



Lord Immanuel Jakobovits: Grandfather of Jewish Medical Ethics

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Key words: Jewish medical ethics, human experimentation, cosmetic surgery, *halachah*, Talmud

IMAJ 2001;3:304–310

The emergence of Jewish medical ethics as a distinct subspecialty within Jewish thought is a relatively recent phenomenon. The phrase “Jewish Medical Ethics” first appeared as the title of Rabbi Lord Immanuel Jakobovits’ doctoral thesis submitted to London University in 1955 and published by New York’s Philosophical Library in 1959. This monograph was a landmark publication, not merely because the term or concept was unknown at that time but the subject itself had never been explored and thus had no literary or scholarly expression in any western language. Physicians, medical students and others had no writings to consult regarding Jewish views on elementary questions such as abortion, contraception, euthanasia, autopsy and the like. Only a handful of people, mostly rabbis, could refer to the original Hebrew and/or Aramaic sources, which were scattered in rabbinic writings covering many centuries of legal casuistry and creativity and often masked by highly technical terms.

Rabbi Jakobovits’ now classic book is the first comprehensive treatise on the subject of Jewish medical ethics. Tracing the development of Jewish and other religions’ views on medico-moral problems from antiquity to the present day, the book is profusely annotated by references to the original sources in religious, medical, legal and historical literatures. The book contains discussions of classic subjects in Jewish medical ethics such as abortion, artificial insemination, birth control, euthanasia, autopsies, eugenics, sterilization, treatment of patients on the Sabbath, and more. In addition, several chapters are devoted to the physician in Jewish religious law – his studies and privileges, his license and legal responsibilities, his professional charges and the admission of his evidence. The book is appropriately subtitled “A comparative and historical study of the Jewish religious attitude to medicine and its practice.”

The modern era of Jewish medical ethics, launched in 1959 by Rabbi Jakobovits’ pioneering book by that title, has since been witness to a proliferation of books and articles in English by rabbis and doctors on various aspects of this burgeoning field of study. The Falk Schlesinger Institute for Medical Halachic Research at the Shaare Zedek Medical Center in

Jerusalem publishes Hebrew and English versions of a journal titled *Assia*, devoted entirely to Jewish medical ethics. Moreover, numerous international conferences on medicine, ethics, and Jewish law have been held over the past two decades. Ongoing lectures, symposia, scholar-in-residence programs, and other educational activities throughout the world are too many to enumerate. This field of study has continued to blossom since Rabbi Jakobovits’ 1959 doctoral thesis, yet we are reminded that the study of Jewish medical ethics is not a twentieth century phenomenon. The Jewish people have been studying, writing about, and practicing Jewish medical ethics for thousands of years. The Jewish tradition, which dates back to Sinai, is perhaps the longest unbroken tradition in bioethics that is still followed by its adherents. Prof. Shimon Glick writes [1]:

Throughout the millennia, Judaism and medicine have marched hand-in-hand as allies, not as rivals. The mainstream of Jewish tradition has placed an enormous value on human life and health, has given human beings an obligation to preserve life and health, and has pursued a dual track of encouraging recognized medical therapy together with faith in the Almighty. Judaism has also, for the most part, rejected all varieties of dualism and rivalries between the body and the spirit, maintaining rather that spiritual progress can be enhanced by a healthy body. Our ancients already had insights, as well, into preventive medicine and behavioral medicine.

Because Judaism and medicine enjoy historical and intellectual kinships, it is only natural that Jewish law apply its reasoned pragmatic rules of morality to the practice of medicine. In the words of Rabbi Jakobovits, “For many centuries, rabbis and physicians, often merging their professions into one, were intimate partners in a common effort for the betterment of life. The perplexities of our age challenge them to renew their association in the service of human life, health and dignity. Indeed, they challenge Judaism itself to reassert its place as a potent force in the moral advancement of humanity.” [2]

This paper provides brief biographical material about Rabbi

Jakobovits including some correspondence between him and this author, discusses two examples of Rabbi Jakobovits' groundbreaking pronouncements and rulings on two modern medical ethical dilemmas, contrasts Rabbi Jakobovits' influence on Jewish medical ethics with that of three other twentieth century rabbinic giants in the field, and, finally gives a prognostic view of the future of Jewish medical ethics.

Biographical highlights

Rabbi Lord Immanuel Jakobovits was born in Koenigsberg, Germany. To escape the rising Nazi menace, he was sent to England in 1936 where he studied at Yeshiva Etz Chaim and obtained ministerial training at Jews College. Already in the late 1940s he was writing and lecturing on medical ethics. In 1947 he became the Rabbi of the Great Synagogue in London, and in 1949 he moved to Dublin to become Chief Rabbi of Ireland, and it was here that his academic career in medical ethics took shape. Over the next few years he published several seminal articles [3]. A landmark article on autopsies in Jewish law appeared in 1958 in the first issue of *Tradition* [4], itself a distinguished rabbinic journal. In 1958 Rabbi Jakobovits moved to New York to become the founding Rabbi of the Fifth Avenue Synagogue. In New York, he also served as the rabbinic advisor to the Association of Orthodox Jewish Scientists and gave classes and lectures on Jewish medical ethics to physicians and allied health professionals. At the same time he edited the first editions of New York's Federation of Jewish Philanthropies' *Hospital Compendium on Medical Ethics*. In 1961, he founded the "Review of Recent Halakhic Periodical Literature" section of *Tradition*, a feature that still appears in nearly every issue. In 1967 he returned to England to become Chief Rabbi of the United Hebrew Congregations of the British Commonwealth of Nations, a post he held for nearly a quarter of a century. He was knighted by Queen Elizabeth in 1981 and appointed to the House of Lords seven years later, the first rabbi ever to be so honored. In 1991 Rabbi Jakobovits was the first Jewish recipient of the Templeton Foundation's Award for Progress in Religion, often called the Nobel Prize for religion.

On 26 December 1967, just after the first heart transplant was performed in South Africa, I wrote to Rabbi Jakobovits asking for his opinion on this new medical procedure. His reply, in part, said the following:

An organ may never be removed for transplantation from a donor until death has been eventually established. The prohibition of *nivul hameth* would then be suspended by the overriding consideration of *pikuach nephesh*. Hence, I can see no objection in Jewish law to the heart operations recently carried out, provided the donors were definitely deceased at the time the organ was removed from them.

Thus began the discussion of brain death among contemporary rabbinic authorities, an intense debate that is still ongoing. When in 1968, I sent Rabbi Jakobovits my article on

abortion in Jewish law, his reply included the very important caveat that:

In a delicate and capital issue such as this, one should always emphasize the need for the submission of every individual case to rabbinic judgment in the light of the prevailing circumstances, since there may be many important legal and moral considerations weighing on the verdict which cannot be spelt out in the presentation of general principles.

When I invited Rabbi Jakobovits to review and edit my translation of Julius Preuss' classic book on biblical and Talmudic medicine, his reply clearly described the heavy pressure on his time and his very busy communal schedule:

The pressure of communal work is such that I am heavily in arrears on my own literary commitments. I am trying to get a book ready for publication myself, and I just cannot find the time to complete this. At this time of crisis, virtually every communal and educational institution in this country turns to me for help, and that is quite apart from my heavy involvement in matters concerning Israel and Soviet Jewry. And this is quite apart from my fairly frequent visits abroad for various conferences and lectures, which will take me to Denmark, Canada, New York, Israel within the next few weeks alone.

These comments are reminiscent of the famous letter written by Moses Maimonides to Rabbi Samuel Ibn Tibbon in which he describes his heavy medical duties and his communal obligations to the Jewish community of Egypt [5]. At the inauguration of the Rabbi Immanuel Jakobovits Center of Jewish Medical Ethics at Ben-Gurion University in Beer Sheva, Israel in 1983, Rabbi Jakobovits said in part:

Jewish doctors ought to have some idea of where Jewish teachings differ from commonly accepted norms of medical practice; for instance, the reluctance to inform patients of a fatal diagnosis if there is the slightest fear that such information may cause a physical or mental trauma; or the need to set the saving of life above the patient's consent; or the limits of professional secrecy when overriding third party or public interests are at stake, such as undisclosed genetic defects in a person planning marriage, or suppressed medical records liable to cause grave public hazards through violence, crime, or illness. In all these cases, the teachings of Jewish ethics are quite distinct, and Jewish doctors ought to be aware of them. [6]

Rabbi Jakobovits and I did not always agree on all matters. In 1988, he and I, as well as others, were invited to lecture in Berlin on the fiftieth anniversary of *Kristallnacht*, the first all-out assault on the Jewish people by the Nazis. A group of German Jewish physicians organized an International Conference on Jewish medical ethics and invited us both to return to Berlin 50 years after *Kristallnacht*, which we had both lived through. I had forsworn never to return to Germany and needed a *Bet Din* to absolve me of that vow. After a long and difficult deliberation I decided to go; I described my reasoning

as juxtaposing the pain of memory with hope for the future [7]. In a moving testimony, Rabbi Jakobovits described his personal decision not to revisit Germany. In part he wrote:

My personal history relating to Germany is very similar to Fred Rosner's. I too was born in Germany, living in Berlin when the Nazis came to power in 1933 and witnessing the earliest manifestations of the mounting horror.... My resolve never to visit Germany again was always purely personal. I never sought to impose it on others; I never preached or advocated it. I simply felt I could not go back.... As I told Dr. Rosner when we discussed the invitation to Berlin we had both received, I fully respect the reasons which prompted him to accept, and I made no effort to dissuade him. But I could not change my mind or my feelings, not even fifty years later... [8]

Rabbi Jakobovits was an eloquent spokesman not only for British Jewry but for world Jewry. He was both forthright and controversial, particularly in his views on Israel's relations with the neighboring Arab nations. He articulated the position that the saving of human life in Judaism must override territorial considerations and that genuine peace is more important than land. He was strongly criticized by many for this view but was praised by others for speaking out on matters of religious conscience regarding the peace process.

Rabbi Jakobovits was also outspoken in the House of Lords, where he preached the traditional values of religion and morality, the importance of ethical conduct, the dignity of labor, and the primacy of family. He was a brilliant communicator with an elegant command of the English language, which matched his majestic physical appearance. In a speech he delivered in the House of Lords against a plan to allow commercial activities on Sundays, Rabbi Jakobovits said: "The loss of the Sabbath will deprive Britain of the last visible vestige of national spirituality and sanctification." The silence in the House of Lords was broken by an Anglican admirer who shouted down from the gallery: "It takes a Jew to tell you that."

But his first and main love, other than his family, was Jewish medical ethics. He characterized the basic difference between secular medical ethics and Jewish medical ethics by saying that:

... secular medical ethics is the effort to turn ethical guidelines or rules of conscience into law, i.e., into legislation. Attempts are made constantly to choose ethical insights and judgments and then to gradually distill these into legislative laws adopted by different legislatures. Jewish medical ethics does the reverse. We determine law or legislation, distill it, and then come to the conclusion that it includes certain ethical guidelines. Thus, Jewish medical ethics derives from legislation. It does not lead to legislation. We look at legislation as rulings of law that have been given, i.e., *halakhah*, which means law or legislation, and then try and extrapolate ethical rules from the legislation. Therefore, the Jewish concept of medical ethics is the very reverse of that commonly accepted in civilized countries of the world. [9]

When he was honored at the Tenth Annual International Conference on Jewish Medical Ethics in San Francisco just a few months before he died, Rabbi Jakobovits responded by saying that he was "no longer the Father of Jewish medical ethics, but indeed the Grandfather through the disciples who now themselves have raised generations of new scholars devoted to the field." Just a month before he passed away, Professor Shimon Glick and I were privileged to have dinner with Rabbi Jakobovits and Lady Jakobovits in Boston at a conference entitled "Jewish Perspectives on Bioethics in the 21st Century: A Pluralistic Discussion." In his remarks to the conference participants, Rabbi Jakobovits said: "We are the guardians of the Jewish ethical tradition. We can be pioneers, in spite of all the barriers and limitations that historically have been put up against us, to provide the world with hope, enlightenment and moral understanding. And there never has been such a time of both great opportunity for human existence but also the greatest of dangers." Indeed, these remarks could serve as his epitaph.

Two examples discussed below – human experimentation in Judaism and cosmetic surgery in Judaism – well illustrate Rabbi Jakobovits' pioneering contributions to and influence on the modern field of Jewish medical ethics.

Human experimentation

In 1966, Henry Beecher published a classic article on unethical or questionable ethical procedures in clinical research, citing 22 instances where informed consent was not obtained in potentially hazardous human experimentation [10]. In response, Rabbi Jakobovits defined the Jewish attitude to the issue of human experimentation, stating that this is a rather new question and "there are as yet too few relevant rabbinic rulings published for a firm opinion to be crystallized and authoritatively accepted" [11]. He therefore attempted to scan the classic sources of Jewish law for views and judgments bearing on the issue of human experimentation. He stressed the caveat that his conclusions were entirely tentative, and any verdict in a practical case should be endorsed or revised by a competent rabbinical authority duly considering all the facts and circumstances involved. Rabbi Jakobovits described ten basic Jewish principles affecting human experimentation, adding to each item the relevant sources and considerations.

1. Human life is sacrosanct, and of supreme and infinite worth.
2. Any chance to save life, however remote, must be pursued at all costs.
3. The obligation to save a person from any hazard to his life or health devolves on anyone able to do so.
4. Every life is equally valuable and inviolable, including that of criminals, prisoners and defectives.
5. One must not sacrifice one life to save another, or even any number of others.
6. No one has the right to volunteer his life.

7. No one has the right to injure his own or anyone else's body, except for therapeutic purposes.
8. No one has the right to refuse medical treatment considered necessary by competent opinion.
9. Measures involving some immediate risks of life may be taken in attempts to prevent certain death later.
10. There is no restriction on animal experiments for medical purposes.

Nearly three decades later, in his *Encyclopedia of Jewish Medical Ethics*, Dr. Avraham Steinberg cites all the rabbinic responsa dealing with human experimentation [12]. These rulings are all in consonance with the ten principles cited by Rabbi Jakobovits in his watershed article on the subject in 1966.

Most rabbinic opinions allow but do not obligate *healthy volunteers* to participate in human experimentation where no side effects are anticipated. If the volunteer may be harmed by the research, he or she should not participate unless they may thereby save the life of a dangerously ill patient, but not as part of a general study that might benefit future patients. A *seriously ill patient* is allowed but not obligated to undergo experimental treatment if standard therapy has failed or is not available for that illness, even if serious side effects might occur. The experiment must have therapeutic intent for the patient and not be merely a toxicity study to benefit future patients. Jewish law is opposed to experimentation in which the human organism serves as an experimental animal, if there is hazard to the individual taking part in the experiment without concomitant benefit to the same individual. Even the informed voluntary consent of an individual does not suffice to permit the physician to subject him to possibly hazardous medical procedures. The evaluation of new surgical procedures or pharmacological agents should occur only within a therapeutic protocol. If a patient is suffering from an illness for which there is no known medical treatment, he can be subjected to new procedures if there is valid expectation of benefiting this patient. A careful evaluation of experiments on animals enables the physician to review the expected beneficial results, as well as the potential hazards of a new medical procedure. Only if the expectation of beneficial results exceeds the danger of causing harm to the patient can this new treatment be instituted [13]. The Talmud (*Avodah Zarah 27b*) states that one is justified in jeopardizing a brief life expectancy in the hope that a cure of a life-threatening illness may be achieved. On this basis, Rabbi Jacob Reischer (Responsa *Shevut Yaakov* Part 3#85) permits the use of hazardous experimental therapy, provided that specialists are consulted and agree by a two-thirds majority and provided the local rabbinic authority concurs. In Judaism, a patient is under no obligation to assume the risks involved in human experimentation. Jewish patients are obligated to accept standard medical therapy for their ailments, but need not make use of experimental procedures even if they involve no inherent risk [14]. A Jewish person is permitted to volunteer for medical experimentation provided that it poses no threat to his own health and that the results may benefit others. Although a person is not required and should not be forced to volunteer for

such experimentation, he or she is performing a meritorious act (*mitzvah*) if they do so [15]. A healthy person should not participate in medical experimentation that requires invasive procedures accompanied by pain and discomfort and possible risk to life or limb [16].

In summary, human experimentation may involve healthy volunteers and/or sick patients. In Judaism, healthy people may altruistically volunteer for a research study that involves little or no risk (e.g., blood drawing). A seriously ill patient is required to accept standard medical therapy that is known to be efficacious even if side effects may occur. If standard therapy has failed or is not available, a patient is allowed but not obligated to accept experimental therapy even if the risks are significant. Experimentation on human patients must have therapeutic intent. Experimental medications or surgical procedures may not be undertaken solely to determine toxicity or possible benefit to others. They must at least have the potential to benefit the patient at hand. The decision to assume the risk of high mortality or severe morbidity with hope of benefit from the experimental treatment must, if possible, be made by the patient [17].

Cosmetic Surgery

At the symposium "Religious Views on Cosmetic Surgery" in 1961, Rabbi Jakobovits addressed the American Society of Facial Plastic Surgery. He discussed the issue under four headings: the theological implications of "improving" God's work or "flying in the face of Providence"; the possible risks to life involved in any operation; the Jewish objection to any mutilation of the body; and the ethical censure of human vanity, especially among males.

Rabbi Jakobovits pointed out that although no formal rabbinic rulings on this subject had yet been issued, the concerns cited above about cosmetic surgery could be:

... set aside if the deformity to be corrected is serious enough to make it difficult for a woman to find a matrimonial partner or to maintain a happy relationship with her husband or to prevent a person from playing a constructive role in society, and in particular from pursuing his calling with a view of maintaining himself and his family in decent comfort. [18]

Jakobovits thus allows cosmetic surgery in a woman to help her find or maintain a marriage partner. He also allows cosmetic surgery in a man to correct a condition that interferes with him finding employment. Later rabbis explain that the psychological anguish of not being able to find a suitable marriage partner or gainful employment is considered sufficient pain to allow cosmetic surgery in both men and women [19]. All subsequent rabbinic responsa on this subject invoke the principles cited by Jakobovits.

In 1964, Rabbi Yaakov Breisch (Responsa *Chelkat Yaakov*, Part 3 #11) was consulted about a young woman who was contemplating plastic surgery on her nose in order to improve her appearance with the hope of more easily finding an

appropriate mate. He discusses at length the prohibition against wounding oneself and the prohibition against endangering one's life. He concludes that the former prohibition is set aside not only for correcting medical abnormalities and physical deformities but also for alleviating mental anguish. He marshals numerous sources to support this conclusion. A son should ordinarily not remove a splinter, remove blood or amputate a limb on his father (Karo's *Shulchan Aruch, Yoreh Deah* 241:3). If no other physician is available, however, the son is allowed to do so to relieve his father's pain (*Rama, loc. cit.*). Thus, the prohibition against wounding one's father is set aside in order to relieve his pain. Breisch quotes *Tosafot (Shabbat 50b s.v. bishvil)*, which states that if a person is ashamed to walk among people because of a physical deformity or blemish, it may be surgically corrected. Similarly, concludes Breisch, since the young woman in question suffers deep mental discomfort because of her appearance, to relieve that pain the prohibition against self-wounding is set aside and the cosmetic surgery is permitted. He also cites the case of a man whose beard and eyebrows were half-black and half-white, causing him severe embarrassment; Rabbi Breisch permits the man to dye the white hairs black to alleviate his distress. Since the intent was not self-beautification, the prohibition of a man wearing women's garments does not apply. (Face-lifting and nasoplasty and other forms of beautification such as cosmetic use are widely associated with women and therefore might be considered as a form of "female dress" biblically prohibited in Deuteronomy 22:5).

Regarding the prohibition against self-endangerment, Rabbi Breisch points out that while all surgery is associated with some danger, it depends on the circumstances, the physician's expertise, the patients' condition and other factors. Again using a host of sources, he concludes that taking risks for the sake of relieving pain (physical or mental) is permissible since all healing is associated with some risks, yet these are acceptable since the physician and patient are divinely mandated to heal and to seek healing, respectively. The general custom of medicine is to perform surgery when necessary – for saving life and limb as well as for elective but necessary procedures. Yet, a person may place himself in some danger to correct a medical condition or obtain relief from suffering because of the Talmudic principle (*Shabbat 129b; Avodah Zarah 30b; Niddah 31a; Yevamot 72a*) that one may place one's trust in God regarding normally acceptable risks because "The Lord preserves the simple" (Psalms 116:6). Breisch therefore concludes that the young woman undergoing cosmetic surgery on her nose does not violate the prohibition against self-endangerment.

Also in 1964, Rabbi Menasheh Klein (*Mishneh Halachot* 4:24b) discussed the case of a woman with a facial blemish. He allows both men and women to undergo corrective surgery for such blemishes since the plastic surgery is considered part of the normal biblically sanctioned practice of medicine and surgery. No violation of the prohibitions against self-wounding and self-endangerment is involved. He enumerates some of the 140

physical defects or blemishes in priests, which are listed in the Talmud and Maimonides' legal code the *Mishneh Torah*. Priests were probably obligated to have such defects corrected, if possible, to enable them to serve in the Temple, and no violation of the prohibition against a man wearing women's garments is involved. Although non-priests were not obligated to surgically correct such blemishes, they were certainly permitted to do so. Rabbi Ben Zion Uziel (Responsa *Mishpetei Uziel, Tanina, Yoreh Deah* 1:25) states that the prohibition against a man wearing women's clothes does not apply to medical procedures, particularly those performed on both women and men. In a second responsum (*Mishneh Halachot* 4:247), Rabbi Klein discusses the case of a man with "summer spots" on his face who wished to remove them with certain medications. He concludes that cosmetic procedures purely for beautification are not allowed; however, if this man is ashamed to socialize with other people because of the facial spots it is permissible to remove them to relieve his mental anguish. In 1967, Rabbi Yitzchok Yaakov Weiss (Responsa *Minchat Yitzchak* 6:105.2) stated that elective plastic or cosmetic surgery to correct a congenital or acquired defect is permitted, if necessary, to relieve the psychological torment of a person concerned about his or her appearance. Such a person is considered as a patient, albeit not dangerously ill, and the corrective surgery is part of normal healing. Rabbi Moshe Feinstein (Responsa *Iggrot Moshe, Choshen Mishpat* 2:66), also consulted about a girl who wished to undergo cosmetic surgery to help her find a suitable mate, discusses at length the nature of the prohibition against self-wounding. He permits the surgery, since wounding for the aforementioned purpose is not considered an act of disgrace or aggression; rather, the cosmetic surgery is for her benefit. In a second responsum (Responsa *Iggrot Moshe, Choshen Mishpat* 2:65), Rabbi Feinstein permits a young girl to diet to improve her appearance even though the diet may cause hunger pangs. Dieting to lose weight for health reasons is certainly permissible. Rabbi Shlomo Zalman Auerbach is quoted [20] as allowing the plastic surgical reattachment of a finger or hand since such surgery is not considered wounding but fixing and saving a limb. Hence the possible danger of the surgery and the anesthesia is permissible.

One dissenting opinion is that of Rabbi Eliezer Yehudah Waldenberg (Responsa *Tzitz Eliezer*, Vol 11 # 41:8-9) who concluded that "it is forbidden for a person to undergo plastic surgery and for a physician to perform such surgery purely for the sake of beautification and the like." A person is not permitted to improve on God's handiwork by attempting to change the work of the Creator who creates human beings in His image.

In summary, the issue of plastic and cosmetic surgery in Judaism involves four halachic concerns: the prohibitions against self-wounding, self-endangerment, and a man wearing women's garments, and the possible interference with Divine Providence by "improving" on God's work. Thus, cosmetic surgery for pure vanity without any medical, psychological or economic justification is opposed in Judaism. However, the vast

majority of rabbinic decisions rendered to date permits plastic or cosmetic surgery in a variety of situations. These include a medically indicated procedure to correct a congenital or acquired deformity or abnormality, to relieve the mental anguish of a person ashamed to appear in public because of the blemish, to enable a woman to find a spouse or maintain a happy marriage, or to enable a person to earn a livelihood [21]. The psychological pain that derives from not being able to find a suitable marriage partner or gainful employment is considered sufficient reason to permit cosmetic surgery. Cosmetic surgery is not a uniquely feminine form of beautification, but is widely practiced by males as well and therefore does not constitute an infraction of the prohibition against the wearing of female garments [22].

Other modern rabbinic bioethicists

Three other renowned twentieth century rabbinic authorities who have made major contributions to the modern field of Jewish medical ethics are Rabbis Shlomo Zalman Auerbach, Moshe Feinstein, and Eliezer Yehudah Waldenberg.

Rabbi Auerbach (1910–1995) was born, lived his entire life and died in Jerusalem. Recognized as one of the greatest rabbinic decisors of the twentieth century, he was loved and admired not lonely for his erudition in rabbinics and theology but also for his impeccable integrity and modesty. Rabbi Auerbach's rabbinic rulings were based on strict halachic principles and not on intuition, and his advice and personal behavior were refined by *halachah* and Jewish thought [23]. Although Rabbi Auerbach never wrote or compiled a book of his rabbinic responsa, he authored and published several books and many articles in halachic journals such as *Noam*, *Sinai* and *Moriah*. A compilation of some of his articles was published as *Responsa Minchat Shlomo* in 1986.

Rabbi Moshe Feinstein (1895–1986), or Reb Moshe as he was popularly known, succeeded his father as Rabbi of Uzda, Russia, and later became Rabbi in Luban until 1936. Because of the increasing anti-Semitism in Russia, Reb Moshe immigrated to the United States where he headed the Mesifita Tiferet Jerusalem Yeshiva in New York City, a post that he held until his death in 1986. Reb Moshe was already recognized as the premier rabbinic decisor (*posek*) in Russia. His early responsa were regarded as brilliant by many of his illustrious contemporaries, including Rabbi Chaim Ozer and Rabbi Yechezkel Abramsky. He was the rabbinic decisor par excellence for world Jewry for more than seven decades, and for American Jewry for more than half a century. Reb Moshe was the moral and halachic conscience of the Torah community, but nowhere was his leadership more keenly felt than in medicine and in medical *halachah* where his empathy, sensitivity and intellectual integrity were widely recognized. The study of his famous and now classic eight volumes of *Responsa Igrot Moshe* (one published posthumously) serves to memorialize and eternalize his teachings [24].

Rabbi Eliezer Yehuda Waldenberg (1920-) has dealt with

issues of medicine and *halachah* prolifically, distinguishing himself through the publication of many important halachic texts, including his magnum opus – the multivolume (22 volumes to date) and renowned *Responsa Tzitz Eliezer*. Considered a giant in the field of medicine and *halachah*, he has received many important awards, chief among them the Israel Prize and the Shaare Zedek Prize for Medicine and *Halachah* [25].

In contrast to Rabbis Auerbach, Feinstein and Waldenberg, Rabbi Jakobovits' main focus was moral problems raised by medicine and medical practice, as opposed to those raised by Jewish law. Many widely discussed medical topics such as abortion, contraception, assisted reproduction, life support, euthanasia, the treatment of the terminally ill, and human experimentation are ethical dilemmas in general medical practice. On the other hand, difficulties in medical practice sometimes arise because of Judaism, for example, the Sabbath, Yom Kippur, and dietary laws. While Rabbi Jakobovits' writings primarily address problems and issues prompted by general medical practices, Rabbis Auerbach, Feinstein and Waldenberg contribute primarily to the legal aspects of medical *halachah*.

The future of Jewish medical ethics

Jewish medical ethics is built on rulings given by leading experts on Jewish law which, when collected and published, are known as responsa. By definition, these rulings are reactive rather than proactive and meet a demand for guidance by patients, physicians, scholars or others who seek to practice Judaism according to traditional teachings. The rulings become normative and assume the force of law by virtue of the universal recognition accorded to their authors. Rabbi Jakobovits contends that these conditions show every sign of remaining a permanent feature of Jewish medical ethics. The constituency that seeks and respects rabbinic rulings is, at present, experiencing a record growth [26].

A second crucial factor determining the future course of medical ethics will be the development of medicine itself. Most important from a Jewish point of view will be where to draw the line between the “blind march to mechanical perfection and the capacity to control the forces science and technology can now generate at our bidding for the exploitation of nature's infinite energies.” According to Rabbi Jakobovits,

Jewish thought will be particularly concerned to preserve man's spirituality and humanity against the encroachments of mechanization in which human love will be replaced by syringes and test tubes in the generation of life, and the designs of Providence by the arbitrary manipulation of genes and lethal agents in the determination of life and death, or in which human beings will be constructed to specified orders. [26]

In some areas, halachic issues raised by modern medical technology are still unresolved and subject to heated controversy. One such example is the definition of death. It is hoped

that within the next few years this dispute will be resolved – if only by the preponderance of halachic verdicts one way or the other. The decision depends on facts, and facts are bound to emerge convincingly in the end. The introduction of heart transplants was condemned by most halachic authorities, but the impressive success rate (80% survival for 5 years) has been accompanied by increasing permissive rulings that now seem to predominate.

Areas of Jewish medical ethics that require additional study are professional ethics such as secrecy, confidentiality, truth telling and the public good; genetics including genetic screening, gene therapy, gene surgery and cloning; and mental health issues such as sex therapy, homosexuality, drug addiction, and alcoholism. A large area that is still rather fallow and which is bound to engage ever-increasing attention is the distribution of scarce resources and the allocation of limited funds. Among the limited resources is the Jewish source material. This need, too, will eventually be met by intensified search for precedents in earlier statements of principles and decisions.

Finally, the significant growth of Jewish medical ethics, both for practical guidance and as an academic discipline of ever-greater sophistication, will call for more intensive training of experts proficient in Jewish law and medicine alike. Such professional specialists are beginning to emerge – both practicing rabbis and practicing physicians – some of them rabbis and doctors in the spirit of famous Talmudic and medieval physician-rabbis. These modern Jewish bioethicists are the heirs to the legacy of Rabbi Lord Immanuel Jakobovits, who is identified today not as the father of Jewish medical ethics but the grandfather of Jewish medical ethics “through the disciples who now themselves have raised generations of scholars devoted to this field.”

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Capsule

How motor proteins like kinesin act

Motor proteins like kinesin generally possess two "heads" attached to a filamentous tail. The motor proteins use energy to translocate themselves (and any attached cargo) along intracellular tracks known as microtubules. Kawaguchi and Ishiwata (*Science* 2001;291:667) have examined this process in

isolation using sophisticated biophysical techniques to analyze how and when the head domains use energy from adenosine triphosphate as they crawl along microtubules. Their findings support the notion that, as the motor moves along, alternately one and then two heads are bound to the microtubule.

