

Figures and captions

Figure 1: 50% Negative Predictive Values for OFC to Tree Nut Among Tree Nut Allergic and Sensitized Individuals

Caption: 50% negative predictive values for the combined allergic and sensitized population, adjusted for patient age, eczema, asthma, gender, and peanut allergy. Left panel displays wheal size curve, and right panel tree nut sIgE curve.

Figure 2: 50% Negative Predictive Values for OFC to Tree Nut Among Tree Nut Sensitized Individuals

Caption: 50% negative predictive values for the tree nut sensitized population, adjusted for patient age, eczema, and peanut allergy. Left panel displays wheal size curve, and right panel tree nut sIgE curve. Reflects relationship with sensitized tree nuts in individuals with no history of tree nut allergy.

Figure 3: 50% Negative Predictive Values for OFC to Tree Nut Among Tree Nut Allergic Individuals

Caption: 50% negative predictive values for the tree nut sensitized population, adjusted for patient age, eczema, and peanut allergy. Left panel displays wheal size curve, and right panel tree nut sIgE curve. Reflects relationship with sensitized tree nuts other than the nut to which the patient has a primary allergy.

Supplemental Figure 1: 50% Negative Predictive Values for OFC to Tree Nut Among Tree Nut Allergic and Sensitized Individuals

Caption: 50% negative predictive values for the combined allergic and sensitized population. Walnut is adjusted for peanut allergy. Hazelnut, and pecan individual curves are unadjusted due to power issues. Combined cashew/pistachio and walnut/pecan/hazelnut curves are age adjusted.

Supplemental Table 1. Characteristics of tree nut oral food challenges near time of OFC in tree nut allergic individuals by presenting symptoms

	No.	Pass rate	OFC with sIgE <2 kUA/L, no. (%)	OFC with sIgE ≥2 kUA/L, no. (%)	OFC with SPT <3 mm, no. (%)	OFC with SPT ≥3 mm, no. (%)
Anaphylaxis	21	71%	17 (81)	3 (14)	11 (52)	8 (38)
Skin symptoms	46	83%	41 (89)	1 (2)	33 (72)	13 (28)
Facial swelling	18	56%	16 (89)	2 (11)	8 (44)	8 (44)
Oropharyngeal symptoms	15	73%	12 (80)	2 (13)	10 (67)	5 (33)
Respiratory symptoms	15	67%	14 (93)	1 (7)	8 (53)	6 (40)
Vomiting	18	83%	17 (94)	1 (6)	10 (56)	7 (39)

TN=tree nut; OFC=oral food challenge; sIgE=specific IgE; SPT=skin prick test. Skin symptoms: hives, itching, flushing, rash. Oropharyngeal symptoms: tongue or throat pruritus/swelling. Respiratory symptoms: cough, wheezing, shortness of breath. 93% of tree nut challenges in tree nut allergic individuals had both sIgE and SPT performed, 6% had SPT performed only, and 1% had sIgE performed only.

Supplemental Table 1.2: Testing characteristics at time of initial diagnosis for tree nut OFCs in tree nut allergic individuals by presenting symptoms

	No.	sIgE <2 kUA/L, no. (%)	sIgE ≥2 kUA/L, no. (%)	SPT <3 mm, no. (%)	SPT ≥3 mm, no. (%)
Anaphylaxis	21	17 (81)	3 (14)	8 (38)	11 (52)
Skin symptoms	46	40 (87)	2 (4)	23 (50)	23 (50)
Facial swelling	18	16 (89)	2 (13)	6 (33)	10 (56)
Oropharyngeal symptoms	15	12 (80)	2 (13)	7 (47)	8 (53)
Respiratory symptoms	15	14 (93)	1 (7)	5 (33)	9 (60)
Vomiting	18	16 (89)	2 (11)	9 (50)	8 (44)

OFC=oral food challenge; sIgE=specific IgE; SPT=skin prick test. Skin symptoms: hives, itching, flushing, rash. Oropharyngeal symptoms: tongue or throat pruritus/swelling. Respiratory symptoms: cough, wheezing, shortness of breath. 93% of tree nut challenges in tree nut allergic individuals had both sIgE and SPT performed, 6% had SPT performed only, and 1% had sIgE performed only.

Supplemental Table 1.3: Testing characteristics at time of initial diagnosis in tree nut allergic individuals by presenting symptoms

	No.	sIgE <2 kUA/L, no. (%)	sIgE ≥2 kUA/L, no. (%)	SPT <3 mm, no. (%)	SPT ≥3 mm, no. (%)
Anaphylaxis	15	12 (80)	3 (20)	7 (47)	7 (47)
Skin symptoms	36	31 (86)	2 (6)	19 (53)	17 (47)
Facial swelling	16	15 (94)	2 (13)	5 (19)	10 (63)
Oropharyngeal symptoms	13	10 (77)	2 (15)	7 (54)	6 (46)
Respiratory symptoms	11	10 (91)	1 (9)	5 (45)	5 (45)
Vomiting	13	12 (92)	2 (15)	7 (54)	6 (46)

OFC=oral food challenge; sIgE=specific IgE; SPT=skin prick test. Skin symptoms: hives, itching, flushing, rash. Oropharyngeal symptoms: tongue or throat pruritus/swelling. Respiratory symptoms: cough, wheezing, shortness of breath. 93% of tree nut challenges in tree nut allergic individuals had both sIgE and SPT performed, 6% had SPT performed only, and 1% had sIgE performed only.

Supplemental Table 2. Characteristics of failed tree nut oral food challenges

	No.	OFC with sIgE <2 kUA/L, no. (%)	OFC with sIgE ≥2 kUA/L, no. (%)	OFC with SPT <3 mm, no. (%)	OFC with SPT ≥3 mm, no. (%)
All failed Tree nut challenges	22	14 (64)	5 (23)	4 (18)	16 (73)
Tree nut allergic	16	12 (75)	2 (13)	3 (19)	11 (69)
Tree nut sensitized	6	2 (33)	3 (50)	1 (17)	5 (83)
Almond	0	-	-	-	-
Cashew	6	6 (100)	0 (0)	0 (0)	6 (100)
Walnut	5	2 (40)	2 (40)	0 (0)	5 (100)
Hazelnut	3	1 (33)	1 (33)	0 (0)	2 (67)
Pecan	3	1 (33)	1 (33)	1 (33)	2 (67)
Pistachio	4	3 (75)	1 (25)	1 (25)	2 (50)
Brazil nut	1	1 (100)	0 (0)	0 (0)	1 (100)

sIgE=specific IgE; SPT=skin prick test.
77% of failed tree nut OFCs had both sIgE and SPT performed, 14% had SPT only, and 9% had sIgE only.

Supplemental Table 3. Tree nut oral food challenge characteristics in peanut allergic patients with tree nut co-sensitization

	No.	Pass rate	OFC with sIgE <2 kUA/L, no. (%)	OFC with sIgE ≥2 kUA/L, no. (%)	OFC with SPT <3 mm, no. (%)	OFC with SPT ≥3 mm, no. (%)
Tree nut OFCs in peanut allergic patients	68	96%	51 (75)	8 (12)	49 (72)	8 (12)
Tree nut allergic	9	89%	9 (100)	0 (0)	6 (67)	2 (22)
Tree nut sensitized	44	95%	31 (70)	8 (18)	34 (77)	6 (14)
Tree Nut avoidance despite negative testing	15	100%	11 (73)	-	9 (60)	-
Almond	36	100%	21 (58)	4 (11)	24 (67)	6 (17)
Cashew	5	100%	5 (100)	0 (0)	3 (60)	1 (20)
Walnut	10	90%	8 (80)	0 (0)	8 (80)	1 (10)
Hazelnut	11	91%	7 (64)	4 (36)	9 (82)	0 (0)
Pecan	4	100%	3 (75)	0 (0)	4 (100)	0 (0)
Pistachio	2	50%	2 (100)	0 (0)	1 (50)	0 (0)

Supplemental Figure 1:

