

Title:

Psychological traits affect liking and choice of phenol-rich foods

Authors & affiliations:

*Alessandra De Toffoli*¹, Sara Spinelli¹, Caterina Dinnella¹, Monica Laureati², Tullia Gallina Toschi³,
Fabio Napolitano⁴, Luisa Torri⁵, Isabella Endrizzi⁶, Elena Arena⁷, Rossella di Monaco⁸ & Erminio
Monteleone¹*

*¹Dept. GESAAF, University of Florence, Italy; ²DeFENS, University of Milan, Italy; ³Dept. DISTAL,
University of Bologna – Alma Mater Studiorum, Italy; ⁴SAFE, University of Basilicata, Italy; ⁵University
of Gastronomic Sciences, Pollenzo (CN), Italy; ⁶Edmund Mach Foundation, San Michele all'Adige (TN),
Italy; ⁷Di3A, University of Catania, Italy; ⁸University of Naples Federico II, Italy*

** alessandra.detoffoli@unifi.it*

The purpose of the study was to investigate the role of psychological traits in liking, familiarity and choice for phenol-rich foods, characterized at the same time by health benefits and warning sensations such as bitterness and astringency.

1208 subjects (58% females, 18-60 yrs) were characterized for responsiveness to PROP, Food Neophobia (FN), Alexithymia (TAS), Sensitivity to Punishment (SP), to Reward (SR) and to Disgust (DS). A choice index for phenol-rich foods was calculated as a sum of the choices of the high phenol content option using a questionnaire developed to evaluate preferences within a pair of food items. Pairs were arranged to represent variations in astringency and bitterness and validated in a preliminary check-all-that-apply test. Familiarity with and stated liking for the selected high phenol foods were measured. Moreover, sensory and liking responses for phenol-rich foods samples (dark chocolate pudding) varying in the level of bitterness and astringency were collected.

Our findings showed that subjects higher in SP, DS, FN and TAS had a lower phenol-rich food choice index, preferring the more bitter and astringent option less frequently. In addition, the stated liking and familiarity with phenol-rich foods were lower in subjects high in SP, DS and FN and, to a lower extent, SR. The results on the chocolate pudding series were in line with this trend, with subjects high in DS and FN that liked less the most bitter samples. In addition, the samples were perceived as more bitter in high SP and SR, as more astringent in high DS, or both in high FN and high TAS subjects.

Variations in psychological traits were not correlated with PROP responsiveness.

Results showed that SR and the traits associated with anxiety FN, DS, SP, and TAS may act as a barrier in the development of preference for phenol-rich foods.