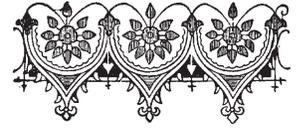


Health & Medicine



Epigenetics: The Science That Supports Healthy Lifestyles



Dr. Kate Thomsen and Silky

According to the popular press, there is no association between herbicides on your food or cell phone radiation and cancer. There is no association between plastics and other environmental chemicals and diabetes. I disagree, but the magazine authors and TV news broadcasters seem sure of it. There is also no reason to take a large daily dose of vitamin D anymore – even if you sit in an office all day and wear sunscreen while outside all weekend. These simple messages create so much confusion in my patients because they are written so absolutely and yet are often contradictory.

The human body is complex and miraculous and the more we unravel about its underpinnings, the more complex it seems to get. We are inextricably related to all the other living organisms in that our physical existences are based on DNA. It was in 1866 when the Czech monk, Gregor Mendel showed that peas could be grown in ways that would predict their traits – like shape or color. He had discovered that there were patterns to inheritance and

these were based on an unknown substance which we now know are genes. In 1953 Watson and Crick discovered how these genes were structured and packaged – the DNA helix. Like a twisted ladder, the DNA unzips (through the rungs of the ladder) in segments allowing certain genes to be copied as needed to make proteins for living. The entire DNA is copied when cells replicate. In 2003, after only 13 years of work, the Human Genome Project had revealed the sequencing of the DNA base pairs (the rungs of the ladder). This is a huge accomplishment since there are 3 billion pairs! Combinations of these base pairs make up the genes and the instructions for using them. Controversy exists as to how many genes are in humans. Recent estimates are in the 25,000 range (although some researchers suspect up to 75,000), which is still much less than originally thought. It took less than 150 years after Mendel's peas to discover and fully identify the "secret of life" – only to reveal that humans have nearly the same number of genes as the 20,000 found in a roundworm. Disheartening news.

Nonetheless, it's the arrangement and groupings of our DNA and the ways the specific genes can be turned on and off that makes us more complex than a roundworm. (Thank God). And this complexity is our blessing and our curse.

Since we have this same meter long stretch of DNA compacted into every cell in our body (except our red blood cells), there must be ways of instructing the DNA to make liver proteins in the liver and not make them in the stomach. Depending on what substances are "washing over" the DNA, attaching here and there, genes in certain regions of the DNA will be "turned on" to make certain proteins and other genes will be "turned off." This is the new field of "epigenetics" – the study of chemical compounds that "mark" the DNA telling it what to do, where to do it and when to do it. This is where it gets exciting.

It turns out that the foods in your diet, exercise, and environmental pollutants are giving your genes messages all the time. I will go over some of the research next month but suffice it to say, how you live your life matters!!! The CDC estimates that 30% of your health outcome is based on your genes and 70% on your lifestyle. You can modify "risky" genes and amplify "protective" genes – mainly by living like our grandmothers told us to – lots of fruits, vegetables and exercise. And a "healthy" lifestyle does not just benefit you – it turns out that you can pass your healthy (or unhealthy) lifestyle on to your children and grandchildren through the epigenetic changes it makes in your DNA.

Dr. Kate Thomsen WOMEN'S HEALTH AND WELLNESS Pennington, NJ

Learn How to "Mark" Your DNA for Health
Reduce Your Risk of Chronic Disease
Join Dr Kate's Therapeutic Lifestyle
Changes (TLC) Program

✿ The CDC and NIH have recommended therapeutic lifestyle changes as the first line of therapy for individuals with or at risk of chronic diseases (heart disease, high blood pressure, cancer, diabetes, high cholesterol, osteoporosis...)

✿ Our 12 week program is based on extensive scientific research. It is medically supervised and includes:

- Initial testing and follow-up testing
- Individual consultations
- Meal plans based on your unique body composition
- A personal guidebook
- Weekly follow-up sessions
- Nutritional supplements

✿ Your DNA will respond by giving you better health outcomes AND

✿ You will feel so much better as well!!!

Call the office for an appointment
or more information.

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Dr Kate Thomsen has a holistic health practice in Pennington, NJ. She is board certified in Family Medicine and Integrative/Holistic

Medicine. For more information visit online at www.drkatethomsen.com. For information about appointments, TLC, or our upcoming group programs, call the office at 609-818-9700.

*"Great things are not done by impulse,
but by a series of small things brought together."*

– VINCENT VAN GOGH