How to Factor Your Biological Clock into Life and Career Choices
MISSION

To empower people to make more informed and personalized decisions around fertility, reproductive health, and family roadmapping.

SERVICES

- Fertility coaching
- Fertility education

Leslie Feingerts, MBA
Founder of Fertility Forward
Fertilityfwd.com
Most highly educated females start motherhood at 30+

AGE AT BIRTH OF FIRST CHILD, BY EDUCATION ATTAINMENT

<table>
<thead>
<tr>
<th>Education Attainment</th>
<th>Median Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master’s degree+</td>
<td>30 yrs</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>28 yrs</td>
</tr>
<tr>
<td>Two-year degree / some college</td>
<td>25 yrs</td>
</tr>
<tr>
<td>High school or less</td>
<td>24 yrs</td>
</tr>
</tbody>
</table>

Note: Based on women ages 40-50 who have ever given birth
50% of residents & fellows reported delaying childbearing due to medical training.

Source: Wang et al, J Fert Pres, 2021
Showed that even though physicians were more likely to start childbearing later, they ultimately achieved a similar cumulative probability of one live birth by age 37 compared to non-physicians.
Female physicians have an increased likelihood of...

- **Time to Pregnancy More Than 1 Year**
  - 18.4% (vs 9.8%)

- **High Risk Pregnancies**
  - 26.3% (vs 16.3%)

- **Undergoing Fertility Treatments**
  - 8.5% (vs 3.4%)

Source: Gyorffy et al, BMC Womens Health, 2014

Based on a 2014 survey of 3,000 female physicians and 1,000 female non-physicians...
There is no ideal time to have kids

<table>
<thead>
<tr>
<th>Stage</th>
<th>Duration</th>
<th>Average Age at Start</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical School</td>
<td>4 years</td>
<td>24 years old</td>
</tr>
<tr>
<td>Internship</td>
<td>1 year</td>
<td>28 years old</td>
</tr>
<tr>
<td>Residency</td>
<td>3-7 years</td>
<td>29 years old</td>
</tr>
<tr>
<td>Fellowship</td>
<td>1-3 years</td>
<td>32-36 years old</td>
</tr>
<tr>
<td>Attending</td>
<td>Indefinite</td>
<td>33-39 years old</td>
</tr>
</tbody>
</table>
Today's goal

Equip you with basic fertility information to incorporate into your lives and careers
Fertility 101

Including conception, fertility challenges, and what you can do
Conception
Egg + Sperm = Embryo
Conception can only occur within the fertile window*

*Fertility windows and menstrual cycles vary from person to person.

Chance of conception is highest 2-3 days per month.
86% of people aged 25-34 conceive within one year.

Chances of getting pregnant per month are 25% at best.

Source: https://www.mother.ly/child/we-were-wondering-how-long-will-it-take-me-to-get-pregnant
Fertility Challenges
1 in 8 couples have a hard time conceiving or carrying a baby to term

Source: 2006-2010 National Survey of Family Growth, CDC
Infertility cases today are split across male, female, and unknown/combined factors.
“The biological clock? I don’t even own a watch.”

-Sarah Mlynowsk, Author
Egg quantity and quality decline with age

Source: Yen & Jaffe, 2014
Egg quantity and quality decline with age

1 in 5 pregnancies end in miscarriage

Source: Mayo Clinic
What you can do
How to take charge of your fertility

Live a fertility friendly lifestyle

Get a fertility assessment

Freeze eggs or embryos

Start trying to conceive

Consider tradeoffs of starting/waiting

Use apps and kits to track ovulation
Control what you can: your lifestyle!

- Moderate alcohol/caffeine
- Minimal to no smoking
- Body Mass Index between 20-25
- Avoid reproductive toxins
- Moderate exercise

What does a fertility assessment tell?

Indicates if you have more or fewer eggs than average

Suggests if you might hit menopause sooner than average

Provides a sense of estimated egg freezing and IVF outcomes

May suggest reproductive disorder (e.g. PCOS)

Source: https://modernfertility.com/
Fertility hormone tests give you a snapshot of your egg quantity (not quality or chance of pregnancy).
Fertility hormone tests cannot perfectly predict a pregnancy outcome.
Egg/Embryo Freezing
Basic steps of in vitro fertilization

1. **Ovarian stimulation**
   - Woman takes drugs to grow eggs

2. **Egg retrieval**
   - Doctor surgically retrieves eggs

3. **Egg fertilization**
   - Laboratory fertilizes eggs with sperm

4. **Embryo growth**
   - Laboratory grows embryos

5. **Embryo transfer**
   - Doctor transfers embryos into woman's uterus

**Egg freezing**

**Embryo freezing**

Source: FertilityIQ
Egg freezing is more successful when done at age 35 or younger.
Age determines how many eggs doctors recommend freezing

EGG FREEZING SUCCESS RATES BY AGE AT FREEZE AND NUMBER OF EGGS FROZEN

Source: Goldman, Fox et al (pulled from FertilityIQ)
Family roadmapping
Family roadmapping

Core principles

- Stay true to your values
- Be intentional
- Be adaptable
- Commit to making it work
Working backwards

Do I think I want children?

How many children do I think I want?
My friend who wanted 3 kids before 40

Baby #1
- TTC* 6 mo.
- PREG. 9 mo.
- POST-PARTUM 18 mo.

Baby #2
- TTC 10 mo.
- PREG. 9 mo.
- POST-PARTUM 18 mo.

Baby #3
- TTC 11 mo.
- PREG. 9 mo.

TTC = Trying to Conceive

Last child born at age 39
I thought my timeline would look like this...

Baby #1

Baby #2

Baby #3

3rd child born at age 38
In reality, my timeline looked like this

31 32 33 34 35 36 37 38 39 40

BUSINESS SCHOOL

Baby #1

TTC 11 mo. IUI + IVF 13 mo. PREG. 9 mo. POST-PARTUM 15 mo.

TTC = Trying to Conceive

Baby #2

2nd child born at age 38

Baby #3

Last child born at age 38

TTC = Trying to Conceive
There are many paths and timelines to parenthood (if you choose that path)

The old-fashioned way (with or without a boost)

Intrauterine insemination (IUI)

Egg and embryo freezing

Egg donation, sperm donation, and/or surrogacy

Adoption

IVF

Single parenthood by choice
Takeaways
What you should remember

There are many paths and timelines to parenthood

You don’t need to sacrifice parenthood for your career. Advocate for yourself. Think about what’s important to you.

You have the best chances of conception before age 38, before egg quality and quantity take a steep decline

Fertility hormone tests can give you a sense of your egg quantity, but there is no test for egg quality
Appendix I
Evaluation of quantity: AFC

WHAT IS AFC?
An antral follicle is an egg in its late stage of development. Antral follicle count is measured by ultrasound.
Evaluation of quantity: AMH

WHAT IS AMH?
Anti-müllerian hormone (AMH) is produced by antral follicles within the ovary.

Source: Kelsey et al, PLOS One, 2011
Decline in ovarian reserve is not fixed

Source: Loy et al, PLOS One, 2017
AMH is not a predictor of pregnancy.

Source: Steiner et al, JAMA, 2017
Egg quality = embryo quality

Source: derived from Fransasiak et al, Fert Steril, 2014
Nuances of Egg Freezing
There is a wide range of egg retrieval outcomes.

Source: FertilityIQ; number of oocytes obtained by age for cryopreservation at one clinic, 2007-2014.
How do I decide how many eggs to freeze?

Age = most important

Ovarian reserve

Family roadmapping
Predicted chances of pregnancy based on age and number of eggs frozen

Hormonal contraception can temporarily suppress ovarian reserve measures.

It can take two to six months off of OCPs or NuvaRing to see a return to your “baseline” ovarian reserve.
Appendix II
Male factor infertility has multiple causes

- Obstruction
- Varicocele
- Intrinsic testicular dysfunction
- Pituitary dysfunction
- Genetic
- Lifestyle (e.g., tobacco use, marijuana/drug use, heat exposure)
- Medications (beta blockers, Ca channel blockers)
- Medical co-morbidities (obesity, diabetes)
Female factor fertility challenges are varied

- Age
- Tubal factor
- Diminished ovarian reserve
- Ovulatory dysfunction (hypothalamic amenorrhea, PCOS)
- Endometriosis

Source: www.reproductivefacts.org; Dr. Samantha Schon
Donor IUI success rates in single women and lesbian couples

Cumulative pregnancy rate (CPR) according to patient's age (years).

Source: Ferrara et al, Hum Rep, 2000