

2024 Q1 REPORT

Fertility Tech in the United States

By : Aya Spencer
Investor

Data Powered By:



Who is this report for?

- **Venture Capital & Private Equity Investors**

Investors eager to explore the current innovation landscape in fertility care and access

- **Founders**

Founders building in the fertility tech space

- **Future Parents**

Those looking to learn more about their fertility journey

Data Limitations:

- **Public Data**

Proprietary data behind a paywall is not utilized in this report, except within the framework of an established data partnership with Harmonic AI.

- **Recent Data**

To the best of my capabilities, I leverage data utilizing the most recent information available on the topic. The earliest report utilized dates back to 2018, while the most recent one is from 2024.

- **Startup Discovery**

In order to safeguard the privacy of certain stealth companies, intentional omission from the discussion occurs for some.

- **Birth Rate vs Fertility Rate**

Certain information may only provide one metric over another (example: birth rate vs fertility rate). It is the responsibility of the reader to draw informed insights based on the nuances of the available data.

Data Limitations:

Infertility in the LGBTQ community

On October 15, 2023, the American Society for Reproductive Medicine (ASRM) Practice Committee [issued a new definition](#) of infertility. Infertility is a disease, condition, or status characterized by any of the following:

The inability to achieve a successful pregnancy based on a patient's medical, sexual, and reproductive history, age, physical findings, diagnostic testing, or any combination of those factors.

The need for medical intervention, including, but not limited to, the use of donor gametes or donor embryos in order to achieve a successful pregnancy either as an individual or with a partner.

In patients having regular, unprotected intercourse and without any known etiology for either partner suggestive of impaired reproductive ability, evaluation should be initiated at 12 months when the female partner is under 35 years of age and at six months when the female partner is 35 years of age or older.

Most importantly, ASRM adds, "Nothing in this definition shall be used to deny or delay treatment to any individual, regardless of relationship status or sexual orientation."

For the purposes of this report, it's important to note that the updated definition provided by the ASRM has not been referenced in the research materials. Therefore, infertility is defined in this context as the physiological inability for conception within a heterosexual couple.

About Me



- **Who I am:** I am an Investor at Kapor Capital.
-

- **Contact Me:** Follow me on [LinkedIn](#) and [Forbes](#).

Thank you to my data partner

Harmonic is on a mission to make the startup universe discoverable.

Their data platform finds companies from the earliest stages, indexing descriptions, website text, headcount, team connections and hundreds of other fields — allowing you to search through the startup universe with precision.

Learn more at harmonic.ai



Company searches /

FertilityTech ☆

General 3 Funding 1 Team Sector Custom 7 Reset

Showing all Sort Edit columns Export Rows per page: 25

☐ Company Name	Legal Name	Company Highlights
☐  Twentyeight ...	• Twentyeight Health Inc.	 Venture Backed  Top University 12  Deep Technical Background 7  Seasoned Operator 6 +4
☐  Hey Jane	• Possible Health Inc.	 Venture Backed  Top University 13 Current Student  Major Research Institution Experience +10
☐  Sika Health	• Sika Health, Inc.	 Venture Backed  Prior VC Backed Executive 3  Elite Industry Experience 2  Top University 8 +4
☐  Cleo	• Cleo Labs, Inc.	 Venture Backed Major Hire  Prior VC Backed Executive 11  Seasoned Executive 12 +8
☐  A Life Inc	• Alife Health, Inc.	 Venture Backed  Major Research Institution Experience +9
☐  Future Family	• Future Family, Inc.	 Venture Backed  Prior VC Backed Executive 13  Seasoned Executive 10  Seasoned Operator 9 +8

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Incorporating subjects related to infertility and access to fertility care.
- 2 | Fertility Tech Overview (**Harmonic AI**)
- 3 | Investor Appetite and Path to Venture Scalability
- 4 | My Projections & Recommendations

Section 1

Introduction

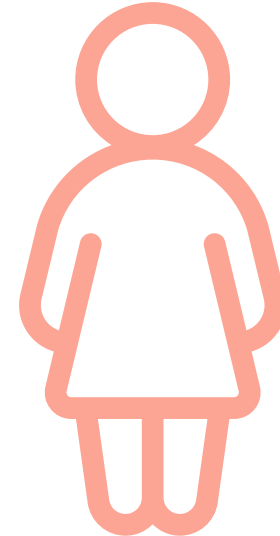
Fertility in America - Then and Now

Let's start with definitions



Fertility

Ability to conceive or induce conception.



Infertility

Disease of the male or female reproductive system defined by the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse.

Source: [World Health Organization](#)

More definitions



Primary Infertility

Inability to conceive or carry a baby to term.



Secondary Infertility

Inability to conceive or carry a baby to term after previously giving birth.



Birth Rate

The total number of births in a year per 1,000 individuals.



Fertility Rate

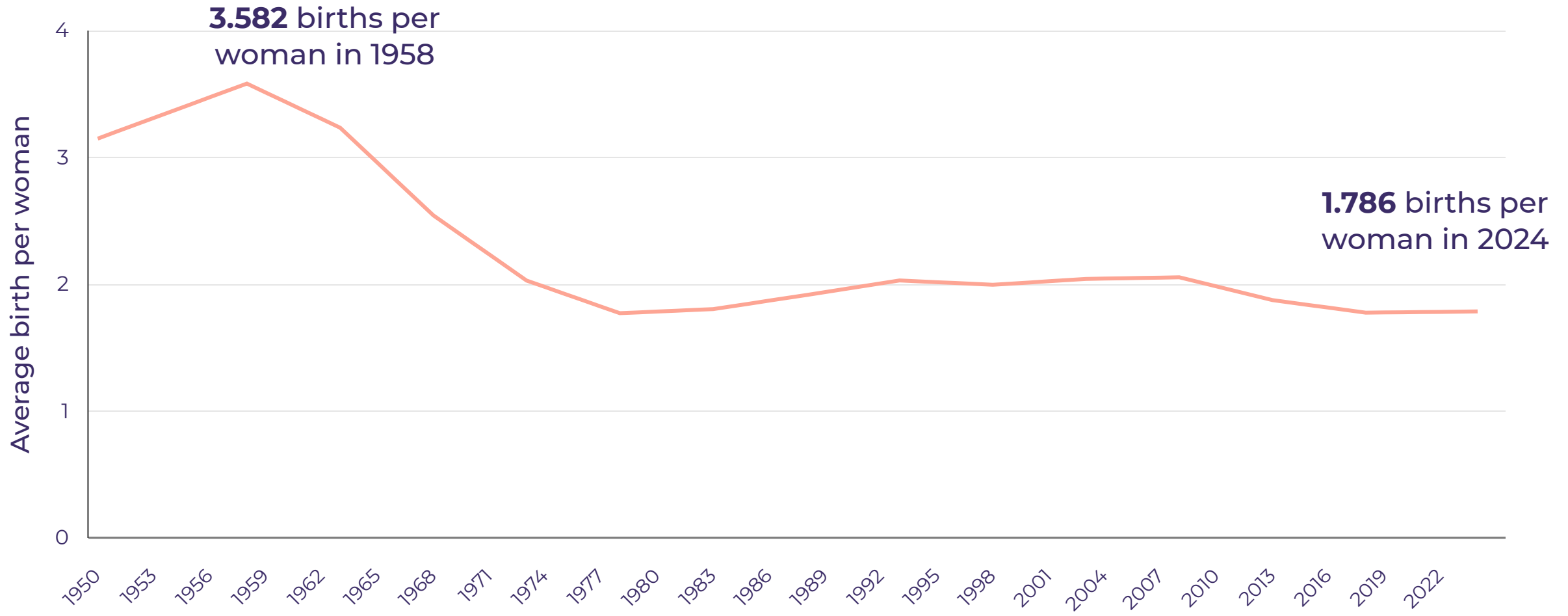
- The total number of births in a year per 1,000 women of reproductive age in a population (usually referring to women aged 15 to 49 years).
- Not including immigration, a given area needs an overall total fertility rate of 2.1 to keep a stable population.

Note: The fertility rate shouldn't be directly correlated with infertility, as some individuals may choose not to have children. Evaluating actual fertility in comparison to infertility requires a nuanced approach, often involving educated deductions considering the constraints of available data collection methods.

Fertility rate in the United States

Then and Now

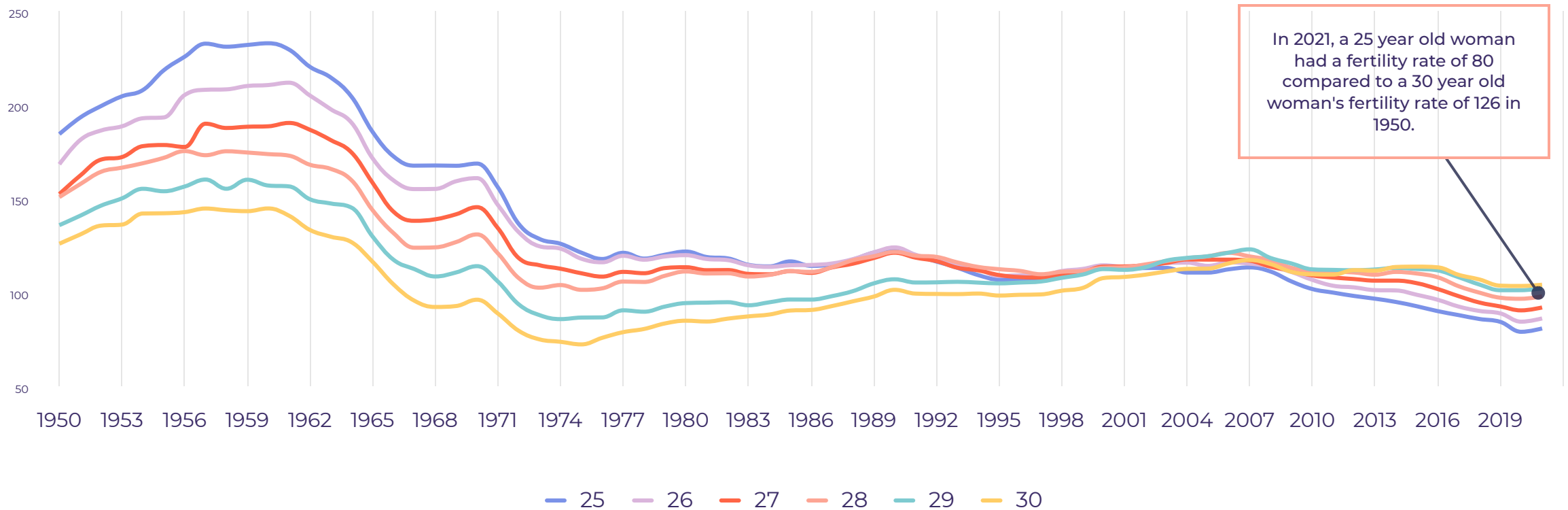
US fertility rate over the last 70 years



Source; [Macro Trends](#); [United Nations](#)

A US woman in her 20s today is less fertile than her grandmother was at 30

births per 1,000 women

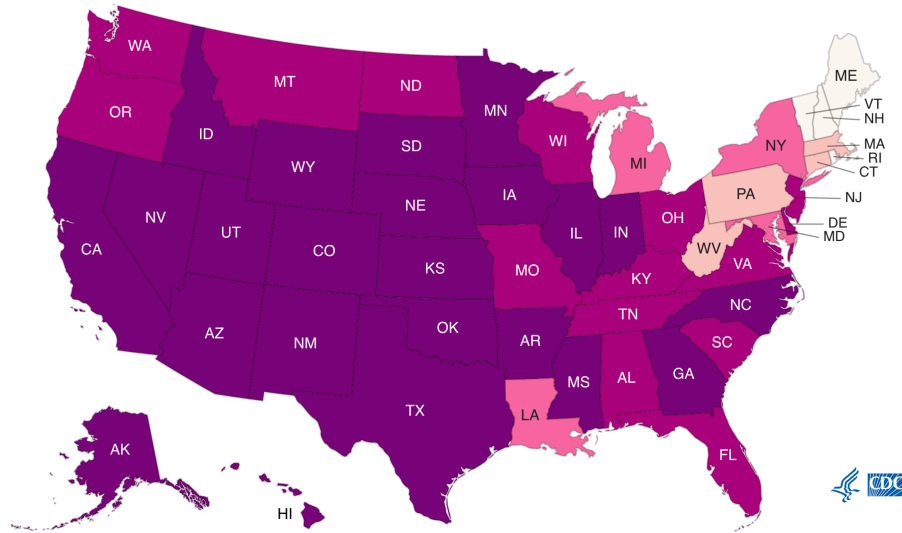


In 2021, a 25 year old woman had a fertility rate of 80 compared to a 30 year old woman's fertility rate of 126 in 1950.

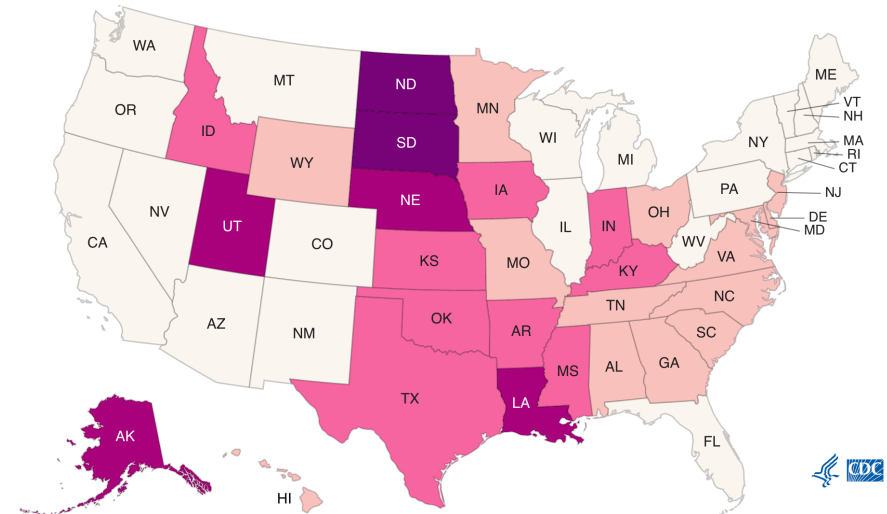
Source: [United Nations](#)

Fertility rate across the United States is declining

2005



2021



Fertility Rate¹

44.7 - 55.8

59.8 - 62.2

66.2 - 92.8

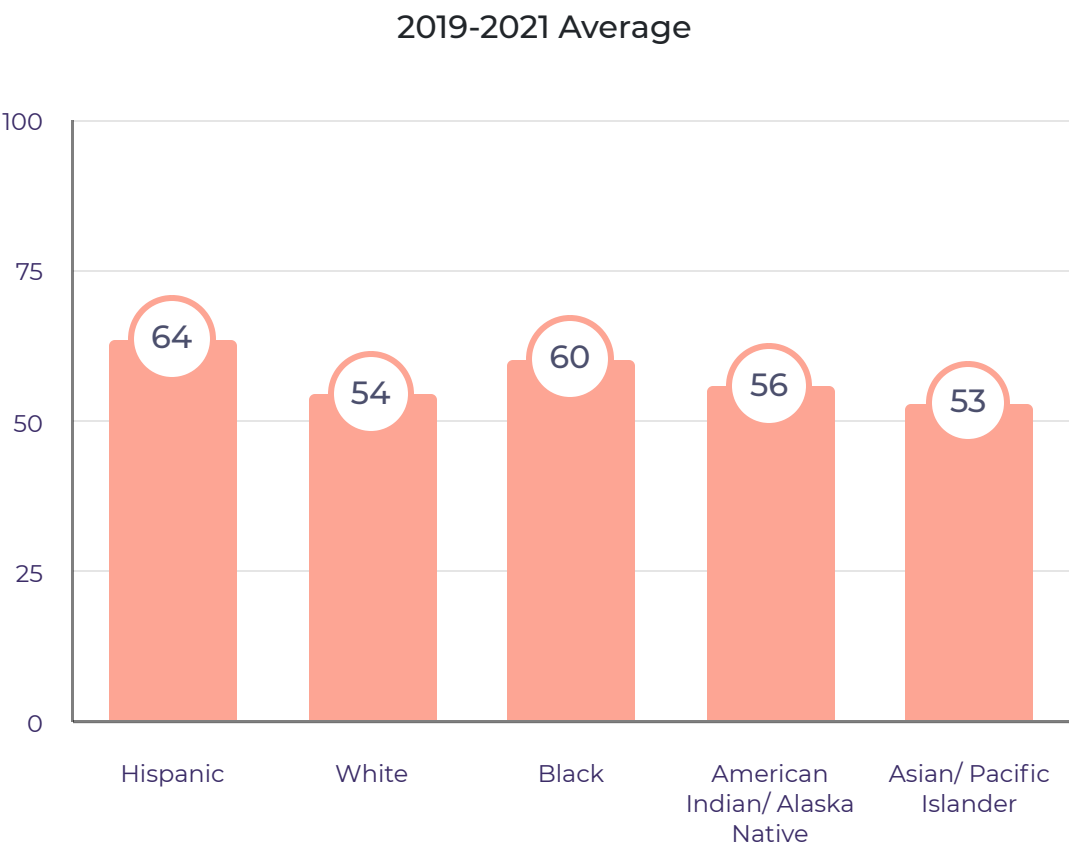
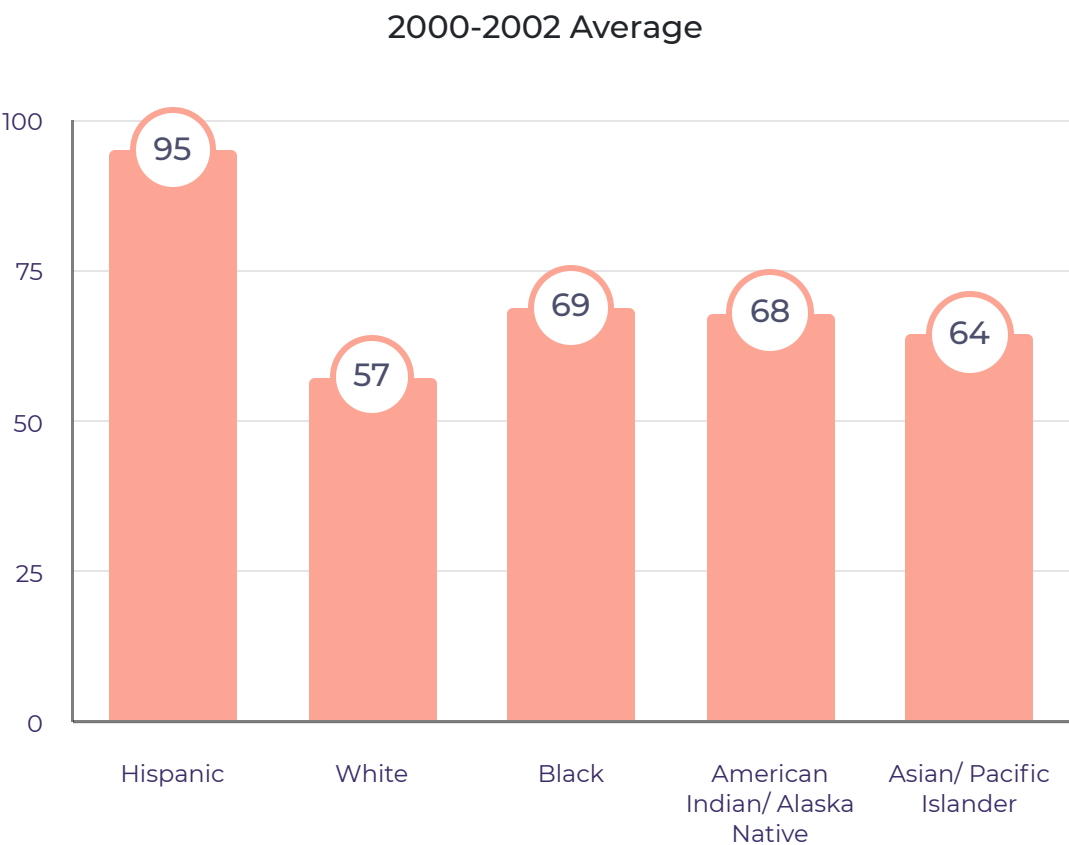
55.9 - 59.8

62.2 - 66.1

Source: [CDC](#)

Birth rate is declining across all major ethnic groups

Rate per 1000 women, ages 15-44



Source: [March of Dimes](#)

How prevalent is infertility?

What does it means when a person is "infertile?"

“Infertility is ...the inability of a couple to get pregnant or the inability of a woman to carry a pregnancy to term.”

NIH

“Infertility is a disease, condition, or status characterized by any of the following: The inability to achieve a successful pregnancy based on a patient's medical, sexual, and reproductive history, age, physical findings, diagnostic testing, or any combination of those factors.”

Fertility Rules

“Primary infertility is when a pregnancy has never been achieved by a person, and secondary infertility is when at least one prior pregnancy has been achieved.”

WHO

19%



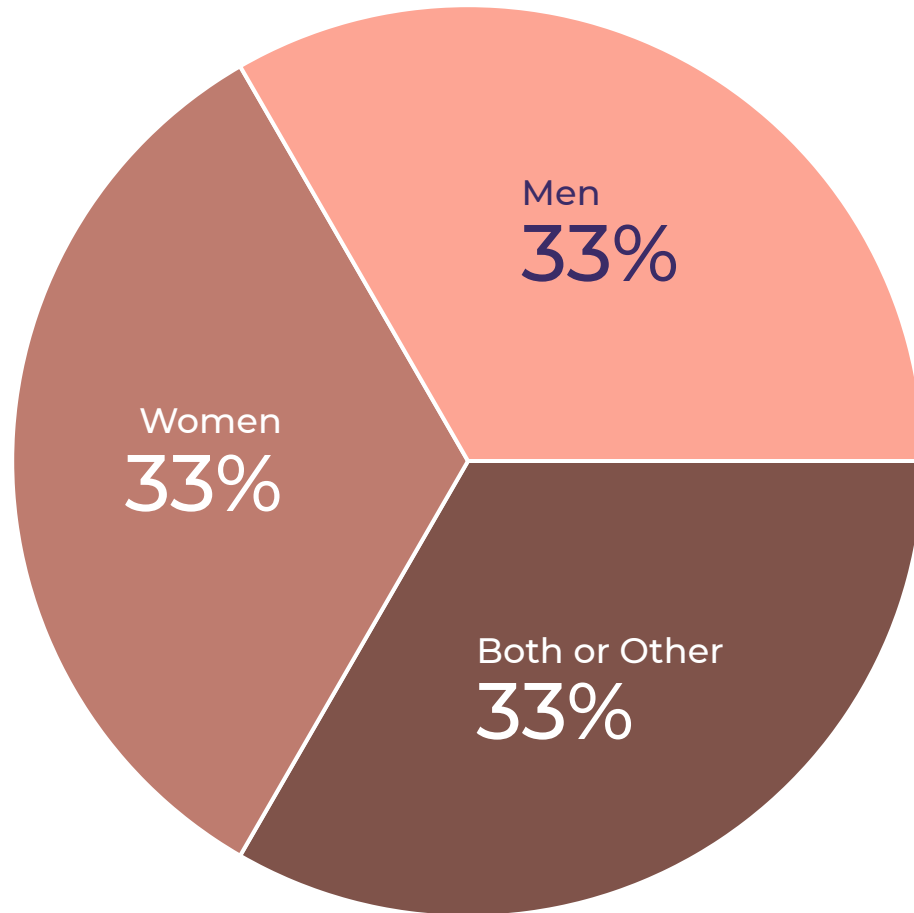
In the United States, approximately 19% of married women aged 15 to 49 who have never given birth are unable to conceive after one year of attempting to do so.

26%



Furthermore, around 26% of women within this 15-49, married demographic encounter challenges in conceiving or maintaining a pregnancy to full term, a condition known as impaired fecundity.

Infertility is not solely attributable to one gender.



One-third of infertility cases are caused by male reproductive issues, one-third by female reproductive issues, and one-third by both male and female reproductive issues or by unknown factors.

Source: [NIH](#)

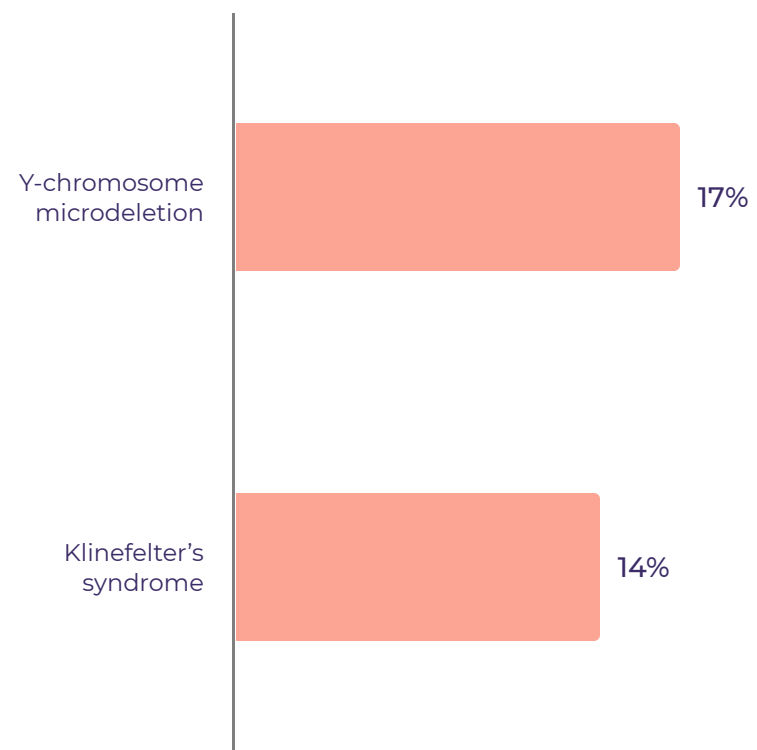
Male Infertility

10-15%

A complete lack of sperm ("Azoospermia") occurs in about 10% to 15% of men who are infertile.

Source: [NIH](#)

Genetic Disorders that are found in azoospermic men (Source: [CDC](#), [NIH](#))

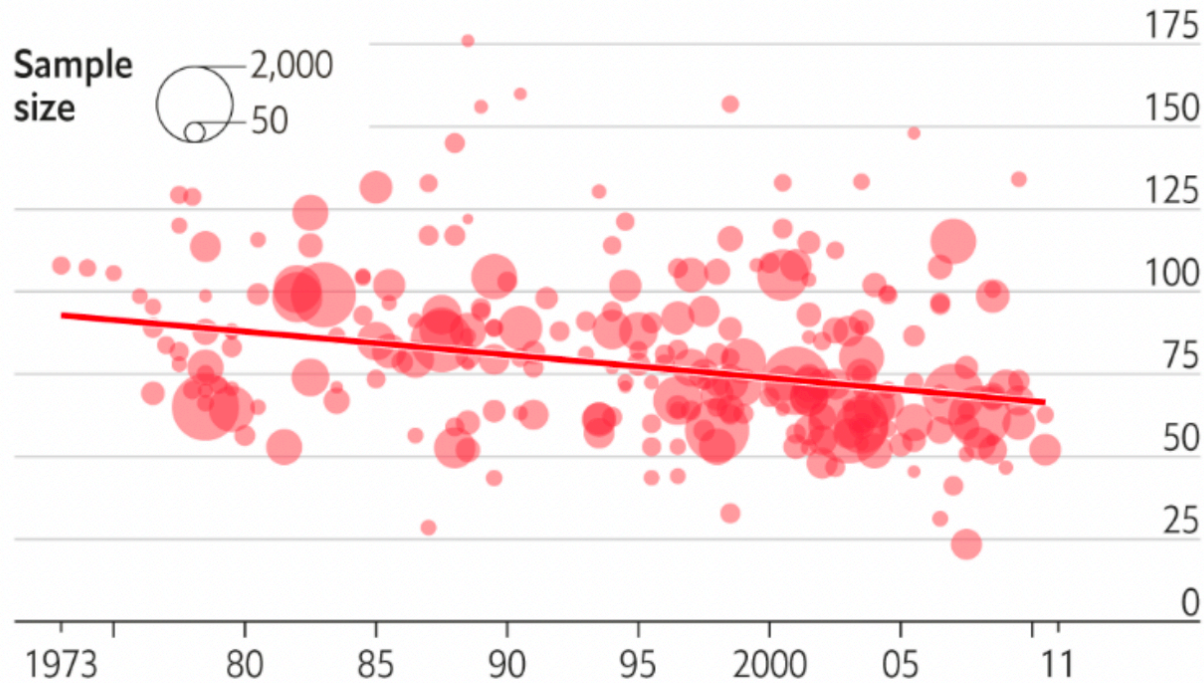


Types of male infertility

Azoospermia	A complete absence of sperm from the fluid ejaculated during orgasm (semen).
Oligozoospermia	the condition in which sperm concentration is below the lower reference limit of 15 million sperm/mL of ejaculate
Teratozoospermia	a condition characterized by abnormal sperm morphology
Asthenozoospermia	A condition in which a person has reduced sperm motility (the ability of the sperm to move)

Sperm counts are falling precipitously across the rich world

Average sperm concentration, million per millilitre
244 estimates from 185 studies



Source: "Temporal trends in sperm count",
by H. Levine et al., *Human Reproduction Update*

The Economist

What is a "normal" sperm count?

Normal sperm densities range from 15 million to greater than 200 million sperm per milliliter of semen.

You are considered to have a low sperm count if you have fewer than 15 million sperm per milliliter or less than 39 million sperm total per ejaculate. (Source: [Mayo Clinic](#))

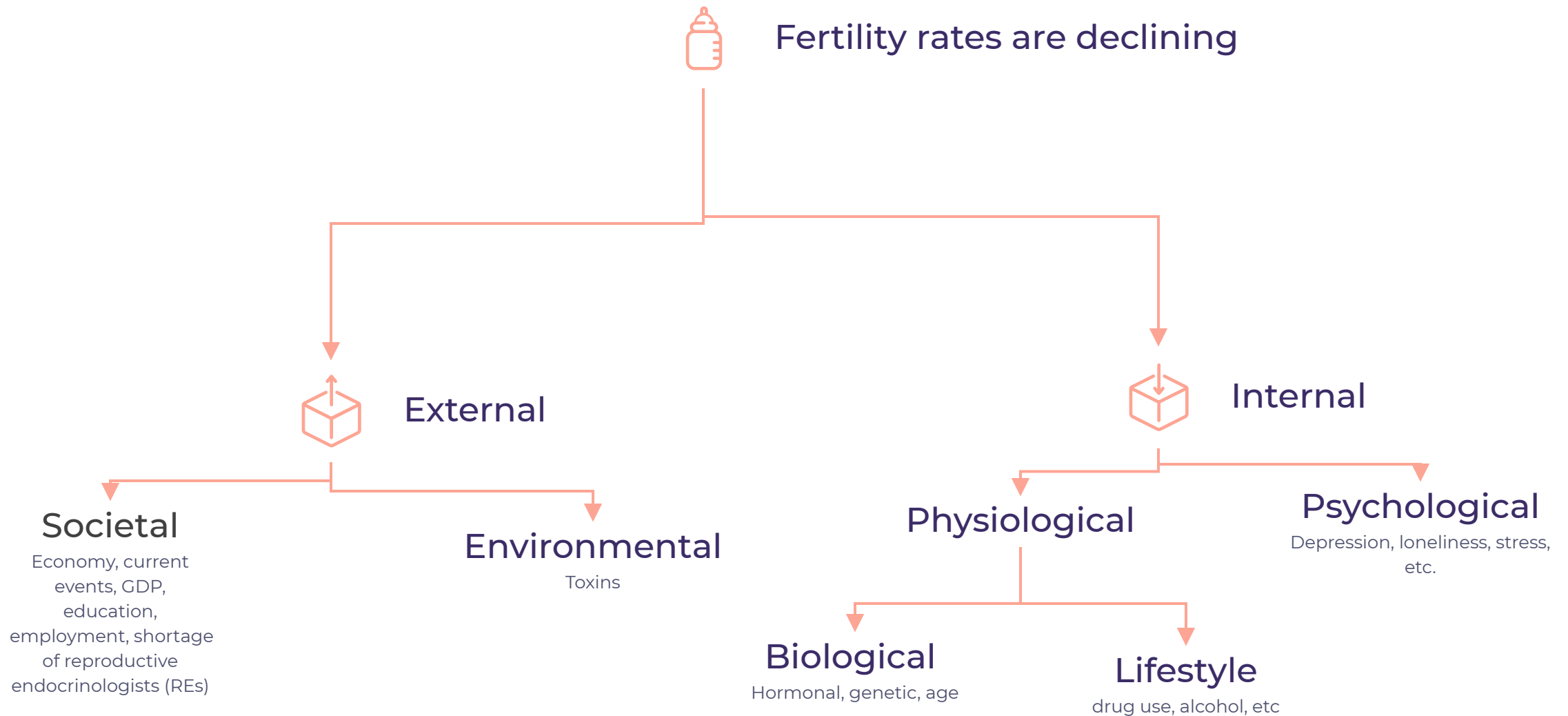
In some cases of infertility, a man produces less sperm than normal.

The most common cause of this condition is varicocele, an enlarged vein in the testicle.

Varicocele is present in about 40% of men with infertility problems. (Source: [NIH](#))

A deeper look into the cause of declining fertility rates

(and making inferences about its relationship with infertility)

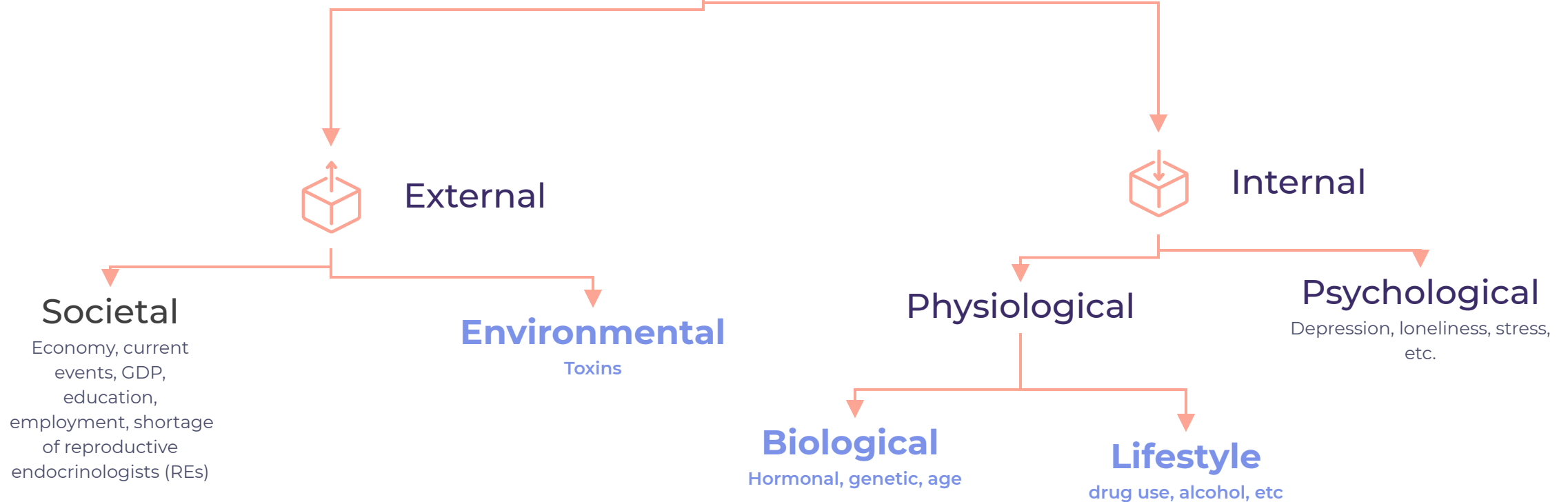


Many of these factors can overlap and are not inherently exclusive. For instance, both the economy and current events can influence an individual's psychological state. Similarly, environmental toxins can have an effect on a person's hormonal imbalance.

Infertility can influence a number of factors that contribute to declining fertility rate in the US.



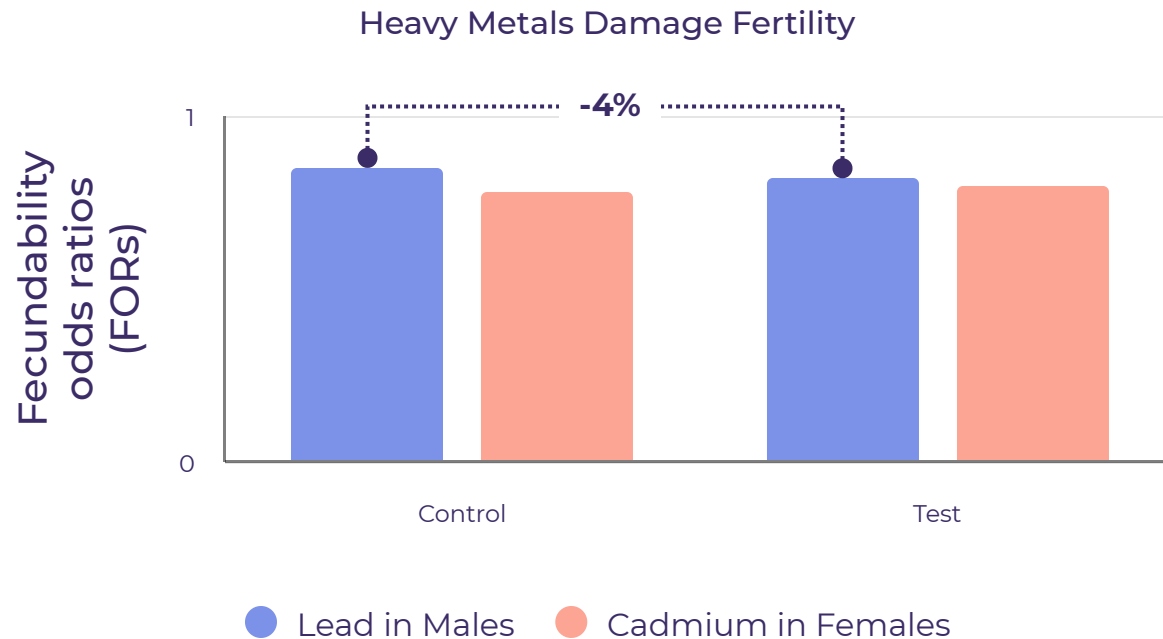
Fertility rates are declining



Many of these factors can overlap and are not inherently exclusive. For instance, both the economy and current events can influence an individual's psychological state. Similarly, environmental toxins can have an effect on a person's hormonal imbalance.

Environmental:

Relationship between sperm/egg quality and environmental toxins



Source: NIH

Environmental toxins cause infertility in basically 4 ways:

- **Endocrine disruption.**
- **Damage to the female reproductive system.**
- **Damage to the male reproductive system.**
- **Impaired fetal viability.**

Limited research has examined the impact of environmentally relevant concentrations of heavy metals on couple fecundity despite widespread exposure. From 2005 to 2009, a study recruited 501 couples aiming for pregnancy, collecting data on heavy metal concentrations in blood samples and monitoring lifestyle, intercourse, and menstruation. **Fecundability odds ratios (FORs)** were estimated, with values <1 indicating longer time to pregnancy. Adjusted models revealed reduced FORs for female cadmium and male lead concentrations. Joint modeling indicated male lead significantly reduced FORs, suggesting reproductive toxicity of cadmium and lead at environmentally relevant concentrations.

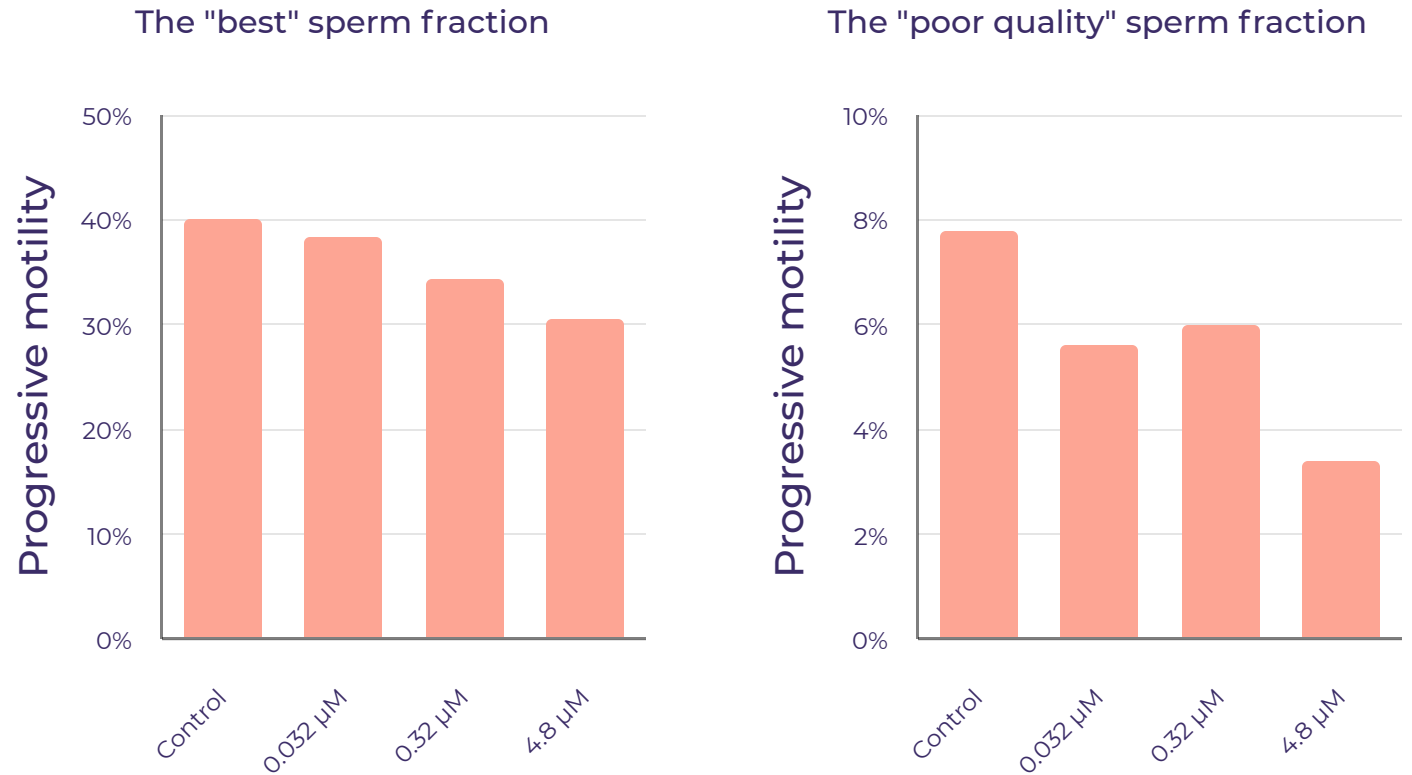
The study investigated the impact of different concentrations of THC, representing recreational and therapeutic usage levels, on human sperm. Results showed a dose-dependent reduction in the number of progressively motile sperm. At the therapeutic level of 0.032 μM , there was no significant difference, while at recreational levels of 0.32 μM and 4.8 μM , there were significant decreases of 14% and 21% respectively in progressive motility. Similar reductions were observed across different fractions of sperm.

Sperm were divided into 90% (the best fertilizing potential used in assisted conception) and 45% (the poorer subpopulation) fractions by density centrifugation and incubated with THC at concentrations equivalent to therapeutic (0.032 μM) and recreational (0.32 and 4.8 μM) plasma levels at 37°C for 3 h.

While this study examines the correlation between THC and male sperm, numerous research studies have demonstrated the effects of substances such as tobacco, alcohol, and others on both male and female fertility.

Lifestyle: Relationship between fertility and drug use

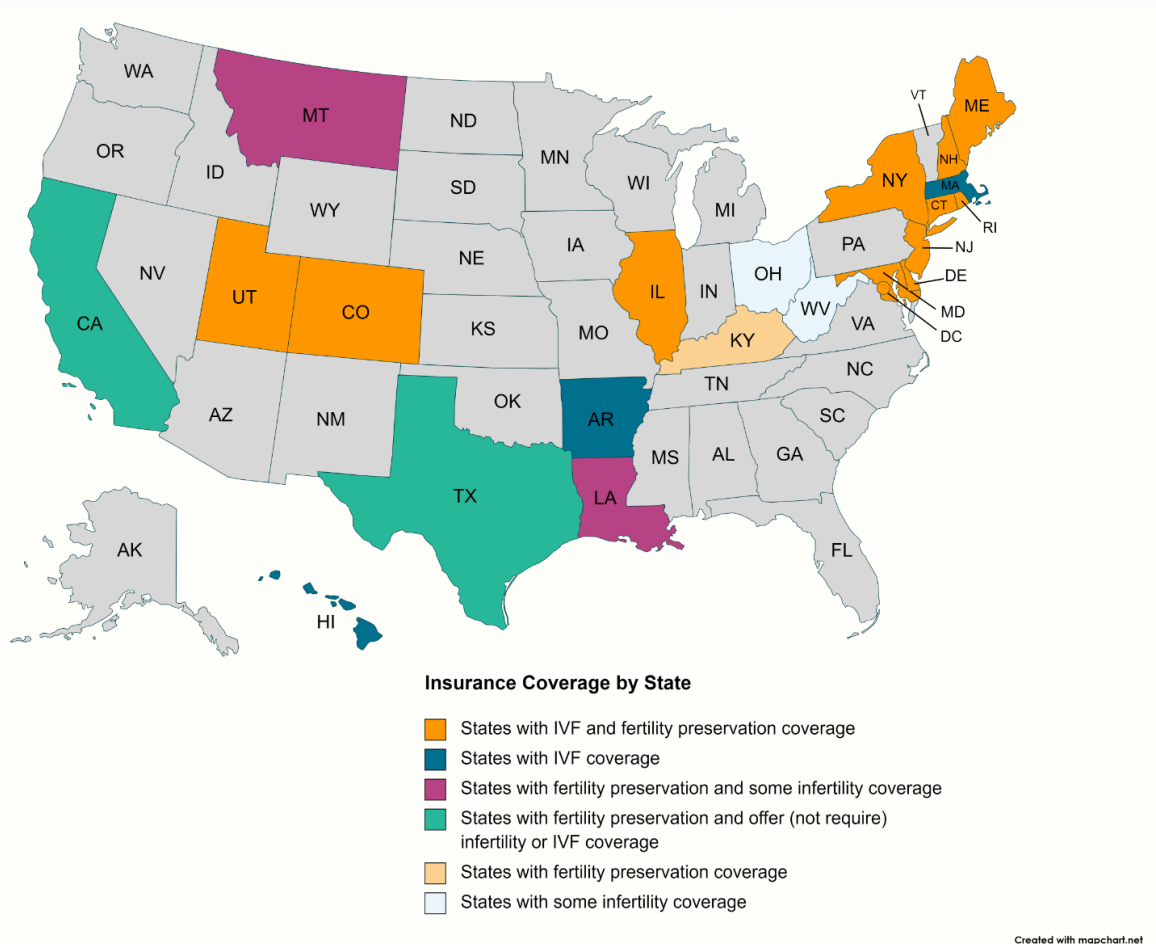
The effects of THC on the quality of sperm motility



Source: Whan LB, West MC, McClure N, Lewis SE. Effects of delta-9-tetrahydrocannabinol, the primary psychoactive cannabinoid in marijuana, on human sperm function in vitro. Fertil Steril. 2006;85(3):653–60.

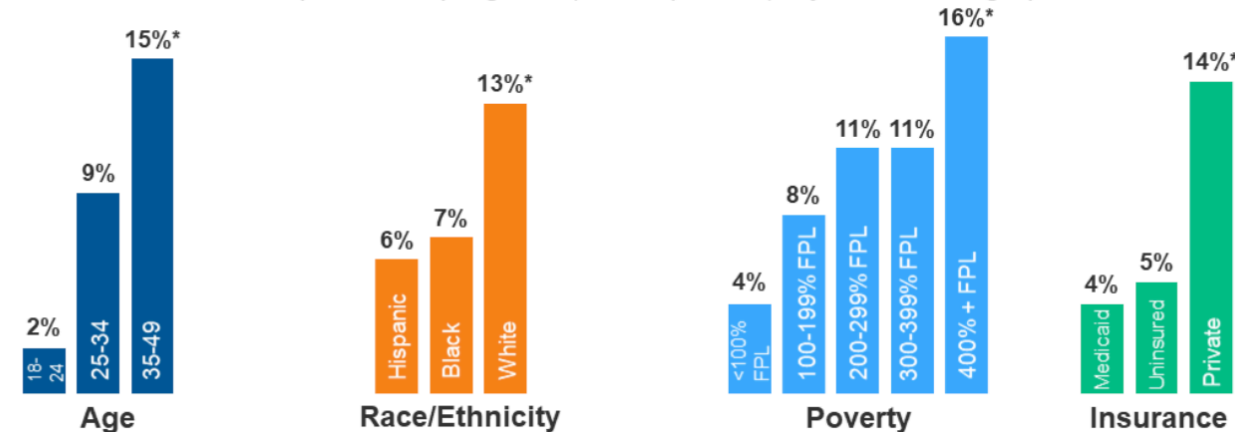
What does fertility care access look like today?

Insurance coverage of fertility care services varies by state



Women Seeking Help to Become Pregnant Tend to Be Age 35+, White, Higher Income, and Privately Insured

Share of women ages 18-49 that have ever been to a doctor to talk about ways to help become pregnant (self or partner), by sociodemographics:



Section 2

Fertility Tech Overview

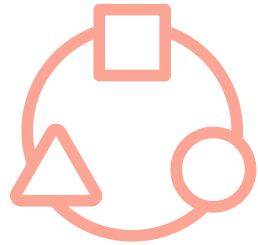
Using **Harmonic AI** to explore the startup landscape

Factors that complicate fertility treatment today



Insurance Coverage

The economics of infertility treatments remain heavily opaque, and insurance coverage varies dramatically by state and provider.



Disadvantaged Communities

The disparities within the industry disproportionately affect LGBTQ individuals, low-income individuals, and communities of color.



Legislation

The end of Roe v. Wade has enabled states to pursue reproductive health legislation that can create challenges for patients and providers of fertility treatment in states including Arizona, Florida, Louisiana and Tennessee.



Knowledge Gap

There exists a significant knowledge gap regarding fertility and infertility within the general public, compounded by stigma and bias. This often leads to an unfair burden of responsibility placed on females.

Analysis of Fertility Tech Startups in the USA



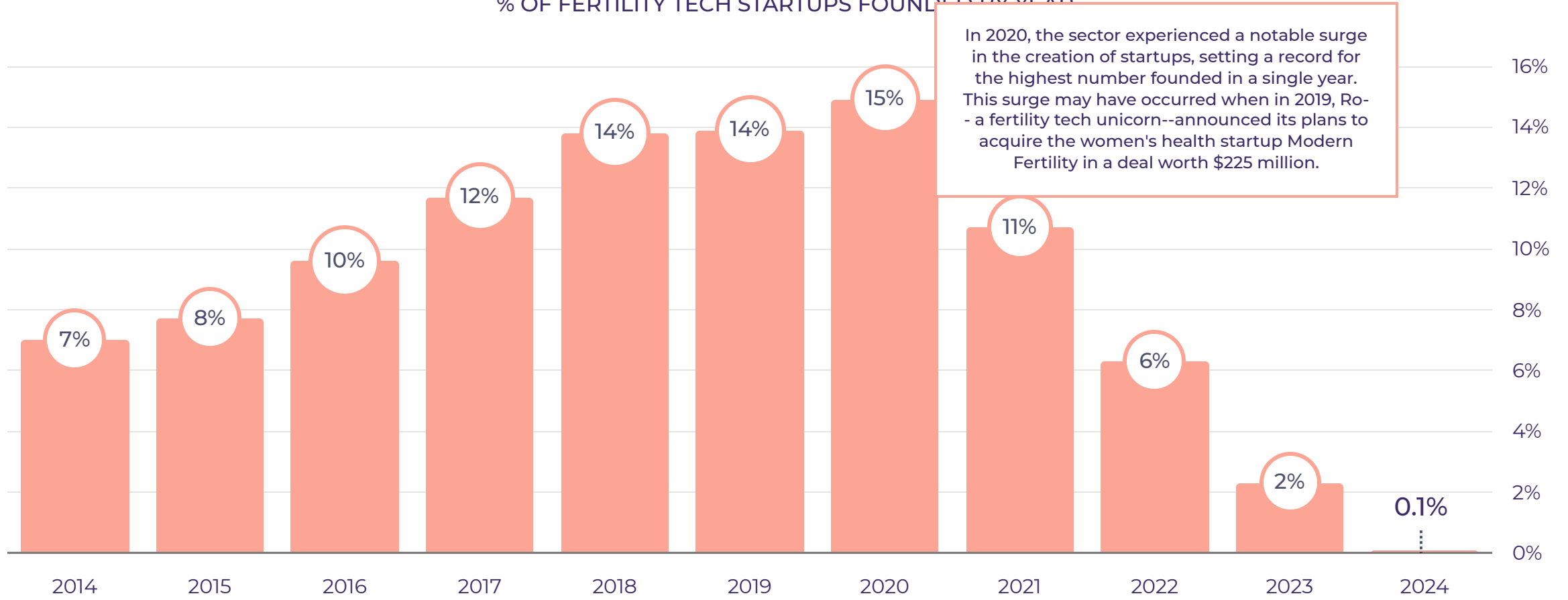
- 718 companies assessed

Location	Search Terms (contains any of)	Stage	Company founded
United States of America	Fertility, Infertility, IVF, Sperm, Reproductive, Family Planning	All Stages	last 10 years (Since 12/31/2013)

Harmonic AI was employed to search through all startups within the database, encompassing various stages, with a specific focus on fertility technology as a vertical. Records with blank, undefined, or unknown values have been omitted from the analysis to ensure the accuracy of the displayed data results. This adjustment may lead to slight variations in the outcomes.

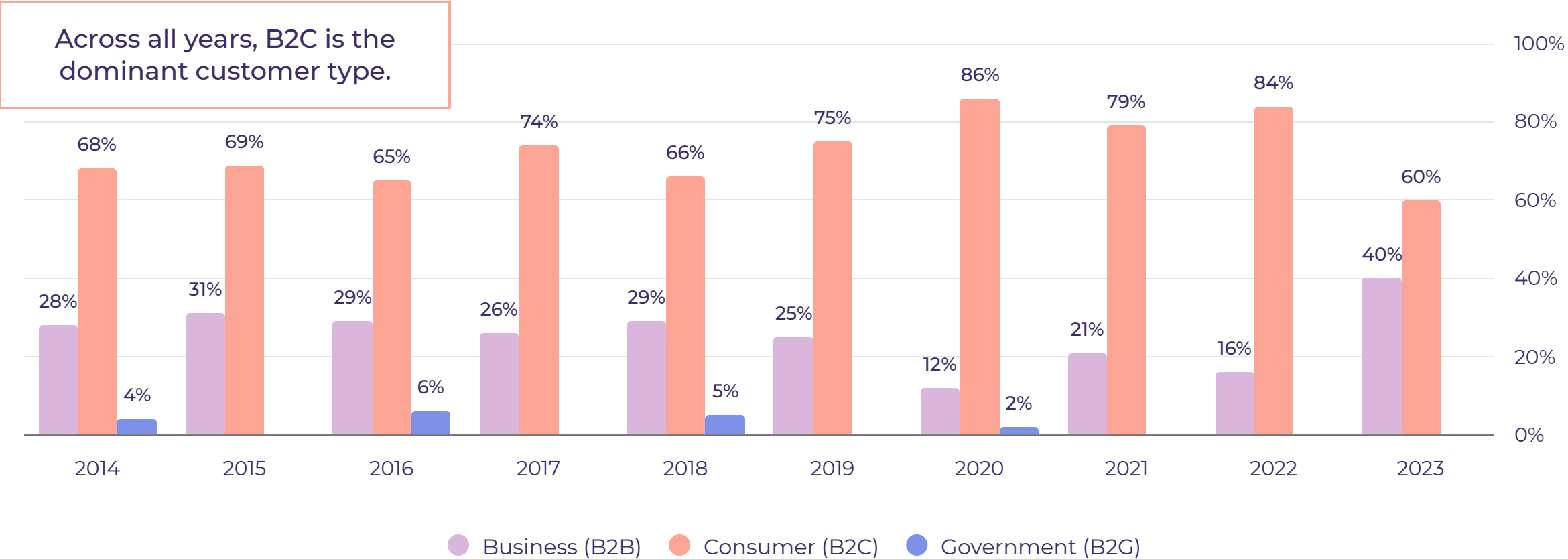
Breakdown by Year

% OF FERTILITY TECH STARTUPS FOUNDED BY YEAR



Breakdown by Year and Customer Type

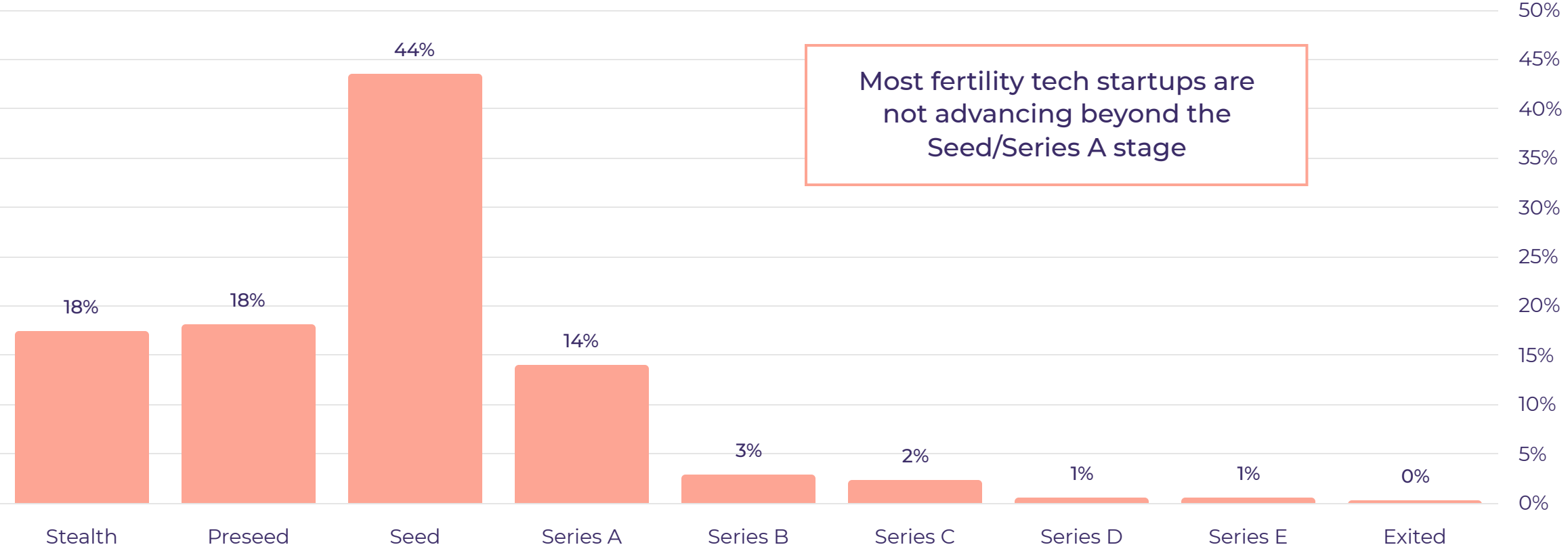
FREQUENCY OF FERTILITY TECH STARTUPS BY FOUNDING YEAR AND CUSTOMER TYPE



Results for 2024 are omitted, as customer type could not be made clear

Breakdown by Stage

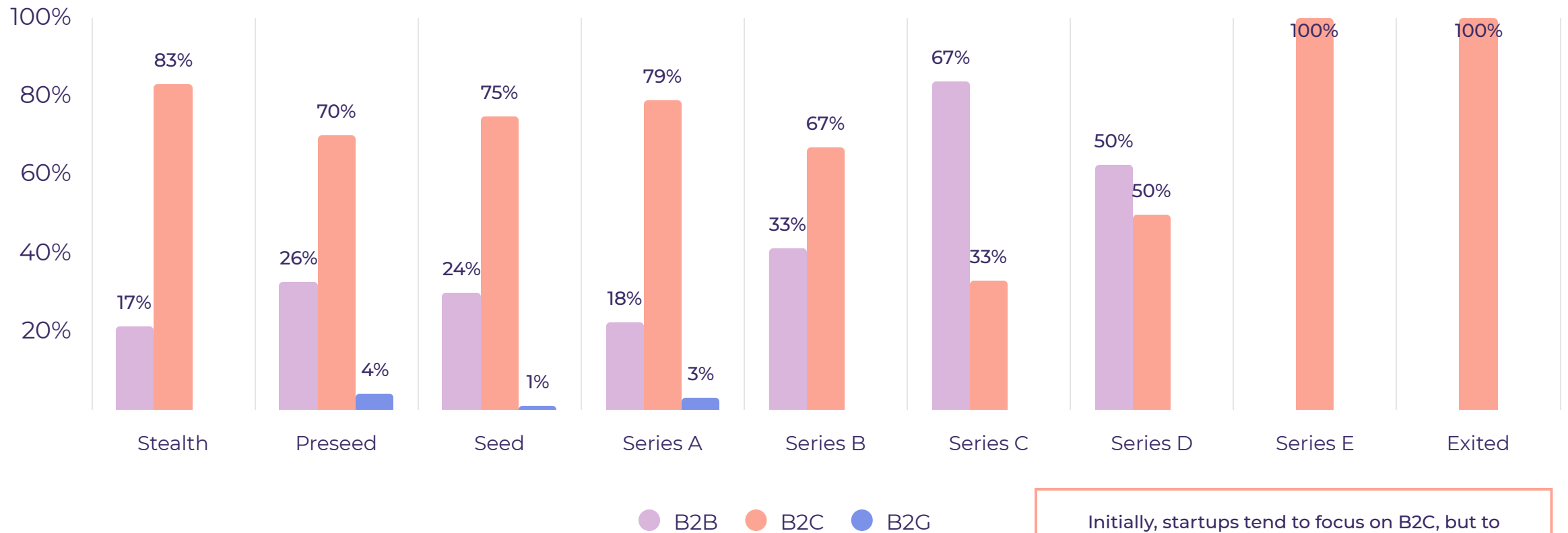
FERTILITY TECH STARTUPS FOUNDED SINCE 2014



The Exited rate is 0.3%, rounded to the nearest whole number.

Breakdown by Stage and Customer Type

FERTILITY TECH STARTUPS FOUNDED SINCE 2014



Initially, startups tend to focus on B2C, but to advance past Series B, many transition to prioritizing a B2B model. Interestingly, the highest valued ones in the database remain B2C.

Emerging startups at the pre-seed and seed stages concentrate on three primary themes: **accessibility**, **assessment**, and **education**.

Theme:

Fertility Treatment Accessibility

Platforms that streamlines the process, eliminating the worry of choosing the right fertility service by customizing solutions to meet your individual needs and goals.



Characteristics of startups in this theme

- Improve accessibility to fertility care, which can be costly (with IVF cycles averaging between \$15k to \$30k).
- Assist in securing insurance coverage for fertility treatments.
- Offer alternatives to traditional IVF, including medication-based solutions and options like egg donation or surrogacy.
- Provide personalized assessments to help individuals determine the most suitable fertility journey based on their circumstances.

 expecting

ALIFE

 Hera Fertility

Sunfish 

FRAME

conceivable LIFE SCIENCES

Cofertility

zuri

Theme: Health Assessment

AI-powered survey, developed in collaboration with leading practitioners and backed by research, to gain a comprehensive understanding of your fertility.



Characteristics of startups in this theme

- Frequently employing a "score" system to evaluate your comprehensive well-being, considering various factors.
- The objective is to inform users about their present health status to infer fertility health.
- Health and fertility coaches assist in comprehending your holistic health.

The logo for poplin, with the word "poplin" in a lowercase, orange, sans-serif font. The letter "o" is replaced by a stylized orange egg or cell.

The logo for CONCEIVE, featuring a circular icon with a stylized infinity symbol or knot inside, followed by the word "CONCEIVE" in a uppercase, red, sans-serif font.

The logo for ORCHID, featuring a stylized black orchid flower icon to the left of the word "ORCHID" in a black, sans-serif font.

The logo for microgenesis, with the word "microgenesis" in a lowercase, sans-serif font. "micro" is in blue and "genesis" is in orange.

The logo for pregmune, featuring a stylized blue circular icon with a white shape inside, followed by the word "pregmune" in a lowercase, blue, sans-serif font.

Theme:

Provider Education & Workflow

A comprehensive solution designed to empower fertility service providers, facilitating them in optimizing patient outcomes through tailored strategies and enhanced care protocols.



Characteristics of startups in this theme

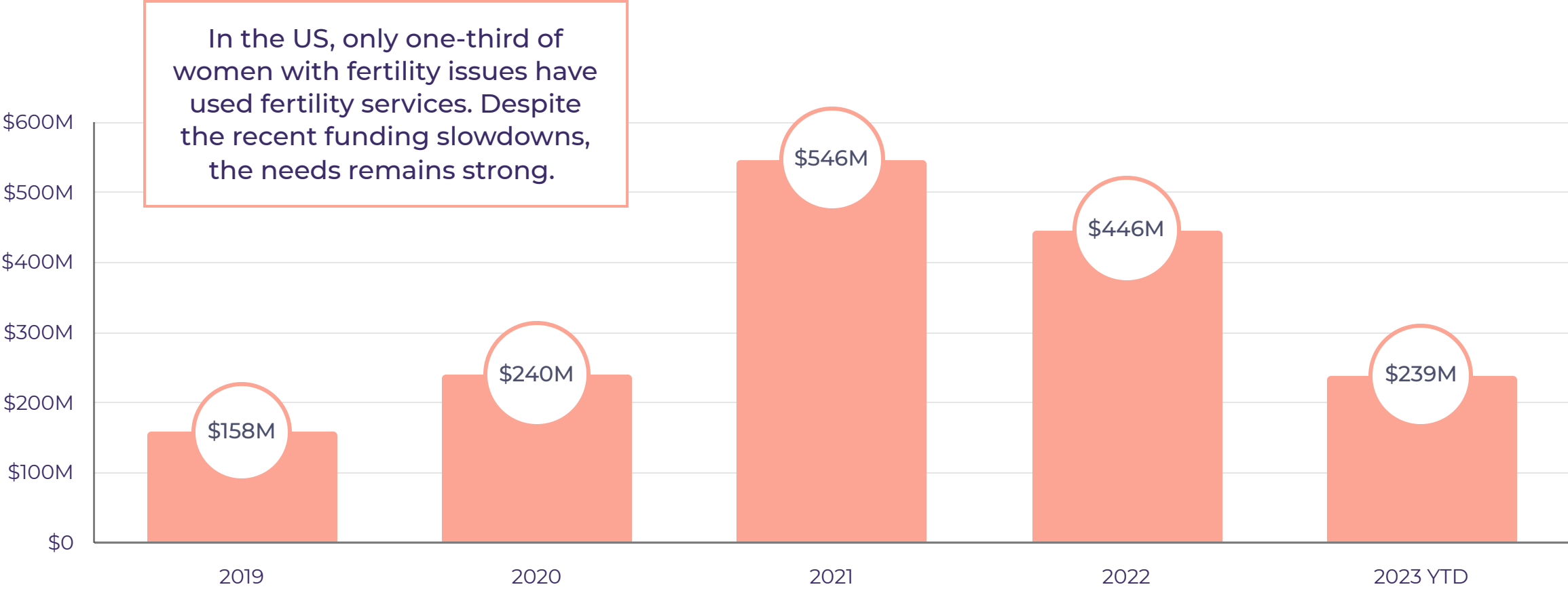
- Enabling healthcare providers and clinics to cater more accurate and diverse options towards a larger patient base.
- Supplying data and insights to support clinicians in achieving improved patient outcomes.
- Additionally, some companies offer hardware solutions that can replace gynecologists' surgical procedures, such as targeted biopsies.



Section 3

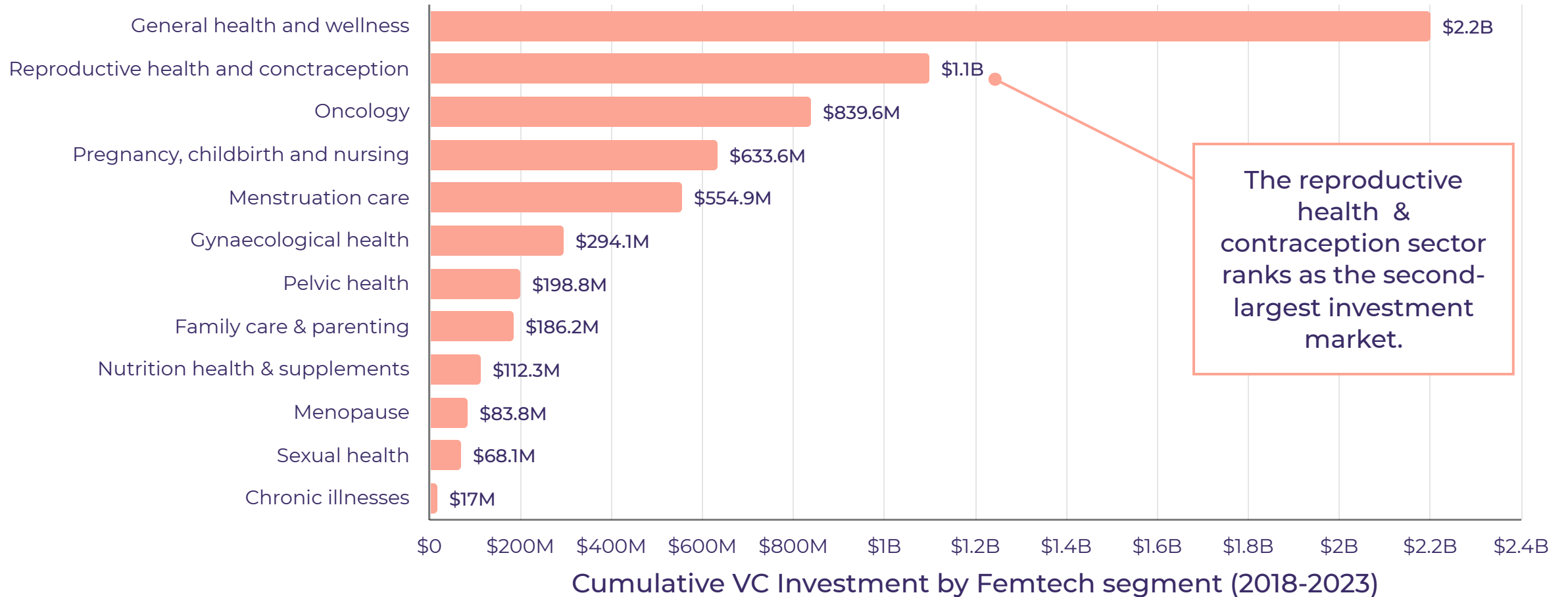
Investor Appetite and Path to Venture Scalability

Fertility tech startups have raised more than \$1.5B since 2019



Source: CB Insights (as of 7/21/2023)

Global VC Investment into Femtech

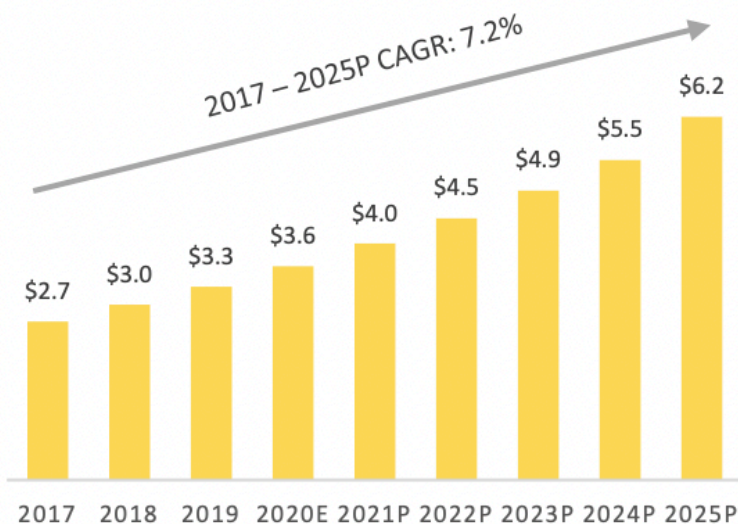


Source; [Dealroom](#)

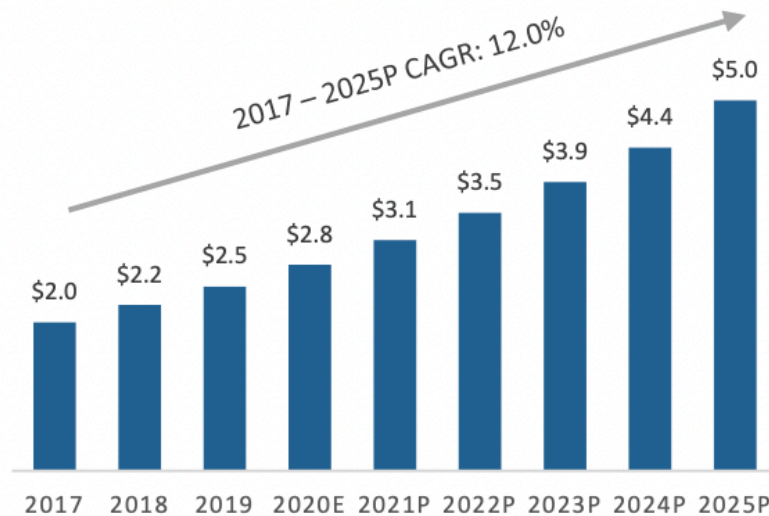
What will the USA fertility market look like in 2025?

For the Years Ended and Ending December 31, 2017 – 2025P
(\$ in billions)

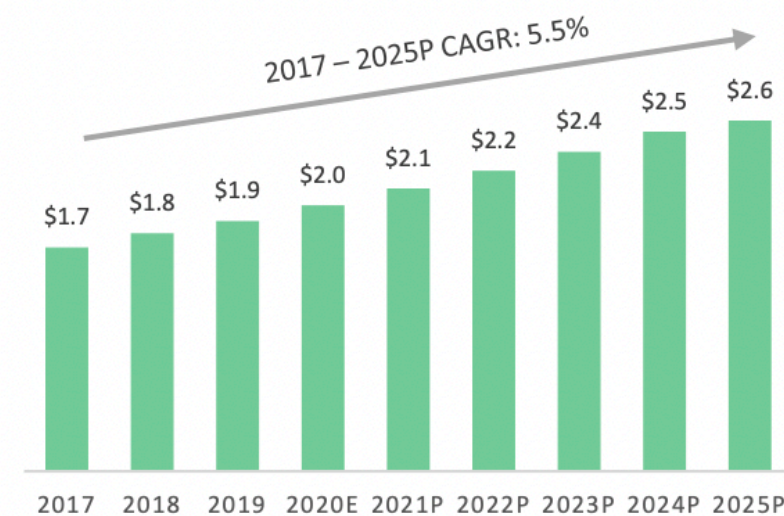
IVF SERVICES U.S. MARKET⁽²⁾



GENETIC TESTING U.S. MARKET⁽²⁾⁽³⁾

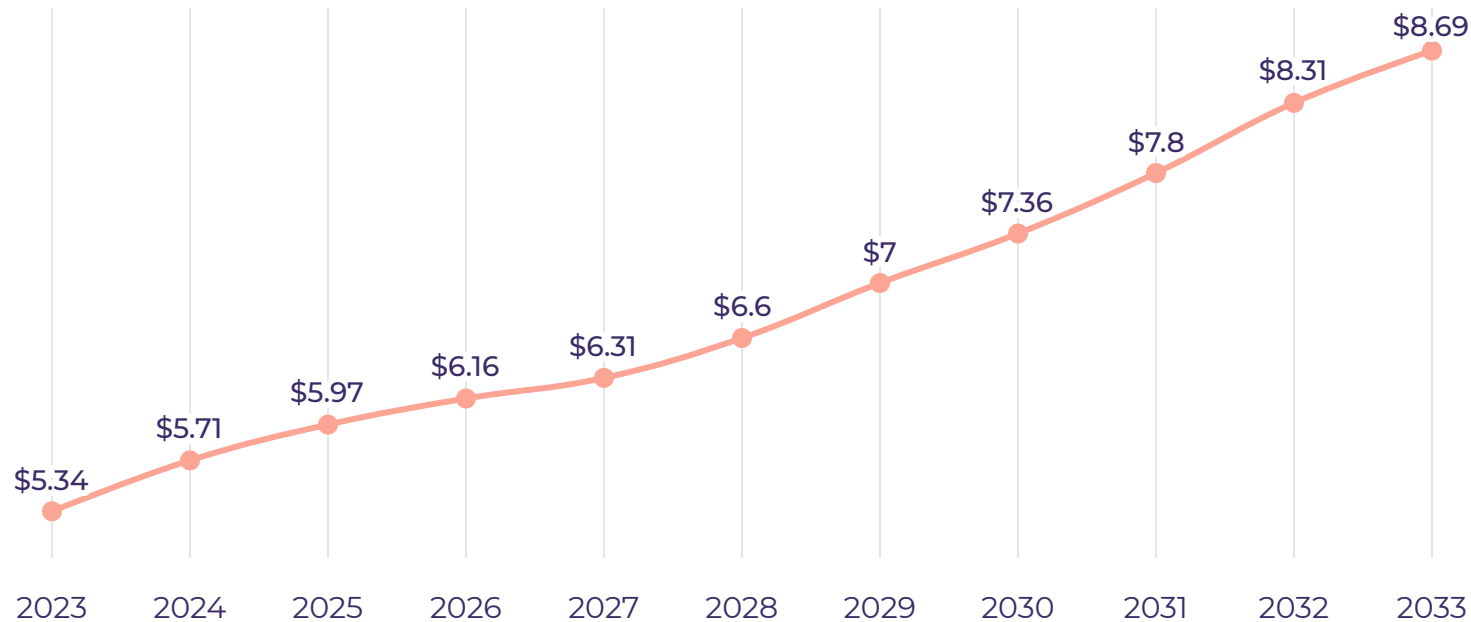


REPRODUCTIVE TISSUE STORAGE & DONOR SERVICES U.S. MARKET⁽²⁾



How about by 2033?

US Fertility Market Size 2023 to 2033 (\$B)



4.87%
CAGR

Drivers of this growth include ability of improved diagnostic tools, and rising acceptance of fertility treatments.

Please be aware that market size projections may vary slightly depending on the source. Additionally, these projections are specific to the US market, not global.

SOURCE: [PRECEDENCE RESEARCH](#)

Do **fertility tech** unicorns/IPOs currently exist in the USA?

Yes.

Here are 4 of them.



Maven

Type: Virtual clinic

Total Funding: 292M

HQ: NYC, NY



Ro

Type: At-home diagnostic testing services

Total Funding: 1.05B

HQ: NYC, NY



Kindbody

Type: fertility clinic network and family-building benefits provider for employers

Total Funding: 280M

HQ: Brooklyn, NY



Progyny

Type: fertility benefits management

Total Funding: Public

HQ: NYC, NY

Below are **4** of the Fertility Tech unicorns/IPOs headquartered in the United States. **All** achieved unicorn or IPO status within the last **5** years.



2019
Progyny

2020
Ro Health



2021
Maven

2023
Kindbody



Growing Trend: Male Reproductive Health



March 2022

Ro doubles down on fertility with Dadi acquisition for at-home sperm testing.



January 2023

Posterity Health, a digital male fertility treatment provider, has raised \$7.5 million in seed funding.

Services for men still make up a relatively small portion of the fertility market at \$4 billion



LEGACY

May 2022

Sperm-focused fertility startup Legacy banks \$25M

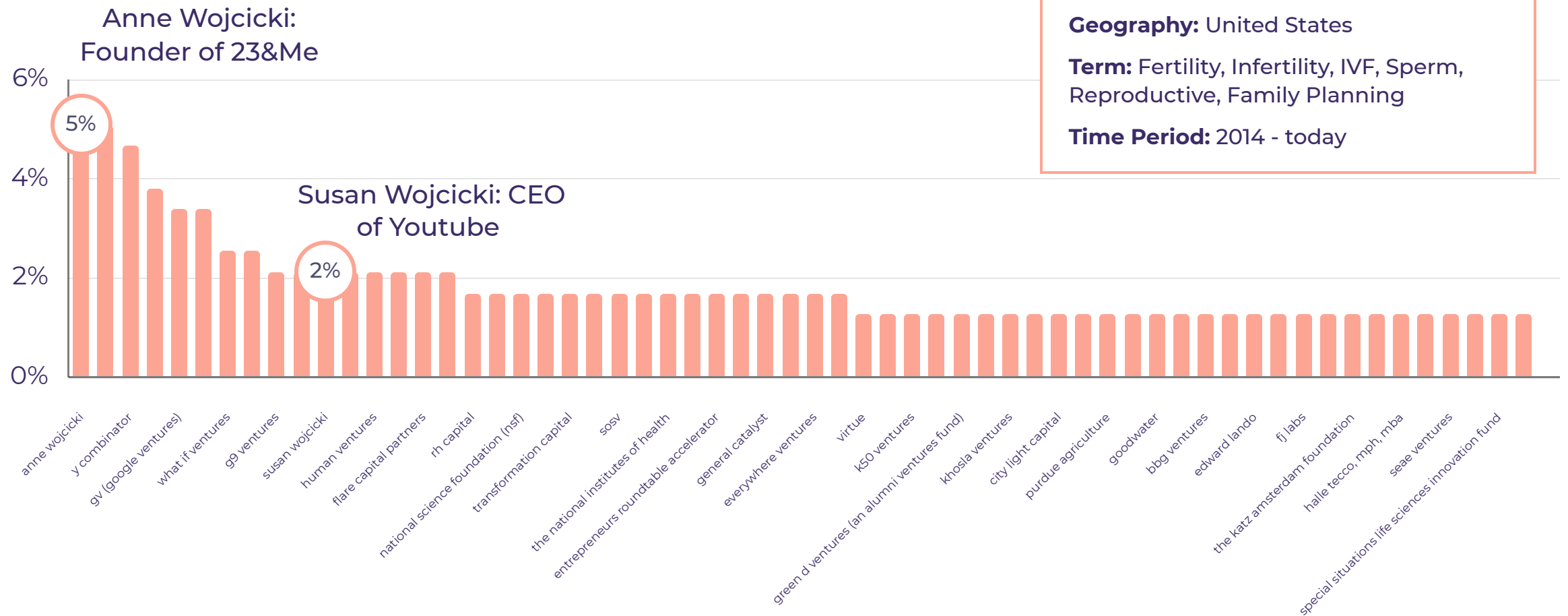


January 2024

Next Life Sciences has raised \$2.5 million to develop a male contraceptive product called Plan A, which could become a nonsurgical alternative to vasectomies.

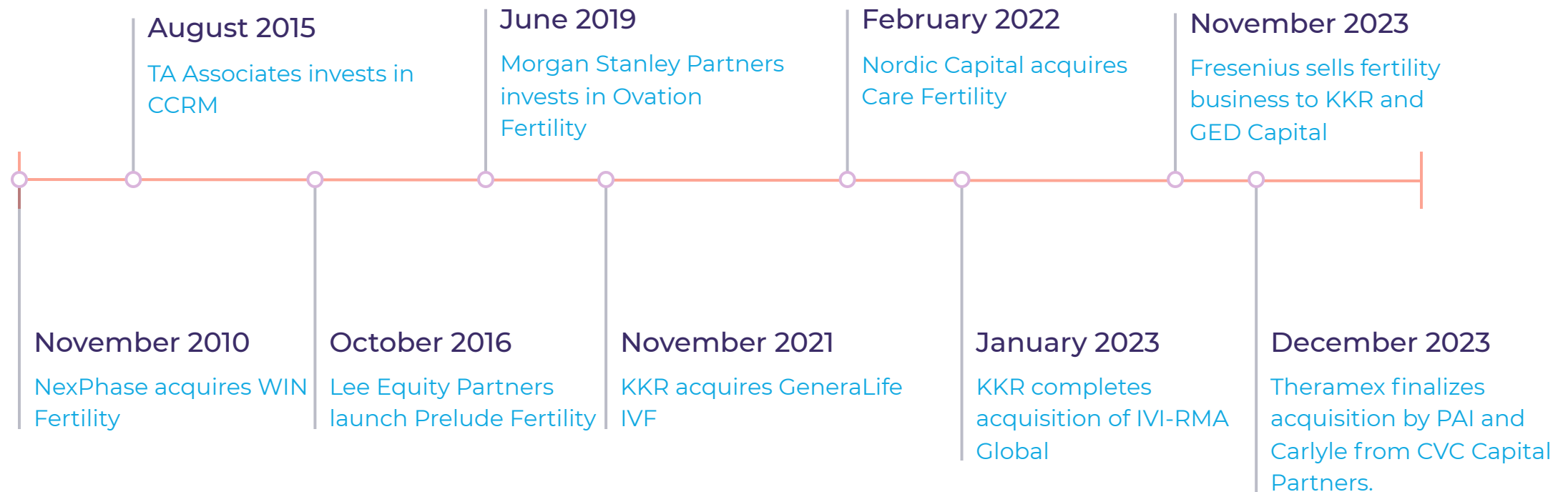
Source: [Axios 2024](#)

Top VCs investing in Fertility Tech



Global private equity investment into fertility spaces has been steadily growing for over a decade.

The fertility sector's largest PE buyout came during KKR's roughly \$3.2 billion acquisition of Spain-headquartered IVI-RMA Global. (Source: [PB](#))



The timeline provided above offers only a glimpse of PE activity and does not cover all the activity occurring in this domain.

Section 4

My Projections & Recommendations

My Projections



Market

- Once the stigma surrounding infertility transitions from being exclusively seen as a "female issue" to becoming an "everybody issue," the market is anticipated to experience further growth.
- An increasing number of high earning professionals will opt to start families, whether or not they have a partner. As GenZ fosters a culture centered on "living with purpose," there will be a shift towards seeking happiness and fulfillment beyond the realm of work.
- Fertility trends will be steered by single, heterosexual women and single-sex couples. Additionally, a smaller subset known as "platonic parenting" might emerge, utilizing artificial insemination as a means to expand their families.



Startups

- Numerous startups emphasizing male infertility, both in terms of education and access to services, are likely to emerge.
- Since male infertility frequently stems from lifestyle choices, the health and wellness market for men will likely see a surge in demand.
- The next fertility tech unicorn originating from the United States is poised to integrate components like gut health, blood tests, and precision nutrition, providing a thorough health analysis and continuous health monitoring, reminiscent of the 23andMe model for lineage. Anticipate a significant expansion in D2C services.

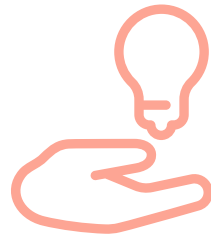


Investors

- Investors will increasingly engage in fertility research and venture into areas beyond in vitro fertilization (IVF), diversifying their investments.
- Both VC and PE funding will be channeled into research and R&D of startups, with the aim of eventually commercializing the research through partnerships with healthcare providers, leveraging data sales as a key strategy.
- With the expansion of knowledge, IVF treatments will become more cost-effective to stay competitive with other alternatives. Fertility clinics will be compelled to include fertility education as a service within their offerings.

My Recommendations

(Assuming founders aim for scalability and investors pursue returns)



For Founders

Highlight the importance of bolstering fertility knowledge alongside improving access, as part of a business model. Advancements in knowledge will inherently drive down the cost of existing treatments as they compete with alternative options.



For Investors

For private equity investors acquiring fertility clinics, it's worth exploring the purchase of SaaS or technology designed to facilitate OBGYNs in efficiently screening for the early detection of infertility, which can then be integrated into the clinics' operations.

Thank you!