GHOST IN YOUR GENES!

PROVES THAT GOD KNOWS BEST

REPROGRAMMING GENES

a PBS program that aired on April 5, 2007

IS A PERSONS DESTINY WRITTEN IN THEIR DNA?

If one identical twin develops cancer, will the other? A new field called epigenetics is offering some surprising answers. Epigenome literally means above or outside of the genome. It involves the study of tiny chemical tags that attach themselves to the genes, turning them on or off. As you age the pattern of tags, your epigenome, changes…it can be affected by toxins you are exposed to or even what you eat.

Jean-Pierre Issa of the M. D. Anderson Cancer Center describes how a field called epigenetics may change the way researchers look at the disease. He says:

When it comes to cancer, scientists used to think it was totally caused by glitches within our genetic code. But now it looks like epigenetics is also a critical factor….Cancer cells start out as normal cells, with the same set of instructions present in every one of our cells… In the process of becoming cancer, a lot of these instructions are forgotten because specific genes that regulate the behavior of a cell are turned off by epigenetics.

Epigenome therapy really aims at reminding the cell of its normal behavior….We try to do that by REACTIVATING GENES, that have been silenced in the cancer cell and letting those genes do the work for us, and not killing the cell.

[OF COURSE THEY ARE USING DRUGS TO TRY TO MAKE THE CELL WORK RIGHT.]

The bottom line is our epigenome is something that we could actually watch, is something that we can affect by our behavior. As opposed to the genome which is what we are born with that we can not really modify, the epigenome is a little more dynamic. Smoking and exposures and lifestyle habits can affect our epigenome. And perhaps more interestingly, not to be on the

negative all the time, there might be interventions that would make our epigenome more healthy.

GHOST IN YOUR GENES

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Program Overview: An examination of the gatekeeper role played by the epigenome, which can shape everything from whether people develop diseases to whether they are fat or slim by turning on and off specific genes.

Scientists have long puzzled over the different fates of identical twins: both have the same genes, yet only one may develop a serious disease like cancer or autism. What's going on? Does something else besides genes determine who we are?

The "something else" turns out to be a network of chemical switches that sit on our DNA, turning genes off and on. Called collectively the epigenome, the switches appear to play a major role in everything from how our cells keep their identity to whether we contract dread diseases. Epigenetic switches may even help mold our personalities—or so it appears to Canadian researchers studying a group of epigenetically modified rats.

"We're in the midst of probably the biggest revolution in biology, which is going to forever transform the way we understand genetics, environment, the way the two interact, and what causes disease," says Mark Mehler, Professor of Neurology at Albert Einstein College of Medicine. "It's another level of biology, which for the first time really is up to the task of explaining the biological complexity of life."

In a provocative report from the frontiers of biology, NOVA explores new findings that call into question the long-held belief that all inherited traits are passed on by our genes. The fast-growing field of epigenetics investigates hidden influences that could not only affect our health today but that of our descendants far into the future. It now appears the environment we live in makes small chemical changes to our DNA without affecting the gene's overall makeup: In other words, epigenetics adds another layer to our DNA that acts as a control system of "switches." Variable life experiences, such as nutrition or stress, may trigger these switches, turning genes on or off. According to the new research, these subtle changes can then be "remembered" and passed on from generation to generation, altering the traits we inherit. So the lives of your grandparents – the air they breathed, the food they ate, even the things they saw – could possibly affect you, and that what you do in your lifetime could, in turn, affect your grandchildren.

NOVA delves into this fascinating new idea, interviewing top scientists in the field and following what could be a paradigm shift in the way we think about inheritance and our genes.

http://samadhisoft.com/2008/05/22/ghost-in-your-genes-pbs-nova/

'Epigenome'. The word means, 'above the genome'. As they explained, the way to think about this is that the genome is like the computer's hardware and the Epigenome is like the software, above, that tells the hardware/genome what to do. This wasn't particularly new to me as I've

been following the developments these last few years as biologists have been discovering the RNA control systems that coexists and perhaps even preceded the DNA systems within our genetics.

What was new and scary was the idea that what happens in one generation can effect the health outcomes in another generation. They had one study where they connected whether the human grandparents had experienced famine during critical times in their development and how those events in the lives of the grandparents had affected the health of their grandchildren.

- They showed how exposure to pesticides on one generation of rats could produce effects in the next four generations of their offspring.

- I couldn't help but think about the many thousands of untested chemicals that we humans have unleashed on ourselves and the biosphere.

- They said that if someone chooses to smoke of drink, they used to be able to say, "*It's my body, I can take the risk if I want.*" But now, it may be revealed that one's actions can reverberate down through generations of your progeny.

http://bestdocumentaries.blogspot.com/2007/10/ghost-in-your-genes-full-nova.html

Biology stands on the brink of a shift in the understanding of inheritance. The discovery of epigenetics – hidden influences upon the genes – could affect every aspect of our lives. At the heart of this new field is a simple but contentious idea – that genes have a 'memory'.

That the lives of your grandparents – the

air they breathed,

the *food they ate,*

even the things they saw –

can directly affect you, decades later, despite your never experiencing these things yourself. And that what you do in your lifetime could in turn affect your grandchildren.

The conventional view is that DNA carries all our heritable information and that nothing an individual does in their lifetime will be biologically passed to their children. To many scientists, epigenetics amounts to a heresy, calling into question the accepted view of the DNA sequence

– a cornerstone on which modern biology sits.

Epigenetics adds a whole new layer to genes beyond the DNA. It proposes a control system of 'switches' that turn genes on or off – and suggests that things people experience, like nutrition and stress, can control these switches and cause heritable effects in humans.

In a remote town in northern Sweden there is evidence for this radical idea. Lying in Överkalix's parish registries of births and deaths and its detailed harvest records is a secret that confounds traditional scientific thinking. Marcus Pembrey, a Professor of Clinical Genetics at the Institute of Child Health in London, in collaboration with Swedish researcher Lars Olov Bygren, has found evidence in these records of an environmental effect being passed down the generations. They have shown that a famine at critical times in the lives of the grandparents can affect the life expectancy of the grandchildren. This is the first evidence that an environmental effect can be inherited in humans….

This work is at the forefront of a paradigm shift in scientific thinking. It will change the way the causes of disease are viewed, as well as the importance of lifestyles and family relationships. What people do no longer just affects themselves, but can determine the health of their children and grandchildren in decades to come. "We are," as Marcus Pembrey says, "all guardians of our genome."

THE HOLY BIBLE

Exodus 20:5 Thou shalt not bow down thyself to them, nor serve them: for I the LORD thy God [am] a jealous God, visiting the iniquity of the fathers upon the children unto the third and fourth generation of them that hate me;

Exodus 34:7 Keeping mercy for thousands, forgiving iniquity and transgression and sin, and that will by no means clear[the guilty; visiting the iniquity of the fathers upon the children, and upon the children's children, unto the third and to the fourth generation.

NOW WE KNOW MORE ABOUT WHY. THE SIN PROBLEM, MENTAL & PHYSICAL HEALTH OF GOD'S PEOPLE.

The strongest and most endearing ties that bound them to idolaters were broken. Not only were future marriages with the heathen forbidden, but marriages already formed were dissolved.

Some men in sacred office pleaded for their heathen wives, declaring that they could not bring themselves to separate from them. Nehemiah replied, with solemn sternness, "Shall we then hearken unto you, to do all this great evil to transgress against our God in marrying strange wives?"

A grandson of the high priest, having married a daughter of the notorious Sanballat, was not only removed from office; but promptly banished from Israel. "Remember them, O my God," exclaimed Nehemiah, "because they have defiled the priesthood, and the covenant of the

priesthood, and of the Levites." He adds: "Thus cleansed I them from all strangers, and appointed the wards of the priests and the Levites, every one in his business." No respect was shown for rank or position. No distinction was made. Whoever among the priests and rulers refused to sever his connection with idolaters, was immediately separated from the service of the Lord. {ST, January 24, 1884 par. 4}

What an enormous weight of responsibility rests upon parents when we consider that the course pursued by them before the birth of their children has very much to do with the development of their character after their birth.— HL (Part 2) 32, 1865. (2SM 426.) {1MCP 140.1}

Sickly men have often won the affections of women apparently healthy, and because they loved each other, they felt themselves at perfect liberty to marry. . . . If those who thus enter the marriage relation were alone concerned, the sin would not be so great. Their offspring are compelled to be sufferers by disease transmitted to them. Thus disease has been perpetuated from generation to generation.... They have thrown upon society an enfeebled race, and done their part to deteriorate the race, by rendering disease hereditary, and thus accumulating human suffering.--HL (Part 2) 28, 1865. (2SM 423.)

Another cause of the deficiency of the present generation in physical strength and moral worth is men and women uniting in marriage whose ages widely differ. . . . The offspring of such unions in many cases, where ages widely differ, have not well-balanced minds. They have been deficient also in physical strength. In such families have frequently been manifested varied, peculiar, and often painful traits of character. They often die prematurely, and those who reach maturity, in many cases, are deficient in physical and mental strength and moral worth. {1MCP 138.1}

Thus a class of beings have been thrown upon the world as a burden to society. Their parents were accountable in a great degree for the characters developed by their children, which are transmitted from generation to generation.--HL (Part 2) 29, 30, 1865. (2SM 423, 424.) {1MCP 138.2}

Women have not always followed the dictates of reason instead of impulse. They have not felt in a high degree the responsibilities resting upon them to form such life connections as would not enstamp upon their offspring a low degree of morals and a passion to gratify debased appetites at the expense of health, and even life. God will hold them accountable in a large degree for the physical health and moral characters thus transmitted to future generations.

Very many of this class have married and left for an inheritance to their offspring the taints of their own physical debility and depraved morals. The gratification of animal passions and gross sensuality have been the marked characters of their posterity, which have descended from generation to generation, increasing human misery to a fearful degree and hastening the depreciation of the race.--HL (Part 2) 27, 28, 1865. (2SM 422, 423.) {1MCP 138.3 &4}

What the parents are, that to a great extent the children will be. The physical conditions of the parents, their dispositions and appetites, their mental and moral tendencies, are to a greater or less degree reproduced in their children.--MH 371 (1905). {1MCP 138.5}

The nobler the aims, the higher the mental and spiritual endowments, and the better developed the physical powers of the parents, the better will be the life equipment they give their children. In cultivating that which is best in themselves, parents are exerting an influence to mold society and to uplift future generations.... {1MCP 139.1}

Through the indulgence of appetite and passion their energies are wasted, and millions are ruined for this world and for the world to come. Parents should remember that their children must encounter these temptations. Even before the birth of the child, the preparation should begin that will enable it to fight successfully the battle against evil. {1MCP 139.2}

CHEMICAL TAGS, EPIGENETICS & CANCER

"But in the end it will be found that nature,
untrammeled, does her work wisely and well. Those who persevere in obedience
to her laws will reap the reward in health of body and health of mind." COUNSELS ON DIET p. 301

"Cancer cells start out as normal cells, with the same set of instructions present in every one of our cells….In the process of becoming cancer, a lot of these instructions are forgotten because specific genes that regulate the behavior of a cell are *turned off* by epigenetics." Jean-Pierre Issa of the M. D Anderson Cancer Center.

AN EPIGENOME IS A CHEMICAL SWITCH THAT SITS ON

OUR DNA TURNING GENES OFF OR ON.

What makes an epigenome turn off a gene that regulates the behavior of a cell?

According to Jean-Pierre Issa: "Variable life experiences, such as nutrition or stress may trigger these switches, turning genes on or off."

THESE SUBTLE CHANGES CAN THEN BE REMEMBERED AND PASSED ON FROM GENERATION TO GENERATION, SO THE LIVES OF YOUR GRANDPARENTS—THE AIR THEY BREATHED, THE FOOD THEY ATE, EVEN THE THINGS THEY SAW, COULD POSSIBLY AFFECT YOU, AND THAT WHAT YOU DO IN YOUR LIFETIME COULD IN TURN AFFECT YOUR GRANDCHILDREN!

"Epigenome therapy really aims at reminding the cell of its normal behavior. We try to do that by REACTIVATING GENES that have been silenced in the cancer cell…" ibid.

Scientists want to reactive the cell by using drugs.

God wants to reactive the cell by our lifestyle changes.

WHICH IS BEST?

Drugs never cure disease. They only change the form and location. Nature alone is the effectual restorer, and how much better could she perform her task if left to herself…. {2SM 451.1}

Jean-Pierre Issa continues:

"The bottom line is our epigenome is something that *we can effect by our behavior*…there might be interventions that would make our epigenome more healthy."

IF A CELLS EPIGENOME REGULATING THE ACTION OF A GENE CAN BE TURNED OFF

BY THE AIR I BREATHE,

THE FOOD I EAT,

AND THE THINGS I WATCH--*

THEN A CELLS EPIGENOME CAN BE TURNED BACK ON

BY THE FOOD I EAT,

THE AIR I BREATHE

AND THE THINGS I WATCH.

Watch the PBS.ORG program:

GHOST IN YOUR GENES which aired Oct. 16, 2007