fertility

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About the *Starting Families* study

Merck Serono, in collaboration with Cardiff University, has conducted the largest-ever international study – *Starting Families* – among over 10,000 women and men trying to conceive, to gain insight into their decision-making around fertility and fertility treatments.

The study was conducted online at **www.startingfamilies.com** during 2009-2010 and surveyed couples in: Australia, Brazil, Canada, China, Denmark, France, Germany, India, Italy, Japan, Mexico, New Zealand, Portugal, Russia, Spain, Turkey, UK and USA.

Contents

Foreword

Infertility is a significant problem affecting about 1 in 10 couples worldwide.[1] Over 70 million couples struggle to become parents or to conceive another child.[1]

Being denied the personal fulfilment of having a child can lead to a significant psychological burden and social isolation. From a societal perspective, infertility raises questions of inequalities of access to treatment and it exacerbates declining fertility rates.

Although modern fertility treatments are effective, only a fraction of couples are getting help. It is estimated that only six in ten couples with infertility seek medical advice and just two in ten receive medical care.[1]

The *Starting Families* study provides global insights into contemporary fertility decision-making around conceiving a child and seeking medical help in instances where infertility exists. We hope that its findings will enable media, healthcare providers, policy-makers and other stakeholders concerned with fertility, to help more couples become families and to address the challenges they face along the way.

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There is ample evidence for significant change in fertility trends worldwide. Fewer men and women are having children, parenthood is postponed to a later age and family size is shrinking, and few people seek medical advice when they can't conceive spontaneously.

Starting Families is the landmark study that helps broaden our understanding of the barriers making it difficult for couples to start families in today's world, whichever country or culture.

The results of the study highlight that inability to discuss fertility issues with close friends and family, and poor knowledge of fertility and treatments, are still major hurdles to seeking medical help around the world.

I hope that this report will help transform the ways we think about infertility and support couples trying for a baby.

Section 1
Fertility – Findings from the international *Starting Families* study

Fertility – Findings from the international *Starting Families* study

The *Starting Families* study uncovers the story behind factors influencing the decision to have a child and seek fertility treatment if challenges should arise. It reveals what people know about their own fertility, how they perceive fertility treatments and what barriers they face to seeking treatment.

Methodology:

The final sample consisted of 10,045 people currently trying to conceive.

The key characteristics of the population that participated in the research were as follows:

- 83% women, 17% men
- 61% of the sample declared that they were treated for infertility problems
- Respondents from Europe represented 54% of the total sample, whereas 27% came from the Americas, 16% from Asia Pacific and 3% from other countries

How to interpret the data:

Please note that the results are not representative of the general population, but are representative of the people that participated in this survey. Therefore, each time that 'people', 'men', 'women' is cited in the text below, one should read it as people, men, women who participated in the survey. Likewise, each time that a country is mentioned, one should read the statement as representative of the participants interviewed from that country, and not necessarily representative of the total population of that country.

1. What makes people ready to conceive?

Most people desire children but not all need them to achieve life satisfaction:

- Need for parenthood (the importance of having children for achieving life satisfaction) is greatest in **Russia**, **France**, **India** and **Brazil** and lowest in **Japan**

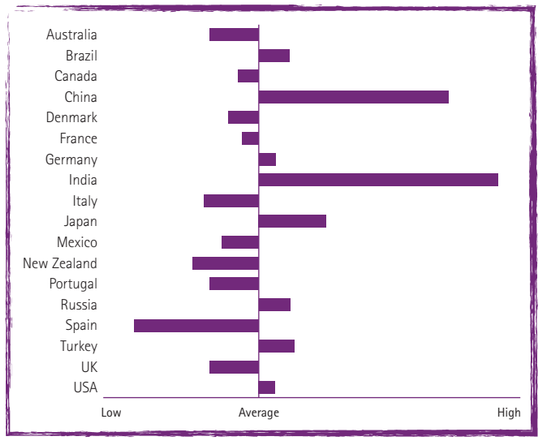
NEED FOR PARENTHOOD

- Men have a weaker desire for children and a lower need for parenthood than women. Contrary to expectations, men perceive more social pressure to have a child and are more willing to comply with these norms than women. An interpretation of this would be that men seek to become fathers to meet social obligations rather than to satisfy a personal need

Social value attached to parenthood and children, and associated economic benefits, are key factors that provide insight into possible reasons why fertility rates differ across countries, followed by subjective sense of economic security and personal and relational readiness. Influencing factors vary between men and women and across countries.

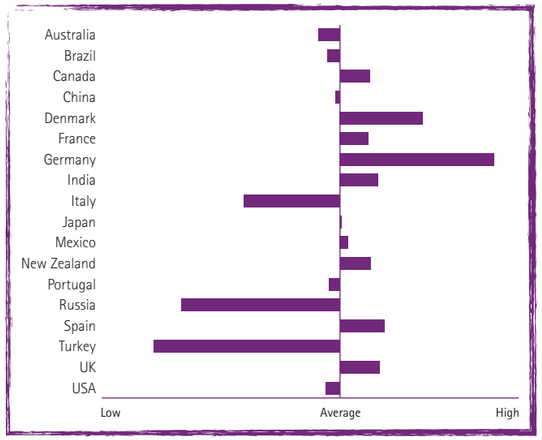
- Even though men and women value personal and relational readiness the most, they differ on the second most valued motivations. Men are more concerned by physical health and child cost, followed by economic pre-conditions and social status of parenthood, whereas women place economic pre-conditions before physical health and child cost
- The social status of parenthood is more influential in **China** and **India** than it is in other countries. Respondents in these countries are also more willing to comply with partner, family, in-law and community expectations. Interestingly, social status of parenthood seems to be less valued in countries with a higher level of economic development, with the exception of the **US**, **Germany** and **Japan**

IMPORTANCE OF SOCIAL STATUS OF PARENTHOOD



- Economic security is given the highest importance in **Germany** and **Denmark** and the lowest in **Turkey**, **Russia** and **Italy**

IMPORTANCE OF ECONOMIC SECURITY



- The importance of relational and personal readiness is highest in **Denmark** and the **UK** and lowest in **Japan** and **China**

IMPORTANCE OF RELATIONAL AND PERSONAL READINESS

Perspective from J. Boivin

Starting families today is a complex affair involving numerous considerations and pre-conditions. Some decisional aspects are (nearly) universal – desire, need for economic stability – others are country specific.

Declining need and value of children and other sources of life satisfaction (especially for women) are important considerations. Decrease in the total fertility rate (TERIA) is cost of success of equality policies & actualisation of people's economic & aspirational goals.

Policy-makers may face a number of challenges trying to reverse fertility trends:

Reinventing the value of parenthood for contemporary society. Social status of parenthood and priority of parenting in developmental life course seems to lose ground in wealthier societies. This is compounded by educational and career aspirations. It may be easier to help those already willing but unable to have children to realise their goals (e.g. increase access to fertility treatments) than to convince those with relatively low desire/need to have them.

Addressing subjective sense of economic security. Economic pre-conditions depend on a subjective level of security and not on a concrete sum of money therefore monetary incentives alone are not likely to succeed in stimulating birth rates. This contention applies to all aspects of pre-conception nesting and sense of 'being ready' for parenting.

Need for contemporary & tailored policies. Heterogeneity in decisional factors means that policies to improve declining fertility rates need to tackle both shared barriers (e.g. European policies on economic pre-conditions) and decisional factors particularly present in some countries (e.g. Italian national policies reinforcing individual desire and societal need for children).

2. What prevents people with infertility from seeking help?

Starting Families found that acknowledgement of a fertility problem, being able to disclose it to partner, family and friends, knowledge about treatment cost and positive attitude towards treatment are among the key factors characterising people who seek medical help.

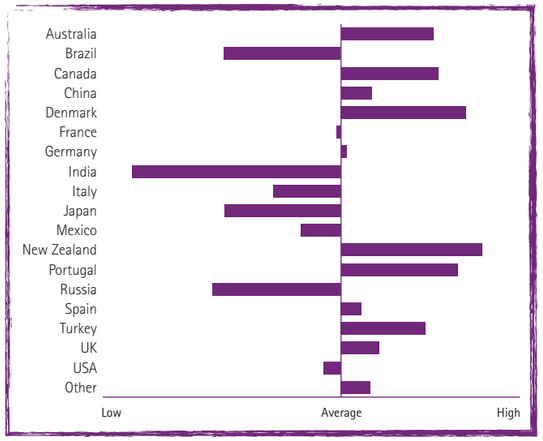
Interestingly, desire to have children, the need for parenthood for achieving life satisfaction and the opinion of partner, family and friends about starting or continuing treatment are not among deciding factors.

Women are more aware of their fertility problem, are more open to discuss it with significant others and have a more positive attitude towards treatment than men.

Responses from different countries reveal significant differences, providing insight into why people in some countries may be more likely to seek help than in others:

Awareness of a fertility problem and knowledge about treatment cost is the highest among respondents from **New Zealand**, **Denmark** and **Portugal** and the lowest among respondents from **India**, **Russia**, **Japan** and **Brazil**.

AWARENESS OF FERTILITY PROBLEM AND TREATMENT COST

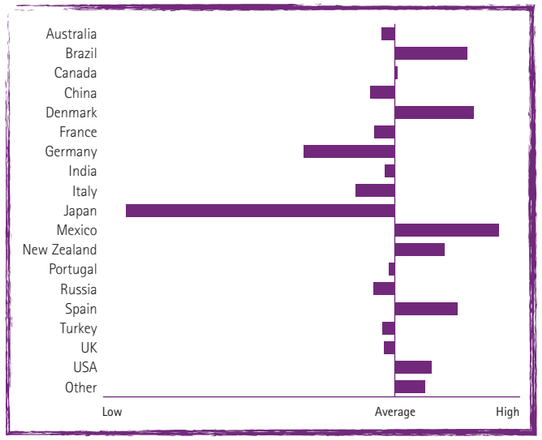


Respondents in **Russia** and **Japan** feel least comfortable about disclosing infertility to partner, family and friends.

EASE OF DISCLOSING INFERTILITY TO PARTNER, FAMILY & FRIENDS

Japan reports the least positive attitudes towards fertility treatment. Among the other countries, positive attitudes towards fertility are lower in **Germany** and higher in **Mexico**, **Denmark** and **Brazil**.

POSITIVE ATTITUDES TOWARDS FERTILITY TREATMENT



Perspective from J. Boivin

This study reveals a number of factors that, together with the level of treatment access, help to explain why many couples do not pursue treatment and why the level of treatment uptake differs from one country to another.

At a minimum, people need to realise their risk for a fertility problem and need to be discussing this problem with their partner and close ones to initiate treatment. The following areas merit further discussion and research:

Lifting taboos. **It is understandable that we may experience discomfort discussing infertility or consider (in)fertility a very private topic. Yet for some people openness to discuss fertility issues may be the deciding factor between becoming a parent or not. How can we create an environment where couples looking to conceive can feel at ease discussing their fertility concerns?**

Increasing knowledge. **Many do not suspect a potential problem when they should already be seeking help, reducing their chances of conceiving over time. More effort is needed to educate couples on when to seek medical advice and on what risk factors affecting fertility should be avoided or may warrant earlier medical investigation.**

Providing balanced information about treatment. **Positive attitudes towards fertility treatments play a critical role in the decision to seek help. Attitudes are very much informed through passive exposure (media, internet, public campaigns). Few other medical treatments have caused as much ongoing debate or controversy and this may disproportionately affect what people think of these interventions. It is important to ensure that people have access to balanced and factual information about different aspects of fertility treatments on which to base the fertility decisions that will affect the rest of their lives.**

3. How much do people really know about fertility?

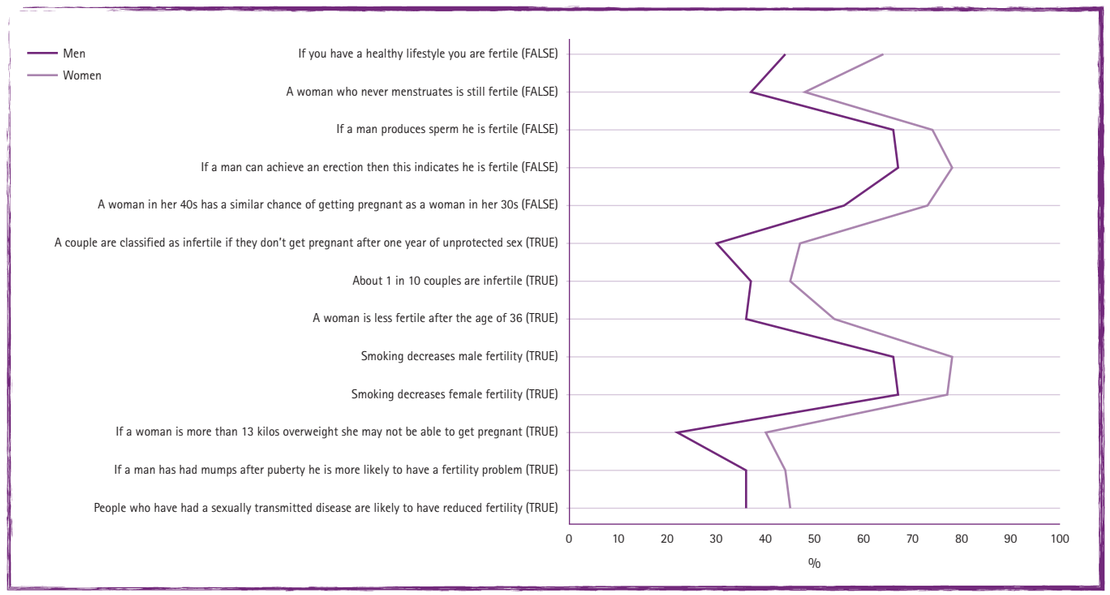
Starting Families reveals that fertility knowledge is generally low and varies considerably across countries. The **UK**, **Denmark** and **Australia** show the greatest overall knowledge of fertility, while **Turkey**, **Japan** and **China** show the least.

Men are less knowledgeable about fertility than women. The level of male knowledge is the lowest in **Turkey** and the highest in **Denmark**, **Australia**, **Portugal** and the **UK**.

Fertility knowledge is poorest when it comes to understanding fertility risk factors and the facts that help people seek timely medical advice:

- Only 44% of people know that a couple is classified as infertile if they fail to conceive after 12 months of trying. The level of knowledge ranges from 70% in **New Zealand** to 33% in **Italy** and 20% in **Russia**
- Half of respondents wrongly believe that women in their 40s have a similar chance of getting pregnant as women in their 30s. The percentage of correct answers ranges from 12% in **Turkey** to about 50% in the **US** and **Brazil** and 78% in **New Zealand**
- Only 42% know that mumps after puberty can affect male fertility, ranging from 5% in **Turkey** to 57% in **France** and the **UK**
- Only 32% of people are aware that female obesity may reduce fertility. The knowledge ranges from about 20% in **Russia** and **Japan** to 73% in **New Zealand**
- Only 44% know that sexually transmitted diseases may have a negative impact on fertility. Awareness ranges from 6% in **Turkey** to about 30% in **Germany**, **Italy** and **India** and 74% in the **UK**

Fertility knowledge of men vs. women (% correct answers)

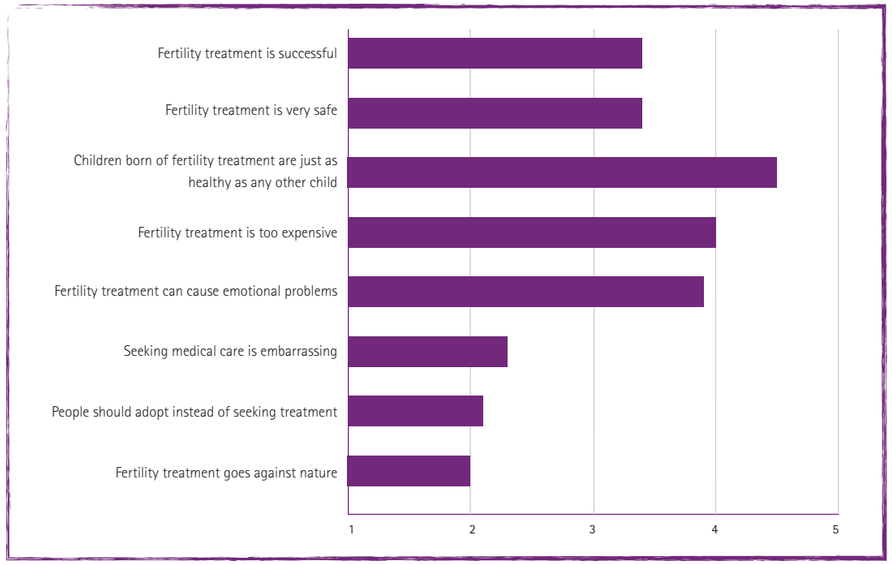


4. What do people know and think about treatment options?

Most people are aware of where they can get medical advice and know of treatments available. Treatments people are most aware of include lifestyle changes, followed by complex procedures like in vitro fertilisation (IVF) and then medications or injections to restore ovulation. **Japan**, **India**, **China** and **Russia** stand out as the countries with the lowest awareness across advice and treatment options.

The majority of respondents agree that fertility treatments are safe and successful and that children born of fertility treatment are just as healthy as any others. People generally do not consider fertility treatments to be 'against nature' or something that should be dismissed in favour of adoption. There is a strong feeling that treatment is expensive and can be stressful.

Attitudes towards fertility treatment (1=strongly disagree, 5=strongly agree)

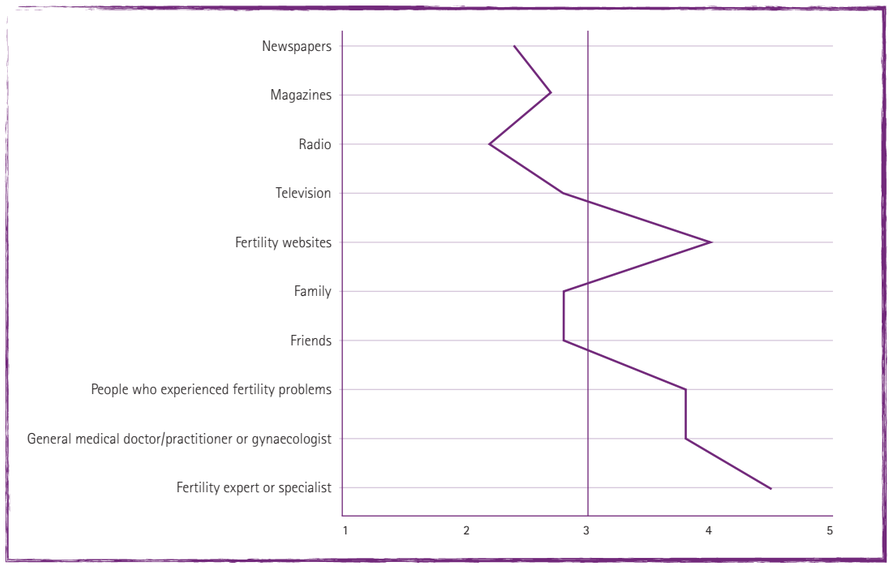


5. Are people getting helpful information about fertility?

People turn to a variety of sources for information about fertility, but not all are equal when it comes to being helpful:

- Fertility specialists and fertility websites are seen as the most helpful sources. Interestingly, people view the information received from general doctors and gynaecologists as 'helpful' or even 'less helpful' than information from the internet
- The mass media (newspapers, magazines, radio and television) is not seen as particularly helpful. Perception of the quality of fertility specific information presented in mass media is mixed according to country, but no country rates the quality as good
- Negative attitudes to treatment are associated with a less favourable perception of the quality of information in the media and of its portrayal of fertility treatment. In contrast positive attitudes to treatment are associated with more favourable perceptions of the quality of information and of how fertility treatments are portrayed

Helpfulness of information (1=not at all helpful, 5=extremely helpful)



Section 2
Fertility: The Real Story – Facts and perspectives on fertility

Fertility: The Real Story – Facts and perspectives on fertility

1. Fertility facts & figures

Infertility is a disease. The World Health Organization defines infertility as a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular, unprotected sexual intercourse.[2]

Over 70 million couples experience fertility problems.[1]

Infertility is a couple issue. Male infertility is the primary diagnosis in approximately 25% of cases and contributes to a further 15% to 25% of the remaining cases. 20% of cases remain unexplained.[3]

Modern fertility treatments are effective. In a recent Danish study 69.4% of treated couples had at least one child within 5 years. Only 6.6% conceived spontaneously outside treatment.[4]

About 8 out of 10 couples seeking medical care do not start, or persevere with the treatment journey.[5-10] Emotional distress is the key reason mentioned by couples who discontinue treatment.[11]

2. Fertility pathway

Trying

- Have unprotected sex approximately every 2-3 days
- Try to have sex during the female partner's fertile phase, which is at the time of or just before ovulation (-14 days from the length of the female partner's average menstrual cycle)
- Live a healthy, balanced lifestyle
- Relax... 80% of couples get pregnant within the first 12-18 months

Seeking medical help

- Typically, a doctor or gynaecologist will provide information about fertility and may carry out preliminary tests
- Couples may be referred to a specially trained fertility expert for comprehensive testing and treatment

Testing & diagnosis

- Tests are designed to assess the following four key elements:
  - The right balance of hormones to allow egg and sperm development and support
  - The female's ovarian reserve and whether ovulation is taking place
  - The quantity and quality of male sperm
  - The ability of both the male and female reproductive mechanisms to allow fertilisation to take place
- Tests may need to be repeated, requiring two or three visits to the clinic

Day clinic

- In some cases simple surgery is all that is needed to allow a couple to conceive naturally. Several modern techniques for both men and woman (e.g. laparoscopy and hysteroscopy) can be completed in a simple day visit to a clinic

Oral medication

- If the female partner is not ovulating, she may be advised to take a drug such as clomiphene citrate, the most commonly used drug to stimulate ovulation

Hormone treatment

- Hormone injections may be required if one or both partners has a problem producing the necessary amount of hormones to produce enough healthy sperm and eggs
- Injections can normally be administered by couples at home
- Regular check-ups at a clinic will be needed to ensure that the hormones are effective
- Hormone treatment may be combined with other fertility treatments, depending on a couple's diagnosis

Assisted reproductive techniques (ART)

- If other treatments fail and the problem is with a couple's ability to achieve fertilisation a range of modern techniques may help:
- **In Vitro Fertilisation (IVF).** Hormonal injections are given to a woman to stimulate the production and release of multiple eggs. Once the eggs have matured, a fertility specialist retrieves them from the woman's ovaries. Eggs and sperm are united in a laboratory dish and two-three days later, one or more embryos are transferred into the woman's uterus
- **Intracytoplasmic Sperm Injection (ICSI)** is a lab procedure where a single sperm is injected into the egg cell to help fertilisation. ICSI is often performed in conjunction with IVF

Adapted from The Assisted Conception Taskforce (ACT) booklet: *Trying for a baby? Your step-by-step guide to assisted conception.* www.assistedconception.net

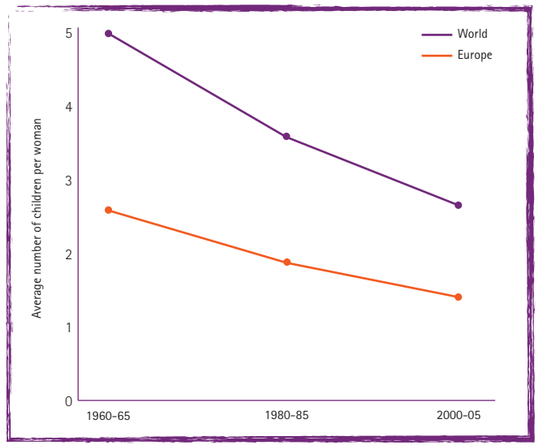
3. History of fertility treatments

1924-1949	Irradiation of the ovaries and pituitary (the gland producing follicle stimulating hormone – FSH – and luteinizing hormone – LH) is first used to stimulate ovarian function. The treatment is stopped in 1965
1941	Pregnant mare serum gonadotrophin (PMSG) and human chorionic gonadotrophin (hCG) is used to treat infertile women
1949-1950	First human menopausal gonadotrophin (hMG) is extracted from post-menopausal women's urine and registered by Serono as Pergonal
1962	First baby girl was born after treatment with Pergonal
1970s	FSH us known to be the primary hormone causing follicular development
1978	Louise Brown, first IVF baby, is born
1980s	Serono develops Metrodin, the first 'biologically pure' FSH still extracted from urine
1993	Serono registers Metrodin HP, highly purified FSH preparation
1995	Serono registers Gonal-f, the first human FSH produced with the recombinant DNA technology that no longer requires extracting FSH from human urine
2001	Serono has a full recombinant human gonadotrophin portfolio including FSH, LH and hCG

4. Fertility in the 21st century

Fertility rates are declining globally.[12] In Europe fertility rates have fallen to 1.41 children per woman[12], well below the 2.1 children per woman required to support the size of the population. This may bring new socio-economic challenges around supporting aging populations and sustaining economic growth.

Global fertility rates[12]



Infertility is common. It is estimated that 9.6% of couples face infertility.[1] The trend of delaying parenthood may contribute to the increasing number of couples struggling to conceive.

The majority of couples with infertility remain untreated. Although effective treatments are available, only 56% of infertile couples seek and 22% receive medical care against infertility.[1] Persisting social and personal barriers, low fertility awareness and limited treatment access and reimbursement, are among key factors contributing to this gap.

Access to advanced fertility treatments varies significantly across countries. It is estimated that in vitro fertilisation (IVF) and intracytoplasmic sperm injection (ICSI) treatments are available in 45 out of 191 World Health Organization (WHO) member states.[13] The number of treatment cycles performed per million population ranges from 2 in Guatemala to 3,688 in Israel.[14]

Advanced fertility treatments are not reimbursed in the majority of countries. Full or partial coverage of assisted reproductive technology (ART) treatments is available only in Western Europe, Australia, Israel, Korea and some US states. When available, access to ART reimbursement is often restricted by age of woman, number of children and number of treatment attempts.

5. Fertility myths

IVF can fix anything. Success rates for IVF vary and while they can be as high as 75%[4], the higher rates of success are usually achieved after multiple attempts. And invariably, younger women fare better, although egg donation can improve the chances of older women conceiving through IVF.

The research assessing the degree to which IVF can help older women increase their chances of conceiving concludes that if a woman postpones an attempt to become pregnant by 5 years (from age 30 to 35), her chances of conceiving will be reduced by 9% and ART will only make up for 4% of the reduction. A woman aged 35 to 40 years will have a 25% reduction in her chances of conceiving and ART will make up for only 7% of that.[15]

This sends a clear message to women 35 years or over who have not conceived after six months of trying – do not delay seeking help because even the most advanced treatments cannot make up all births lost by the natural decline of fertility with age.

Fertility treatments mean multiple births. Using drugs to stimulate the ovaries to produce multiple eggs can result in multiple embryos and multiple pregnancies. And transferring more than one embryo per IVF treatment cycle may result in more than one baby being born.

This may sound like an attractive and cost-effective strategy for couples desperate to have a baby but who cannot afford multiple IVF attempts. It may also be appealing to couples who face time pressures on becoming a parent because of their age. However, multiple pregnancies pose potentially serious health consequences for both mothers and children. The ESHRE Task Force on Ethics and Law recommended in 2003 that the aim of fertility treatment should be to produce a singleton pregnancy only. They also recommended that women under 38, who have normal ovarian function and a good fertilisation rate, should have only one or two embryos transferred.[16]

Policies that restrict the number of embryos transferred are already effectively reducing multiple birth rates. Globally, since 2000, the percentage of single embryo transfers has increased by almost 2%, with the highest proportion of such transfers being seen in Finland and Sweden (38.5% and 30.5% respectively). As a result, the percentage of triplet births is very low, at just 0.2%, in both countries.[17]

It's encouraging to note too that although fewer embryos are being transferred each time, this has not resulted in a drop in the number of babies born overall. In Sweden, despite a successive reduction in the number of embryos transferred, delivery rates per treatment cycle have been maintained at around 26%[18].

6. The real costs of infertility

Advanced fertility treatments are not reimbursed in the majority of countries. Reimbursement of fertility treatments is rarely a priority on the agenda of policy-makers and payers. Often the discussion focuses on the cost-effectiveness of investing limited public resources into infertility treatments compared to other healthcare priorities. While specific circumstances may differ by country it is important that the decision-makers and public consider a broader perspective.

Infertility is a disease. The World Health Organization (WHO) defines infertility as a 'disease of the reproductive system'.[2] Infertility prevents people from realising an important life goal – the possibility to parent a genetically related child or a child created within the current relationship.[18]

Infertility can create inequality. The ability to have children should not depend on personal income. For many couples the cost of advanced treatments is high. The cost of a standard IVF cycle ranges from 12% of an individual's annual income in Japan to 50% in the US.[19] In developing countries like China and India, the cost of IVF can be 50% higher than the gross national income per capita.[20] At the same time, the cost of providing treatment is relatively low for a society. In Scandinavian countries, where the levels of ART utilisation and reimbursement are among the highest in the world, it accounts for less than 0.2% of the total healthcare expenditure.[19]

Lack of reimbursement goes hand in hand with health risks and costs of multiple births. When paying for treatment themselves couples have a strong financial incentive to achieve pregnancy in the minimum number of treatment cycles. Attempts to increase pregnancy chances by transferring more embryos, result in multiple births that create health risks for mothers and children, translating into higher healthcare costs. For instance the maternal and neo-natal cost of a singleton pregnancy in the UK is estimated at £3,313 compared to £9,122 for twins and £32,354 for triples.[21] Sweden, where IVF is well reimbursed, succeeded in reducing multiple birth rates from 34% in 1991 to 5% in 2004 thanks to single embryo transfer policies.[17]

ART can support total fertility rates. Many countries face significant long-term socio-economic challenges due to declining fertility rates and aging populations. A study comparing the use of ART in Denmark and in the UK concluded that increasing IVF uptake in the UK to Danish levels could result in the UK total fertility rate increasing from 1.64 to 1.68 children per woman. Further, it concluded that the direct costs associated with adopting ART as a population policy are comparable to those of existing policies commonly used by governments to influence fertility.[22]

Denmark – the case study

Denmark has one of the highest uptakes of infertility treatments – 4.2% of babies in 2002 were born due to assisted reproductive technologies, compared to just 1.4% in the UK and 1.2% in the US. In Denmark, IVF is widely accepted, publicly subsidised* and waiting times for treatment are short. This has helped keep Denmark's birth rate high at 1.9 children per woman, close to the 2.1 babies per woman needed to maintain population levels.[22]

* The provision of reimbursement for ART in Denmark is currently under legislative review

7. An IVF success story

43 year old Helen and her husband Steven (51) have two children – Nathan and Scarlet – thanks to IVF.

Helen tells the story of their journey to parenthood.

"At the age of 37, I had been trying to have a baby with my husband Steven for six years, which includes a year of having infertility tests. We were desperate to have children; it was the most important thing in our lives and for me, I felt that I wouldn't have got to the next stage of my life if I hadn't managed to have children. My life just wouldn't have been as good as it could have been.

We both had very busy jobs and thought that getting pregnant would 'just happen' but when it didn't we visited our family doctor to find out why we were struggling. There didn't appear to be any particular reason though and so I had a laparoscopy and 3 cycles of clomiphene citrate to try and stimulate my ovulation. This didn't work so we continued to try to conceive naturally, but we became frustrated by the fact that our sex life quickly became a mechanical routine.

I had a friend who was going through IVF treatment and she eventually took me aside and told me to be more proactive about our fertility problem. I immediately called our doctor and demanded a referral to a fertility clinic as a private patient.

Right from the start, Steve and I opted for IVF because of our age and we decided we would pay for the treatment ourselves so that we could get on with it quickly. Neither of us thought we'd get pregnant straight away so we were quite relaxed about the whole experience and the transfer of our two embryos. Maybe our being so relaxed is why I got pregnant straight away, with twins. Sadly, we lost one twin at 12 weeks but the rest of my pregnancy was brilliant and Nathan was born on Christmas Day 2003.

When Nathan was about two and a half years old, Steve and I decided the time was right to try for another baby. IVF didn't work for us this time round and I was also diagnosed with a heart problem that meant I needed treatment for that and a complete break from trying for a baby for three months. By this time, I was 39 and was told that the quality of my eggs was rapidly declining. There wasn't any time to wait if we were to try and achieve our dream of having another child.

As soon as I was given the all-clear we gave IVF another go, and had three embryos transferred during our first cycle of treatment. Just like our very first attempt, I became pregnant straight way, with one baby this time. Scarlet was born, after another good pregnancy, on 21 March 2007.

Both of our children are really healthy, happy and intelligent. Nathan, at 6 years old, wears clothes for 8-9 year olds, has a reading age of 10 years and is great at maths. He's also never missed a day of school in his life!"

IVF – the emotions

The level of distress in infertility patients tends to increase as treatment intensifies and as the duration of treatment continues.[23] By the time couples get to try IVF they will have gone through many months of trying to conceive and failures of less complex treatments, so their distress is high.

Up to 54% of couples drop out of IVF, without achieving pregnancy, before they complete three cycles of treatment.[7] The psychological burden is the key reason for this.[7,11]

Most stressful experiences have to do with the disappointments of treatment failure or waiting for treatment results.

Rating of stress events in an IVF cycle[24]	Extremely stressful and very stressful
Losing a pregnancy	94%
Finding out that the cycle had been unsuccessful	87%
Waiting to find out if pregnant after embryo transfer	81%
Waiting to find out how many eggs had fertilised	68%
Having oocyte retrieval	52%

Patient preparation and psychological counseling are needed to help patients manage the demands of treatment, as pre-treatment levels of depression are predictive of patient drop-out after only one IVF cycle.[23] Most couples will need multiple treatment cycles to succeed.

Looking back, 100% of couples who had a baby after treatment, and 91% of those who didn't, say they are happy they tried IVF.[24]

References

1 Boivin J et al. International estimates of infertility prevalence and treatment seeking: potential need and demand for infertility medical care. *Human Reproduction.* 2007;22(6):1506-1512

2 Zegers-Hochschild F et al. The International Committee for Monitoring Assisted Reproductive Technology (ICMART) and the World Health Organization (WHO) revised glossary on ART terminology. *Human Reproduction.* 2009;24(11):2683-2687

3 Collins J A. Evidence-based infertility: evaluation of the female partner. *International Congress Series.* 2004;1266:57-62

4 Pinbourg A et al. Prospective longitudinal cohort study on cumulative 5-year delivery and adoption rates among 1338 couples initiating infertility treatment. *Human Reproduction.* 2009;24(4):991-999

5 Stakeholder Insight: Infertility. *Datamonitor.* 2008

6 Collins J A , Van Steirteghem A. Overall prognosis with current treatment of infertility. *Human Reproduction.* 2004;10(4):309-316

7 Olivius K et al. Cumulative probability of live birth after three in vitro fertilization/intracytoplasmic sperm injection cycles. *Fertility & Sterility.* 2002;77(3):505-510

8 Land J A et al. Patient dropout in an assisted reproductive technology program: implications for pregnancy rates. *Fertility & Sterility.* 1997;68(2):278-281

9 Schroder A K et al. Patient dropout in an assisted reproductive technology program: implications for pregnancy rates. *RBM Online.* 2004;5(5):600-606

10 Rajkhowa M et al. Reasons for discontinuation of IVF treatment: a questionnaire study. *Human Reproduction.* 2006;21(2):358–363

11 Brandes M et al. When and why do sub fertile couples discontinue their fertility care? A longitudinal cohort study in a secondary care sub fertility population. *Human Reproduction.* 2009;24(12):3127-3135

12 Europe In Figures. *Eurostat Yearbook.* p155, 2009

13 Collins JA. An international survey of the health economics of IVF and ICSI. *Human Reproduction.* 2002;8(3):265-277.

14 Zegers-Hochschild F et al. International Committee for Monitoring Assisted Reproductive Technology (ICMART). World collaborative report on assisted reproductive technology, 2002. *Human Reproduction.* 2009;24(9):2310-2320

15 Leridon, H. Can assisted reproductive technology compensate for the natural decline in fertility with age? *Human Reproduction.* 2004;19(7):1548-1553

16 The ESHRE Task Force on Ethics and Law 6. Ethical issues related to multiple pregnancies in medically assisted procreation. *Human Reproduction.* 2003;18(9):1976-1979

17 Karlström P O, Bergh C. Reducing the number of embryos transferred in Sweden-impact on delivery and multiple birth rates. *Human Reproduction.* 2007;22(8):2202–2207

18 ESHRE Task Force on Ethics and Law 14. Equity of access to assisted reproductive technology. *Human Reproduction.* 2008;23(4):772–774

19 Chambers G M et al. The economic impact of assisted reproductive technology: a review of selected developed countries. *Fertility & Sterility.* 2009;91(6):2281-2294

20 Vayena E et al. Assisted reproductive technologies in developing countries: are we caring yet? *Fertility & Sterility.* 2009;92(2):413-416

21 Ledger V L et al. The costs to the NHS of multiple births after IVF treatment in the UK. BJOG: *An International Journal of Obstetrics & Gynaecology.* 2006;13(1):21-25

22 Hoorens S et al. Can assisted reproductive technologies help to offset population ageing? An assessment of the demographic and economic impact of ART in Denmark and UK. *Human Reproduction.* 2007;22(9):2471–2475

23 Cousineau T M, Domar A D. Psychological Impact of Infertility. *Best Practice & Research Clinical Obstetrics and Gynaecology.* 2007;21(2):293-308

24 Hammarberg K et al. Women's experience in IVF: a follow-up study. *Human Reproduction.* 2001;16(2):374-383

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