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COCOA, AN ANCIENT DRUG THAT FIGHTS MODERN "ILLNESSES"

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The interest in chocolate comes from the publication by Crichton et al. (*Appetite* 2016, 100: 126-132), that states the consumption of chocolate is associated with a better cognitive function as well as from the Siena artisanal chocolate festival which takes place in March and lasts five days. For the fifth time, it hosted the most important Italian chocolate

manufacturers. This brief article will try recount in general terms the history of chocolate and its nutraceutical functions.

Cocoa (*Theobroma cacao* L.) is a small tree originally from South America whose 10-15 cm long pods contain some beans. The Maya and Aztec population migrations spread through central America, moreover, considering it the “food of the gods” and using it as divine offerings. These peoples also believed that the plant could grant immortality. An alcoholic drink was made by fermenting the pulp of the sugar-rich fruit. Some ceramic vases portray scenes where liquid cocoa is being poured from one vessel to the other to make a foam deemed palatable and thirst-quenching. In nature, monkeys disseminate cocoa beans eating its fruits. The cocoa tree has two crops per year and reaches its full development in ten years’ time while a plantation is productive for about thirty years. It needs an average minimum temperature of twenty-five degrees centigrade and an altitude not above five hundred meters. Furthermore it must be planted under a bigger tree (cocoa mother), in order to develop well. Today seventy percent of cocoa comes from western Africa followed by Indonesia, Nigeria, Brazil, and Ecuador. As the tree blossoms all year round, farmers constantly monitor the plant. In order to produce a half-kilo of cocoa, it is necessary to harvest an entire tree. The harvested beans are left to ferment; once dried, cleaned, and packed, they are sold to chocolate factories. Here the beans undergo further processing in which they are heated to extremely high temperatures and then ground. The cocoa liquid is used to produce cocoa butter as well as powdered cocoa, which is mixed with other ingredients to be transformed in tasty sweets. Since antiquity, cocoa has also been used to treat coughs, fever, anemia in addition to heart and kidney pains. However, in truth, there is no scientific evidence of the efficacy of cocoa or chocolate in the prevention or treatment of specific diseases. It is quite likely that many of its therapeutic properties can be attributed to the epicatechin (a specific sub-group of flavonoids) contained in the flavonoids, a substance in which cocoa beans are particularly rich. Moreover, flavonoids protect the plant from diseases and pests, whereas they seem to reduce the risk of such conditions as cancer, stroke, and cardio-vascular diseases in humans. Flavonoids act as antioxidants eliminating the free radicals in the cell, playing a key role in countering many degenerative age-related illnesses. Cocoa also seems to have analgesic and healing properties even against headaches. In fact, the consumption of chocolate causes the organism to produce endorphins whose effect brings about feelings of high spirits and well-being. Forty grams of chocolate contain about 226 calories and sometimes the desired benefits contrast with the calories consumed. The above-mentioned work by Crichton was carried out on a large number of patients through careful neurophysiological investigations; it shows that chocolate consumption has important effects on memory and cognitive activities. Unsurprisingly, the work specifies that such effects are greater if combined with a healthy lifestyle and regular physical activity.