

**HC70A/PLSS 059 - Genetic Engineering in Medicine, Agriculture, & Law**

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**Genetic Engineering Opinion Survey**

N=29

**Genetic Engineering in Medicine**

- A=27  
B= 72
1. If in your family history there is a lethal incurable genetic disease (e.g., Huntington's Disease), would you want to be tested to see if you carried the lethal gene?
- a. Yes
  - b. No
- A= 29  
B= 0
2. If you carried the dominant lethal gene and became pregnant using *in vitro* fertilization, would have embryos tested for the gene before implantation?
- a. Yes
  - b. No
- A= 28  
B= 1
3. If you carried the dominant lethal gene, would you use *in vitro fertilization* (IVF) and PGD to screen for "normal" embryos before implantation?
- a. Yes
  - b. No
- A= 25  
B= 4
4. If you determined that your embryo carried the dominant lethal gene, would you use gene editing to alter its DNA so that the gene becomes normal?
- a. Yes
  - b. No
- A= 22  
B= 7
5. Should editing human embryos be permitted in order to cure lethal diseases even though the engineered genes will be passed on to the next generation?
- a. Yes
  - b. No
- A=19 E=6  
B= 2 F=0  
C= 1 N/A= 1  
D=0
6. If you could choose traits for your baby, would you choose to:
- a. Rule out a genetic disease
  - b. Ensure greater intelligence
  - c. Influence height, weight, or hair/eye color
  - d. Select gender (male or female)
  - e. All of the above
- A= 21  
B= 8
7. Should parents that carry a gene for a genetic disease be required to test their children to determine whether they are carriers or have the disease?
- a. Yes
  - b. No
- A= 10  
B= 19
8. Should a child that is born with a genetic disease be allowed to sue their parents for failing to have a genetic test for the disease that is causing the child so much "misery;" if a gene test exists? That is, sue for wrongful life liability?
- a. Yes
  - b. No
- A= 16  
B= 13
9. If parents choose to give birth to a child with a genetic disease, should the parents, or society, pay for the health care for their child?
- a. Parents
  - b. Society
- A= 16  
B= 13
10. If you could undergo gene therapy and change any of your genetic traits (e.g., eye color, hair color, skin color, presence/absence of body hair, etc.) without any adverse effects, would you do it?
- a. Yes

- A= 26  
B= 3
- b. No
11. Should the government regulate gene therapy – that is, altering genes to cure or prevent genetic diseases – by passing specific legislation at the state and/or federal levels?
- a. Yes  
b. No
- A= 27  
B= 2
12. Should cloning of human embryos be permitted in order to obtain patient-specific stem cells to cure diseases such as diabetes, Parkinson's, and muscular dystrophy?
- a. Yes  
b. No  
c.
- A= 11  
B= 18
13. Should the state and/or federal government ban the cloning of human beings?
- a. Yes  
b. No
- A= 28  
B= 1
14. Would you allow yourself to be vaccinated with a genetically engineered vaccine in order to make you immune to common flu viruses?
- a. Yes  
b. No
- A= 29  
B= 0
15. Would you allow yourself to be injected with a genetically engineered drug in order to treat a life-threatening illness?
- a. Yes  
b. No
- A= 20  
B= 9
16. Should Permanent (Heritable) Changes in the Human Genome Be Allowed?
- a. Yes  
b. No

### **Genetic Engineering in the Law**

- A= 16  
B= 13
1. Should the police be allowed to collect DNA from suspected criminals without a search warrant?
- a. Yes  
b. No
- A= 18  
B= 10  
n/a= 1
2. Should law enforcement agencies be allowed to use ancestry DNA databases to solve crimes without the permission of individuals who have submitted their DNA sequences to the database?
- a. Yes  
b. No
- A= 14  
B= 15
3. Should every individual who is arrested for a crime be required to have his/her DNA fingerprinted and deposited in a National Criminal DNA database (CODIS)?
- a. Yes  
b. No
- A= 0  
B= 29
4. Should insurance companies have access to your genetic records, or DNA fingerprints, without your permission?
- a. Yes  
b. No
- A= 0  
B= 29
5. Should employers be able to obtain access to employees' genetic records and/or DNA fingerprints without permission?
- a. Yes  
b. No
- A= 4  
B= 25
6. Should employers be allowed to require their employees to undergo DNA testing?
- a. Yes  
b. No
- A= 20  
B= 9
7. Should the state and/or federal government regulate funding for stem cell research?

- A= 24  
B= 4  
n/a= 1
8. Should the government regulate the engineering of animals and plants for use in agriculture and/or medicine?  
a. Yes  
b. No
- A= 28  
B= 1
9. Should genetically engineered mosquitos be released into the environment if they could eliminate diseases such as malaria, yellow fever, and zika?  
a. Yes  
b. No
- A= 7  
B= 22
10. Should patents be allowed on human gene sequences?  
a. Yes  
b. No
- A= 24  
B= 5
11. Should patents be allowed on genetically engineered organisms (e.g., oil-eating bacteria)?  
a. Yes  
b. No
- A= 24  
B= 5
12. Should research involving genetic engineering techniques be carried out to combat lethal pathogens that could be used as bioweapons?  
a. Yes  
b. No
- A= 16  
B= 13
13. Should research publications that could be used to engineer bioweapons be censored by the government?  
a. Yes  
b. No
- A= 19  
B= 10
14. Should resurrecting extinct animals (e.g., woolly mammoth) by a combination of synthetic genomes and cell cloning be permitted?  
a. Yes  
b. No
- A= 27  
B= 2
15. Should organisms with synthetic genomes that have traits that they weren't "born" with (e.g., fuel producing bacteria) be regulated?  
a. Yes  
b. No?

### **Genetic Engineering in Agriculture (GMOs)**

- A= 28  
B= 1
1. Would you eat food obtained from genetically modified plants or animals?  
a. Yes  
b. No
- A= 28  
B= 0  
n/a= 1
2. Can engineering crop plants with modern DNA tools help mitigate the effects of climate change on food production in the future?  
a. Yes  
b. No
- A= 12  
B= 17
3. Should genetically modified foods be labeled?  
a. Yes  
b. No
- A= 2  
B= 27
4. Is organically grown food more nutritious than food grown using conventional agriculture?  
a. Yes  
b. No
- A= 28  
B= 1
5. Have you eaten any foods that were produced by modern genetic engineering?  
a. Yes  
b. No
- A= 0  
B= 0  
C= 1  
D=28
6. How many fruits and vegetables in the grocery store are GMOs?  
a. One

Birthday (YEAR/MM/DD): \_\_\_\_\_/\_\_\_\_/\_\_\_\_

- b. Three
  - c. Ten
  - d. All
- A= 27    7. All domesticated plants and animals are GMOs.  
B= 2        a. Yes  
              b. No
- A= 3        8. Genetically engineered foods are harmful to your health.  
B= 26       a. Yes  
              b. No
- A= 29       9. Genetically engineered salmon has been approved by the FDA for human  
B= 10       consumption.  
              a. Yes  
              b. No
- A= 28       10. Should crops be engineered that are resistant to insects and require no pesticides?  
B= 1         a. Yes  
              b. No
- A= 4        11. The “so-called” GMO controversy is science based?  
B= 24       a. Yes  
N/A= 1      b. No

**QUESTION TWO —5,000 points**

My attitudes on genetic engineering, GMOs, and the importance of biotechnology advances to society have changed as a result of learning about the scientific foundations and applications of genetic engineering in medicine, agriculture, and the law.

- A= 28       A. Yes \_\_\_\_\_  
B= 1        B. No \_\_\_\_\_