



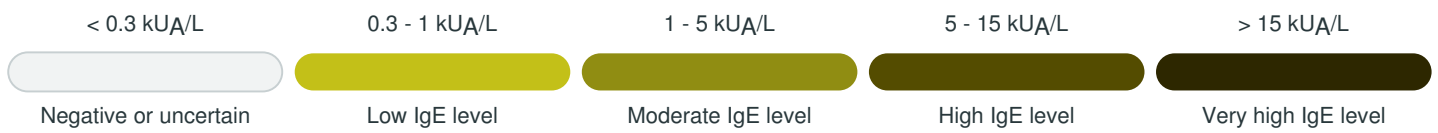
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TES





Highest measured IgE concentration per allergen group



Name	E/M	Allergen	Function	kU _A /L
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POLLEN

Grass Pollen

Bermuda grass		Cyn d		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Cyn d 1	Beta-Expansin	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Perennial Ryegrass		Lol p 1	Beta-Expansin	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Bahia grass		Pas n		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Timothy grass		Phl p 1	Beta-Expansin	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Phl p 2	Expansin	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Phl p 5.0101	Grass Group 5/6	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Phl p 6	Grass Group 5/6	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Phl p 7	Polcalcin	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Phl p 12	Profilin	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Common reed		Phr c		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Cultivated rye, Pollen		Sec c_pollen		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>

Tree Pollen

Acacia		Aca m		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Tree of Heaven		Ail a		0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Alder		Aln g 1	PR-10	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Aln g 4	Polcalcin	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Silver birch		Bet v 1	PR-10	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Bet v 2	Profilin	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Bet v 6	Isoflavon Reductase	0.14	<div><div></div><div></div><div></div><div></div><div></div></div>
Paper mulberry		Bro pa		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Hazel pollen		Cor a_pollen		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Cor a 1.0103	PR-10	0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Sugi		Cry j 1	Pectate Lyase	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Cypress		Cup a 1	Pectate Lyase	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Cup s		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Beech		Fag s 1	PR-10	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Ash		Fra e		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
		Fra e 1	Ole e 1-Family	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Walnut pollen		Jug r_pollen		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Mountain cedar		Jun a		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Mulberry		Mor r		≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>
Olive		Ole e 1	Ole e 1-Family	≤ 0.10	<div><div></div><div></div><div></div><div></div><div></div></div>

Name	E/M	Allergen	Function	kU _A /L
		Ole e 9	1,3 β Glucanase	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Date palm		Pho d 2	Profilin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
London plane tree		Pla a 1	Plant Invertase	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Pla a 2	Polygalacturonase	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Pla a 3	nsLTP	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Cottonwood		Pop n		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Elm		Ulm c		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>

Weed Pollen

Common Pigweed		Ama r		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Ragweed		Amb a		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Amb a 1	Pectate Lyase	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Amb a 4	Plant Defensin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Mugwort		Art v		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Art v 1	Plant Defensin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Art v 3	nsLTP	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Hemp		Can s		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Can s 3	nsLTP	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Lamb's quarter		Che a		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Che a 1	Ole e 1-Family	0.62 <div><div></div><div></div><div></div><div></div><div></div></div>
Annual mercury		Mer a 1	Profilin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Wall pellitory		Par j		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Par j 2	nsLTP	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Ribwort		Pla l		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Pla l 1	Ole e 1-Family	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Russian thistle		Sal k		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Sal k 1	Pectin Methylesterase	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Nettle		Urt d		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>

MITES

House Dust Mite

American house dust mite		Der f 1	Cysteine protease	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Der f 2	NPC2 Family	4.90 <div><div></div><div></div><div></div><div></div><div></div></div>
European house dust mite		Der p 1	Cysteine protease	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Der p 2	NPC2 Family	4.51 <div><div></div><div></div><div></div><div></div><div></div></div>
		Der p 5	unknown	2.12 <div><div></div><div></div><div></div><div></div><div></div></div>

Name	E/M	Allergen	Function	kU _A /L
		Der p 7	Mites, Group 7	≤ 0.10 <div><div></div></div>
		Der p 10	Tropomyosin	42.79 <div><div></div></div>
		Der p 11	Myosin, heavy chain	≤ 0.10 <div><div></div></div>
		Der p 20	Arginine kinase	≤ 0.10 <div><div></div></div>
		Der p 21	unknown	≤ 0.10 <div><div></div></div>
		Der p 23	Peritrophin-like protein domain	1.36 <div><div></div></div>

Storage Mite

Acarus siro		Aca s		0.78 <div><div></div></div>
Blomia tropicalis		Blo t 5	Mites, Group 5	≤ 0.10 <div><div></div></div>
		Blo t 10	Tropomyosin	38.47 <div><div></div></div>
		Blo t 21	unknown	≤ 0.10 <div><div></div></div>
Glycyphagus domesticus		Gly d 2	NPC2 Family	≤ 0.10 <div><div></div></div>
Lepidoglyphus destructor		Lep d 2	NPC2 Family	≤ 0.10 <div><div></div></div>
Tyrophagus putrescentiae		Tyr p		≤ 0.10 <div><div></div></div>
		Tyr p 2	NPC2 Family	≤ 0.10 <div><div></div></div>

MICROORGANISMS & SPORES

Yeast

Malassezia sympodialis		Mala s 5	unknown	≤ 0.10 <div><div></div></div>
		Mala s 6	Cyclophilin	≤ 0.10 <div><div></div></div>
		Mala s 11	Mn Superoxid-Dismutase	≤ 0.10 <div><div></div></div>
Yeast		Sac c		≤ 0.10 <div><div></div></div>

Moulds

Alternaria alternata		Alt a 1	Alt a 1-Family	0.85 <div><div></div></div>
		Alt a 6	Enolase	≤ 0.10 <div><div></div></div>
Aspergillus fumigatus		Asp f 1	Mitogillin Family	≤ 0.10 <div><div></div></div>
		Asp f 3	Peroxisomal Protein	≤ 0.10 <div><div></div></div>
		Asp f 4	unknown	≤ 0.10 <div><div></div></div>
		Asp f 6	Mn Superoxid-Dismutase	≤ 0.10 <div><div></div></div>
Cladosporium herbarum		Cla h		≤ 0.10 <div><div></div></div>
		Cla h 8	Short Chain Dehydrogenase	≤ 0.10 <div><div></div></div>
Penicilium chrysogenum		Pen ch		≤ 0.10 <div><div></div></div>

Name	E/M	Allergen	Function	kU _A /L
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PLANT FOOD

Legumes

Peanut	⦿	Ara h 1	7/8S Globulin	0.20	<div><div></div></div>
	⦿	Ara h 2	2S Albumin	0.45	<div><div></div></div>
	⦿	Ara h 3	11S Globulin	≤ 0.10	<div><div></div></div>
	⦿	Ara h 6	2S Albumin	≤ 0.10	<div><div></div></div>
	⦿	Ara h 8	PR-10	≤ 0.10	<div><div></div></div>
	⦿	Ara h 9	nsLTP	≤ 0.10	<div><div></div></div>
	⦿	Ara h 15	Oleosin	≤ 0.10	<div><div></div></div>
Chickpea	⦿	Cic a		≤ 0.10	<div><div></div></div>
Soy	⦿	Gly m 4	PR-10	≤ 0.10	<div><div></div></div>
	⦿	Gly m 5	7/8S Globulin	≤ 0.10	<div><div></div></div>
	⦿	Gly m 6	11S Globulin	≤ 0.10	<div><div></div></div>
	⦿	Gly m 8	2S Albumin	0.24	<div><div></div></div>
Lentil	⦿	Len c		≤ 0.10	<div><div></div></div>
White bean	⦿	Pha v		≤ 0.10	<div><div></div></div>
Pea	⦿	Pis s		≤ 0.10	<div><div></div></div>

Cereals

Oat	⦿	Ave s		≤ 0.10	<div><div></div></div>
Quinoa	⦿	Che q		≤ 0.10	<div><div></div></div>
Common buckwheat	⦿	Fag e		≤ 0.10	<div><div></div></div>
	⦿	Fag e 2	2S Albumin	≤ 0.10	<div><div></div></div>
Barley	⦿	Hor v		≤ 0.10	<div><div></div></div>
Lupine seed	⦿	Lup a		≤ 0.10	<div><div></div></div>
Rice	⦿	Ory s		≤ 0.10	<div><div></div></div>
Millet	⦿	Pan m		≤ 0.10	<div><div></div></div>
Cultivated rye	⦿	Sec c_flour		≤ 0.10	<div><div></div></div>
Wheat	⦿	Tri a aA_TI	Alpha-Amylase Trypsin-Inhibitor	≤ 0.10	<div><div></div></div>
	⦿	Tri a 14	nsLTP	≤ 0.10	<div><div></div></div>
	⦿	Tri a 19	Omega-5-Gliadin	≤ 0.10	<div><div></div></div>
Spelt	⦿	Tri s		≤ 0.10	<div><div></div></div>
Maize	⦿	Zea m		≤ 0.10	<div><div></div></div>
	⦿	Zea m 14	nsLTP	≤ 0.10	<div><div></div></div>

Name	E/M	Allergen	Function	kU _A /L
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Spices

Paprika		Cap a		≤ 0.10 
Caraway		Car c		≤ 0.10 
Oregano		Ori v		≤ 0.10 
Parsley		Pet c		≤ 0.10 
Anise		Pim a		≤ 0.10 
Mustard		Sin		≤ 0.10 
		Sin a 1	2S Albumin	≤ 0.10 

Fruits

Kiwi		Act d 1	Cysteine protease	≤ 0.10 
		Act d 2	TLP	0.13 
		Act d 5	Kiwellin	≤ 0.10 
		Act d 10	nsLTP	≤ 0.10 
Papaya		Car p		≤ 0.10 
Orange		Cit s		≤ 0.10 
Melon		Cuc m 2	Profilin	≤ 0.10 
Fig		Fic c		≤ 0.10 
Strawberry		Fra a 1+3	PR-10+LTP	≤ 0.10 
Apple		Mal d 1	PR-10	≤ 0.10 
		Mal d 2	TLP	≤ 0.10 
		Mal d 3	nsLTP	≤ 0.10 
Mango		Man i		≤ 0.10 
Banana		Mus a		≤ 0.10 
Avocado		Pers a		≤ 0.10 
Cherry		Pru av		≤ 0.10 
Peach		Pru p 3	nsLTP	≤ 0.10 
Pear		Pyr c		≤ 0.10 
Blueberry		Vac m		≤ 0.10 
Grapes		Vit v 1	nsLTP	≤ 0.10 

Vegetables

Onion		All c		≤ 0.10 
Garlic		All s		≤ 0.10 
Celery		Api g 1	PR-10	≤ 0.10 

Name	E/M	Allergen	Function	kU _A /L
		Api g 2	nsLTP	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Api g 6	nsLTP	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Carrot		Dau c		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Dau c 1	PR-10	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Potato		Sol t		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Tomato		Sola l		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Sola l 6	nsLTP	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>

Nuts

Cashew		Ana o		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Ana o 2	11S Globulin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Ana o 3	2S Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Brazil nut		Ber e		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Ber e 1	2S Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Pecan		Car i		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Hazelnut		Cor a 1.0401	PR-10	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Cor a 8	nsLTP	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Cor a 9	11S Globulin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Cor a 11	7/8S Globulin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Cor a 14	2S Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Walnut		Jug r 1	2S Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Jug r 2	7/8S Globulin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Jug r 3	nsLTP	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Jug r 4	11S Globulin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Jug r 6	7/8S Globulin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Macadamia		Mac i 2S Albumin	2S Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Mac inte		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Pistachio		Pis v 1	2S Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Pis v 2	11S Globulin subunit	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
		Pis v 3	7/8S Globulin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Almond		Pru du		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>

Seed

Pumpkin seed		Cuc p		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Sunflower seed		Hel a		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Poppy seed		Pap s		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>

Name	E/M	Allergen	Function	kU _A /L
	⦿	Pap s 2S Albumin	2S Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Sesame	⦿	Ses i		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⦿	Ses i 1	2S Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Fenugreek seeds	⦿	Tri fo		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>

ANIMAL FOOD

Milk

Cow, milk	⦿	Bos d_milk		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⦿	Bos d 4	α-Lactalbumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⦿	Bos d 5	β-Lactoglobulin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⦿	Bos d 8	Casein	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Camel	⦿	Cam d		0.13 <div><div></div><div></div><div></div><div></div><div></div></div>
Goat, milk	⦿	Cap h_milk		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Mare's milk	⦿	Equ c_milk		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Sheep, milk	⦿	Ovi a_milk		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>

Egg

Egg white	⦿	Gal d_white		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Egg yolk	⦿	Gal d_yolk		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Egg white	⦿	Gal d 1	Ovomucoid	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⦿	Gal d 2	Ovalbumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⦿	Gal d 3	Ovotransferrin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⦿	Gal d 4	Lysozym C	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Egg yolk	⦿	Gal d 5	Serum Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>

Seafood

Herring worm	⦿	Ani s 1	Kunitz Serin Protease Inhibitor	0.28 <div><div></div><div></div><div></div><div></div><div></div></div>
	⦿	Ani s 3	Tropomyosin	34.46 <div><div></div><div></div><div></div><div></div><div></div></div>
Crab	⦿	Chi spp.		38.09 <div><div></div><div></div><div></div><div></div><div></div></div>
Herring	⦿	Clu h		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⦿	Clu h 1	β-Parvalbumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Brown shrimp	⦿	Cra c 6	Troponin C	0.12 <div><div></div><div></div><div></div><div></div><div></div></div>
Carp	⦿	Cyp c 1	β-Parvalbumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Atlantic cod	⦿	Gad m		0.25 <div><div></div><div></div><div></div><div></div><div></div></div>
	⦿	Gad m 2+3	β-Enolase & Aldolase	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>

Name	E/M	Allergen	Function	kU _A /L
	⊙	Gad m 1	β-Parvalbumin	0.86 <div><div></div><div></div><div></div><div></div><div></div></div>
Lobster	⬢	Hom g		3.34 <div><div></div><div></div><div></div><div></div><div></div></div>
Shrimp	⬢	Lit s		38.52 <div><div></div><div></div><div></div><div></div><div></div></div>
Squid	⬢	Lol spp.		24.03 <div><div></div><div></div><div></div><div></div><div></div></div>
Common mussel	⬢	Myt e		8.82 <div><div></div><div></div><div></div><div></div><div></div></div>
Oyster	⬢	Ost e		4.42 <div><div></div><div></div><div></div><div></div><div></div></div>
Shrimp	⬢	Pan b		7.88 <div><div></div><div></div><div></div><div></div><div></div></div>
Scallop	⬢	Pec spp.		8.02 <div><div></div><div></div><div></div><div></div><div></div></div>
Black Tiger Shrimp	⊙	Pen m 1	Tropomyosin	45.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⊙	Pen m 2	Arginine kinase	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⊙	Pen m 3	Myosin, light chain	0.54 <div><div></div><div></div><div></div><div></div><div></div></div>
	⊙	Pen m 4	Sarcoplasmic Calcium Binding Protein	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Thornback ray	⬢	Raj c		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⊙	Raj c Parvalbumin	α-Parvalbumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Clam	⬢	Rud spp.		15.55 <div><div></div><div></div><div></div><div></div><div></div></div>
Salmon	⬢	Sal s		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⊙	Sal s 1	β-Parvalbumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Atlantic mackerel	⬢	Sco s		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⊙	Sco s 1	β-Parvalbumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Tuna	⬢	Thu a		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⊙	Thu a 1	β-Parvalbumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Swordfish	⊙	Xip g 1	β-Parvalbumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>

Meat

House cricket	⬢	Ach d		14.01 <div><div></div><div></div><div></div><div></div><div></div></div>
Cattle, meat	⬢	Bos d_meat		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⊙	Bos d 6	Serum Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Horse, meat	⬢	Equ c_meat		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Chicken meat	⬢	Gal d_meat		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Migratory locust	⬢	Loc m		25.85 <div><div></div><div></div><div></div><div></div><div></div></div>
Turkey	⬢	Mel g		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Rabbit, meat	⬢	Ory_meat		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Sheep, meat	⬢	Ovi a_meat		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Pork	⬢	Sus d_meat		≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
	⊙	Sus d 1	Serum Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div><div></div></div>
Mealworm	⬢	Ten m		31.08 <div><div></div><div></div><div></div><div></div><div></div></div>

Name	E/M	Allergen	Function	kU _A /L
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INSECTS & VENOMS

Fire ant poison

Fire ant		Sol spp.		6.19 <div><div></div><div></div><div></div><div></div></div>
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Honey Bee Venom

Honey bee		Api m		≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Api m 1	Phospholipase A2	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Api m 10	Icarapin Variant 2	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>

Wasp Venom

Hornet		Dol spp		≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
Paper wasp venom		Pol d		≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Pol d 5	Antigen 5	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
Wasp venom		Ves v		≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Ves v 1	Phospholipase A1	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Ves v 5	Antigen 5	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>

Cockroach

German Cockroach		Bla g 1	Cockroach Group 1	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Bla g 2	Aspartyl protease	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Bla g 4	Lipocalin	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Bla g 5	Glutathione S-transferase	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Bla g 9	Arginine kinase	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
American Cockroach		Per a		0.59 <div><div></div><div></div><div></div><div></div></div>
		Per a 7	Tropomyosin	41.37 <div><div></div><div></div><div></div><div></div></div>

ANIMAL ORIGIN

Pet

Dog		Can f_Fd1	Uterogloblin	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
Male dog urine (incl. Can f 5)		Can f_male urine		≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
Dog		Can f 1	Lipocalin	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Can f 2	Lipocalin	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
		Can f 3	Serum Albumin	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>

Name	E/M	Allergen	Function	kU _A /L
		Can f 4	Lipocalin	≤ 0.10 <div><div></div></div>
		Can f 6	Lipocalin	≤ 0.10 <div><div></div></div>
Guinea pig		Cav p 1	Lipocalin	≤ 0.10 <div><div></div></div>
Cat		Fel d 1	Uteroglobin	≤ 0.10 <div><div></div></div>
		Fel d 2	Serum Albumin	≤ 0.10 <div><div></div></div>
		Fel d 4	Lipocalin	≤ 0.10 <div><div></div></div>
		Fel d 7	Lipocalin	≤ 0.10 <div><div></div></div>
House mouse		Mus m 1	Lipocalin	≤ 0.10 <div><div></div></div>
Rabbit, epithel		Ory c 1	Lipocalin	≤ 0.10 <div><div></div></div>
		Ory c 2	Lipophilin	≤ 0.10 <div><div></div></div>
		Ory c 3	Uteroglobin	≤ 0.10 <div><div></div></div>
Djungarian hamster		Phod s 1	Lipocalin	≤ 0.10 <div><div></div></div>
Rat		Rat n		≤ 0.10 <div><div></div></div>

Farm Animals

Cattle		Bos d 2	Lipocalin	≤ 0.10 <div><div></div></div>
Goat, epithel		Cap h_epithelia		≤ 0.10 <div><div></div></div>
Horse, epithel		Equ c 1	Lipocalin	≤ 0.10 <div><div></div></div>
		Equ c 3	Serum Albumin	≤ 0.10 <div><div></div></div>
		Equ c 4	Latherin	≤ 0.10 <div><div></div></div>
Sheep, epithel		Ovi a_epithelia		≤ 0.10 <div><div></div></div>
Pig		Sus d_epithelia		≤ 0.10 <div><div></div></div>

OTHERS

Latex

Latex		Hev b 1	Rubber elongation factor	≤ 0.10 <div><div></div></div>
		Hev b 3	Small rubber particle protein	≤ 0.10 <div><div></div></div>
		Hev b 5	unknown	≤ 0.10 <div><div></div></div>
		Hev b 6.02	Hevein	≤ 0.10 <div><div></div></div>
		Hev b 8	Profilin	≤ 0.10 <div><div></div></div>
		Hev b 11	Class 1 Chitinase	≤ 0.10 <div><div></div></div>

Ficus

Weeping fig		Fic b		≤ 0.10 <div><div></div></div>
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Name	E/M	Allergen	Function	kU _A /L
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CCD

Hom s Lactoferrin		Hom s LF	CCD	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
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Parasite

Pigeon tick		Arg r 1	Lipocalin	≤ 0.10 <div><div></div><div></div><div></div><div></div></div>
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Total IgE result: 153 kU/L

Reference range total-IgE
Adults: < 100 kU/L

SAMPLED ON 16/05/2024	PRINTED ON 17/05/2024
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Information to cross-reactive allergens

Ole e 1 Family

Ole e 1 family allergens show a high degree of cross-reactivity within plant family borders.

The major olive pollen allergen, Ole e 1, represents the prototype of all Ole e 1 family allergens and is the primary sensitiser in regions with olive pollen exposure. Further Ole e 1 related allergens were identified in other trees from the Oleaceae family (ash, lilac, privet). There are further Ole e 1 family members present in grass- and weed pollen.

Storage proteins (2S Albumins, 7/8S Globulins, 11S Globulins)

Storage proteins show a limited degree of cross-reactivity.

Storage proteins are major allergens in legumes (e.g. peanut or soy), tree nuts (e.g. wal- or hazelnut) and other seeds (e.g. buckwheat, sesame, mustard). Storage proteins are the major cause of severe allergic reactions, including anaphylaxis. Storage proteins are stable to processing.

Parvalbumins

Parvalbumins show a very high degree of cross-reactivity.

Clinical cross-reactivity between different fish species is explained by highly conserved parvalbumin IgE epitopes. Parvalbumins are food and respiratory allergens and can cause severe allergic reactions. Parvalbumins are stable to processing.

Tropomyosins

Tropomyosins show a very high degree of cross-reactivity.

Tropomyosins can induce diverse symptoms including anaphylaxis. Sensitisation to tropomyosins can occur by ingestion (seafood), inhalation (mites, cockroaches) or parasite infection (ascariasis, anisakiasis). Tropomyosins are stable to processing.

NPC2

NPC2 allergens show a limited degree of cross-reactivity.

Members of the NPC2 family are present in house dust- and storage mites. The cross-reactivity between Der f 2 and Der p 2 is quite extensive. NPC2 allergens from storage mites show only a limited degree of cross-reactivity to their pendants in house dust mites.

ALEX² – Number of tested allergen sources:

295



GRASS POLLEN

6

Bahia grass, Bermuda grass, Common reed, Perennial ryegrass, Rye, Timothy grass



COCKROACH

2

American cockroach, German cockroach



TREE POLLEN

19

Acacia, Alder, Arizona Cypress, European Ash, Beech, Cottonwood, Date palm, Elm, Hazel, London Plane Tree, Mediterranean Cypress, Mountain cedar, Mulberry, Olive, Paper mulberry, Silver birch, Sugi, Tree of Heaven, Walnut



INSECT VENOMS

5

Common wasp venom, Fire ant venom, Honeybee venom, Long-headed wasp venom, Paper wasp venom



FUNGAL SPORES & YEAST

6

Alternaria alternata, Aspergillus fumigatus, Baker's yeast, Cladosporium herbarum, Malassezia sympodialis, Penicillium chrysogenum



WEED POLLEN

10

Annual mercury, Hemp, Lamb's quarter, Mugwort, Nettle, Pigweed, Ragweed, Ribwort, Russian thistle, Wall pellitory



MILK

5

Camel's milk, Cow's milk, Goat's milk, Mare's milk, Sheep's milk



HOUSE DUST MITES & STORAGE MITES

7

Acarus siro, American house dust mite, Blomia tropicalis, European house dust mite, Glycyphagus domesticus, Lepidoglyphus destructor, Tyrophagus putrescentiae



EGG

2

Egg white, Egg yolk



FISH & SEAFOOD

20

Anisakis simplex, Atlantic cod, Atlantic herring, Atlantic mackerel, Black-Tiger shrimp, Brown shrimp, Carp, Common mussel, Crab, Lobster, Northern prawn, Oyster, Salmon, Scallop, Shrimp mix, Squid, Swordfish, Thornback ray, Tuna, Venus clam



LEGUMES

6

Chickpea, White bean, Lentil, Pea, Peanut, Soy



GRAINS

11

Barley, Buckwheat, Corn, Cultivated rye, Lupine, Millet, Oat, Quinoa, Rice, Spelt, Wheat



MEAT

10

Beef, Chicken, Horse, House cricket, Lamb, Mealworm, Migratory locust, Pig, Rabbit, Turkey



SPICES

6

Anise, Caraway, Mustard, Oregano, Paprika, Parsley



PETS

7

Cat, Djungarian hamster, Dog, Guinea pig, Mouse, Rabbit, Rat



FRUITS

15

Avocado, Apple, Banana, Blueberry, Cherry, Fig, Grape, Kiwi, Mango, Muskmelon, Orange, Papaya, Peach, Pear, Strawberry



FARM ANIMALS

5

Cattle, Goat, Horse, Pig, Sheep



VEGETABLES

6

Carrot, Celery, Garlic, Onion, Potato, Tomato



OTHERS

4

Latex, Human lactoferrin, Pigeon tick, Weeping fig



NUTS & SEEDS

13

Almond, Brazil nut, Cashew, Hazelnut, Macadamia, Pecan, Pistachio, Walnut, Fenugreek seeds, Poppy seed, Pumpkin seed, Sesame, Sunflower seed

Raven Interpretation Summary

Sample Information

The sample was tested on ALEX² Barcode 02BGH04D, interpretation date 17/05/2024.

Of the tested 295 allergens, 29 were/was above the cut off of 0.3 kU_A/L. A sensitisation can be an indicator of an IgE dependent allergy. For all positive ALEX² allergens, comments for interpretation guidance are listed below.

Total IgE: 153 kU/L

The measured total IgE was 153 kU/L. With a total IgE titre above 100 kU/L, allergy is likely.

Cross-Reactive allergen sensitisation detected

Sensitisations against molecular allergens which are markers of (broad) cross-reactivity between different allergen sources were detected.

Detected cross-reactive allergen sensitisations:

- Parvalbumins: Gad m 1
- Storage Proteins: Ara h 2
- Tropomyosins: Ani s 3, Blo t 10, Der p 10, Pen m 1, Per a 7

Parvalbumins

Parvalbumins are the major allergens from fish species. The degree of cross-reactivity between different Parvalbumins is high, but not absolute. Parvalbumins are resistant to heat and digestion. α-Parvalbumin from thornback ray has been described as hypoallergenic.

Storage Proteins

Members of the storage protein allergen families are able to induce mild and strong allergic reactions and even anaphylactic shock. Allergens of these families can be found in legumes, nuts and seeds. Storage proteins are resistant to heat and digestion. Storage protein allergen families include 2S Albumins, 7/8S & 11S Globulins.

Tropomyosins

Members of the Tropomyosin allergen family can cause inhalative, as well as mild to severe reactions after consumption of seafood. Allergens of the TM allergen family have been identified in ,fish-parasites, insects (e.g. cockroach), mites and seafood. The degree of cross-reactivity between TM members is high.

Weed Pollen

Lamb's quarter

Sensitisation to pollen from lamb's quarter was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Che a 1 is a member of the Ole e 1 allergen family. The degree of cross-reactivity between Che a 1 and its related allergens from saffron and Russian thistle is high to very high and much lower to other members of the Ole e 1 allergen family. Che a 1 serves as a marker for AIT indication, if corresponding clinical reactions are present.

Causal treatment is possible via AIT - Che a 1 serves as a marker for AIT indication. Symptomatic treatment includes anti-histamines and local corticosteroids in various formulations (tablet, spray).

Moulds and Yeasts

Alternaria alternata

Sensitisation to spores from Alternaria alternata was detected. Allergic symptoms associated with A. alternata range from allergic rhinoconjunctivitis to allergic asthma. Alternaria alternata is an outdoor fungal species.

Alt a 1 is a member of the Alt a 1 allergen family and is associated with inhalative symptoms. Cross-reactions between Alt a 1 and other members of the Alt a 1 allergen family have been described. Alt a 1 serves as a marker for AIT indication, if corresponding clinical symptoms are present.

Causal treatment is possible via AIT, symptomatic treatment includes anti-histamines and local corticosteroids in various formulations (tablet, spray).

Mites and Cockroaches

House dust mites

Sensitisation to house dust mite was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to asthma.

Der p 2 & Der f 2 are members of the NPC2 allergen family. The degree of cross-reactivity between different members of the NPC2 is very high in different house dust mites and less so to related allergens in storage mites. Both Der p 2 and Der 2 serve as markers for AIT indication. Positive results were obtained for: Der f 2, Der p 2.

Der p 5 is a member of the Mite Group 5/21 allergen family (MG 5/21). The degree of cross-reactivity to other members of the MG 5/21 allergen family is moderate (e.g. to Blo t 5).

Der p 10 is a member of the Tropomyosin allergen family. The degree of cross-reactivity between Der p 10 and other Tropomyosins is high. Sensitisation to Der p 10 can be the cause for cross-reactions to shrimp and other seafood species (except fish).

Der p 23 is a member of the Peritrophin-like Protein allergen family (PLP), which is associated with the development of Asthma. The degree of cross-reactivity to other members of the PLP allergen family is not clear.

Allergen avoidance is advised. Encasings for blankets, mattresses and pillows can reduce the allergen load. Der f 1/Der p 1 and Der f 2/Der p 2 are major allergens from house dust mite and serve as markers for AIT indication, if corresponding clinical symptoms are present. Symptomatic treatment includes anti-histamines as well as local corticosteroids in various formulations (tablet, spray).

Storage Mites

Sensitisation to storage mites was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Blo t 10 is a member of the Tropomyosin allergen family and it is highly cross-reactive to other members of this allergen family. Sensitisation to Blo t 10 can be the cause for cross-reactions to shrimp and other seafood species (except fish).

Allergen avoidance is advised. Encasings for blankets, mattresses and pillows can reduce the allergen load. Blo t 5 and 21, Gly d 2, Lep d 2 and Tyr p 2 may serve as markers for AIT indication, if corresponding clinical symptoms are present. Symptomatic treatment includes anti-histamines as well as local corticosteroids in various formulations (tablet, spray).

Cockroach

Sensitisation to cockroach was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Per a 7 is a member of the Tropomyosin allergen family and it is highly cross-reactive to other members of this allergen family. Sensitisation to Per a 7 can be the cause for cross-reactions to shrimp and other seafood species (except fish).

Pest control is advised as a first line measure. If this is not possible, an AIT can be prescribed. Symptomatic treatment includes anti-histamines as well as corticosteroids in various formulations (tablet, spray).

Insect Venoms

Fire ant venom

Sensitisation to fire ant venom was detected. Allergic symptoms associated with this allergen source range from local to severe anaphylactic reactions. Fire ants are native to South America and have been imported to the Southern USA, Caribbean countries and recently also to China. Colonies in Australia have been eradicated.

As avoidance of fire ants can be difficult, AIT is the major therapy option. Additionally, the prescription of an emergency kit (incl. adrenalin autoinjector for severe cases) is advised.

Nuts and Legumes

Peanut

Sensitisation to peanut was detected. Allergic symptoms associated with peanut allergens range from oral allergy syndrome to severe, anaphylactic reactions.

The peanut storage proteins Ara h 1,2,3 and 6 are associated with clinical reactions up to severe anaphylaxis. The degree of cross-reactivity between storage proteins from peanut and storage proteins from legumes, nuts and seeds is low to moderate. The importance of these cross-reactions has to be analysed on a clinical level. Ara h 1,2,3 & 6 are stable towards heat and digestion. Positive results were obtained for: Ara h 2.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases).

Edible insects

Sensitisation to edible insects was detected. Allergic symptoms associated with edible insects range from oral allergy syndrome to anaphylaxis. The degree of cross-reactivity is high to other insects (e.g. cockroach) and also to mites and seafood.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases).

Fish

Sensitisation to fish was detected. Allergic symptoms associated with fish allergy include mild to severe anaphylactic reactions after fish consumption as well as respiratory/asthmatic reactions upon exposure to cooking vapors.

Parvalbumins are the major allergens from fish species. The degree of cross-reactivity between different Parvalbumins is high, but not absolute. Parvalbumins are resistant to heat and digestion. α -Parvalbumin from thornback ray has been described as hypoallergenic.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases).

Anisakis simplex

Sensitisation to Anisakis simplex was detected. Allergic symptoms associated with A. simplex include urticaria, gastrointestinal symptoms and anaphylaxis. Anisakis simplex is a nematode that can infect any fish or cephalopods (e.g. squid). Many cases have been reported in Japan and Western Europe, where raw fish is consumed frequently. Fish-processing workers and fishermen also have a certain risk of exposure to A. simplex.

Ani s 3 is a member of the Tropomyosin allergen family. The degree of cross-reactivity between Ani s 3 and other Tropomyosins is high. The importance of these cross-reactions has to be analysed on a clinical level. It is stable to heat and digestion.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases). Persisting gastrointestinal symptoms may indicate active anisakiasis that may be treated by endoscopic removal of the worm.

Seafood

Crab

Sensitisation to crab was detected. Allergic symptoms associated with crab allergy include mild to severe anaphylactic reactions after consumption as well as respiratory/asthmatic reactions upon exposure to cooking vapors. The degree of cross-reactivity between crustaceans is very high.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases).

Lobster

Sensitisation to lobster was detected. Allergic symptoms associated with lobster allergy include mild to severe anaphylactic reactions after consumption as well as respiratory/asthmatic reactions upon exposure to cooking vapors. The degree of cross-reactivity between crustaceans is very high.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases).

Bivalvia (common mussel, oyster, venus clam, scallop)

Sensitisation to mussels was detected. Allergic symptoms associated with mussels of various species (common mussel, oyster, venus clam, scallop) range from oral allergy syndrome to anaphylaxis. Based on Tropomyosin (e.g. Pen m 1), Troponin C (e.g. Cra c 6) and other allergens, the degree of cross-reactivity between different mussel species can be very high. The importance of these cross-reactions has to be analysed on a clinical level.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases).

Shrimp

Sensitisation to shrimp was detected. Allergic symptoms associated with shrimp allergy include mild to severe anaphylactic reactions after shrimp consumption as well as respiratory/asthmatic reactions upon exposure to cooking vapors. The degree of cross-reactivity between crustaceans is very high.

Pen m 1 is a member of the Tropomyosin allergen family. The degree of cross-reactivity between Pen m 1 and other Tropomyosins is high. It is stable to heat and digestion.

Pen m 3 is a member of the Myosin Light Chain allergen family (MLC). The degree of cross-reactivity between Pen m 3 and other members of the MLC allergen family is unknown, but probably high with other shrimp species and possible with chicken. It is stable to heat and presumably also to digestion.

include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases).

Squid

Sensitisation to squid was detected. Allergic symptoms associated with squid allergy include mild to severe anaphylactic reactions after consumption as well as respiratory/asthmatic reactions upon exposure to cooking vapors. Squid commonly cross-reacts with mussels and shrimp.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases).

DISCLAIMER: THE PRESENCE OF IgE-ANTIBODIES IMPLIES A RISK OF ALLERGIC REACTIONS AND HAS TO BE ANALYZED IN CONJUNCTION WITH THE CLINICAL HISTORY AND OTHER DIAGNOSTIC TEST RESULTS. THE RAVEN INTERPRETATION GUIDANCE SOFTWARE IS A TOOL TO SUPPORT PHYSICIANS IN THE INTERPRETATION OF ALEX² RESULTS. RAVEN COMMENTS DO NOT REPLACE THE DIAGNOSIS BY A PHYSICIAN. NO LIABILITY IS ACCEPTED FOR RAVEN COMMENTS AND RESULTING THERAPEUTIC INTERVENTIONS. THE STATED COMMENTS ARE DESIGNED EXCLUSIVELY FOR ALEX² RESULTS.