



Part 1

State of Women's Health



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Re-defining Women's Health

Exploring In-Depth Insights into the Facets of Women's Health

Springboard and Accenture are re-defining women's health using a framework that outlines main categories of conditions, indications, and diseases that exclusively, predominantly, or uniquely impact women.

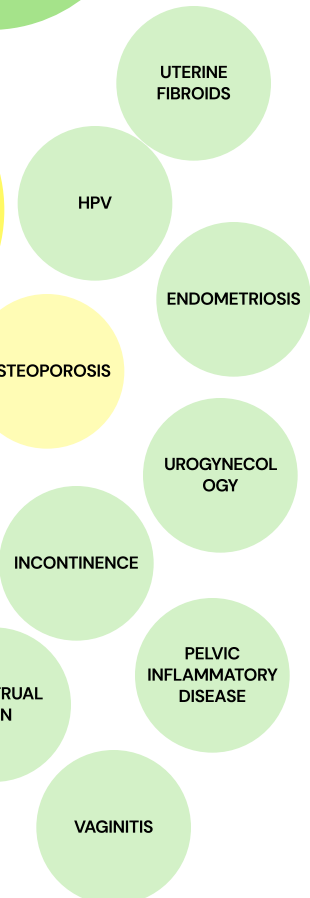
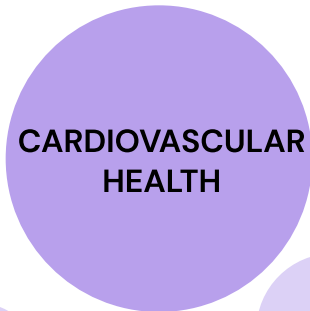
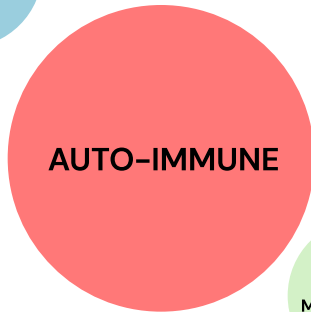
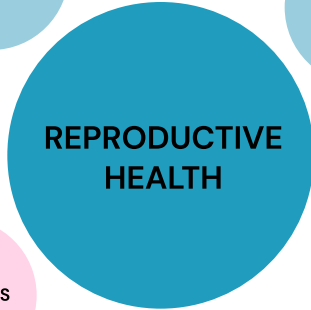
"Re-defining Women's Health" is a comprehensive initiative aimed at shedding light on the multifaceted landscape of women's health, addressing both challenges and opportunities. For decades, women's health has been **Under-Funded**, **Under-Researched** and **Misunderstood**. This series is designed to raise awareness, drive action, and promote positive change around funding, research and innovation in women's health.

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What is Women's Health?

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Women's health has progressed significantly via grassroots movements, government initiatives, and global conventions

Active engagement and strategic collaboration are required to accelerate the impact of women's health advocacy and research.

- **1960's** Commonly considered the **start of the women's health movement** in the US. Activists were focused on gaining authority over their reproductive rights^{1,2}
- **1970's**
 - **1973:** The U.S. Supreme Court **recognized the right to abortion** in Roe v. Wade. It was later overturned in **2022**³
 - **1975: First World Conference** on Women resolutions addressed women's health and maternal/child health^{4,5}
 - **1977:** Women of childbearing age are **excluded from phase 1 and 2 drug trials** by the FDA⁶
- **1980's**
 - **1983:** The Public Health Service Task Force established and urged the inclusion of women in clinical trials⁷
 - **1986:** Inclusion of Women and Minorities in Clinical Research Policy enacted by NIH advocated for the inclusion of women and minorities in clinical trials²
- **1990's**
 - **1990:** The Office of Research on Women's Health (ORWH) was established in **response to the failure of consistent inclusion** despite the 1986 policy urging the same **in clinical trials**^{8,3}
 - **1993:** NIH Revitalization Act **mandated inclusion of women and minorities in clinical trials**⁹
 - **1995:** The **4th World Conference on Women**, a pivotal moment in women's equality¹⁰, highlighted key **focus areas such as accessibility, preventive health, and research**¹¹
- **2000's**
 - **2010:** The Affordable Care Act (ACA) passed, **prohibiting gender-based insurance pricing and coverage denials for pre-existing conditions**, including pregnancy.¹² **UN Women**, focused on equality and empowerment, was **established**¹³
 - **2016:** Policy on Sex as a Biological Variable ensured **research in vertebrate animal and human studies considered sex**¹⁴
 - **2019:** The Black Maternal Health Caucus formed to **drive solutions for the maternal health crisis**.¹⁵ In 2021, the Black Maternal Health Omnibus Act passed reforms to address inequities¹⁶
 - **2023:** Appropriations Act and FDORA (Food and Drug Omnibus Reform Act) signed into law instructing FDA to **require diversity plans for all Phase 3 clinical trials**¹⁷
 - **2024:** Executive order to prioritize investments in Women's Health including **\$12B in funding Women's Health Research at NIH** and launching Advanced Research Projects Agency for Health (ARPA-H), which **commits \$100 million towards transformative research and development in women's health**¹⁸

1. Azevedo et al. (2023) 2. ORWH (2021) 3. Center for Reproductive Rights (n.d.) 4. United Nations. (1999) 5. United Nations_Women (2006) 6. Nichols (2000) 7. ORWH_Public Health (2021) 8. ORWH_Establish (2021) 9. ORWH_Mandate (2021) 10. UN Women_Beijing (n.d.) 11. Un Women_Action (n.d.) 12. IOM et al. (2014) 13. United Nations_Un Women (n.d.) 14. NIH (n.d.) 15. Caucus (n.d.) 16. Caucus_Momnibus (n.d.) 17. FDA (2023) 18. White House (2024)

Women's Health is...

Under-Funded

Fewer dollars are directed to research, development, and investment in women's health.



Under-Researched

Research and Development is disproportionately male or gender-neutral focused

Misunderstood

A gap in understanding and bias results in a distinct healthcare journey for women.

Women's Health is...

Under-Funded

Relative to gender-neutral and/or male health conditions, women's health receives little funding. This persistent trend, spanning years, underscores the consistent lag in funding of women's wellbeing compared to overall health initiatives.

Of the total \$26.5B VC Capital invested in healthcare companies in 2023, women's health companies received only \$1.1B despite a 59% increase from the previous year.¹

Over 17 years, the budget for Office for Research on Women's Health has only increased from **\$41M** (2003) to **\$45M** (2020) or 9.7%²

"FemTech," defined as technology designed to resolve issues primarily impacting women and girls, accounts for 4% of all healthtech funding³

In 2023, despite increasing attention on the need for innovative women's health solutions, industry leaders shifted R&D investments from women's health to oncology, cardiology, neurology and rare diseases/immunology

1. Forbes "Women's health in this article is defined as the U.S.-based, VC-backed companies labeled as "women's health", "women's healthcare", or "FemTech" in PitchBook Data." (2024) 2. Temkin et al. (2022) 3. Chakraborty et al. (2024)

Perceived associations of higher returns in well-researched disease areas results in decreased prioritization in women's health R&D¹

Less "established" diseases are at a disadvantage when it comes to receiving research funding.



1%

Percent **globally invested** in research and innovation for **female-specific** conditions beyond oncology²

5%

Percent of medicines **approved by the FDA** in 2022 were for **female-specific conditions**³

64%

Percent of **female-dominant diseases** which are **underfunded by the NIH**, compared to only 8% for male-dominant diseases¹

The Outcome

Lack of funding leads to gaps in research and, subsequently, diagnosis, prevention, and treatments for women.

1. *Mirin (2021)* 2. *Stengel (2023)* 3. *Mbugua and Hekster (2023)* 4. *WHAM (2024)* 5. *Baird et al. (2022)*

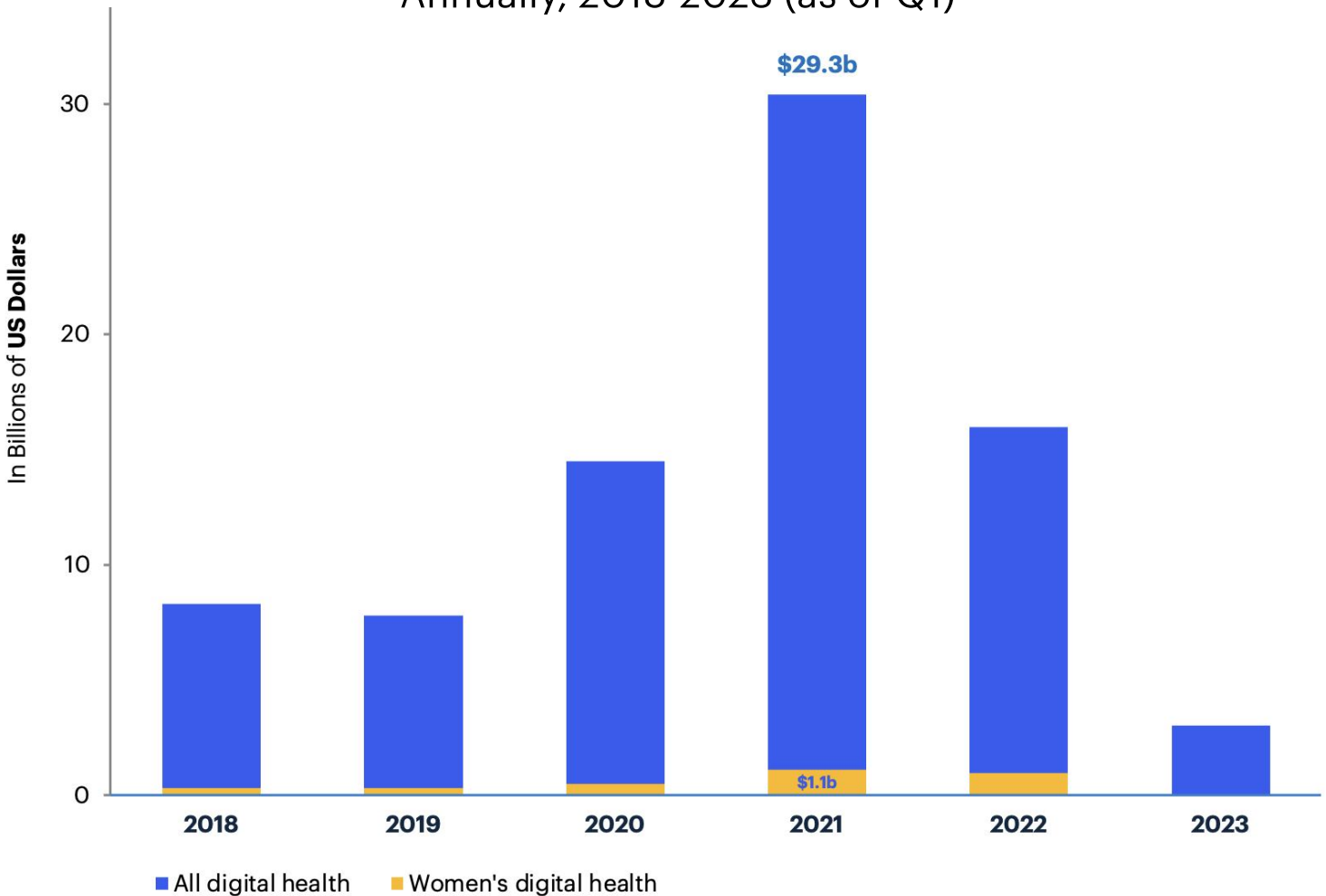
As digital health demands grow, overall funding increases, yet *women's health impact and funding falter* under limited resources^{1,2}

3.7%

Percent of total digital health funding received by women's digital health in 2021.

This disparity is clear across years, especially in the apex of 2021, where the digital health sector experienced a surge in funding, reaching a staggering \$29.3 billion, while women's digital health only received \$1.1 billion, which equates to a meager 3.7% of total funding.³

Digital health deal value³ Annually, 2018-2023 (as of Q1)



Source: Brodwin. Data: Rock Health, PitchBook, Coyote Ventures fellow Melody Qiu; Chart: Axios Visuals

1. Brodwin_Health demands (2023) 2. Brodwin_Resources (2023) 3. Brodwin_Sector peak (2023)

Women's Health is...

Under-Researched

Prior to 1993, when NIH mandated the inclusion of women, **clinical trial results were treated as generalizable**. Researchers applied the insights gained from male-focused research to women.¹

Despite women being 49.7% of the population and having higher prevalence in certain diseases, **research is rarely sex disaggregated**.²

Females have frequently been **excluded or underrepresented** in cell, animal, and human clinical studies because their **varying hormone levels were thought to complicate research** participation and outcomes.⁶

During a 20-year period, only 43% of clinical trials reported sex and ethnicity data³

Women were excluded for fear of harm to reproductive health (including potential pregnancies) and viewed as overcomplicated due to atypical and cyclical hormones⁴

In the US, cardiovascular disease is the leading cause of death for women, yet they make up only approximately one-third of clinical trial subjects⁵

1. *Committee on Women's Health Research (2010)* 2. *World Bank (2024)* 3. *Turner et al. (2018)* 4. *Society for Women's Health Research (2022)* 5. *Jin et al. (2022)*

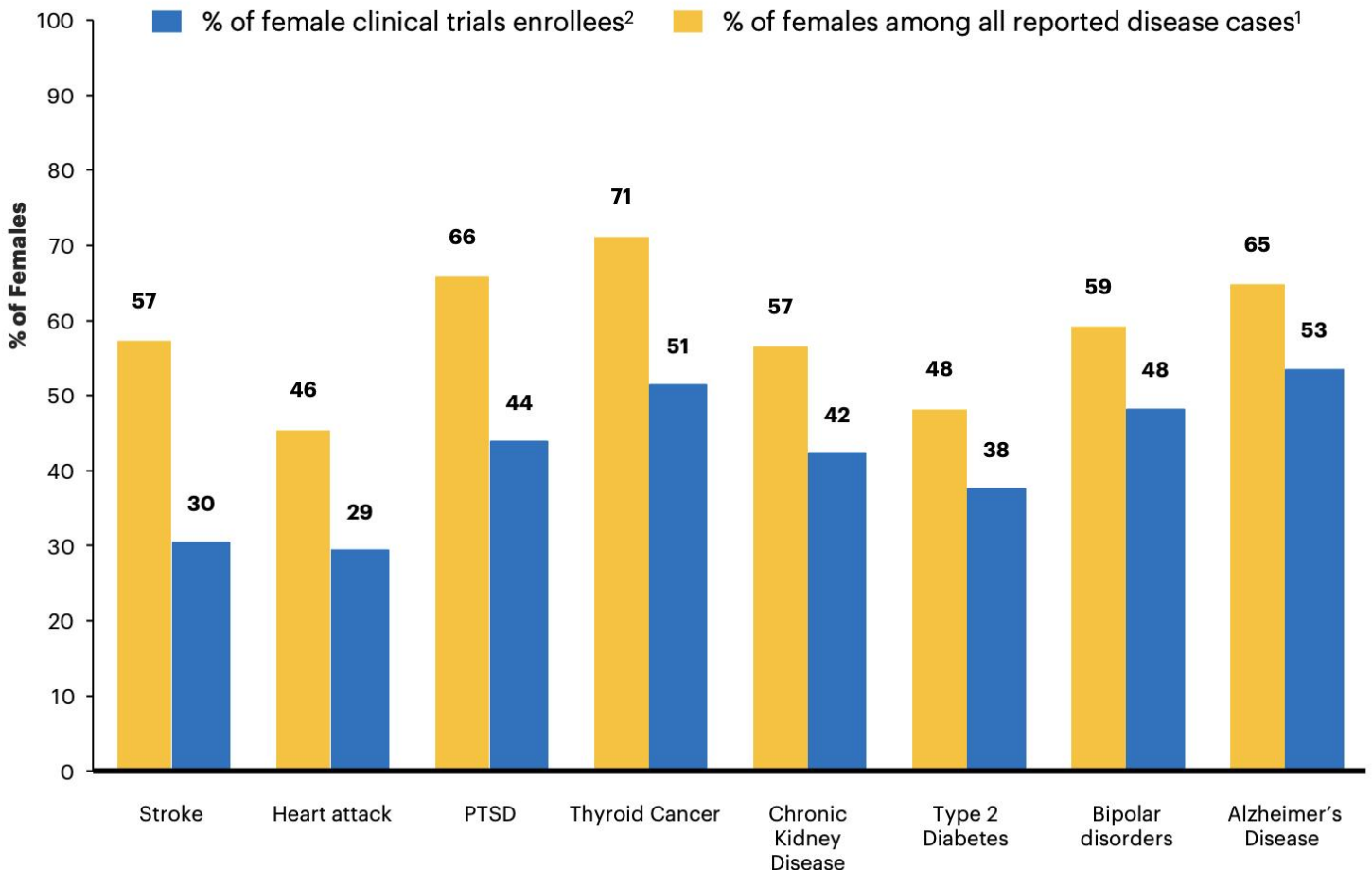
Clinical trial representation *often fails* to mirror disease burden

Though women comprise 49.7% of the population and have higher prevalence in certain diseases, they are frequently excluded from research.^{1,2}

12% to 27%

Difference between disease prevalence and female trial participation across 8 diseases where women bear similar or higher burden of disease compared to men

Female Disease Prevalence vs. Representation in Clinical Trials (2018-2022)^{3,4}



Source: Accenture Research. Please see footnotes for details

1. World Bank (2024) 2. Schiebinger (2003) 3. Accenture Research analysis leveraging US Prevalence data from GlobalData, the American Heart Association and the American Cancer Society, August 2023 4. Accenture Research analysis leveraging ClinicalTrials.gov data, August 2023. Data based on Interventional clinical trials, which completed between 2018-2022, reported results and gender statistics.

Lack of research has led to *negative health outcomes* for women that need to be addressed with speed

Though women comprise 49.7% of the population and have higher prevalence in certain diseases, they are frequently excluded from research.^{1,2}

55 years

Time **difference between** when the FDA mandated **premarket safety** testing for new drugs and required the inclusion of **women and minorities in clinical trials**.^{1,2} Even with this inclusion, **data still lacks on the combined effects of gender and race in trial data**³

96%

Percentage of FDA-approved drugs where there were sex differences in drug interactions that showed significantly higher rates of **Adverse Drug Reactions in women**⁴

PROOF POINT

In 2013, **21 years after** its initial approval and decades of post-marketing reports of **cognitive deficits in women**, the FDA required manufacturers of the sedative zolpidem to **reduce dose recommendation for women**^{5,6}

The Outcome

Millions of women are at risk of overmedication and are 2x more likely to experience adverse drug reactions across all drug classes and be hospitalized as a result.⁷ Even with data, it can take decades to address adverse events for women.

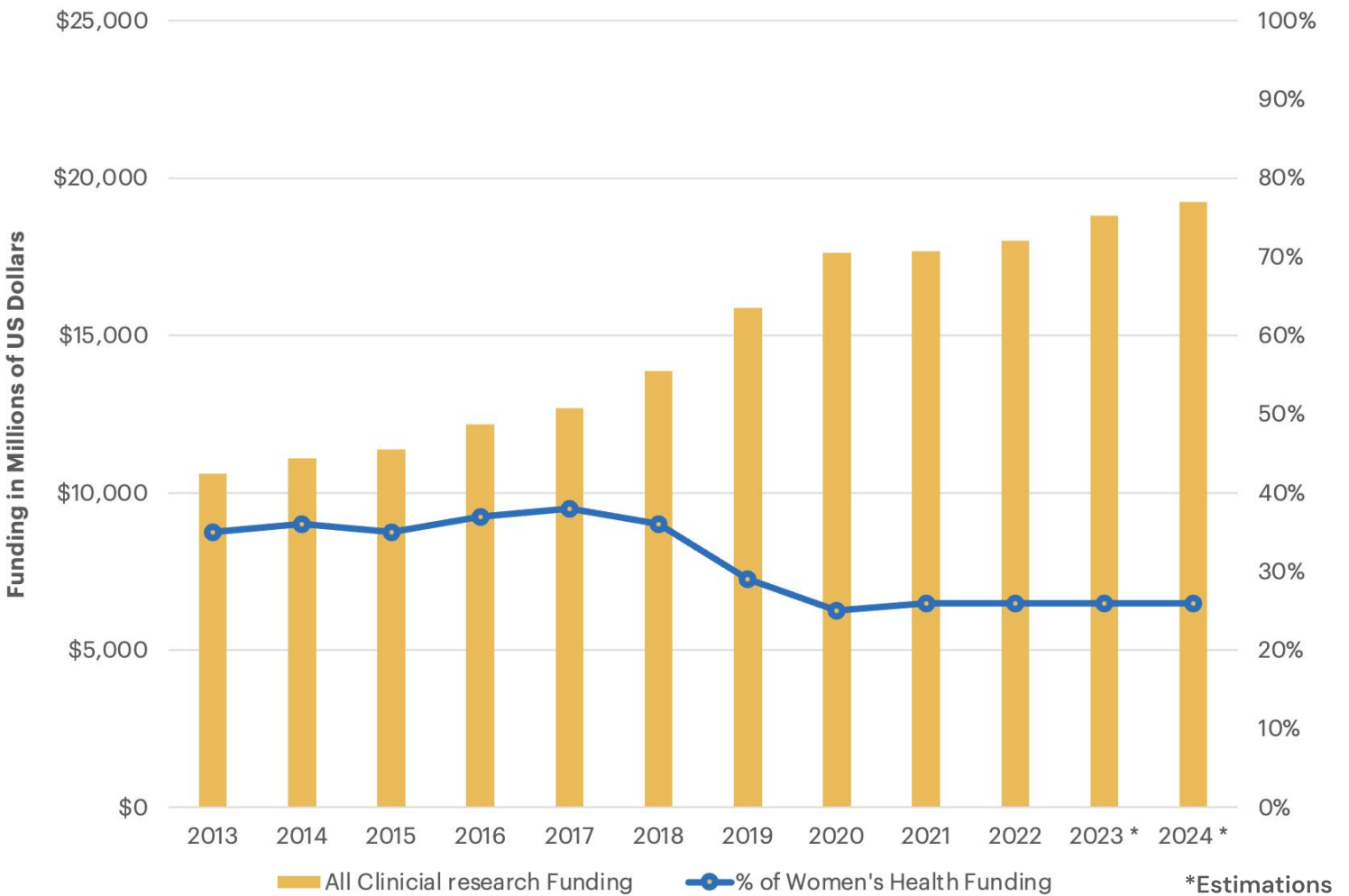
1. Junod (2017) 2. NIH Revitalization Act (1994) 3. Bierer et al. (2022) 4. Zucker and Prendergast (2020) 5. B.FDA (2005) 6. FDA_Drug Safety (2013) 7. Zucker and Prendergast_ADR hospitalizations (2020)

Disproportionate funding contributes to fewer studies focused on women's health

"Despite women being the dominant workers, healthcare decision-makers, users, and spenders of the \$4 trillion+ U.S. healthcare industry, their needs are often minimized and undervalued."¹

9% Decrease in funding of women's health compared to total funding for clinical research

Total women's health funding by NIH as percentage of total clinical research funding, FY 2013 to FY 2024^{2,3,4}



Source: Accenture Research. Data: Statista and Estimates of Funding for Various Research, Condition, and Disease Categories (RCDC)

1. FastCompany (2023) 2. Statista...Women's (2023) 3. NIH_RCDC (2023) 4. Statista_Total (2023)

Women's Health is...

Misunderstood

Historically, the data has shown the **unconscious bias and lack of acknowledgement of women's health** in Medicine.

Medical education has **embraced the 'male norm' and ignored fundamental sex-based differences** in physiology, assuming similar physiology aside from reproductive systems and **framing any differences as abnormalities**.

These biases result in diagnosis delays, mis-diagnosis, and ultimately worse health outcomes for women.

In **72% of cases**, women waited longer for a diagnosis¹

Doctors typically label men suffering from chronic pain as "brave" or "stoic," but women as "**emotional**" or "**hysterical**"^{2,3}

Women are **2X more likely** to have worse outcomes post heart attack compared to men, even when adjusting for comorbid conditions and receipt of similar interventions^{4,5}

1. Westergaard et al. (2019) 2. Samulowitz et al. (2018) 3. Samulowitz et al. _hysterical (2018) 4. European Society of Cardiology (2023) 5. Alabas et al. (2017)

Female-presenting symptoms are often *misunderstood* or diminished

Biological sex influences health. Genes and hormones impact disease, symptoms, and treatment processes.¹



700+

Number of **diseases** for which women receive **delayed diagnosis** compared to men, on average 4 years later and 2.5 years in the case of cancer^{2,3,4}

2x

Multiple by which women are **more likely to die** during first 30-days post-heart attack (11.8% of women vs. 4.6% of men)⁵

400K+

Number of women who transition to menopause each year with symptoms who are **not diagnosed**. **20% experience a delay in diagnosis** of 1+ years⁶

The Outcome

Women experience decreased quality of life and, potentially, life-threatening delays in care.

1. *Mauvais-Jarvis et al. (2020)* 2. *Forbes (2021)* 3. *World Economic Forum (2023)* 4. *Nature (2019)* 5. *European Society of Cardiology. (2023)* 6. *RTI Health Advance (2023)*

Clinical bias shapes women’s experience with healthcare, often leading to increased years of *poor health outcomes*

The absence of inclusivity in medical education and practice has contributed to a gap in health due to variation in care delivery and, subsequently, poorer health and quality of life in women.

34%

Of students in medical school who report feeling prepared to manage sex and gender difference

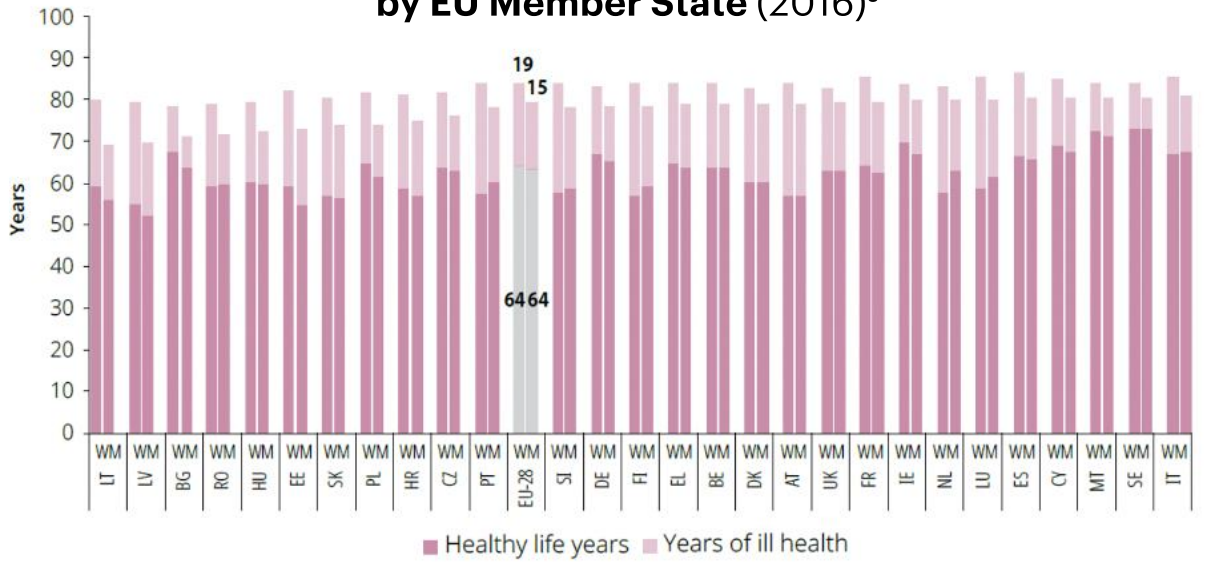
in healthcare, even though 96% agree it is an important factor to improve one’s ability to manage patients.¹

16 minutes

Average additional time women wait in the Emergency Department before getting analgesic treatment

for acute abdominal pain compared to men.² Gender stereotypes influence how physicians perceive patient pain and trustworthiness.

Years of healthy life and ill health of women and men, by EU Member State (2016)³



In 2016, the World Health Organization (WHO) found that “although women in the European Union live longer than men, they spend more of their lives in poor health.”³

1. Jenkins et al. (2016) 2. Chen et al. (2008) 3. World Economic Forum (2023)

Efforts to address historical exclusion often *prioritize equality rather than equity*

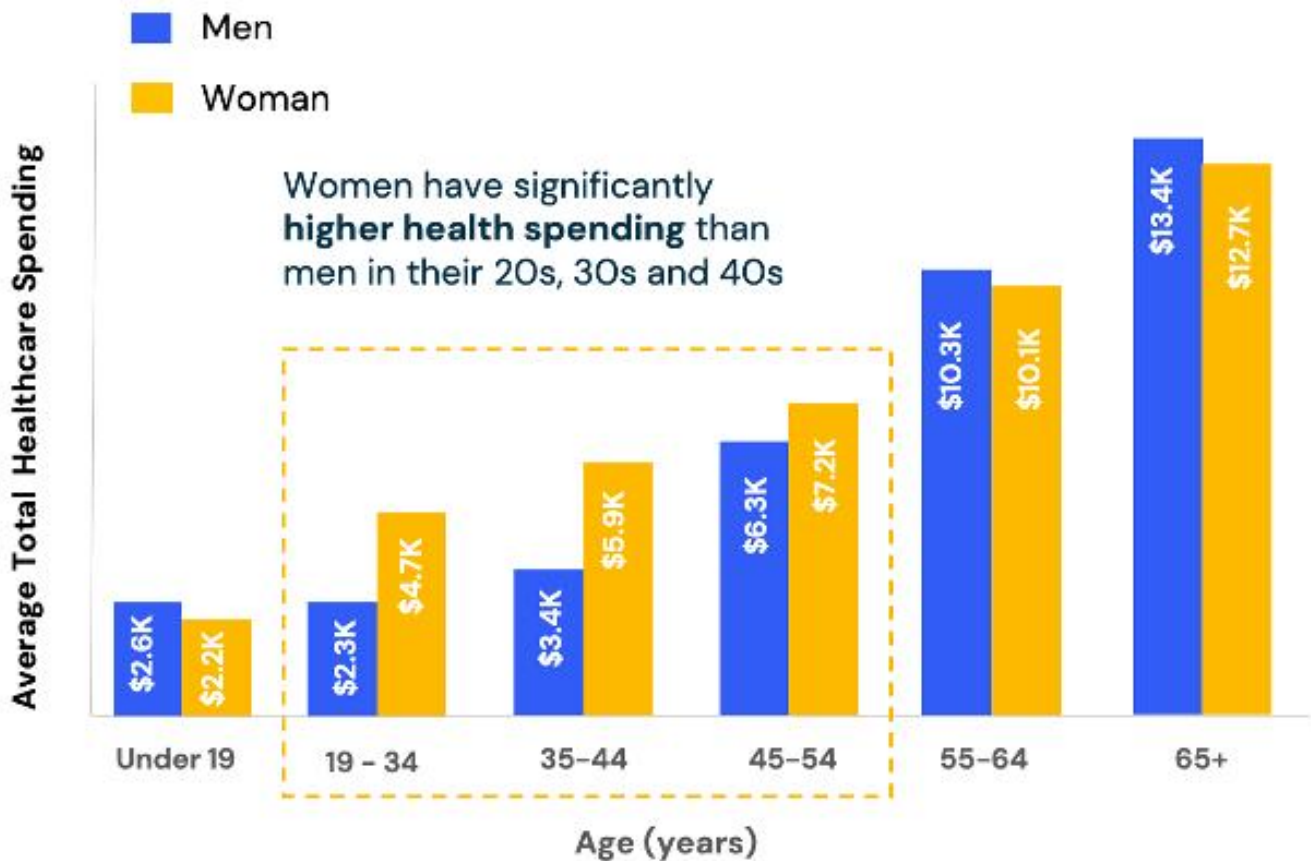
Despite the inclusion of safeguards in the Affordable Care Act, women still face a healthcare “pink tax” due to gender-related cost disparities.^{1,2}

49% Of women in a 2020 survey in the US that admitted to forgoing care.⁵

Considering the higher cost of care for women, they are more likely to report delaying or postponing care due to cost.⁶

Delays in care, whether voluntary or otherwise, result in poorer health outcomes. In the US, there are 198 deaths per 100,000 women which could be “prevented with the right care at the right time”⁷

US Average Total Healthcare Spending by Sex and Age³



Source: Silicon Valley Bank analysis and US Census Bureau in 2023

1. Forbes_Pink tax (2023) 2. Joint Economic Committee (2016) 3. Silicon Valley Bank (2023) 4. Deloitte (2023) 5. The Commonwealth Fund (2022) 6. KFF (2023) 7. The Commonwealth Fund_Deaths (2022)

Under-Funded | Under-Researched | Misunderstood

Let's dare to redefine the trajectory of Women's Health

INVEST IN WOMEN-CENTRIC RESEARCH

A **\$300M** investment in women-centric research is estimated to generate a **\$13B return**, cutting healthcare costs and boosting the global workforce productivity and quality of life.¹

CHALLENGE THE STATUS QUO FOR INCLUSIVITY

Menopause is experienced by 1.1B women globally yet is widely misunderstood. The annual **\$26.6 billion economic impact of menopause symptoms** demonstrates the need to question historical exclusion of women's health issues and collaborate with stakeholders to find new approaches to **foster a deeper understanding of women's health needs.**³

MATCH CLINICAL RESEARCH TO DISEASE PREVALENCE

Sex bias persists within clinical trials, leaving women, and sometimes men, underrepresented.² **Trial participation should reflect the disease prevalence** and health burdens of the population.

JOIN THE FIGHT AND START CONVERSATIONS

Share your story – why do you believe in revamping women's health? Why are you passionate about it? What changes do you want to see?



1. *World Economic Forum* (2023) 2. *Steinberg et al.* (2021) 3. *Abouzahr et al.* (2018) 4. *Butler* (2023)

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Liza Goodspeed Julia Lasater
Anna Piermont

Change-makers

Springboard entrepreneurs who are making an impact in addressing issues in Women's Health with their companies

Meet Mette Dyhrberg

Founder & CEO of Mymee

Mymee uses self-tracked data to reduce autoimmune disease flares and enhance disease management.



Digital Health Innovation Program
'18 alumna

MYMEE®

- Founded in 2017
- New York, NY
- Partners include Mount Sinai, The Institute for Functional Medicine, The Galien Foundation, and Oscar

Uncovering Personal Exposome Triggers to Help Patients Regain Control of Their Health

Between 24 and 50 million Americans suffer from autoimmune disease, with up to 4 out of 5 of being women.¹

65% of autoimmune rheumatic patients are considered “non responders,” having inadequate response to prescription therapies.² They are particularly susceptible to their exposome, defined as the measure of all lifetime exposures and their relationship to health, leading to debilitating symptoms like pain and joint stiffness.^{2,3}

Mission, Delivery, Impact

Until there is a cure, Mymee provides patients with uncontrolled symptoms access to **self-evidence-based personalized trials & care.**⁴

Mymee’s **clinically validated** proprietary digital application **isolates potential triggers** and effectively **links them to symptoms**, providing invaluable insight to **improve health in an average of 17 weeks.**⁵

Multi-year research studies show **reduced costs and improved outcomes:**

- **Biologic use reduced** in 48% of those using ≥ 4 drugs, **reducing costs by \$15,000**
- 70% with moderate/severe disease experienced a **reduction of severity**

1. Goldman (2024) 2. Mymee_Outcomes (2023) 3. CDC (2022) 4. Mymee_About (2023) 5. Mymee (2023)

Meet Laura Yecies

CEO of Bone Health Technologies

Bone Health Technologies uses vibration therapy to treat decreased bone density.



Women's Health Innovation Program
'24 alumna



- Founded in 2018
- Redwood City, CA
- Investors include Good Growth Capital, Astia, Berkeley Angel Network, and Golden Seeds

Taking a **Non-Pharmacological** Approach to Bone Density

Women represent 80% of the approximately 10 million Americans impacted by osteoporosis.¹ 50% of women over the age of 50 will experience an osteoporosis related fracture.¹

The risk of a hip fracture in women is equivalent to her combined risk of breast, uterine, and ovarian cancer.¹

Mission, Delivery, Impact

Bone Health Technologies is revolutionizing bone health in postmenopausal women with an easy-to-use wearable device.²

Bone Health Technologies' OsteoBoost, is the only FDA approved non-pharmacological therapeutic device, tailored to counteract bone density loss in postmenopausal women. It delivers gentle mechanical stimulation to enhance bone strength in the hips and spine.^{2,3}

Current drug therapy has low utilization (10%) and high discontinuation rate. OsteoBoost provides a high compliance alternative at 83%, with no serious adverse events.²

1. Bone Health & Osteoporosis Foundation (2024) 2. Bone Health Technologies (2024)
3. Bone Health Technologies_Press (2024)

Meet Kristen Helton

CEO of Herself Health

Herself Health is a primary care practice lovingly designed for women 65 and up.



Women's Health Innovation Program
'24 alumna

Herself Health

- Founded in 2022
- St. Paul, MN

Providing Age-Conscious Care to Improve Outcomes

Only approximately 2% of Medicare beneficiaries have access to value-based care today and none are focused on women over 65.

As women age, there are age and sex-specific conditions that are more prevalent in women than men (e.g. 4x more likely than men to be diagnosed with osteoporosis, 3x more likely than men to have autoimmune diseases such as arthritis, 2x more likely than men to be diagnosed with Alzheimer's)

Mission, Delivery, Impact

Herself Health provides value-based care to women 65+, prioritizing their visibility and elevating their voice as they age. Utilizing a holistic approach, Herself Health considers various aspects of patients' wellbeing, including mobility, mental health, social and behavioral factors, life journey, and quality of life.

The company is dedicated to ensuring each patient receives comprehensive support and attention as they transition through life's stages^{1,2}

1. *HerselfHealth (2024)* 2. *HerselfHealth_Services (2024)*

Meet Yael Katz

Cofounder and former CEO of
BrainCheck

BrainCheck uses interactive cognitive assessment and cognitive care planning to mitigate the burden of cognitive impairment.



Tech Innovation Program
'16 alumna



- Founded in 2015
- Austin, TX
- Customers include Cleveland Clinic, Johns Hopkins Medicine, Mount Sinai, and Stanford Medicine

Uncovering Subtle Changes to Ensure **Early Intervention and Support**

Approximately 7 million Americans 65 years old or older are impacted by Alzheimer's disease, which is equivalent to 1 in 9 seniors.¹ Women are disproportionately impacted, having a lifetime risk at age 45 that is double that of men (1 in 5 vs. 1 in 10).²

Between 2000 and 2019, deaths from Alzheimer's disease surged 145%. Dementia related deaths are responsible for 33% of deaths in seniors.²

Mission, Delivery, Impact

Braincheck develops tools to help provide **comprehensive cognitive care** focused on **early assessment, function tracking, and care coordination**.

BrainCheck platform is an **assessment and management application** that assists decision making about cognitive health concerns through a **"comprehensive set of cognitive health assessments, screeners and digital biomarkers"**.³

BrainCheck Screen, a 3-minute screening tool, assess multiple cognitive domains and suggests further testing if needed. A validation study demonstrated 92% sensitivity and 74% specificity in screening for cognitive impairment.⁴

1. [AlzheimersAssociation \(2023\)](#) 2. [AlzheimersAssociation_FactSheet \(2023\)](#)
3. [BrainCheck_FAQ \(2024\)](#) 4. [BrainCheck_Screen \(2023\)](#)

Meet Oriana Papin- Zoghbi

Cofounder & CEO of AOA Dx

AOA Dx leverages artificial intelligence for early detection of ovarian cancer.



Life Sciences Innovation Program
'21 alumna

AOA

- Founded in 2020
- Denver, CO
- Partners include Professor Uri Saragovi (McGill University); Dr. Kevin Elias (Brigham and Women's Hospital and Harvard Medical School)

Equipping providers to make better informed decisions earlier to improve survival rates

Ovarian cancer ranks fifth leading women's cancer-related deaths. By 2035, a surge in incidence and mortality is predicted.¹

Despite 94% of women showing symptoms in stage 1, 80% of cases are diagnosed at advanced stages. Early-stage survival is over 90%, while advanced stages have a mere 28% survival rate¹

Mission, Delivery, Impact

AOA Dx is **reshaping oncology care**, from diagnosis to treatment, employing artificial intelligence to **pinpoint biomarkers of malignancy**.²

AOA Dx's **AI-enabled platform**, GlycoLocate, pioneers the use of gangliosides as a tumor marker for early **cancer detection** and allows for differentiation based on tissue of origin.²

AKRIVIS GD, the inaugural **diagnostic test** created with the GlycoLocate platform, **utilizes tumor marker ganglioside technology** to offer a **non-invasive liquid biopsy test**, shown to have high sensitivity and specificity across all stages, for **ovarian cancer detection**.¹

1. AOA_AkrivisGD (2024) 2. AOA_GlycoLocate (2024) 3. Celmatix_Team (2020) 3. AOA (2024)

Meet Piraye Yurttas Beim, PhD

Founder & CEO of Celmatix

Celmatix, a preclinical-stage biotech uses data to help drive discovery and the next generation of solutions to promote better ovarian health.



Life Sciences Innovation Program
'20 alumna



- Founded in 2009
- New York, New York
- Partners include Evotec, Bayer, and Bill & Melinda Gates Foundation

Closing gaps in knowledge on ovarian function to address unmet need for advanced therapeutics

Impaired ovarian function impacts 33% of women, and frequently results in significant disability due to the ovary's role in overall endocrine function.¹

Available therapies for ovarian disorders are based on pharmaceutical discoveries that are more than 50 years old.¹

Mission, Delivery, Impact

Celmatix, uniquely **focused on ovarian biology**, transforms women's lives by **accelerating precision medicine innovations** in women's health.²

Celmatix's leading "**multi-omic ovarian health platform**," contains **data on ovarian health and outcomes from over half a million women**, serving as the foundation for its groundbreaking pipeline of first-in-class therapies.¹

Celmatix is pioneering advancements in ovarian health, developing a pipeline of drug programs including an **AMHR2 agonist program focused on ovarian aging**, **novel melatonin agonist program for PCOS**, **oral FSH for infertility**.¹

1. Celmatix (2020) 2. Celmatix_Team (2020) 2. Celmatix_Team (2020) 3. Celmatix_Linkedin (n.d.)