

[youtube:<http://www.youtube.com/watch?v=SKeorEMkFGY> w auto]

Future of biotechnology, genetics, health care, pharmaceutical industry

Human [genetics](#) is the use of [genetics](#) to change people, or to study inheritance, alteration of human genetic code by artificial means etc.

Human [genetics](#) means being able to predict who has genetic abnormalities.

An example of human [genetics](#) is insertion of human genes into sheep so that they secrete alpha-1 antitrypsin in their milk - a useful substance in treating some cases of lung disease.

Human [genetics](#) has created a rabbit-human hybrid by combining balls of human and rabbit cells shortly after fertilisation.

Human [genetics](#) has created a salmon fish that has human genes and grows to 4 times normal length in a year.

Human [genetics](#) works because there is one language of life: human genes work in bacteria, monkey genes work in mice and earthworms. Tree genes work in bananas and frog genes work in rice. There is no limit in theory to the potential of human genetics.

Human [genetics](#) has given us the power to alter the very basis of life on earth.

Human [genetics](#) in making babies has been said to be no different than ancient breeding methods but this is untrue. Human [genetics](#) allows us to search and destroy embryos and fetuses whose genes are less than optimal (very controversial) and also add genes to those unborn to seek to improve them.

Human [genetics](#) therefore has few limits - except our imagination, and our moral or ethical code.

Human [genetics](#) makes the whole digital revolution look nothing. Digital technology changes what we do. Human [genetics](#) has the power to change who we are.

Human cloning is a type of human genetics, but is not the same as true genetic manipulation. In human cloning, the aim is to duplicate the genes of an existing person so that an identical set is inside a human egg. The result is intended to be a cloned twin, perhaps of a dead child.

Human [genetics](#) in its fullest form would result in the child produced having unique genes - as a result of laboratory interference, and therefore the child will not be an identikit twin.

Human [genetics](#) could create people with enhanced intelligence or athletic capability.

Human [genetics](#) will alter the basis of life on earth - permanently - unless controlled.

Summary written May 2004, updated 2011.