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| Sommario/riassunto      | <p>Changes in food composition and availability have contributed to the dramatic increase in obesity over the past 30-40 years in developed and, increasingly, in developing countries. The modern diet now contains many foods that are rich in saturated fat and refined sugar. People who eat excessive amounts of this diet are not only likely to become overweight, even obese, develop metabolic and cardiovascular diseases, some forms of cancer, but also undergo a more rapid rate of normal age-related cognitive decline and more rapid progression of neurological diseases such as dementia. A central problem is why people persist in consuming this diet in spite of its adverse health effects and when alternative food choices are available. As high fat / high sugar foods are inherently rewarding, eating for pleasure, like taking psychoactive drugs, can modulate reward neurocircuitry, causing changes in responsiveness to reward-predicting stimuli and incentive motivation. Indeed, the excessive ingestion in modern societies and the resulting obesity epidemic may be viewed as a form of food addiction. Thus, a diet high in palatable foods is proposed to impact upon reward systems in the brain, modulating appetitive learning and altering reward thresholds. Impairments in other forms of cognition have been associated with obesity, and these have a rapid onset. The hippocampus appears to be particularly vulnerable to the detrimental effects of high fat and high sugar diets. Recent research has shown that as little as one week of exposure to a high fat, high sugar diet leads to</p> |

impairments in place but not object recognition memory in the rat. Excess sugar alone had similar effects, and the detrimental effects of diet consumption was linked to increased inflammatory markers in the hippocampus, a critical region involved in memory. Furthermore, obesity-related inflammatory changes have also been described in the human brain that may lead to memory impairments. These memory deficits may contribute to pathological eating behaviour through changes in the amount consumed and timing of eating. The aim of this eBook is to present up-to-date information about the impact of diet and diet-induced obesity on reward driven learning, memory and cognition, encompassing both animal and human literature, and also potential therapeutic targets to attenuate such deficits.

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