm to conceive. Because women live longer than men,²⁴⁶ a child born using an older man's sperm is more likely to become fatherless.²⁴⁷ Thus, if the government is truly concerned about the welfare of the child, the law must be expanded to apply to older men. The law is also under inclusive because it does not apply to younger women with disabilities and/or chronic illnesses. For example, a young woman who is diabetic faces more risks from pregnancy than an older woman who is relatively healthy.²⁴⁸ A law based upon age overlooks the fact that sometimes a woman's physiological age is younger than her chronological age.²⁴⁹ The law is also over inclusive because it would apply to older women who may still be healthy, active, and productive. People age differently. For instance, there are fifty-year-old women who run marathons and twenty-year-old

243. *Cabell v. Chavez-Salido*, 454 U.S. 432, 440 (1982).

244. Peter Brandon Bayer, *Rationality—and the Irrational Underinclusiveness of the Civil Rights Laws*, 45 WASH. & LEE L. REV. 1, 54 (1988).

245. R. Randall Kelso, *Considerations of Legislative Fit Under Equal Protection, Substantive Due Process, and Free Speech Doctrine: Separating Questions of Advancement, Relationship and Burden*, 28 U. RICH. L. REV. 1279, 1298 (1994).

246. Ian Ayres & Jacob Hacker, *Social Security Plus*, 26 ELDER L.J. 261, 278 (2019).

247. See Reynolds, *supra* note 181, at 296.

248. Compare R. Bell et al., *Peri-Conception Hyperglycaemia and Nephropathy Are Associated with Risk of Congenital Anomaly in Women with Pre-Existing Diabetes: A Population-Based Cohort Study*, 55 DIABETOLOGIA 936, 936 (2012) (finding that women with pre-existing diabetes have over a three times greater risk of have a pregnancy with major congenital abnormalities compared to women without diabetes), with Shimrit Salem Yaniv et al., *A Significant Linear Association Exists Between Advanced Maternal Age and Adverse Perinatal Outcome*, 283 ARCHIVES GYNECOLOGY & OBSTETRICS 755, 755 (2011) (“advanced maternal age is not an independent risk factor for perinatal mortality”).

249. Sara G. Miller, *How Old Are You Really? Genes Reveal ‘Biological Age’*, LIVE SCI. (Sept. 7, 2015), [https://perma.cc/6APV-W4FQ].

women who are morbidly obese. Doctors would probably worry more about the obese woman becoming pregnant than the older woman.²⁵⁰ Nevertheless, the law would deny the older woman the opportunity to have a child but not the younger woman. Because a law restricting an older woman's ability to use her previously frozen oocytes would be both under and over inclusive, it may not withstand an equal protection challenge. However, the Equal Protection Clause would not be applicable if the government decides to completely ban the use of human oocyte cryopreservation.

CONCLUSION

Due to advancements in reproductive technology, human oocyte cryopreservation is now a viable option for women seeking to preserve their fertility.²⁵¹ Women, men, and children may benefit from a technology that permits women to pause their biological clocks while they fulfill their personal and professional dreams. If women do not have to worry about potentially becoming infertile, they can postpone motherhood until they are ready to parent.²⁵² Undoubtedly, infertility affects women, but it also negatively impacts men.²⁵³ Therefore, a procedure that reduces the chances of infertility will be also be advantageous to men. The availability of human oocyte cryopreservation will serve the best interests of children by permitting them to be born to parents who want them and who are able to care for them.²⁵⁴ For all the benefits it may provide, human cryopreservation may lead to ethical problems that must be resolved. Unfortunately, proposed solutions to those ethical concerns may lead to legal

250. Compare Meaghan A. Leddy et al., *The Impact of Maternal Obesity on Maternal and Fetal Health*, 1 REVS. OBSTETRICS & GYNECOLOGY 170, 174 (2008) (finding obesity increases the risk of spontaneous abortion and unexplained stillbirth), with Yaniv et al., *supra* note 248, at 755 (“advanced maternal age is not an independent risk factor for perinatal mortality”).

251. Argyle et al., *supra* note 11, at 440.

252. MAYO CLINIC, *supra* note 18.

253. See Scott D. Johnson & Lindy B. Williams, *Deference, Denial, and Exclusion: Men Talk About Contraception and Unintended Pregnancy*, 4 INT'L J. MEN'S HEALTH 223, 232-33 (2005); Rahime Nida Ergin et al., *Social Stigma and Familial Attitudes Related to Infertility*, 15 TURK. J. OBSTETRICS & GYNECOLOGY 46, 46 (2018); Mandy Oaklander, *The Silent Shame of Male Infertility*, TIME (Jan. 3, 2019), [<https://perma.cc/83XQ-XUZN>].

254. See MAYO CLINIC, *supra* note 18.

complications if those actions infringe upon a woman's right to procreate or treat her different than similarly situated men.