

Applications

1. Alexandra Ossola, *Betting on the first disease to be treated by gene editing*, CNBC Mar. 15 '17
<https://www.cnbc.com/2017/03/13/betting-on-first-disease-to-be-treated-by-crispr-genetic-engineering.html>
Researchers don't doubt that CRISPR-based treatments will become widely available to patients. The only question is when... [University of Western Ontario associate professor of biochemistry David] Edgell thinks CRISPR treatments could be available within the next two to three years, with modified T-cells used to treat some types of cancer (there are already clinical trials for lung cancer in China, and a similar one slated to take place at the University of Pennsylvania was approved last June by the National Institutes of Health).

2. Antonio Regalado, *Engineering the Perfect Baby*, Technology Review Mar. 5 '15
<https://www.technologyreview.com/s/535661/engineering-the-perfect-baby/>
[G]erm-line engineering is much further along than anyone imagined. "What you are talking about is a major issue for all humanity," says Merle Berger, one of the founders of Boston IVF, a network of fertility clinics that is among the largest in the world and helps more than a thousand women get pregnant each year. "It would be the biggest thing that ever happened in our field." Berger predicts that repairing genes involved in serious inherited diseases will win wide public acceptance but says the idea of using the technology beyond that would cause a public uproar because "everyone would want the perfect child": people might pick and choose eye color and eventually intelligence.

3. Anne-Marie Guarnieri, *The Future of Anti-Aging*, Harper's Bazaar Oct. 27 '17
<http://www.harpersbazaar.com/beauty/skin-care/a12776110/future-of-anti-aging/>
Many CRISPR human trials are currently being done in China on patients with HPV, HIV, and lung cancer. "At first it's going to be used only on cases where it's worth the risk," Robinton says, "and on people who are willing to take the risk because they don't have many options." As to whether CRISPR will be used for vainer pursuits—think curing baldness, eliminating gray hair, erasing wrinkles—Robinton, 30, is optimistic. "This isn't the first time that biotech has invaded the beauty space," she says. "It's not [yet] real, but it's our hopeful reality."

Case 1: Medical treatment for adults: Prohibited, optional or obligatory?

4. Deuteronomy 4:15

And you shall guard your lives greatly...

5. Talmud, Bava Metzia 112a

"For this he puts his life on the line (Devarim 24:15)" – Why did this person climb the ramp, become suspended from the tree, and give his life over to death? Was it not for his wages?

6. Rabbi Yaakov Breisch (20th century Switzerland), Chelkat Yaakov Choshen Mishpat 31:8

Could one entertain the thought that a woman could not marry and give birth because she thereby endangers herself?... That is the way of the world, and since the public does it, "Gd guards the fools." We have found this stated frequently in the Talmud regarding danger, "Since many people trample on it, 'Gd guards the fools.'" ... So too here, since the masses trample on it, going to doctors even though surgery is dangerous, Gd guards the fools. Our eyes see, thank Gd, that the great majority of patients for whom this surgery is done (Gd save us) are healed.

7. Rabbi Moses Nachmanides (13th century Spain), Torat ha'Adam, Sakkanah 6

The Talmud records, "They taught in the yeshiva of Rabbi Yishmael: The Torah says, 'He shall surely heal.' From here we see that permission is given to doctors to heal." This means the following: lest a doctor say, "What do I need with this pain? I might err and kill accidentally," the Torah permitted him to heal.

8. Rabbi J. David Bleich (21st century USA), *Contemporary Halakhic Problems*, Volume 1 Page 122

Although every therapy is fraught with danger, the hazards of treatment are specifically sanctioned when incurred in conjunction with a therapeutic protocol. Accordingly, the practice of the healing arts may be permitted even if designed simply for the alleviation of pain.

Case 2: Minors: Who gave you the right?

9. Rabbi Moshe Tendler, Dr. John Loike, *Tampering with the Genetic Code of Life*, Hakirah 18 (2014)

The issue of violating the autonomy of the unborn child is considered a valid concern by secular bioethicists. Therefore, bioethicists would view it unethical to perform gene editing on the fertilized egg, fetus, or child. Rather, when a child reaches adulthood, he or she can decide whether to undergo gene editing... However, bioethicists are more likely to support the application of gene editing to children that have fatal or untreatable genetic diseases, such as Tay-Sachs or Fragile X.

10. Talmud, Kiddushin 29a

Our sages taught: A father's obligations to his son are: To circumcise, redeem, teach Torah to, marry off, and train in a trade. And some say to train him to swim.

11. Talmud, Kiddushin 42a

How do we know that the court establishes a guardian for orphans who come to split their father's estate... [even] to incur liability in order to produce benefit? Bamidbar 34:18 says, "And you shall take a leader from each tribe."

12. Rabbi David Tzvi Hoffman (19th century Germany), *Melamed l'Hoil* 2:104

We have never found, anywhere in the Torah, that parents may endanger their children and prevent a doctor from healing them. This is the law of the Torah; I don't know municipal law.

13. R' M. Halperin (21st c. Israel), *Parental Opposition to Surgery for a Dangerously Ill Infant*, Assia 8 pg. 29

It is clear that the decision must consider only the minor's benefit, and no foreign, general concerns, such as the good of the parents or society.

14. Rabbi Yitzchak Zylbershtein (21st century Israel), *Shiurei Torah l'Rofim* III pg. 303

I put the question before my father-in-law and mentor, Rabbi Y. S. Elyashiv, and he replied that they should carry out the treatment now, as a benefit to the child. And just the opposite – if they would not treat now, the child would have a claim against his parents in the future if the birthmarks would cause his spouse to recoil.

Case 3: Eternal skin, Blue-eyed babies: Are values binding?

15. Rabbi Moshe Tendler, Dr. John Loike, *Tampering with the Genetic Code of Life*, Hakirah 18 (2014)

Currently there is no medical research institution in the United States that approves germ-line genetic therapies. There are many reasons for such caution and concerns. As mentioned above, there is great fear that this technology will tamper with the evolution of human beings. In addition, there is concern that gene-editing systems may be applied to alter or modify physical or behavioral characteristics—rather than curing diseases—and should therefore be prohibited. Finally, ethical issues related to designer babies are relevant to gene-editing technologies and introduce the concern that gene-editing procedures will foster eugenics.

16. Rabbi Eliezer Waldenberg (20th century Israel), *Tzitz Eliezer* 11:41:9

It's entirely ridiculous to suggest to permit such surgery for women by amassing leniencies from various midrashim which praise women's beauty. It is not even worth responding to this, for such things have no place in law at all... Only as a homiletic would I respond with the words of King Solomon, who spoke with his Divine inspiration, saying, "Charm is false, and beauty is vain; a woman who reveres Gd is to be praised." Anyone with reverence for Gd in her heart would not stray after such fads of plastic surgery for aesthetics alone, most of which is just for appearances and whims of human beings, no two of whom [were created to] look alike... If one should not trouble

Gd to alter nature, how much more so should one not try to be clever and change nature with such activities, which would be like telling the Craftsman who made him, "How ugly is this vessel You made!"

17. Talmud, Berachot 58a

Our sages taught: One who sees Jewish crowds says, "Blessed is the Wise One of secrets," for their intellects do not resemble each other and their forms do not resemble each other.

18. Rabbi Avraham Yitzchak haKohen Kook (20th century Israel), אל הכי שופר,

We will not measure every acquisition by our personal measure. We will know that each individual is only a unit, one portion, a share of our community, and how could the whole judge but little?

One whose work is in Torah, in fine points of law, if he would depart to sing songs, to examine poetry, his profit would equal his loss in these tasks, his work would ascend in smoke, his learning would be uprooted...

Or one who turns his heart to analysis of history, in books of generations and chronicles of days.

There, too, he will find gold and precious coins; there he will build a temple to knowledge in the heights.

And one whose heart is given to mundane wisdoms, to medicine, to nature, to mathematics, to chemistry, and his heart thirsts and broadens like the depths, to enjoy the benefits of branching, fruitful knowledge...

Each person toward his heart's desire will travel and succeed; from the fruit of their hands their nation will be elevated.

Each in his trade will breathe the breath of life; when he builds for himself a home, the ruin of our people will be rebuilt.

19. Israeli Chief Rabbi Yisrael Meir Lau, press release, 2003

The moment medical science tries to take upon itself duties and areas which are not its responsibility - such as shortening life, cloning or creating life in an unnatural way - we must set down borders in order not to harm the Jewish basic belief that there is a creator of the universe in whose hands life and death are placed.

20. Rabbi Yehudah Loeb (Maharal) (16th century Poland, Moravia, Prague), Beer haGolah 2:10

Just as Nature operates at Divine decree, and Nature functioned during the six days of Creation as is appropriate for Nature, the same applies to the actions of a person, with his brain which is above Nature and with his deeds which are not of Nature...

21. Leviticus 19:2

Speak to the assembly of the Children of Israel and tell them: You shall be holy...

22. Rabbi Moses Nachmanides (13th century Spain), Commentary to Leviticus 19:2

The Torah warned us regarding relations and forbidden foods, and permitted marital relations and eating meat and wine, such that a hedonist could find a way to be immersed in [impropriety], drinking wine and eating meat gluttonously, speaking as he wishes of all depravity, for no prohibition in this regard is mentioned in the Torah; he will be depraved within the bounds of the Torah. Therefore the text followed its list of explicit prohibitions by instructing as a general rule that we should be separated from [certain] permitted practices.

23. Deuteronomy 6:18; Leviticus 19:18; Leviticus 11:43

And you shall do that which is just and good...

...And you shall love your neighbour as yourself; I am Gd.

Do not degrade yourselves...

24. Rabbi Asher Weiss (21st century Israel), Minchat Asher II 9

One who keeps himself from becoming obligated in a mitzvah, before its time has arrived, has not eliminated a commandment. But in terms of the Torah's desire, one is obligated to make certain that he will be able to fulfill Gd's commands, and to pursue their fulfillment.

25. R' Aharon Lichtenstein, *Does Judaism Recognize an Ethic Independent of Halakhah?* (Leaves of Faith Chap. 2) Essentially, then, the question is whether Halakhah is self-sufficient... If, however, we equate Halakhah with the *din*, if we mean that everything can be looked up, every moral dilemma resolved by reference to code or canon, the notion is both palpably naïve and patently false. The Hazon Ish, for one, and both his saintliness and his rigorous halakhic commitment are legend, had no such illusions. "Moral duties," he once wrote, "sometimes constitute one corpus with halakhic rulings, and it is Halakhah that defines the proscribed and permitted of ethical thought." Sometimes, but not, evidently, always. There are moments when one must seek independent counsels.

26. Exodus 18:20

And you shall warn them of the laws and *Torot*, and you shall inform them of the path on which they shall walk and the deed they shall perform.

27. Talmud, Bava Metzia 30b

"And you shall inform them" is a livelihood. "Of the path" is acts of kindness. "They shall walk" is looking after the sick. "On which" is burial. "And the deed" – This is justice. "They will perform" – This is to transcend the line of the law.

28. Leviticus 25:36

Do not take forms of interest from [a borrower]; and you shall revere your Gd.

29. Talmud, Bava Metzia 61b

[Refunding certain forms of interest] is a function of reverence, even if there is no legal duty to refund it.

30. Dr. Jim Sabin, *What if Madoff Took an Ethics Class?*

<https://healthcareorganizationalethics.blogspot.ca/2009/03/what-if-madoff-took-ethics-class.html>

In medical ethics teaching, most time is spent on teasing out the pros and cons of complex ethical conundrums. But in real life recognizing and acknowledging that there is a conundrum that requires contemplation is as important as the way we reason about it.

31. Rabbi Aharon Lichtenstein, *Religion and Morality*, pg. 123 (By His Light, Chapter 6)

Surely, in relating to Halakha, including those areas which one may find morally difficult, there is some role for conscience, some role for the goodness in us, particularly in an interpretive capacity. Conscience does and legitimately can have a role in helping us to understand the content and substance of the *tzav*. In the *Midrash*, *Chazal* depict Avraham's thoughts during his three-day journey to the *akeida*. He tried to understand G-d's command: perhaps G-d meant something else.

32. Rabbi Naftali Zvi Yehudah Berlin (Netziv), *Haamek Davar* to Bamidbar 15:41

Walking in service of Gd is not always the same for everyone. This one involves himself in Torah and its work all day, and this one separates himself for worship, and this one for acts of kindness, and all of it is altruistic. Even in Torah itself, not every path of learning is the same... And if one were to ask, "What is the straight path to choose in his learning or in his careful conduct, to this Kohelet responds, "And follow the path of your heart," whatever draws your heart. It is clear that his *maza*/perceives that this is suited for his spiritual abilities.

[But] on this [a midrash] said, "[Do not stray after] the path you desire," meaning that which is not within the mitzvot of the Torah at all, but one only acts altruistically and in adhering to Gd. I might have said this would be good; therefore it is written, "And do not stray after your hearts," do not seek new mitzvot which are not from the Torah...