

Polyphenol and nutrient release from skin of almonds during simulated human digestion.

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Abstract:

The bioaccessibility of nutrients and phytochemicals from almond skin has not been previously evaluated. We quantified the release of lipid, protein and polyphenols during simulated human digestion from natural (NS) and blanched (BS) skins, the latter being a by-product of the almond industry. Higher percentages of polyphenols were released from NS compared to BS during in vitro digestion. Most of the limited release of lipid and protein occurred during gastric digestion, with no significant differences between NS and BS. The total dietary fibre content was 45% for NS and 46% for BS, glucose and galacturonic acid being the major sugars present. No changes in dietary fibre composition and distribution of autofluorescent phenolics were observed in the cell walls of almond skin after simulated digestion. In the GI tract, the cell walls may therefore function as a useful source of fermentable fibre with beneficial implications for gut health.