MOOD FOOD OR... YOU ARE WHAT YOU EAT

Flick through the pages of the magazines on almost any UK Newsstand and you'll find the Brits as a nation seem to be obsessed with food, drink and dieting; or at least the magazine publishers are. It would appear that advice on what you should eat and drink sells copy across the nation. Even the lad-mags carry reviews on where to eat if not precisely what!

Currently enjoying a resurgence seem to be articles on foods which affect your mood or performance. Did you know for example that a low fat diet can make you feel depressed?

But this obsession is not a new phenomenon, the relationship between food and mood has intrigued people for ages. Three thousand years ago the Aryuvedic sages of India described how the body's natural rhythms were affected by the time of the day, seasonal changes, and diet.

Today, theories about how food affects behaviour revolve around chemicals called neurotransmitters, biochemical messengers of the brain that pass information from cell to cell. They exert control over many of the body's functions, including the regulation of mood and appetite, thoughts, feelings and behaviours. The neurotransmitters that are most sensitive to diet and influential in affecting mood are serotonin, norepinephrine and dopamine.

Serotonin is the neurotransmitter responsible for feelings of optimism, relaxation, general sense of well being, and the ability to focus and concentrate. However, depending on the time of day, high levels of serotonin can make you feel tired and sluggish. Low levels of serotonin result in depressed mood, difficulty sleeping, poor concentration, and increased food cravings. Dopamine and norepinephrine are responsible for feelings of alertness, excitement, action and mental acuity. Low levels of these neurotransmitters result in depressed mood, fatigue, and poor concentration, whereas high levels can create agitation and anxiety.

The brain synthesizes these neurotransmitters from amino acids, the "building blocks" of protein. There are two amino acids that play a part in the food/mood response: tryptophan and tyrosine. Tryptophan is converted into serotonin, whereas tyrosine is the principal ingredient in dopamine and norepinephrine.

To increase the level of tyrosine in your brain, simply eat foods high in protein (meat, milk products, fish, beans, nuts, soy products). Tyrosine will be converted into dopamine and norepinephrine. With only 3-4 ounces of protein, you will apparently feel energized, more alert and more assertive.

To boost the production of serotonin, reach for carbohydrate rich foods (pasta, starchy vegetables, potatoes, cereals, breads). Carbohydrates enhance the absorption of tryptophan, which is converted into serotonin in the brain. Within about thirty minutes of eating a carbohydrate snack, you will feel more calm and relaxed. The effects will last several hours.

Despite the fact that serotonin is manufactured in the brain from tryptophan, found in protein-rich foods, a meal rich in protein actually lowers the blood level of tryptophan. Even a modest amount of protein will counteract the calming effects of carbohydrates. Here's why... Protein-rich foods contain a variety of amino acids, including tryptophan and tyrosine, all competing with each other to get past the "Blood Brain Barrier", the gateway to the brain. When you eat protein, you flood the system with these competing amino acids and they fight for entry. Tryptophan is a large amino acid; only a small amount actually makes it through. Consequently, the serotonin level does not increase very much. As a result, you may reach for a high carbohydrate dessert, feel more down, or not sleep well that night.

Conversely, a carbohydrate meal will result in fewer competing amino acids. A meal rich in carbohydrates triggers the pancreas to release insulin. Insulin directs most amino acids in the blood stream to be absorbed into the cells of the body. Tryptophan, which remains in the blood stream, then has an easy entry into the brain. Serotonin levels increase resulting in a more relaxed, focused mood.

So what can you eat to change your mood?

To keep alert it's important to feed the brain. After all, it uses 20% of all the calories we consume. Eating regular meals will help to feed the brain with the amount of glucose it needs to function well. Poor concentration is a common symptom of low-blood sugar. Stay alert by starting the day with a protein-rich breakfast. Eggs, for example, are packed with brain nutrients, but it's best not to overload your body the night before a big day with heavy food, like pasta, as this might interrupt your blood sugar levels. Iron, vitamin B and essential fatty acids are also important nutrients. Foods rich in B vitamins