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Severe Reactions to a Soy Containing Beverage in Peanut Allergic Individuals Not Avoiding Soy

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Rationale: Three peanut-allergic individuals experienced severe reactions to a nationally distributed high-protein beverage in the same month. The major protein sources in the beverage were soy-based ingredients and cows' milk. These individuals did not avoid soy in their diet and previously consumed various soy products without adverse reactions. Peanut contamination of the beverage was not detected by specific ELISA, so attention shifted to the soy ingredients. The research objective was to elucidate differences between the soy milk and soy protein isolate used in the beverage and other forms of soy safely consumed by these individuals.

Methods: Specific IgE levels from the three sera were determined by ImmunoCAP® and ImmunoCAP® ISAC. The soy components of the high-protein beverage and 16 forms of soy representing the range of soy ingredients used in foods were screened by SDS-PAGE and immunoblotting.

Results: CAP scores ranged from high to very high (peanut: 93.1–441; soy: 10.3–26.1). All sera recognized multiple proteins in many soy products and ingredients. ISAC profiles indicated these individuals were not sensitized to birch pollen or Glym4, which separates them from previously published soy milk reaction profiles. A possible unique protein at

28–30kD in the beverage's soy milk ingredient was recognized by IgE-binding when compared to other soy products.

Conclusions: These individuals were able to consume many soy products even though their sera had high levels of specific soy IgE to multiple soy proteins. Individuals with very high specific IgE scores to peanut may need to avoid certain types of soy milk.