

## REVIEW ARTICLE

**Correspondence:**

Shahar Kol, IVF Unit, Elisha Hospital, Haifa, Israel.  
E-mail: kol@elishahospital.com, ivfisrael@gmail.com

## Ultra-Orthodox Jews and infertility diagnosis and treatment

**Keywords:**

Halacha, infertility, mikveh, religion,  
Ultra-Orthodox Jews

S. Kol 

IVF Unit, Elisha Hospital, Haifa, Israel

Received: 8-Jun-2018

Revised: 14-Jul-2018

Accepted: 14-Jul-2018

doi: 10.1111/andr.12533

**ABSTRACT**

**Background:** 'Be fruitful and multiply' is the first God's command in the Bible. Every aspect in life of the Orthodox Jewish population, including the strive for fertility, is tightly covered by a wide set of commands and rules ('Halacha') that span more than 3,000 years. This is a unique example of a population that continues to adhere to such time-honored rules.

**Objective:** To describe rules that encourage fertility on one hand, but may hinder fertility and influence infertility diagnosis and treatment on the other.

**Materials and Methods:** Halacha rules that may affect fecundity.

**Results:** Orthodox Jews obey a complex set of rules that influence fertility.

**Discussion and conclusion:** This study provides fertility practitioners with background information that may help them when delivering professional care to Ultra-Orthodox Jewish infertile couples.

**INTRODUCTION**

According to the Bible (Torah), God created the world in 6 days. On the last day, God created the human race (males and females). God blessed the new creation and added a command: 'Be fruitful and multiply' (Genesis 1:28). Being first, this command dictates the desire for fertility among Orthodox Jews, beyond any personal or economic considerations.

Every aspect in life of the Orthodox Jewish population is tightly covered by a wide set of commands and rules (Halacha) that originate from three main sources:

**Bible (Torah):** According to Judaism, God, in Mount Sinai, gave the first five books of the bible (the Holy Scripture, or the Old Testament) to Moses, when the Israelites escaped from Egypt on the way to the Holy Land.

**Mishna:** Post-Bible environment dictated further interpretation of biblical rules and commands and the addition of new regulations. Written by scholars for centuries, its final form was established in the 3<sup>rd</sup> century.

**Talmud:** About three hundred years after the Mishna was sealed, further in-depth interpretation and new regulations were put together in a monumental work called 'Talmud'.

Over the last 1,400 years, human life on earth changed considerably, mainly due to new discoveries and the introduction of new technologies. This prompted endless questions raised by Orthodox Jews that were answered by prominent authoritative Jewish scholars qualified to rule on questions of Jewish law. (Rabbis).

Given the pivotal role of fertility in Judaism, the revolutionary advances in our ability to diagnose and treat infertility posed a significant challenge to the Orthodox Jewish population. This challenge was quickly met by a detailed set of rules that regulate every aspect of infertility assessment and treatment, including advanced reproductive technologies (ART).

About 20% of the Jewish population in Israel identify themselves as religious, and 50% of those are considered Ultra-Orthodox ('Haredi'). According to a December 2017 study conducted by the Israeli Democracy Institute, the number of Haredi Jews in Israel exceeded 1 million in 2017, making up 12% of the population in Israel. Relatively small communities of Ultra-Orthodox Jews can be found around the world, particularly in the United States. In 2000, there were 360,000 Haredi Jews in the United States (7.2 percent of the approximately 5 million Jews in the U.S.); by 2006, demographers estimate the number had grown to 468,000 or 9.4 percent. This population strictly obeys the Halacha codes and will always consult with a Rabbi

before making a decision in life that is not clearly covered by the written sources mentioned above.

Taken together, a specialist in reproductive endocrinology and infertility faces the challenge of delivering contemporary therapies to the Ultra-Orthodox Jewish couple that comes for evaluation and treatment of infertility. The purpose of this publication was to shed light on specific issues that are relevant in that regard.

### SPERM ANALYSIS

One of the first tests ordered when evaluating infertile couples is sperm analysis. The World Health Organization (WHO) Manual dictates that: 'The sample should be obtained by masturbation and ejaculated into a clean, wide-mouthed container made of glass or plastic' (WHO laboratory manual for the Examination and processing of human semen FIFTH EDITION, 2010).

Masturbation is strictly prohibited in Judaism based on Genesis 38:6-9. Onan was asked to have intercourse with his late brother's widow; however, he practices coitus interruptus because the future child will not be his. God, who ended Onan's life, regarded this as a major sin. By the way, Onan was coined in Hebrew as the word for masturbation.

Evaluation of sperm quality in Orthodox Jewish couples usually begins with a post-coital test (PCT, Oei *et al.*, 1995). In the general infertility practice, PCT is rarely carried out; however, in evaluating an Orthodox couple, it is in accordance with the Halacha. If ample motile sperm cells are found, male factor infertility can be ruled out, even though full sperm analysis is not available.

If repeated PCT tests are abnormal, most Rabbis will permit sperm analysis based on coitus with a special non-spermicidal, perforated rubber condom ('Kosher condom'). The small perforation in the condom allows even minute amount of spermatozoa to escape the condom and enter the vagina, to allow even a slight chance for pregnancy, and negate complete coitus interruptus. The ejaculate is then brought to the laboratory for full sperm analysis.

### SHORT FOLLICULAR PHASE

The menstruating woman is 'impure' according to the Bible. Leviticus 15:19: 'And if a woman have an issue, and her issue in her flesh be blood, she shall be in her impurity 7 days'. Whoever touches her is 'impure' also, and whatever she touches become 'impure'. Theoretically, therefore, sexual intercourse is permitted from day 8 of cycle. However, the Talmud extended this period, so only after the menstrual flow stops, the woman must count 7 days of complete cleanliness before sex is permitted. On the evening of the 7th day, the woman must attend a ritual bathe ('Mikve') before she recovers from her impurity and can have sexual intercourse. This set of rules are strictly obeyed by Orthodox Jews (and also by other Jewish sectors) and impose some challenges when fertility treatment is introduced.

From the physiological point of view, normal menstrual cyclicity poses no problem: 4-5 bleed days followed by 7 'clean' days schedule the 'Mikve' for 2-3 days before ovulation, so the chances for pregnancy are not compromised. It is tempting to speculate that this was the 'scientific' background of the Talmudic extension as described above: an attempt to eradicate 'unhealthy' traits (anovulation, dysfunctional uterine bleeding, diminished ovarian reserve etc.) and propagate a healthy, fertile, trait: normal cycling fertile women.

The above set of laws form the basis of 'Halacha'-derived infertility, if the follicular phase is short or the bleed time is

prolonged. In both circumstances, ovulation occurs days before sexual intercourse is permitted, so pregnancy cannot be established even though both partners are completely fertile.

It is relatively easy to defer ovulation by hormonal treatment based on early follicular estradiol. This treatment will delay the follicular growth and maturation and delay ovulation to occur after the 'Mikve'. Indeed, this simple intervention restores fecundity (Yairi-Oron *et al.*, 2006). This intervention raises an ethical issue, as the treatment (not totally devoid of risks) is given not for medical reasons, but to serve specific religious practices (Haimov-Kochman *et al.*, 2010). On the other hand, this very treatment is given routinely by many IVF centers to avoid weekend work (Hauzman *et al.*, 2013). Clomiphene is commonly used for delaying ovulation; however, this treatment should be discouraged given significant risk for multiple pregnancies.

In the IVF setting, a similar situation may dictate a creative solution, as spermatozoa may become available only by sexual intercourse, after the female partner had her 'mikve'. Therefore, oocyte retrieval timing must take into account the day of the 'mikve' and be delayed accordingly, often with some endocrine manipulations (Reichman *et al.*, 2013). Sperm freezing, when deemed medically necessary, is allowed, and so is intracytoplasmic sperm injection (ICSI).

### GENETICS IN A SMALL POPULATION

Generations of marriages confined to a relatively small and homogenous population are the ingredients for increase in the risk for genetic diseases (Ferreira *et al.*, 2014). In 1945, the world population of Orthodox Jews was on a brink of extinction, following the holocaust. Recovery was a humongous challenge. The challenge was not only to increase the number of individuals in the community, but also to improve its genetic health.

As marriage is confined to within the community and is always pre-arranged, community leaders were quick to adopt new technologies in genetic screening for significant genetic diseases. In 1983, the organization 'Dor Yeshorim' (in Hebrew 'straight generation') was established with the following philosophy: 'Dor Yeshorim was built on the premise that fatal and debilitating recessive genetic disorders, prevalent in Jewish circles, have absolutely no reason to be perpetuated. In fact, as evidenced by the elimination of Tay Sachs, our goal is to eradicate fatal and debilitating recessive genetic disease from the Jewish community through premarital genetic screening, genetic research and the development of reliable testing methods'. In 2015 alone, the organization dealt with 23, 800 premarital requests, of which 180 couples were found to be carriers for the same disease (1:130). So far, more than 2,500 pre-arranged marriages were canceled.

### ADOPTING ASSISTED REPRODUCTIVE TECHNOLOGIES (ART)

For centuries, pregnancy and birth were viewed as a divine, God-mediated miracle. Authorities from all prevailing religions had to face with awe the development of in vitro fertilization (IVF), where man-made technologies are used to create human lives in the laboratory when nature, or God if you will, failed. As far as the Jewish faith is concerned, two principles were considered:

- 1 A child born to a Jewish mother is Jewish. In a broader view: A child of a Jewish gestational mother is Jewish (implying that oocyte source is not a factor).

2 In order to obey the command 'be fruitful', using any technological development is permitted and encouraged unless there is a clear 'Halacha' rule or law to prohibit its use.

Therefore, most 'Halacha' authorities blessed and endorsed the development of ART, when consulted, looking at the professionals that deliver fertility therapy as God's emissaries. Moreover, to counsel every couple individually, and to cope with the rapid advances in the field of ART, a rabbinic specialty was created. At present, Orthodox Jews can approach rabbinic organizations (see: <https://www.puahonline.org/and> <https://www.boneiolam.org/>) for specific consultations pertinent to their diagnosis and suggested therapy. These organizations also offer on-site 'Halacha' supervision by specially trained Orthodox women. Whenever the IVF laboratory handles gametes or embryos of an Orthodox couple that ordered the service, the supervising women are summoned to the laboratory to witness the procedures. No laboratory procedure will be conducted on Saturdays or on Jewish holidays for these couples. This supervision practice is sometimes met with reluctance on the part of the IVF personnel; however, years of experience with that practice seems to dissipate concerns.

In addition to the large Orthodox Jewish population in Israel, other religions are also well presented: 14% of Israel population are Muslims, mostly Sunny, 2% Christians (Catholic, Orthodox, Protestants) and 2% Druze. The following table summarizes the attitudes of the various religions in Israel to ART.

|                         | IUI | IVF | PGD | Gamete donation |
|-------------------------|-----|-----|-----|-----------------|
| Judaism                 | Yes | Yes | Yes | Yes             |
| Sunni Islam             | Yes | Yes | Yes | No              |
| Christians Catholic*    | No  | No  | No  | No              |
| Christians Orthodox*    | Yes | No  | No  | No              |
| Christians Protestants* | Yes | Yes | No  | No              |
| Druze                   | Yes | Yes | Yes | No              |

Notes. IUI: intrauterine insemination; IVF: in vitro fertilization; PGD: pre-implantation genetic diagnosis.

\*Most patients will use all medical procedures to achieve pregnancy, despite the Church views.

## OVER 3,000 YEARS OF PRIESTHOOD (COHEN) AND THE ART CONNECTION

Jewish priesthood was established >3,000 years ago with the first high priest, Aaron, Moses' older brother. From Aaron, priesthood passed down through the generations, exclusively from fathers to sons. Nowadays, many priests' descendants have the surname Cohen or Kohen, which in Hebrew means 'priest', or related names like Kahn, Kahane, Kogan, Katz, and more. However, not only priesthood is strictly passed from father to son, but also the Y chromosome, which does not recombine with other chromosomes. Therefore, changes that occur in the Y chromosome tend to persist in a lineage over time.

Combining the two 'father to son' phenomena (one based on faith, the other on genetics) led to a scientific endeavor to confirm that indeed the present holders of above-mentioned names share specific Y chromosome features that would link the priests to each other and set them apart from other men, confirming the priesthood unique paternal lineage. In 1997, *Nature* published a scientific paper that indeed established such a connection (Skorecki *et al.*, 1997). The most striking difference was in the frequency of YAP+ (Y chromosome Alu Polymorphism)

chromosomes among priests (1.5%) compared with lay Jews (18.4%). Remarkably, the study also supports the idea that the priesthood was established before the world Jewish population split into two major groups 1,000 years ago, because of migrations. The Y chromosome markers in the priests were similar in Ashkenazic and Sephardic Jews, indicating that the priesthood antedated the division.

A few years ago, an Ultra-Orthodox couple in Jerusalem underwent fertility assessment that disclosed non-obstructive azoospermia. Repeated attempts to retrieve spermatozoa surgically failed, and donor spermatozoon was offered. The couple agreed; however, as the man is a 'Cohen' (priest), a concern was raised that his future son (born after donor insemination) will not be a true 'Cohen', but rather will break the >3,000 'father to son' chain. When the future boy will turn 13 years of age, he will be introduced as a 'Cohen' to the community. This, of course, will constitute a deception. Therefore, the couple approached the Ministry of Health in Jerusalem for a special permission to perform IVF and PGD (pre-implantation genetic diagnosis) to make sure that a baby girl will be born.

In Israel, sexing for social reasons is not permitted, but under strict regulations (at least 4 children of the same sex and specific psychological circumstances to warrant sex selection). However, the above request was approved.

## SUMMARY

This study outlines some major considerations that must be taken into account when serving Orthodox Jews in need of fertility diagnosis and treatment. The physician must be aware of the fact that in every step of the way the couple may ask to secure a permission from a Rabbi. At first glance, this may be interpreted as a lack of trust in the physician's professional recommendations and decisions. However, this is not the case, but rather an effort to find the golden path to combine cutting-edge medical innovations with time-honored life codes (Halacha).

## DISCLOSURES

The author has no conflict of interests to disclose.

## REFERENCES

- Ferreira JC, Schreiber-Agus N, Carter SM, Klugman S, Gregg AR & Gross SJ. (2014) Carrier testing for Ashkenazi Jewish disorders in the prenatal setting: navigating the genetic maze. *Am J Obstet Gynecol* 211, 197–204.
- Haimov-Kochman R, Rosenak D, Orvieto R & Hurwitz A. (2010) Infertility counseling for Orthodox Jewish couples. *Fertil Steril* 93, 1816–1819.
- Hauzman EE, Zapata A, Bermejo A, Iglesias C, Pellicer A & Garcia-Velasco JA. (2013) Cycle scheduling for in vitro fertilization with oral contraceptive pills versus oral estradiol valerate: a randomized, controlled trial. *Reprod Biol Endocrinol Supp* 28, 96.
- Oei SG, Helmerhorst FM & Keirse MJ. (1995) When is the post-coital test normal? A critical appraisal. *Hum Reprod* 107, 1711–1714.
- Reichman DE, Brauer AA, Goldschlag D, Schattman G & Rosenwaks Z. (2013) In vitro fertilization for Orthodox Jewish couples: antagonist cycle modifications allowing for mikveh attendance before oocyte retrieval. *Fertil Steril* 99, 1408–1412.
- Skorecki K, Selig S, Blazer S, Bradman R, Bradman N, Waburton PJ, Ismajlowicz M & Hammer MF. (1997) Y chromosomes of Jewish priests. *Nature* 385, 32.
- Yairi-Oron Y, Rabinson J & Orvieto R. (2006) A simplified approach to religious infertility. *Fertil Steril* 86, 1771–1772.