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# The rise of egg freezing: empowering women's reproductive choices in the Asia-Pacific region

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## About this article

Egg freezing, or oocyte cryopreservation, is a medical procedure that has been transforming the field of assisted reproductive technology by enabling more flexibility and choice around family building, an important consideration as global fertility rates continue to fall. This article, supported by Merck and created by Economist Impact, explores the status of elective egg freezing in the Asia-Pacific region, in terms of its utilisation, benefits and limitations, and cultural and societal impacts on women's choices and aspirations. Ultimately, the article suggests where future opportunities lie in this emerging and growing field.

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- **Raelia Lew**, Medical Director of Melbourne IVF, part of Virtus Health
- **Samir Hamamah**, Professor of Reproductive Medicine, Centre Hospitalier Universitaire de Montpellier, France

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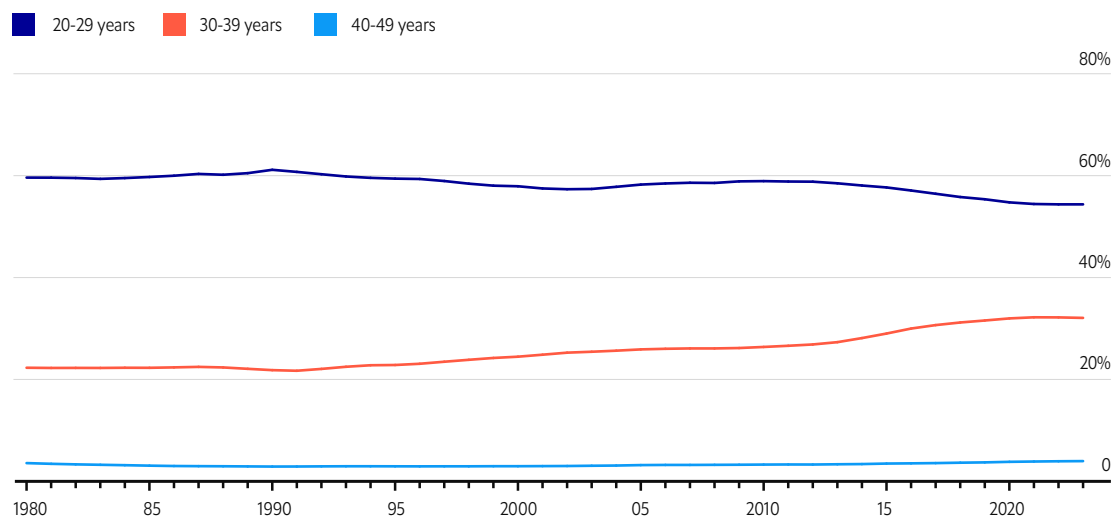


## Introduction

Global declining fertility rates have been gaining significant attention in recent years as more women and couples choose to delay or forego starting a family, often owing to cultural, social and economic changes. These include the pursuit of education and career advancement, workplace inflexibilities, financial considerations or not having found the right partner.<sup>1</sup> Over the past 40-50 years, the share of first-time

mothers aged 20-29 has been decreasing and the share of those aged 30-39 and 40-49 has been increasing (figure 1). At the same time, the global total fertility rate (the average number of children born per woman) has more than halved, with many countries in the Asia-Pacific region today facing “ultra-low” fertility, including Japan, Singapore, Taiwan and South Korea.<sup>2</sup>

**Figure 1: Global share of births by age of mother<sup>3</sup>**

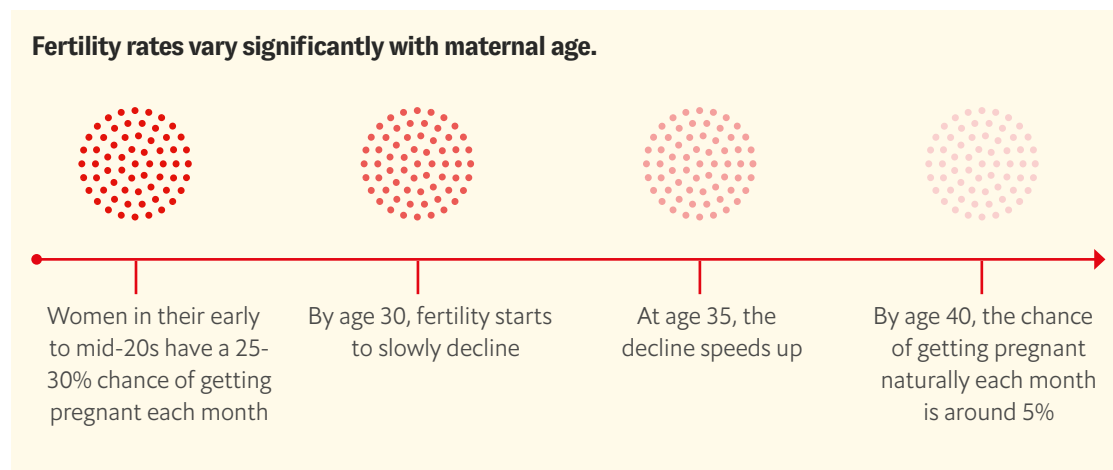


Governments around the world are increasingly looking to address these trends, and the ability of women to freeze their eggs has emerged as a transformative medical procedure in the field of assisted reproductive technology (ART). Egg freezing, also known as oocyte preservation, was initially primarily used for medical reasons, such as preserving fertility for women facing cancer treatments or other health conditions that could compromise their reproductive potential. However, as the technology has improved and become more accessible, and as women increasingly choose to delay motherhood, a growing demand for elective egg freezing has emerged, including in the Asia-Pacific region.<sup>4,5</sup>

Elective egg freezing, also sometimes referred to as social egg freezing, is a procedure which allows women to preserve their fertility and delay childbearing for non-medical reasons, such as career pursuits, educational advancement, lack of a partner, or financial considerations. It can be seen as a means to circumvent age-related fertility decline and therefore extend reproductive options.<sup>6</sup> This is the type of egg freezing which has been increasing in popularity, especially since fertility declines with age, and is the focus of this article. "As women become increasingly educated and financially independent, coupled with trends of delayed marriage and childbearing, the demand for elective egg freezing is rising," says Liu Shuling, director and senior consultant at the KKIVF Centre, KK Women's and Children's Hospital in Singapore. "We expect this trend to continue."

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## Benefits and considerations

Egg freezing offers several benefits to women. It grants an extended window of time for pursuing personal and professional aspirations, for meeting the right partner, and for establishing financial security while preserving the option of future motherhood.<sup>7</sup> It also promotes women's empowerment by allowing women to take more control over their reproduction and choose when, and with whom, they have children.<sup>4</sup> "Women freeze their eggs because they want to be mothers," says Raelia Lew, medical director of Melbourne IVF, part of Virtus Health. "They are taking steps to increase their chances of reaching their reproductive goals and being able to have the family that they want at the right time for them."

However, egg freezing is not without risks and concerns. The process of ovarian stimulation and egg retrieval carries physical and emotional risks, including potential adverse drug reactions and surgical complications.<sup>8</sup> There are also ethical considerations, such as the possibility of unused frozen eggs and the lack of long-term studies on children born from this procedure, and it is important to be aware that egg freezing does not guarantee a successful pregnancy or live birth.<sup>9</sup> "Elective egg freezing is important in the context of women's reproductive rights and choices, as it can help preserve women's autonomy and their ability to have more options and control over their fertility timeline," says Dr Liu. "However, it is crucial to emphasise that it is neither the solution for all fertility issues, nor can it guarantee motherhood. It should be viewed as one option among many in family planning." Financial considerations also play a significant role in the decision to freeze eggs, as the procedure can be expensive, with costs increasing with age.<sup>10</sup>



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### Trends in the Asia-Pacific region

Elective egg freezing has recently been gaining traction in the Asia-Pacific region, though many countries implement more stringent requirements than Western nations.<sup>11</sup> Trends observed are similar to those in other parts of the world including Europe, with similar ranges in mean age at freezing, live birth rates and utilisation rates. Studies have shown that women tend to freeze their eggs between the ages of 35-38, and the live birth rate from frozen eggs has been shown to be between 17.5% and 31.5%.<sup>10,12</sup> “[Egg freezing has] really increased monumentally in all countries in our region,” says Dr Lew. “It’s been exponential ... both electively and also medically, as the technologies become more mainstream.”

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In Australia, for instance, in 2012-21 there was an 818% increase in the number of patients who froze their eggs, from 51 in 2012 to 468 in 2021.<sup>13</sup> In Taiwan, the number of women aged 35-39 freezing their eggs grew by 86% between 2020-23, according to a study by National Taiwan University Hospital.<sup>14</sup> In South Korea, the number of frozen eggs in storage in the country rose over three years from 40,000 to 100,000 in 2023.<sup>15</sup>

There can be a low level of awareness of egg freezing in some countries in the Asia-Pacific region, with one study in Singapore finding that only 36.5% of all female students had heard of elective oocyte freezing, although of these, 70% had personally considered taking up this option.<sup>16</sup> Similarly, a 2022 Chinese study among college students found that over 40% of interviewees had limited knowledge of egg freezing.<sup>17</sup> This level of awareness is significantly lower than what has been observed in European countries.<sup>18</sup>

## Regulatory landscape and funding

Medical egg freezing is generally permitted in most Asia-Pacific countries, and elective freezing is permitted in countries including Australia, Japan, Indonesia, South Korea, Singapore, Thailand, Taiwan and Vietnam. However, there are restrictions in some nations. For instance, China prohibits all fertility preservation including elective egg freezing for single women, and Malaysia has religious rulings that restrict the practice for Muslim women.<sup>19,20</sup> Singapore only began allowing single women to freeze their eggs in 2023, and still has a strict upper age limit of 37 years.<sup>21</sup> When it comes to using the previously frozen eggs more restrictions exist, with many countries including China, Indonesia, Japan, Malaysia, Singapore, South Korea and Taiwan requiring that couples must be in a heterosexual marriage before the eggs can be used. This limits other types of families and single women from being able to access treatment.

Public funding for egg freezing has gained significant support globally, with studies showing strong public backing for full coverage of medically indicated egg freezing, although support for elective procedures is more divided.<sup>13,22</sup> In the Asia-Pacific region, Australia provides rebates for medical egg freezing through its public healthcare system, while the cities of Tokyo in Japan and Seoul in South Korea offer subsidies for egg freezing regardless of the reason, aiming to address their declining birth rates and later marriages.<sup>13,23,24</sup> The debate around public funding models considers factors such as

fairness, therapeutic benefits, healthcare system capacity and cost-effectiveness.<sup>25</sup> Although employer funding for egg freezing also exists in some industries, it raises ethical concerns about workplace pressure and reproductive choices.<sup>26</sup> Public funding appears to be the most practical approach, though the specific model remains a topic of ongoing discussion. Some experts agree that elective egg freezing should be included in family planning policies, as it empowers women to preserve their fertility options when circumstances prevent immediate family formation. Yet caution is also needed, and egg freezing should not be seen as necessary for everyone but rather as a valuable option for those who need it. "While making elective egg freezing more accessible would help support more women to start families, it should only be considered as an alternative, and women should consider getting pregnant naturally sooner rather than later due to the risks involved," says Dr Liu.



## Egg freezing and declining birth rates

Egg freezing has emerged as one option which can perhaps play a role in addressing declining birth rates, particularly in countries where women are delaying childbearing, as is the case in many Asia-Pacific countries. "It will help a subset of the population who are childless not by their own choice, those who want to have children but are struggling to have them for biological reasons," says Dr Lew. "That demographic is a larger demographic than it was 10 or 15 years ago, and much larger than it was

20 or 30 years ago." Elective egg freezing can provide increased options for family planning, allowing some women to have children they otherwise might not have had. "It is about awareness and it is about political willingness," says Samir Hamamah, professor of reproductive medicine at Centre Hospitalier Universitaire de Montpellier in France. "Without both of these, nothing will be done." However, more research and long-term data are needed to fully understand the effects on demographic trends.

### CASE STUDY: FRANCE

In 2021 France became the first country to offer public funding for elective egg freezing, a significant shift in fertility policy. The new legislation allowed women up to the age of 37, including those in same-sex couples and single women, to be able to freeze their eggs through the public health system.<sup>27</sup> This was a drastic change from previous policy, which only allowed egg freezing for medical reasons. Despite concerns about barriers to access, resource allocation, concern over leftover eggs and potential complications, early evidence suggests high public satisfaction.<sup>28</sup> The new policy has led to increased demand and improved public awareness of egg freezing services in France, though this has also meant longer wait times.<sup>29</sup> This can mean that equity in access is still a problem. "Waiting lists can be 18-24 months in Paris," says Dr Hamamah. "This means that some patients choose to travel, which can be costly, or they may choose to go to a private clinic for treatment and pay out of pocket." In 2022 11,500 women sought to freeze their eggs, and 4,800 had begun the process.<sup>30</sup>

### CASE STUDY: SPAIN

Spain has emerged as a leading hub for assisted reproductive technology in Europe and globally, particularly for egg freezing. Success in egg freezing began in the late 1980s, with legislation allowing broad access to treatment, including elective egg freezing, regardless of relationship status or sexual orientation.<sup>31</sup> A landmark 2008 study showed the effectiveness of a new freezing technology, vitrification, and since then the Spanish fertility industry has grown and the country has become a destination for "fertility tourism".<sup>32,33</sup> Between 2010 and 2020, there was an increase from 285 women freezing their eggs to 5,405, with 76% being for elective reasons.<sup>34</sup> However, critics argue that while egg freezing provides peace of mind, it does not address underlying societal issues affecting family planning. Despite Spain's success in reproductive medicine, the country still faces challenges in providing comprehensive family welfare support compared to other European nations.<sup>34</sup>

## Conclusion and looking ahead

The evolution of egg freezing from an experimental to a more accepted procedure has shown significant advancement and increased opportunities in reproductive medicine, though it has also brought forward new challenges. As societal norms shift, technology advances and policies change to be more inclusive, the uptake of egg freezing is expected to continue to increase in the Asia-Pacific region for the demographic for whom it is helpful and worthwhile, and governments should recognise this as an opportunity. “We need to start recognising that egg freezing is a part of women’s healthcare,” says Dr Lew. “Fertility preservation is an endeavour and an investment limited by women’s biology, and the lens needs to change. Governments should recognise that fertility is a critical women’s health issue, and that includes egg freezing, which could be described accurately as a form of preventative medicine.” This rise will be mirrored by the need for continued monitoring of trends, techniques, usage and success rates.

However, the widespread adoption of egg freezing technology, as with all ART, needs a holistic approach. The ethical implications of elective egg freezing should be further explored, as should the role of religion and culture, which can significantly shape public perception and acceptance. Public education initiatives to raise awareness around fertility and women’s reproductive health are also key—it is important to educate women about the age-related decline in fertility and the potential risks associated with later-life pregnancies, and in what circumstances egg freezing could be beneficial. This is already proving successful, as the age range of women who choose to freeze their eggs has been declining. As we live longer and live healthier, women who freeze eggs will have more choices, and this could translate in the long term into women having more children, leading to a slow down in population decline. However, it is important to note that egg freezing is not the “end-all” for reproductive autonomy; institutional change is also needed to overcome existing societal barriers, and only through a comprehensive approach and increased awareness can egg freezing technology fulfil its potential as a tool for reproductive empowerment and gender equality.

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