

# UCL Museums Genetic Controversy Cards: For students

*Cut out individual cards*

UCL MUSEUMS & COLLECTIONS



1) I am a 12 year old girl. My grandfather has Huntington's disease and I want to get tested to see if I have the gene for Huntington's disease.

It is Autosomal dominant—whatever that means. My father wont let me get tested. I think I should have the test.

UCL MUSEUMS & COLLECTIONS



2) In the future, ID cards could contain a sample of DNA and everyone would be required by law to give a sample.

I am a 42 year old female who has never been in trouble with the authorities. I do not think I should have to give a DNA sample.

UCL MUSEUMS & COLLECTIONS



3) I am an employer looking to hire a new labourer for my building site. I have just interviewed a 35 year old male who's perfect for the job.

He mentioned in interview that his father has just died suddenly and that this tended to run in his family. I want him to have a genetic screening test before I would hire him. Is this ok?

UCL MUSEUMS & COLLECTIONS



4) I am a 67 year old lady who has been donating blood for 27 years. Now a biotechnology company wants to buy a small sample of every donors' blood to create a genetic database.

I am not sure why they would want this. Is it acceptable?

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UCL MUSEUMS & COLLECTIONS



5) I am 11 and have a rare genetic disease that has become treatable through genetic engineering. Without the treatment I will die before I am 25.

The treatment requires the use of DNA from umbilical cord blood that would otherwise be discarded. Is this acceptable?

UCL MUSEUMS & COLLECTIONS



6) I am a 28 year old woman trying to have a baby. A search on the internet has turned up a site in the US that will screen my husband's sperm and separate male and female sperm.

I want to select only sperm that will produce a female. Do I have the right?

UCL MUSEUMS & COLLECTIONS



7) I am a 22 year old male and my grandfather suffers from Alzheimer's and experiences severe dementia. I am worried about developing this disease when I am older.

A test has just been developed which will show me if I am genetically susceptible to getting Alzheimer's disease when I am older. Should I take the test?

UCL MUSEUMS & COLLECTIONS



8) I am a 52 year old man who has been found guilty of murder. After the trial it is discovered that I have a gene that predisposes me to aggressive behaviour.

Should I be treated differently now?

# UCL Museums Genetic Controversy Cards: For students

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UCL MUSEUMS & COLLECTIONS



9) I am a pregnant healthy woman. I had my foetus screened for genetic disorders. The doctors say there are no clear genetic diseases, but did not screen for genetic predispositions to diseases, like cancer and heart disease for example.

I want my baby to be tested for predispositions to these diseases

UCL MUSEUMS & COLLECTIONS



10) I am a 45 year old farmer in Ethiopia. I have been trying to grow corn in my barren soil for years with no luck. A GM corn has been developed that will grow in these highly salty soils.

This technology could be used to feed thousands who would otherwise go hungry. Is this a good idea?

UCL MUSEUMS & COLLECTIONS



11) I am a 38 year old vegetarian.

I have just bought some tomatoes only to discover they have been genetically engineered to contain a fish gene.

Are they still vegetarian?

UCL MUSEUMS & COLLECTIONS



12) I am a 25 year old woman who's mother was killed in 1982. Blood samples were found at the scene but DNA testing was unavailable and no-one was convicted.

I want past cases like my mother's to be revisited and DNA testing used on the old samples.

# UCL Museums Genetic Controversy Cards: For students

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13) I am a police officer trying to solve unsolved crimes. I am convinced that many of these crimes would be solved if I could get DNA for comparison from every current prisoner.

Should the samples be collected?

UCL MUSEUMS & COLLECTIONS



14) I am a 26 year old man who has cystic fibrosis. My wife has just had a baby and our health insurance company will not insure our child unless he has genetic testing to see if he has Cystic fibrosis.

Is this reasonable?

UCL MUSEUMS & COLLECTIONS



15) I am a doctor on a medical ethics advisory board. A pregnant mother has requested a late stage termination of a baby found to be carrying the gene for dwarfism.

Dwarfism does not affect the health of the child and so I don't think that the pregnancy should be terminated

UCL MUSEUMS & COLLECTIONS



16) I am a 28 year old woman trying to have a baby. Unfortunately I have haemophilia which I will pass on to any boy I have. My husband does not have this genetic problem so our daughters would be fine. A search on the internet has turned up a site in the US that will screen my husband's sperm and separate male and female sperm.

I want to select only female sperm.

# UCL Museums Genetic Controversy Cards: For teachers/facilitators

UCL MUSEUMS & COLLECTIONS



1) I am a 12 year old girl. My grandfather has Huntington's disease and I want to get tested to see if I have the gene for Huntington's disease.

It is Autosomal dominant—whatever that means. My father wont let me get tested. I think I should have the test.

*Why might he be reluctant?  
When are you old enough to decide?*

UCL MUSEUMS & COLLECTIONS



2) In the future, ID cards could contain a sample of DNA and everyone would be required by law to give a sample.

I am a 42 year old female who has have never been in trouble with the authorities. I do not think I should have to give a DNA sample.

*What issues are there with compulsorily acquiring people's DNA? Who gets to see the results? What are the benefits?*

UCL MUSEUMS & COLLECTIONS



3) I am an employer looking to hire a new labourer for my building site. I have just interviewed a 35 year old male who's perfect for the job.

He mentioned in interview that his father has just died suddenly and that this tended to run in his family. I want him to have a genetic screening test before I would hire him. Is this ok?

*How would they use this information? Is this a matter of choice? Are there some jobs where this is acceptable?*

UCL MUSEUMS & COLLECTIONS



4) I am a 67 year old lady who has been donating blood for 27 years. Now a biotechnology company wants to buy a small sample of every donors' blood to create a genetic database.

I am not sure why they would want this. Is it acceptable?

*How would you feel about this. Who owns your blood after donation?  
What could they do with the information?*

# UCL Museums Genetic Controversy Cards: For teachers/facilitators

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5) I am 11 and have a rare genetic disease that has become treatable through genetic engineering. Without the treatment I will die before I am 25.

The treatment requires the use of DNA from umbilical cord blood that would otherwise be discarded.

Is this acceptable?

*How do you feel about this treatment?*

*Who should be asked permission?*

UCL MUSEUMS & COLLECTIONS



6) I am a 28 year old woman trying to have a baby. A search on the internet has turned up a site in the US that will screen my husband's sperm and separate male and female sperm.

I want to select only sperm that will produce a female. Do I have the right?

*Should you use this service? What are the benefits? What's the harm?*

UCL MUSEUMS & COLLECTIONS



7) I am a 22 year old male and my grandfather suffers from Alzheimer's and experiences severe dementia. I am worried about developing this disease when I am older. A test has just been developed which will show me if I am susceptible to getting Alzheimer's disease when I am older. Should I take the test?

*Should testing be performed when no treatment is available? You have a 1 year old son; should you test him too? How will the results affect you?*

UCL MUSEUMS & COLLECTIONS



8) I am a 52 year old man who has been found guilty of murder. After the trial it is discovered that I have a gene that predisposes me to aggressive behaviour.

Should I be treated differently now?

*Do people's genes make them behave in a particular way? Can people always control their behaviour? Can we be held responsible for our genes?*

# UCL Museums Genetic Controversy Cards: For teachers/facilitators

UCL MUSEUMS & COLLECTIONS



9) I am a pregnant healthy woman. I had my foetus screened for genetic disorders. The doctors say there are no clear genetic diseases, but did not screen for genetic predispositions to diseases, like cancer and heart disease for example.

I want my baby to be tested for predispositions to these diseases.

*Should these tests be made available? What would you do with the results? What is considered acceptable diversity? Where is the line between medical treatment and enhancement? Consider the link between environmental factors and genetic predisposition.*

UCL MUSEUMS & COLLECTIONS



10) I am a 45 year old farmer in Ethiopia. I have been trying to grow corn in my barren soil for years with no luck. A GM corn has been developed that will grow in these highly salty soils.

This technology could be used to feed thousands who would otherwise go hungry. Is this a good idea? *How do you feel about this corn? What happens when farmers become tied to one manufacturer?*

*Is this any different from the Flavr Savr tomato?*

UCL MUSEUMS & COLLECTIONS



11) I am a 38 year old vegetarian.

I have just bought some tomatoes only to discover they have been genetically engineered to contain a fish gene.

Are they still vegetarian?

*Would you be happy to eat this tomato?*

UCL MUSEUMS & COLLECTIONS



12) I am a 25 year old woman who's mother was killed in 1982. Blood samples were found at the scene but DNA testing was unavailable and no-one was convicted.

I want past cases like my mother's to be revisited and DNA testing used on the old samples.

*Should they go back and test the DNA and take samples from past suspects.*

*Should all prisoners have their blood taken for screening?*

*Are the associated costs worth the goal?*

# UCL Museums Genetic Controversy Cards: For teachers/facilitators

UCL MUSEUMS & COLLECTIONS



13) I am a police officer trying to solve unsolved crimes. I am convinced that many of these crimes would be solved if I could get DNA for comparison from every current prisoner. Should the samples be collected?

*What happens to the information once they are released?*

*What about former prisoners?*

*Should prisoners be treated the same as the rest of us - why not sample everyone?*

UCL MUSEUMS & COLLECTIONS



14) I am a 26 year old man who has cystic fibrosis. My wife has just had a baby and our health insurance company will not insure our child unless he has genetic testing to see if he has Cystic fibrosis.

Is this reasonable?

*What is the value of testing when no cure is available? Should insurers be able to ask this for this? What are the benefits to society?*

UCL MUSEUMS & COLLECTIONS



15) I am a doctor on a medical ethics advisory board. A pregnant mother has requested a late stage termination of a baby found to be carrying the gene for dwarfism.

Dwarfism does not affect the health of the child and so I don't think that the pregnancy should be terminated

*Where is the line between treatment and improvement? To what extent should potential quality of life be considered?*

UCL MUSEUMS & COLLECTIONS



16) I am a 28 year old woman trying to have a baby. Unfortunately I have haemophilia which I will pass on to any boy I have. My husband does not have this genetic problem so our daughters would be fine. A search on the internet has turned up a site in the US that will screen my husband's sperm and separate male and female sperm. I want to select only female sperm.

*Should you use this service? Is it different to select a baby's sex before fertilisation than after? Should we ever make this kind of choice?*

# Spectrum cards

*Cut out individual cards*

<p>UCL MUSEUMS &amp; COLLECTIONS</p> 	<p>UCL MUSEUMS &amp; COLLECTIONS</p> 
<p><b>Agree /</b> <b>Yes</b></p>	<p><b>Disagree /</b> <b>No</b></p>

### **Cystic Fibrosis - The Facts**

- Cystic Fibrosis is a recessive genetic disorder.
- Both parents must carry the faulty gene for their offspring to be affected.
- Symptoms can include poor weight gain, troublesome coughs, repeated chest infections and salty sweat.
- There is no cure and sufferers usually do not live beyond their 20s.
- 1 in 25 people in the UK carry the CF gene, usually without knowing it. This disease affects 1 in 2500 babies born in the UK.

### **Huntington's Disease - The Facts**

- Caused by a faulty gene on chromosome 4.
- One copy of the faulty gene is all that's needed to be affected by the disease—Autosomal dominant.
- A child of a Huntington's parent has a 50:50 chance of having the disease
- The disease does not usually begin to develop until the sufferer is 30-50 years old.
- Sufferers develop uncontrolled movements, loss of intellectual abilities and emotional disturbances.
- There is no way to stop or reverse the progression of Huntington's disease

### **Alzheimer's Disease - The Facts**

- Scientists do not yet fully understand what causes Alzheimer's. There probably is not one single cause, but several factors that affect each person differently.
- Age is the most important known risk factor. The number of people with the disease doubles every 5 years beyond age 65.
- The inherited form of Alzheimer's is rare and usually affects people aged 30-60. The more common form has no obvious inheritance pattern and usually affects older people.

### **Haemophilia A- The Facts**

- Haemophilia A is the most common form of haemophilia. It is caused by the deficiency of Factor VIII.
- The faulty gene is on the X chromosome. As males have only one copy of this chromosome if they have a faulty gene on their only X chromosome they will have the disease. As females have 2 copies of the X chromosome they need to have faulty copies on both genes to have the disease—otherwise they are carriers.