EPIGENETICS
How the experiences of previous generations can affect who we are

THE THEORY
Until recently, all our characteristics were thought to be shaped by two different factors:

1. Nucleus
   - Genes
   - DNA
2. Nucleus
   - Environment
   - Lifestyle

In other words, our extensive epigenetic influences, or ‘physical marks’ that are passed down from parents, could not affect our own DNA.

Epigenetics suggests a combination of these. Some DNA is expressed while others are maintained due to environmental and other factors.

AN EXAMPLE...
Demos influenced what we each bring to the world has been known for a long time. Our grandmothers, or in some cases, great-great-grandmothers, had the same experience of breastfeeding as we do now. In some cases, this helped create DNA changes in a small number of genes that have been passed on from cell to cell. It is possible that these changes could have some influence on the health of the next generation.

HOW DOES THIS HAPPEN?

What does that mean?
In a very simplified way, it means that the epigenetic environment you were brought into as a baby can affect how your genes are expressed in adulthood.

What affects gene regulation?
- Nucleus
- Environment
- Life style

Different epigenetic changes can lead to different gene expressions. These can be passed on from cell to cell and can have an impact on your health in adulthood.

ARE EPIGENETIC CHANGES PERMANENT?

WHAT ARE THE IMPLICATIONS OF EPGENETICS RESEARCH?

- Better understanding of how genes work
- New insights into the role of environment in health
- Potential for new treatments and therapies

Nestlé operates a research program to understand and use epigenetics in a range of areas.

HOM IS NESTLE CONTRIBUTING?

Before pregnancy
- Studying the impact of maternal health on offspring
- Understanding the role of epigenetics in food preferences

During pregnancy
- Improving maternal nutrition to optimize fetal health
- Investigating the role of epigenetics in fetal development

After pregnancy
- Understanding the long-term impact of early life experiences on health
- Developing new products and services to support health and well-being