

## DNA as Halachic Evidence

We live in a time where our knowledge of science and human life is constantly advancing. However, just as we think our understanding of the world around us becomes clearer, we are reminded how little we actually know. Deoxyribonucleic acid, or DNA, is a perfect example of how expansive science is. The discovery of DNA may have been a groundbreaking find, but in truth it opened the door to a world of microscopic mysteries. A contemporary issue such as DNA testing and the Torah's perspective on it, is not something directly brought down by the gedolim of the past. Is DNA allowed to be used as evidence? Can it be used to identify bodies or people? It is not just the poskim of our generation who are tasked with figuring out how to approach the complicated issues in our lives, rather it is with the help of those who came before us that we can figure out how to move forward. While names such as Rabbi Bleich, Rav Willig, Rav Asher Weiss, or Rav Zilberstein are the names stamped on the official physical *psak*, they did not reach conclusions alone. It is only with the help of the late and early *achronim*, *rishonim*, *geonim*, *amoraim*, *tannaim*, and those who came before them that we can properly tackle the challenges posed by the unprecedented pace of scientific advancement.

When approaching the complex halachic issue of DNA there are many different applications and cases that need to be discussed. This includes using it to identify bodies, confirming maternity, or to find carriers for genetic diseases. All of these cases require a deeper understanding of what exactly is the Torah's definition of acceptable evidence. However, before we get to the halachic implications of DNA we must understand the nature and essence of DNA.

DNA is the basic code of all living organisms. It is composed of millions of chained nucleotides each containing base pairs. These base pairs, depending on their location and structure, provide the instructions for the assembly of proteins that are responsible for almost all biological functions. Every cell stores its DNA in its nucleus where the strands of DNA are tightly packed into chromosomes. The chromosomes are the basic unit of heredity, with each human regularly having 46. Each parent gives 23 out of the 46 chromosomes, giving rise to genetic variation amongst humans. The way that we are able to establish paternity and maternity can be done by using various methods. Typically, the way DNA tests work is that they compare samples of DNA to see if there are matches in base pair locations. However, as we will explore, even though statistically the odds of an error are extremely low, it is important to note that it is not 100% accurate.

As we delve into the halachic approach to this sugya it is important to clarify what halachic evidence is and its requirements. There is a discussion in the Gemara regarding what type of evidence can be used for identifying bodies. In *Yevamos (120a)*, the Mishna brings down that any type of evidence or identification aside from **facial recognition** is not allowed to be used when it comes to identifying a corpse. The gemara explains that unique facial features are a “*Siman Mu'vhak*” (a unique identification marker) and therefore are allowed to be used as evidence. However, as Rabbi Bleich explains in his brilliant work ‘*DNA in Halacha*’, this gemara does not clarify what the exact guidelines are for what is considered a *Siman Mu'vhak*. What does it mean that it has to be ‘unique’?

*Rambam* brings down in *Hilchos Geirushin* that a mole on the body is not sufficient evidence to identify a corpse, so long as the corpse does not have any facial features that are recognizable. What the *Kesef Mishna* explains is the reason for a feature such as a mole on the body to be deemed ‘insufficient evidence’ is that it is not a “*Mu’vhak B’yoser*” (meaning that it is an even higher level of uniqueness than ordinary *Mu’vhak*). It seems that according to the *Rambam*, even if there is a feature that is *unique* to an individual, such as a mole, if it is outside the facial area then that is not enough to be considered a *Siman Mu’vhak B’ Yoser*. So the question still remains: What is a *Siman Mu’vhak* that was brought down in *Yevamos*?

Regarding this question there seems to be two opinions: *Rabeinu Yeruchom* and *Rav Eliyahu Mizrachi* being the extremists and *Mas’at Binyamin* being the lenient opinion. *Rav Eliyahu Mizrachi* says that to be a *Siman Muv’hak*, not only must it be a sign that is uncommon and rare, but it must be a feature that is not on the body of any other man in the world! The sign must truly be a one-of-a-kind sign. However, aside from this extreme opinion, the *Mas’at Binyamin* says that ‘one in a thousand’ is enough to rely on. At this point it would seem that, statistically speaking, according to the *Mas’at Binyamin*, DNA meets the criteria to be considered a *Siman Muv’hak*.

However, there seem to be a few issues that remain at large regarding DNA. One of the biggest concerns is that it is so small that it may not have halachic significance. *Rabbi Chaim Jachter* discusses how there are many instances where we see that things that cannot be seen by the naked eye are not halachically recognized. *Rav Shlomo Kluger* and the *Aruch HaShulchan* state that any insect that can’t be seen with the human eye does not need to be worried about.

Similarly, Rav Moshe Feinstein writes that tefillin that can be determined as ‘not good’ with a microscope are able to be used. There are many more instances of things that cannot be seen with the human eye being deemed ‘halachically insignificant’. So, DNA should be just as big an issue seeing as it is much smaller than a tiny insect. Rav Willig has been quoted as saying that this may in fact be an issue that results in DNA not being valid evidence, however, there are certain situations such as *agunah* cases where we can rely on typically insufficient evidence for other reasons.

However, the issues with DNA do not stop there. Rabbi J. David Bleich writes that there are many scientific concerns over the accuracy of DNA tests. He says that there is a chance that the child’s DNA will look different from the parents. While the science behind this is far too complex to explain in a few sentences, the idea is that there is a chance that DNA tests can come to incorrect conclusions even if it is exceptionally rare. This is something that halacha refuses to ignore. Additionally, Rabbi Bleich says that since there are ways for DNA testing to result in misleading conclusions there is no way to view DNA as anything more than a typical *rov*.

DNA being allowed as halachic evidence is not a new question, rather it has been dealt with many times, one of the most famous cases taking place in Israel in 1982. The Beis Din of Ashdod were presented with a troubling case of a woman with two kids who had divorced her husband. The husband challenged the assumption that he was the father of the kids stating that his wife had had an affair. He wanted to take DNA tests that he had received and use them to determine if the children were his or not. The wife adamantly opposed using the DNA tests. It happened to be that the DNA tests showed that he was only the father of one of the two kids

which would seemingly exempt him from paying child support on one of the two children. However, when the Beis Din was presented with these DNA tests there was a disagreement regarding if it could be used to exempt the father or not. Rav Shlomo Dichovsky, a member of the court, ruled that there were two *rovs* in the case, one being that most women do not have relations with men that are not their husbands, and the other being that most DNA tests are accurate. He rules that the case remained unresolved with two *rovs* that conflicted one another, and therefore he said the beis din cannot force the husband to pay child support for both children (only one). Rav Dichovsky said the same way that the case is a deadlocked *safiek* regarding the husband's obligation to pay so too the child is not a *mamzer* because there needs to be certainty to deem a child as such. It is important to note that at that time the accuracy of DNA testing was 99.6% accurate while nowadays the chance of an error is greater than ten billion to one.

The other two dayanim on the court disagreed with Rav Dichovsky stating that the DNA evidence is not admissible. They ruled that the *rov* that a woman only relations with her husband is far too strong to be affected by the DNA evidence.

In 1986 when a similar case was presented to Rav Ovadia Yosef, he ruled that DNA testing was inadmissible. His reasoning, as one would expect, was not scientific rather purely halachic. He brings down the gemara which discusses a case where a child's father is known to be one of two possible people. In that case the gemara establishes that the *safiek* is “irreversible”. Rav Ovadia Yosef says that the gemara does not mention DNA testing as a way around this *safiek* and therefore it is not allowed.

Rav Elyashiv dealt with this dilemma as well and gave a vague ruling regarding how to view DNA testing. He was asked if one should conduct DNA testing to see if a child was in fact the son of a certain individual. He responded that, "One has no right to cast aspersions on the legitimacy of the child by engaging in testing." This sounds as though DNA testing is not allowed to be used to establish someone as a *mamzier*.

Rav Zalman Nechemia Goldberg is the leading advocate for DNA testing being allowed. As we discussed earlier, *Rav Ovadia Yosef* does not allow DNA to be used as halachic evidence. His reasoning stemmed from the fact that the gemara did not discuss DNA as being an acceptable example of evidence means that it cannot be used. However, Rav Mendel Senderovic says that since there are no explicit lines in the gemara telling us that DNA cannot be used, it is in fact *muttar*. He argues that although there are poskim who say that blood tests may be problematic in determining paternity as the gemara says that blood comes from the mother, this issue is not relevant to DNA as one can take a sample from bones or fingernails. He also states that there need not be concern about the statistical accuracy of DNA testing as the millions upon millions of results from DNA testing give us more than enough confidence to rely on such tests. Rav Chaim Jachter writes that "DNA evidence has withstood vigorous challenges from defense attorneys in civil courts throughout the western world." This is another rejection of those who feel DNA tests are not accurate enough.

In the end, there are those who feel DNA is unequivocally unacceptable to be used as evidence and then there are those who think it is the most reliable form of evidence on the market. Either way, the beauty and complex nature of cases like these truly show how

remarkable the world of halacha is. It's hard not to be amazed by what modern science is capable of. The fact that we can identify a human from a single bone fragment or trace of a tissue is unbelievable. While there are significant and valid concerns over relying on DNA as evidence, each case is different with many layers and dimensions. Identifying the remains of loved ones and dealing with heartbroken spouses is not an easy *sugya* and has to be dealt with on a case-by-case basis with some of the most experienced and knowledgeable Rabbanim. What do we do when science and halacha clash? Well, they don't. It's not the role of halacha to validate science, nor is it science's place to override halacha. It is our job to integrate what science has uncovered into the framework of the Torah. We must always remember that in halacha we do not focus on the science of what is *possible*, rather we focus on what is *permissible*.