



The Chemistry of Chocolate

"Chocoholics" everywhere will tell you that eating chocolate makes them feel good, but why? Chocolate contains more than 300 known chemicals, some of which react within the human brain to alter mood. One of these chemical reactions is the release of endorphins, proteins which occur naturally in the brain to reduce pain, which in large amounts can make you feel more relaxed or energetic.

Chocolate also contains caffeine in very small amounts, but has a lot of the weaker related stimulant theobromine. Like caffeine, theobromine has been linked to causing migraine headaches, but its positive properties have not been ignored. In the 1940s and '50s, the Hershey company extracted the stimulant from cocoa beans and sold it to Coca Cola, which used the chemical in its soda.

Phenylethylamine is related to amphetamines, and both are stimulants of the nervous system which raise blood pressure and blood glucose levels. Practically speaking, phenylethylamine has been shown to make people feel more alert and gives them a sense of well-being.

In 1992, a new chemical was discovered, which was later found in chocolate. Anandamide is a messenger molecule that plays a role in depression, memory, and pain. The name comes from the Sanskrit word "ananda", which means "bliss". Researchers think the presence of anandamide in chocolate may explain why it is by far the most-craved food.

Anandamide is found naturally in the human body, and acts as a molecular key to receptors on nerve cells. The anandamide key attaches to a receptor and allows ions to flow into the nerve cell, equalizing charges both inside and outside the cell. These molecular keys help alleviate pain and aid in relaxation. Pain-killing drugs like morphine and codeine mimic naturally-occurring key molecules. But scientists hope the mood-enhancing qualities of anandamine will have more benefits than just a chocolate craving. They are hoping it may contribute to finding the cure for mental diseases.

Now you know some of the reasons why chocolate makes you feel so good. It only takes a little bit of chocolate to curtail a craving and get that cheerful chocolatey feeling!

GANONG - A CANADIAN SUCCESS STORY

Next time you bite into your favourite chocolate bar or give your sweetheart a heart-shaped box of treats, remember that Canadian innovation helped make chocolate what it is today.

Ganong Brothers Ltd. was founded in 1873 in St. Stephen, NB, when James and Gilbert Ganong realized their retail grocery business was failing. They decided to specialize in confectionery products, and later moved on to chocolates.

In fact, it is a proud Canadian fact that the Ganong invented the chocolate bar. Arthur Ganong and his manufacturer George Ensor needed to find a way to keep chocolate from melting in their pockets on their frequent fishing trips. They came up with a peanut and chocolate mixture which they wrapped in cellophane. In 1910, several years after their invention, the 5-cent chocolate bar was introduced to the North American market.

Throughout their history, Ganong has brought many innovations to the confectionery business. They installed the first lozenge machine in 1887 (which is still in use), and they were the first manufacturer in Canada to use cellophane packaging.

Today, Ganong Brothers Ltd. is still a family company, headed by fourth-generation president David A. Ganong. Their continued success has led them to be regarded as one of the best-managed private companies in Canada.

At its St. Stephen, N.B. location, Ganong employs two food science graduates and a "chocolatier", or confectionery technologist. In this dream job, they are primarily responsible for ensuring product quality through testing of raw ingredients such as glucose, sugar, and nut meats, finished product starch cook tests, and evaluations of product weight and packaging material. Chocolatier Phil Whiteside did not mention anything about product taste-testing, but it seems that would be a great fringe benefit of the job!