

Fast and frugal food choices: Uncovering individual decision heuristics

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Research on food decision making is often based on the assumption that people take many different aspects into account and weight them according to their subjective importance. On the other hand, a growing body of research suggests that people's decisions can often better be described by simple heuristics—rules of thumb that make choices using only a few yet important pieces of information. To test empirically whether a simple heuristic is able to account for individual food decisions, we ran a computerised experiment in which participants ($N = 50$) repeatedly chose between pairs of 20 lunch dishes that were sampled from a local food court. A questionnaire also assessed individual importance weights as well as evaluation ratings of each lunch dish on nine different factors. Our results show that a simple lexicographic heuristic that only considers each participant's most important factors is as good at predicting participants' food choices as a weighted additive model that takes all factors into account. This result questions the adequacy of weighted additive models as sole descriptions of human decision making in the food domain and provides evidence that food choices may instead be based on simple heuristics.

[10.1016/j.appet.2007.09.054](https://doi.org/10.1016/j.appet.2007.09.054)

A multivitamin–mineral preparation with guaraná positively effects cognitive performance and reduces mental fatigue during sustained mental demand

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This double-blind, randomised, placebo-controlled, parallel group study examined the effects of a multivitamin–mineral supplement with guaraná (Berocca Boost Performance®) on aspects of cognitive performance and self-reported mental fatigue during sustained, effortful mental processing. The acute effects of a single dose of either the vitamin/mineral/guaraná or placebo in an effervescent drink were assessed in 129 healthy adults (18–24 years). The Cognitive Demand Battery (CDB) was used for testing. This is a 10-min battery comprising of Serial Threes subtraction (2 min), Serial Sevens subtraction (2 min), Rapid Visual Information Processing [RVIP] (5 min) and a 'Mental Fatigue' visual analogue scale. Participants firstly completed the CDB twice (practice and baseline) and then consumed their treatment. Thirty minutes following consumption of the treatment the participant completed the CDB six times consecutively. The most notable findings were that the active treatment was

associated with increased speed and accuracy in the performance of the RVIP throughout the 60 min of testing. The active treatment was also associated with reduced ratings of subjective mental fatigue significantly so during the later, more fatiguing repetitions. This research supports the previous findings of the psychoactive properties of guaraná. It also provides for the first time evidence in humans that a multivitamin–mineral preparation containing guaraná can improve cognitive performance and reduce mental fatigue associated with sustained mental effort.

[10.1016/j.appet.2007.09.055](https://doi.org/10.1016/j.appet.2007.09.055)

Effects of chewing gum on subjective and physiological stress responses

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The notion that chewing gum may relieve stress was investigated in a controlled laboratory experiment. The defined intensity stress simulator (DISS) is a multi-tasking platform which reliably induces stress and also includes performance measures. Using a partial crossover design 40 participants (mean age 22 years) underwent two intensities of the DISS while chewing and not chewing. Before and after completing the DISS participants completed the state portion of the State-Trait Anxiety Inventory, Bond-Lader visual analogue mood scales and a single stress visual analogue scale. Salivary cortisol levels were co-monitored. Baseline measures revealed that both levels of stress were effective in significantly reducing self-rated alertness, calmness and contentment while increasing self-rated stress and state anxiety. Cortisol levels fell during both levels of the stressor during the morning but this effect was reversed in the afternoon. Pre-post DISS changes (Δ) for each measure at baseline were subtracted from Δ scores under chewing and no chewing conditions. During both levels of stress the chewing gum condition was associated with significantly better alertness and reduced state anxiety, stress and salivary cortisol. Overall performance on the DISS was also significantly better in the chewing condition. The mechanisms underlying these effects are unknown but may involve neurohormonal interactions during the cephalic phase, improved cerebral blood flow and/or effects which were secondary to performance.

[10.1016/j.appet.2007.09.056](https://doi.org/10.1016/j.appet.2007.09.056)