

Pottenger's Cats – A Study in Nutrition

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Between the years of 1932 and 1942, Dr. Francis M. Pottenger, Jr. conducted a feeding experiment to determine the effects of heat-processed food on cats. His ten-year cat study was prompted by the high rate of mortality he was experiencing among his laboratory cats undergoing adrenalectomies for the use in standardizing the hormone content of the adrenal extract he was making. Because there was no existent chemical procedure for standardizing biological extracts, manufacturers of such extracts necessarily had to use animals to determine their potency. As cats die without their adrenal glands, the dose of extract required to support their lives calibrated the level of the extract's potency.

In his effort to maximize the preoperative health of his laboratory animals, Pottenger fed them a diet of market grade raw milk, cod liver oil, and cooked meat scraps. These scraps included the liver, tripe, entrails, brains, heart and muscles. This diet was considered to be rich in all the important nutritive substances by the experts of the day, and the surgical technique used for the adrenalectomies was the most exacting known. Therefore, Pottenger was perplexed as to why his cats were poor operative risks. In seeking an explanation, he began noticing that the cats showed signs of deficiency. All showed a decrease in their reproductive capacity and many of the kittens born in the laboratory had skeletal deformities and organ malfunctions.

As his neighbors kept donating an increasing number of cats to his laboratory, the demand for cooked meat scraps exceeded supply and he placed an order at the local meat packing plant for raw meat scraps, again including the viscera, muscle and bone. These raw meat scraps were fed to a segregated group of cats each day and within a few months this group appeared in better health than the animals being fed cooked meat scraps. Their kittens appeared more vigorous, and most interestingly, their operative mortality decreased markedly. The contrast in the apparent health of the cats fed raw meat and those fed cooked meat was so startling, it prompted Francis to undertake a controlled experiment. What he had observed by chance, he wanted to repeat by design. He wanted to find answers to such questions as: Why did the cats eating raw meat survive their operations more readily than those eating cooked meat? Why did the kittens of the raw meat fed cats appear more vigorous? Why did a diet based on cooked meat scraps apparently fail to provide the necessary nutritional elements for good health? He felt the findings of a controlled feeding experiment might illuminate new facts about optimal human nutrition.

The Cat Study of Francis M. Pottenger, Jr., MD is unique. There is no similar experiment in the medical literature. The pathological and chemical findings were supervised by Pottenger in consultation with Alvin G. Foord, MD, professor of pathology at the University of Southern California and pathologist at the Huntington Memorial Hospital in Pasadena. Accordingly, the studies met the most rigorous scientific standards of the day and their protocol was observed consistently. Since the Cat Study is unique, its findings are frequently quoted and misquoted in order to justify the ideas of others. For example, one author states that the 200 cats dies of arthritis; this did not happen. Another author states that the cats were fed sprouts and survived in full health for four continuous generations. Again, no such experiment took place, and yet this misinformation has been traced over a dozen or more articles and books.

A frequent criticism of The Pottenger Cat Study is that it was not properly controlled. Here it is necessary to ask "By what standards?" Every one of the studies followed strictly defined protocol. All variables in the stock of the animals were reported and explained. Because some of the test procedures may seem crude forty years later, this in no way invalidates the facts that the procedures were meticulously controlled and that the results of the experiments were reported as observed.

For more information about The Pottenger Cat Study as well as a clearinghouse of information on healthful lifestyles, ecology, sound nutrition, alternative medicine, humane farming and organic gardening go to: www.pricepottenger.org

Pottenger's Cats: Early Epigenetics And Implications For Your Health

By Stephanie Cold / Nov 13, 2014

The 10-Year Pottenger Cat Study

In 1903, Dr. Francis Marion Pottenger, Jr., a physician in Monrovia, California, opened the Pottenger Sanatorium Clinic with his two brothers, specializing in tuberculosis (TB). He hypothesized that tuberculosis was caused by deficiencies in the adrenal gland and, to test the hypothesis, he experimented with cats. Pottenger fed cats both cooked and raw meat. To his astonishment, he observed very different health outcomes. Out of curiosity, Pottenger began a ten-year study focused on variations in the diets of cats. The variables in his experiments included either raw milk versus cooked or raw meat versus cooked. Throughout the entire study and four generations of cats, Pottenger diligently recorded his observations of the health, weight, calcium and phosphorus levels, skeletal structures, and dispositions of the cats. The differences were quite striking. (Pottenger)

In short, the cats subsisting on the raw products (in the first experiment raw meat and in the second experiment raw milk), maintained excellent health. Mother cats carried their babies to full-term, birthed approximately five kittens to a litter, and experienced no difficulty in nursing. The kittens had consistent skeletal structure and no dental issues or infections. Conversely, the health of cats fed cooked meat and cooked milk quickly declined. Even within three months of a transition from a raw to cooked diet, dental infections often arose. Mother cats had difficulty carrying offspring full-term, and suffered from increased miscarriages and raised infant mortality rates. Mother cats were often too weak to nurse, and some died in labor. Kittens were born with varying skeletal structures and weaker bones, and were prone to infections, allergies, and respiratory illnesses.

The degenerative health of the cats on cooked meat/cooked milk diets continued and appeared to be passed from generation to generation. After several generations of degeneration, Pottenger attempted to test the potential "regeneration" of health by means of replacing a cooked diet with a raw one. He found that this was indeed possible, though minor health problems did persist even into the third generation. (Pottenger)

What is Epigenetics?

The implications of these observations are vast. The experiment showed that distinct changes occur when food is cooked that affect its nutritional quality for the cat. It proved that the physical degeneration associated with a mother's poor (cooked) diet could be inherited by offspring and was, in a way, remembered by the genes through multiple generations. The opposite was also found to be true in that the influence of a nutritious (raw) diet is passed on through generations.

POTTENGER OBSERVED THAT DEGENERATION OF HEALTH OCCURRED RATHER SWIFTLY AND THAT REGENERATION, WHILE POSSIBLE, TOOK TIME.

Most important, perhaps, was that Pottenger's experiments revealed the power that environmental factors, including diet, have on our health and the health of future generations. This leads to an idea of even greater significance—that by controlling our environment, we control our health. Biologically, this occurs in the body through the interaction of our epigenome with the environment. (Graham, Kesten, and Scherwitz)

Today epigenetics is more concisely defined as temporary changes in how genes are expressed or turned on or off due to our interactions with the environment, and how those changes affect our health and the health of future generations. These interactions and changes occur without any permanent changes to the DNA sequence. The book, *The Language of Genetics: An Introduction*, offers a particularly useful metaphor to support our understanding of this definition. It states that "if the DNA sequence is the musical score on the page, then epigenetics is all those Italian words (fortissimo and the like) that give instructions on how the notes should be played." (Alexander)

For those unfamiliar with musical concepts, another book, *Pottenger's Prophecy*, provides this metaphor for epigenetics that also incorporates the terminology commonly used in genetics research: "If you were building a house, the architect would provide the blueprint (the genotype); and the builder would work with building materials from the environment (the epigenetic mechanism) to create the house. In turn, the finished house would be the phenotype, the end result." (p. 24) While Pottenger did not necessarily realize the significance of the conclusions of his research at the time, Pottenger and his cats paved the way for modern epigenetics.

<https://price-pottenger.org/healthy-living-tips/epigenetics/pottengers-cats-early-epigenetics-and-implications-your-health>