## Decisions and environment of a parent can genetically effect offspring

For the last few years and extremely hot topics has been epigenetics, which broadly speaking is the study of proteins and other molecules related to gene regulations. Basically, if DNA is like a language with only four letters, epigenetics is an extremely complex dewey decimal system. It's an entirely different set of systems that determines what parts of the DNA actually get read and how it's all organized.

Naturally, gene regulation is dynamic and responds to the environment. Factors like disease, diet, and drug use, can all affect how genes are expressed in different tissue types. Some scientists suspect that modification to these regulatory mechanisms could be passed on to the next generation, in addition to DNA itself. Other think that the epigenetic slate might be wiped clean, due to how different gene expression needs to be during embryonic development.

However, recent research from the University of Edinburgh may be supporting that first hypothesis. They looked at yeast with very similar gene regulation mechanisms to humans, and specifically looked at proteins called histones. DNA is extremely long, so fitting it inside a cell requires a lot of packaging. Histones are the first level of packaging that DNA wraps around. Since the DNA needs to be accessible to be transcribed into RNA, DNA packaging and gene regulation are tightly linked.

Read full, original article: DNA Does Not Solely Contribute To Genetics, New Research Finds