**Passage 1**

## In Vitro Fertilization: Four Decades of Reflections and Promises

The announcement of the birth of Louise Brown in 1978 through in vitro fertilization (IVF) was a major milestone in the treatment of infertile couples. This historic moment was eloquently encapsulated by Howard Jones who observed: “Eleven forty-seven p.m. Tuesday, July 25, 1978, was surely a unique moment in the life of Patrick Steptoe. This was the hour and minute he delivered Louise Brown, the world’s first baby, meticulously, lovingly, and aseptically conceived in the laboratory, but popularly referred to as ‘the world’s first test tube baby’. This midnight minute was surely a mighty moment, not only for Patrick Steptoe, but also for his scientific partner, Robert Edwards, and for their associates”. The importance of this birth to scientists, clinicians and most particularly infertile patients throughout the world cannot be overstated. This milestone is considered to be one of the major medical/scientific achievements of the twentieth century. It was the culmination of many years of work that had been simultaneously carried out in a number of centers worldwide, principally the United Kingdom, the United States and Australia. Most of the background originated from Robert Edwards’ long and enduring efforts over the previous 20 years.

## THE STORY OF ROBERT EDWARDS, NOBEL LAUREATE IN MEDICINE 2010, AND THE FIRST HUMAN IVF

Edwards’ interest in human IVF arose during his graduate studies at Edinburgh University in the early 1950s. The fundamental basis of reproductive physiology intrigued Edwards, and early in his career he conducted numerous experiments in mice exploring meiosis, ovulation, fertilization, cleavage of embryos to the blastocyst stage, implantation, fetal growth to full term and studies on altering the chromosomal complements in embryos. This comprehensive enthusiasm for spermatozoa and eggs later proved his real ambition, which was to work with human gametes and embryos and on human infertility. An intriguing possibility emerged from his studies, namely that infertile couples might be helped to have their own children by means of IVF. However, at that time human IVF was regarded as an impossibility. The thought of bringing human fertilization and embryology into scientific and medical practice was regarded with incredulity.

Lesley Brown was the second patient Patrick Steptoe, a gynecologist, and Robert Edwards treated in a natural cycle; her single oocyte was aspirated laparoscopically, inseminated quickly and transferred precisely when it reached the eight-cell stage. Edwards hoped that earlier transfer would benefit from the embryos spending less time in vitro. After a successful pregnancy, Louise Brown was born on 25 July 1978 on a momentous evening in Oldham. In the

words of Edwards, “It is hard to put into words what the occasion of her birth meant to me, and to our wonderful supportive team.”

Today, IVF is recognized as an established therapy throughout the world. To date it is estimated that some four million children have been born as a result of this procedure. Louise Brown and several other IVF children have become mothers themselves, to-date all conceiving naturally, thus providing evidence of the safety and success of IVF therapy. Today, Robert Edwards’ vision is a reality which continues to bring joy to infertile couples all over the world. It is regrettable that Patrick Steptoe was not able to share the honor of receiving the 2010 Nobel Prize in Medicine together with his colleague Robert Edwards.

## HIGHLIGHT OF IVF MILESTONES

The path to achieving the first successful human IVF procedure was paved with a rich history of novel scientific achievements. Once established as a viable procedure, IVF technology advanced rapidly. The next decade witnessed many robust innovations. Cryopreservation was introduced in the early 1980s. The birth of the first cryopreserved embryo baby was reported in 1983. During the same year, the first successful delivery following embryo donation occurred. By 1985, there were many other “firsts” in the field, including the first pregnancy by IVF using sperm aspirated from the epididymis, the first description of culture media (first published as a formula entitled Human Tubal Fluid) designed to mimic the in vivo environment to which the embryo is exposed, and the first delivery resulting from gestational surrogacy.

Micromanipulation of human oocytes and embryos was introduced in the late 1980s, leading to the first reported pregnancy after intracytoplasmic sperm injection (ICSI).

## CURRENT IVF STATUS

Worldwide, more than 70 million couples are afflicted with infertility. Since the first successful IVF procedure in 1978, the use of this and related technologies has expanded to become commonplace around the globe. Over the past decade, the use of assisted reproductive technology (ART) services has increased at a rate of 5–10% annually.

The transfer of multiple embryos in a single cycle increases the rates of multiple births. Because of the increased social costs and health risks associated with multiple births, legislation or guidelines from professional societies have been introduced in many countries restricting the number of embryos that may be transferred per IVF cycle in an effort to limit the incidence of multiple gestations.

## FUTURE OF IVF

The future of ART/IVF is encouraging. Pregnancy rates associated with IVF are high compared to those seen in the early days of the procedure. The current efficiency of IVF is more cost-effective and efficacious in achieving pregnancy than other modalities, such as injectable gonadotropins coupled with intra uterine insemination (IUI), which traditionally some have preferred. The increased efficiency of IVF has also resulted in an increased rate of multiple gestations. Recent data suggest that single embryo transfer, coupled with subsequent frozen embryo transfer, results in equivalent pregnancy rates compared with the transfer of multiple embryos, without an increase in multiple pregnancy rates. Therefore, a trend toward single embryo transfer is likely to increase in the future.

Although the development and implementation of IVF have offered the hope to infertile couples the world over, it is vital that we as a global community strictly monitor the development of applications of this technology to ensure that ethical abuses do not emerge.

## Vocabulary

infertile *a.* 不能生育的
encapsulate *vt.* 总结，概况
meticulously *adv.* 一丝不苟地
aseptically *adv.* 无菌地
conceive *vt.* 怀孕
meiosis *n.* 减数分裂
cleavage *n.* （胚胎）卵裂，分裂
chromosomal *a.* 染色体的
oocyte *n.* 卵母细胞
aspirate *vt.* 用吸管将体腔中液体抽出，抽吸
laparoscopically *adv.* （借助）腹腔镜
inseminate *vt.* 使受精
viable *a.* 切实可行的
cryopreservation *n.* 冷冻保存，低温储藏
tubal *a.* 输卵管的
surrogacy *n.* 代孕
micromanipulation *n.* 显微操纵（术）
intracytoplasmic *a.* 胞浆内的
commonplace *a.* 普通的，平常的
ethical *a.* 伦理的

**Reading Comprehension**

**Directions:** *There are four suggested answers to each of the following questions. Choose the best one according to the passage you have just read.*

1. The first test tube baby was delivered by _____.
   A. Louise Brown
   B. Howard Jones
   C. Patrick Steptoe
   D. Robert Edwards
2. Retrospecting the mighty moment of Louise's birth, the author seems to emphasize _____.
   A. its meaning to Robert Edwards and his associates
   B. its achievement as a collaborative efforts
   C. its significance to the science community
   D. its importance to the infertile couples
3. Which of the following statements is NOT true about Robert Edwards?
   A. He graduated from Edinburgh University.
   B. His research encountered much incredulity.
   C. He cooperated with Patrick Steptoe in the birth of Louise Brown.
   D. He conducted numerous experiments in humans before Lesley Brown.
4. The order of procedures in a typical IVF should be _____.
   A. aspiration, insemination, transfer, and pregnancy
   B. pregnancy, aspiration, insemination, and transfer
   C. insemination, aspiration, pregnancy, and transfer
   D. transfer, insemination, aspiration, and pregnancy
5. All of the following are innovations based on IVF EXCEPT _____.
   A. sperm aspiration
   B. artificial insemination
   C. Human Tubal Fluid
   D. cryopreservation
6. Compared with IUI, IVF _____.
   A. is less efficient
   B. is less expensive
   C. is traditionally more popular
   D. is more likely to result in multiple gestations

**Passage 2**

## Expecting the Expected

Expectations are the anticipation of our experiences, from the mundane "What? We're out of milk?" to the emergency department patient's "What? You want to admit me to the hospital?" We as humans like to try to predict the future; it makes us feel more in control of our destiny when we're frequently just bystanders of chance. People love to talk about their cars as reliable because they like having their expectation met that the car is going to start when they turn the key. People will tell you how they got seated at a really nice restaurant without a reservation because their expectation was so low that they would ever get a table.

It's really the same in the ED. You read a triage note of a patient with six seemingly unrelated complaints, and your stomach fills with dread. You look at your watch and figure, "Yeah, I've got 30 minutes to spare," and march in. About 30 seconds in, you immediately realize they're actually all related issues, and you make the diagnosis of carbon monoxide poisoning in five minutes. Low expectations, high yield. Or the patient who the nurse warns you is "all drama," and you walk in the room, and find the patient actually to be quite reasonable and pleasant. Wow, that wasn't so bad.

So why not use this to our advantage? We can set appropriate expectations — for our patients, our colleagues, and even ourselves — to make sure everyone is on the same page, knows what's expected and reasonable, and what may happen in the emergency department.

### PATIENTS

At wit's end, on a busy, post-holiday Tuesday, a patient with a runny nose and cough came up to my friend Lisa to complain about having waited an hour without being seen. In a very direct but polite tone, Lisa told the man, "Sir, if you think that that's unreasonable on a day like today with very, very sick patients, I think you need to adjust your expectations." (I, of course, started laughing because I'm a jerk like that, but I think Lisa's intent was spot on.)

We should make sure patients know a time frame and course, and understand that that time course may change. "Under-promise and over-deliver" is a well known business strategy, but I think it's pretty appropriate in medicine as well. Letting them know that blood work and a CT scan usually takes three hours but can be longer if we have critically ill or trauma patients gives patients a time frame before they start giving you the stink eye. You can also let patients know immediately that they're going to be admitted regardless of the workup in the ED so that can sink in from the very beginning (especially when they were *expecting* to go home.) Similarly, I've found that with VIP patients (who are not used to having a stranger direct *them* and make decisions about *them*), it

also helps to let them know how things work in the ED and set boundaries and limits of what's appropriate to negotiate and what's not up for discussion.

Setting expectations with patients may help reassure them as well. Patients with allergic reactions without a clear new exposure, vague neurologic complaints with a negative workup, and even a MRSA abscess prompt me to let them know how commonly I see these things, and the anxiety on their faces melts away as they realize they probably don't have some awful, terrible, fatal diagnosis. And we can let patients know that frequently we don't figure out[6] the cause of belly pain with normal labs and imaging, and that's pretty common as well.

## OUR COLLEAGUES

I think out of habit, I frequently go up to nurses after I've seen a patient of theirs and summarize my plan with them, "Oh man, I have *no* idea what's wrong with this guy, so we'll get some basic labs," or "I really don't like this EKG. I'm going to have cards see him, but can you make sure he's got a good IV? I may need to do a CT angio on him." It makes sure we're on the same page, and frequently the nurses will drop in little extra bits of helpful information they've heard while they're rooming the patient.

Different residents need different sets of expectations sometimes. I want the interns to give me a formal, thorough presentation, but the seniors can give me a briefer one. I think even giving them simple feedback by saying, "You need to do a full neuro exam on patients with headache," teaches them how you evaluate a chief complaint and what they should expect to do on every patient with that complaint.

Finally, any good "how to talk to consultants" discussion is really all about setting expectations with them. Being very clear that "I want you to see the patient and drop a note" makes sure everyone knows this is not a curbside question, and asking the consultant what time you can expect him in the ED lets him know you want him there promptly.

## OURSELVES

On those post-holiday[6] Tuesdays, walking into a shift knowing you're going to work hard may make your day a little less painful. Or running your board and realizing that you can probably make a disposition decision on everyone in the department may give you the sense of achievement you need to finish that shift when you're getting crushed.

Part of why we went into emergency medicine is probably because we *like* the unexpected. Who and what is going to walk through the door next? Will this patient decompensate? Is this guy going to lose his airway in CT? We prepare for the unexpected all the time. By preparing for expectations, too, we can make our emergency departments an even smoother, more predictable

battle zone of — let's be honest here — slightly controlled chaos and random chance.

## Vocabulary

triage *n.* 伤员拣别分类，治疗分类
runny *a.* 流鼻涕的；a runny nose 流鼻涕
allergic *a.* 过敏的
abscess *n.* 脓肿
EKG electrocardiogram 心电图
IV intravenous 静脉注射
angio *n.* angiography 的缩写；血管造影
resident *n.* 住院医生
intern *n.* 实习医生
consultant *n.* 会诊医生
decompensate *v.* 代偿失调
predictable *a.* 可预知的
chaos *n.* 混乱，无序
random *a.* 随机的

**Reading Comprehension**

**Directions:** *There are four suggested answers to each of the following questions. Choose the best one according to the passage you have just read.*

1. In the first paragraph, the author cites several scenarios to mainly illustrate_____.
   A. that we humans are fond of predicting the future
   B. that we humans are able to control our destiny
   C. that we humans are just bystanders of chance
   D. that we humans are mundane

2. Setting appropriate expectations for all people involved will _____.
   A. make things in the emergency department less dramatic
   B. contribute to mutual understanding of the involved
   C. ensure the satisfaction of the expectations
   D. lead to a decline of conflicts

3. What can make a patient give doctors a stink eye?
   A. Loss of patience.
   B. Low expectations.
   C. Too many basic tests.
   D. "Under-promise and over-deliver."

4. The author often involves nurses in his work because_____.
   A. nurses are more helpful than other medical professionals
   B. nurses will make sure the patients get all necessary tests

C. nurses can help him room the patients
D. nurses need to synchronize with him

5. Setting appropriate expectations for doctors themselves engages_____.
   A. total control over chaos in the emergency department
   B. preparation for both the unexpected and the expected
   C. a disposition decision on everyone in the department
   D. prediction of the patients' outcome

## Passage 3

**Directions:** There are 10 blanks in the following passage. For each blank there are four choices marked **A**, **B**, **C**, and **D**. You should choose the ONE that best fits into the passage.

Everyone experiences stress. Your body is pre-wired to deal with it — 1 it is expected or not. This response 2 the stress response, or fight or flight.

When you feel stress, what happens to make your body do the things it does? According to the experts, three glands "go into gear" and work together to help you 3 change or a stressful situation. Two are in your brain and are called the hypothalamus and the pituitary gland. The third, the adrenal glands, are on top of your 4 . The hypothalamus 5 your pituitary gland that it is time to tell your adrenal glands to release the stress hormones called epinephrine, norepinenphrine, and cortisol. These chemicals increase your heart rate and breathing and provide 6 of energy — which is useful if you're trying to 7 a bear! These chemicals can also control body temperature, keep you from getting hungry, and make you less 8 to pain. Because everyone is different, everyone will have different signs. Not to worry — everyone experiences these physical signs of stress sometimes. The good news is that, once things return to normal, your body will 9 the stress response. After some rest and relaxation, you'll be good 10 new.

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|---|---|---|---|---|---|---|---|
| **1.** | A. | if | B. | whether | C. | although | D. despite |
| **2.** | A. | is called | B. | is called for | C. | is known for | D. is known as |
| **3.** | A. | live with | B. | put up with | C. | go along with | D. cope with |
| **4.** | A. | liver | B. | kidneys | C. | lungs | D. stomach |
| **5.** | A. | suggests | B. | signs | C. | signals | D. sighs |
| **6.** | A. | an amount | B. | a burst | C. | a quantity | D. a little |
| **7.** | A. | run into | B. | run short of | C. | run out of | D. run away from |
| **8.** | A. | sentimental | B. | sensational | C. | sensitive | D. sensual |
| **9.** | A. | turn away | B. | turn off | C. | turn up | D. turn down |
| **10.** | A. | as | B. | for | C. | in | D. with |