

Allergy Testing

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NHS

HEART of
ENGLAND
NHS Foundation Trust

Definitions

What is allergy?

Is allergy different to hypersensitivity?

Is there more than one kind of allergy?

Not every unexpected reaction is Allergy

Hypersensitivity

(abnormal response to a substance)

Allergic

immune mediated

mechanisms understood

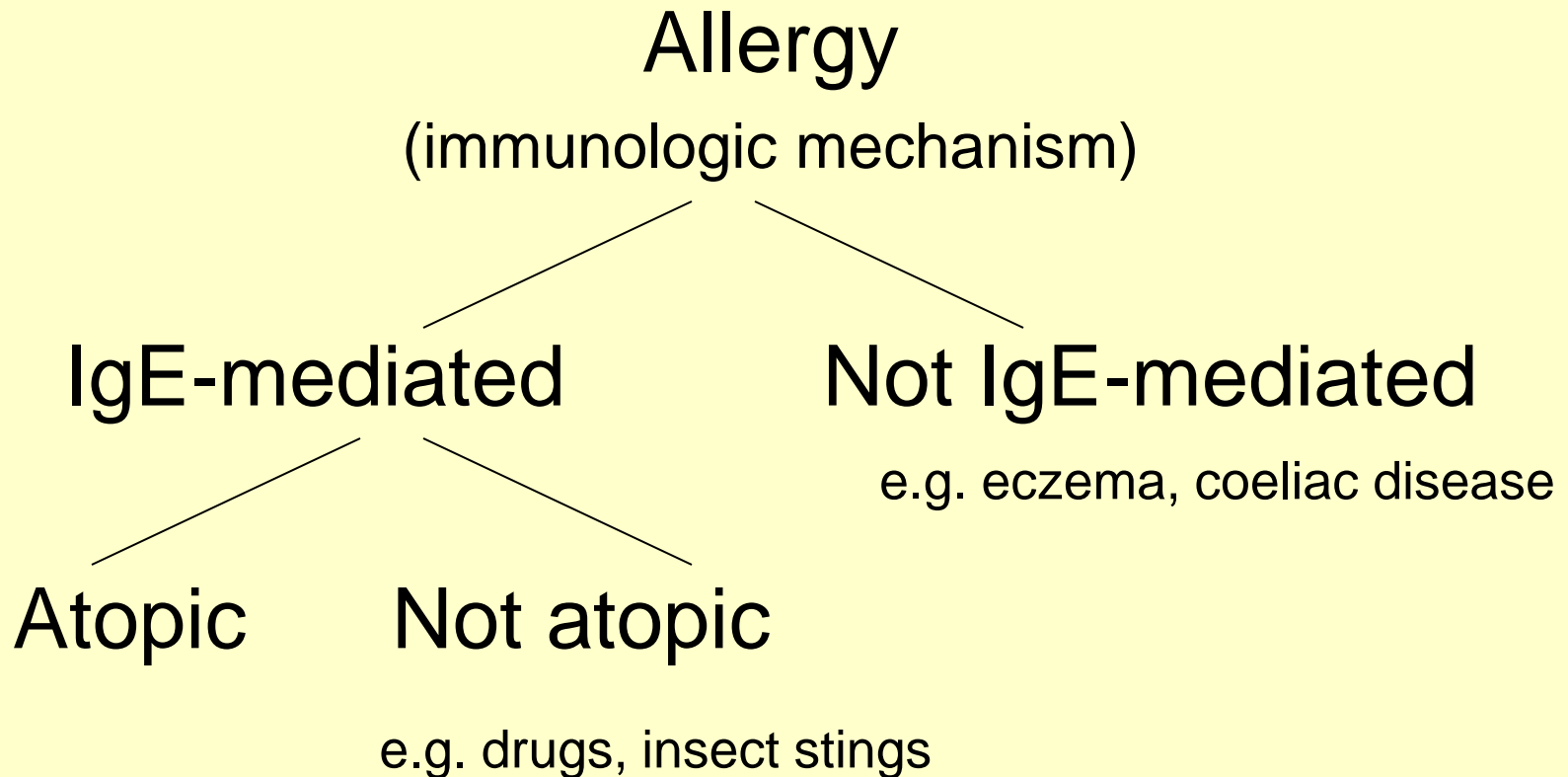
Non-allergic

not immune mediated

mechanisms usually obscure

Role of IgE in Allergy

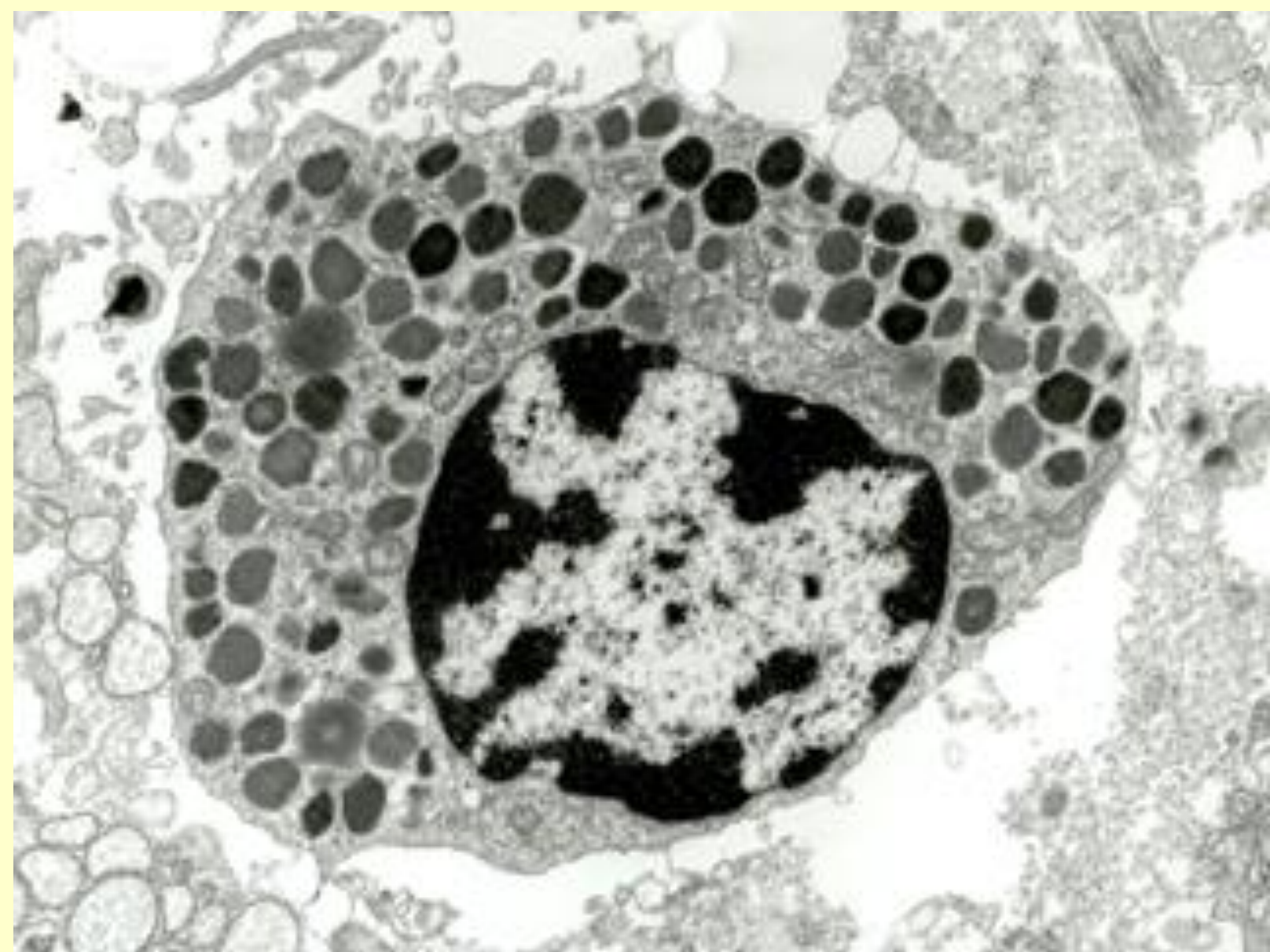
(Allergy Antibodies)



Allergy versus intolerance

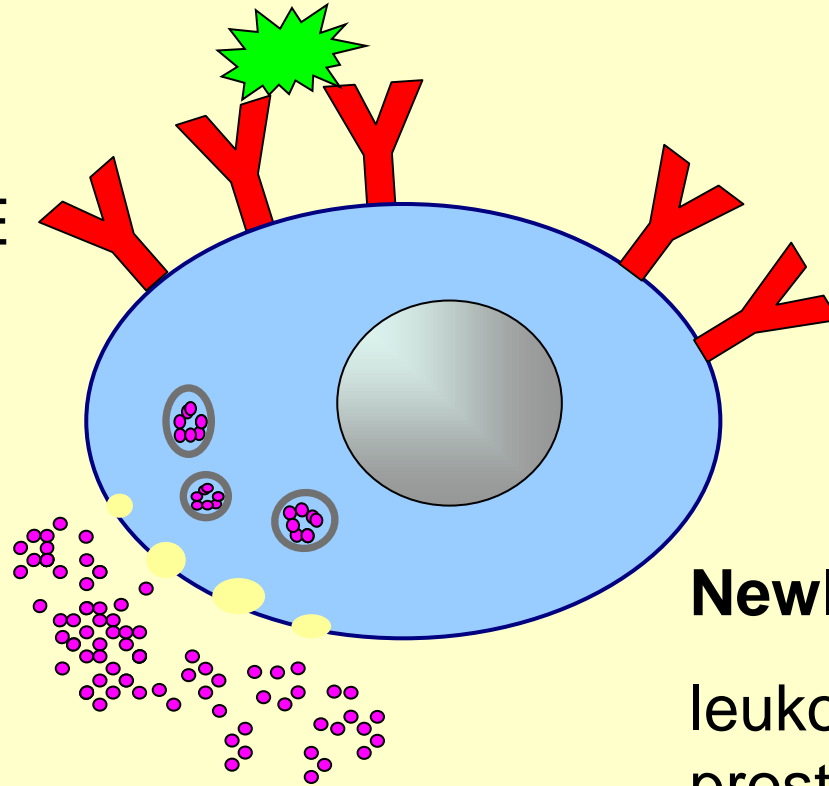
Food allergy: adverse reaction with
immune mechanism

Food intolerance: non immune-
mediated



IgE (allergy antibodies) and Mast Cells

Allergen-specific IgE



Pre-formed chemicals:

histamine, tryptase, heparin

Newly generated:

leukotrienes,
prostaglandins
cytokines

Histamine actions

Irritation of nerve endings
Leaky capillaries
Spasm of airways
Hypersecretion
Recruitment of immune cells

Allergy symptom

Itch
Urticaria / angioedema
Asthma
Runny Nose, eyes
Delayed recurrence

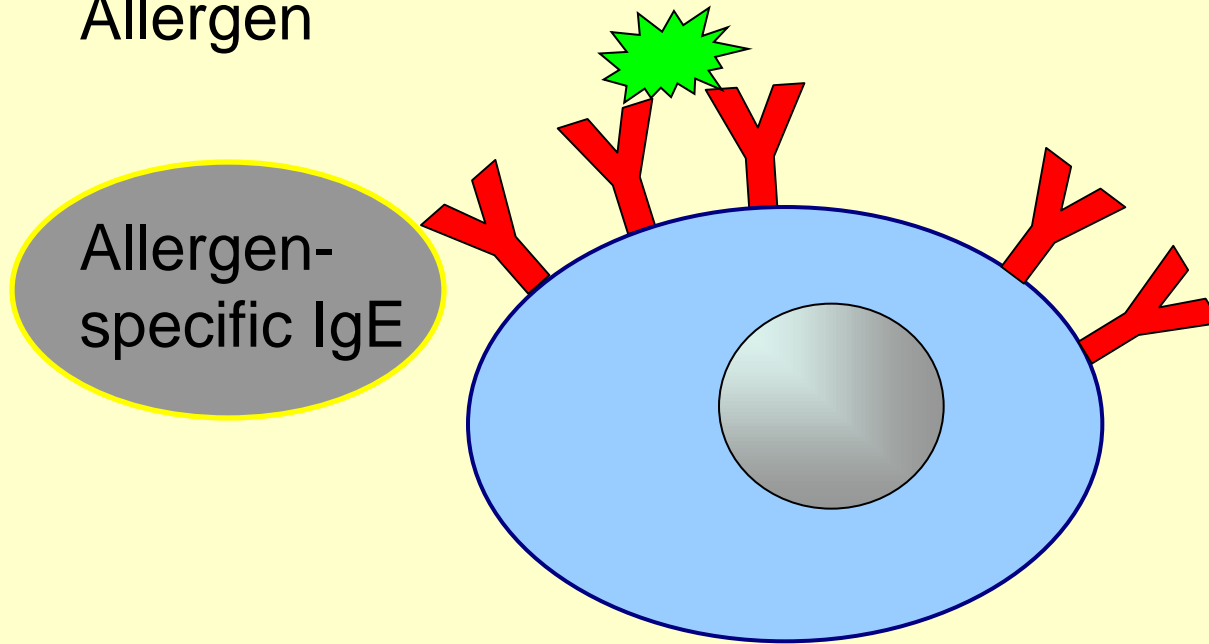


Sensitisation vs Allergy

- Allergy is a 2-step process:
 - 1 Allergic sensitisation
(IgE produced to an allergen)
 - 2 Allergic reaction / symptoms on exposure

Allergy tests

Allergen



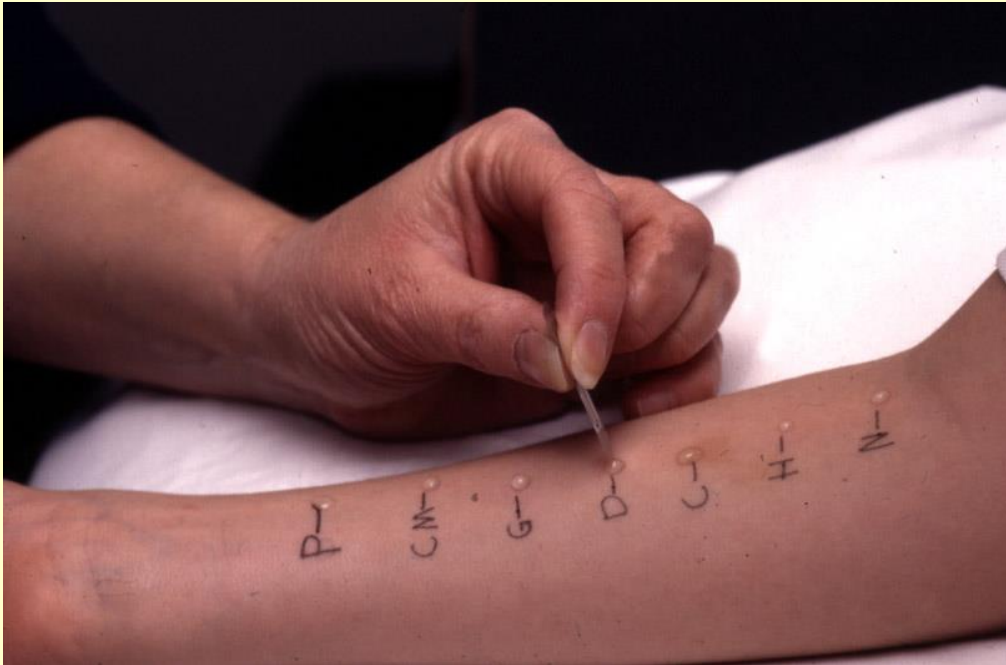
Allergy testing

- Only to help confirm a *plausible* allergy
- Plausible:
 - Sneezing and itchy eyes in June
 - Hives and wheeze 10 minutes after a bee sting
- Implausible:
 - Wakes with lip swelling day after eating nuts
 - Sneezing from Lillies and other strong smells
 - Fatigue after eating white bread

Ways of detecting allergen-specific IgE

- Skin prick test
- Specific IgE in blood
 - “RAST” test
- Challenge - the gold standard

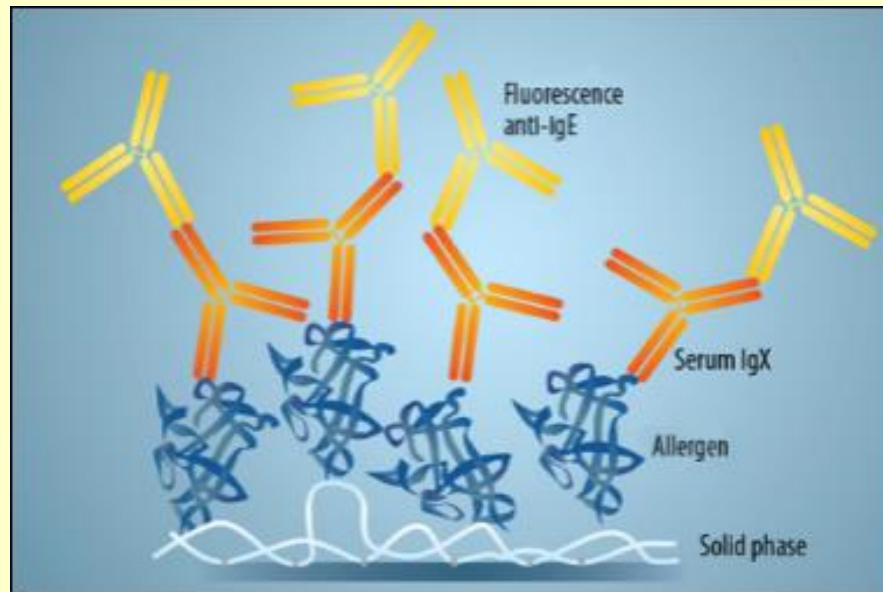
Skin Prick Testing



- Quick, cheap, high patient impact
- Suitable for “unusual” allergens
- Good for excluding allergy
- Problems with eczema and dermographism
- False negatives in some circumstances
- Rare (<1:1000) systemic reactions



Specific IgE Blood Testing



SIgE Cat dander	0.68 kUA/L
SIgE Egg white	0.01 kUA/L
SIgE Hazel nuts	0.00 kUA/L
SIgE House Dust Mite	12.2 kUA/L
Immunglobulin IgE	310 kU/L

- Good for patients on anti-histamines and who have dermographism
- Reaction thresholds described for some food allergens
- Relatively expensive, delay in result
- False negatives in some circumstances
- Insignificant (weak) positive results

Allergy tests cannot...

-be used for allergy screening
-predict likelihood or severity of reaction
-replace a careful clinical history
-identify causes or triggers for eczema
-be used to investigate medically unexplained symptoms

Would you do an allergy test?

- Bloating and wind after eating white bread
- Wheezing and rash 5 mins after an insect sting
- Sneezing after eating mints
- Woke up with hives; ate strawberries previous evening
- Severe diarrhoea after 3 days of amoxicillin

New Allergy – is it or isn't it?

- 36 year-old woman with first episode urticaria
- Sudden onset at work
 - 1 hour after lunch (prawn sandwich)
 - Lip swelling
 - Took colleague's cetirizine, settled in ~2 hours
- Review 3 weeks later: 6 more episodes
 - 1 on the day after ?prawns in curry
 - 2 when colleagues eating nuts / prawns
 - 1 ?new skin cream



Tongue swelling

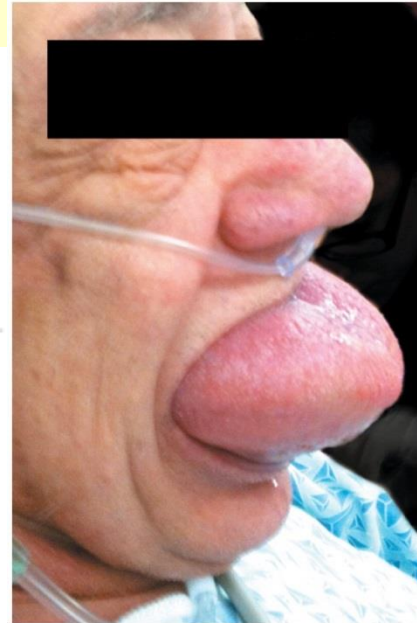
Consultant Immunologist,
Birmingham Heartlands Hospital,
Bordesley Green East,
Birmingham B9 5SS

13-Jan-2015

Dear Colleague,

I would appreciate your review of this patient. He presented with a single episode of a swollen tongue (but intact airways) that responded well to antihistamine. I have been unable to find a trigger. I was unsure if this was angio-oedema. Please find attached his recent blood test.

He is generally well and healthy.



Values and Investigations (Latest Value)

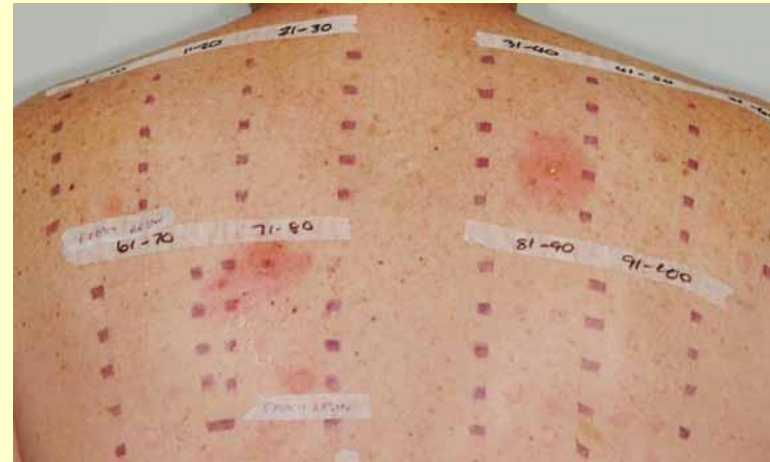
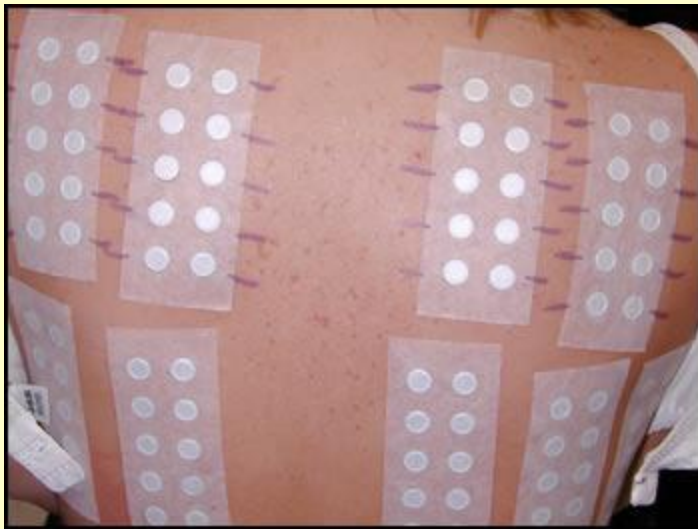
13-Jan-2015	Haemoglobin A1c - (NP2731) - Normal, No action For diagnosis, >48mmol/mol + symptoms is consistent with diabetes With no symptoms, a second positive result confirms diagnosis HbA1c 42-47mmol/mol suggests a high risk of future diabetes IFCC HbA1c target in diabetes monitoring is 48-58 mmol/mol		
	HbA1c level - IFCC standardised	38 mmol/mol	<42.00mmol/mol
	HbA1c level (DCCT aligned)	5.7 %	<6.00%
13-Jan-2015	Wheat RAST test	0.04 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Wasp RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Timothy grass RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Soya bean RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Shrimp RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Peanut RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Cow's milk RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Latex RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Total immunoglobulin E level	16 ku/L	0.00 - 200.00ku/L
	Specific IgEs: Grade 0 = 0-0.35, Grade 1 = 0.35-0.70 Grade 2 = 0.70-3.50, Grade 3 = 3.50-17.5, Grade 4 = 17.5-50 Grade 5 = 50-100 and Grade 6 = >100 kUA/L Negative specific IgE makes allergy unlikely but does not definitively exclude it. If there is strong clinical suspicion suggest refer for skin testing.		
13-Jan-2015	House dust mite RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Egg RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Dog dander RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Cod RAST test	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Cladosporium RAST test - (NP2731) - Normal, No action	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Cat dander RAST test - (NP2731) - Normal, No action	0.00 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Birch RAST test - (NP2731) - Normal, No action	0.02 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Bee RAST test - (NP2731) - Normal, No action	0.01 kUA/L	0.00 - 0.34kUA/L
13-Jan-2015	Aspergillus fumigat RAST test - (NP2731) - Normal, No action	0.01 kUA/L	0.00 - 0.34kUA/L

Total cost of Allergy Tests:

£284.58

Skin patch tests

- For diagnosis of contact eczema
- usually applied to back
- read at 48 hours
- nickel, lanolin, make-up, fragrances etc



You cannot diagnose Allergy by....

- Vega testing
- Hair analysis
- Blood specific IgG
- Kinesiology
- ALCAT testing
- Leucocytotoxicity



No such thing as an intolerance test

Allergy in West Midlands

- 5 centres with Immunologist
- Comprehensive allergy service
- Immunotherapy
- Network





Allergy Pages

Allergen Immunotherapy

Allergy Centre

Clinics

Contacts

Services

Recent Allergy Posts



Inspectors praise Allergy service

September 28, 2015

The West Midlands Allergy Centre based at HEFT is a "robust, quality clinical service", according

Services

The Allergy Centre provides services for the following conditions

- seasonal rhinitis (hay fever)
- rhinitis due to dust mite, pets or other allergies
- hives / urticaria
- allergic swelling (angioedema)
- food allergy (including specialised dietetic advice)
- antibiotic and other drug allergies
- anaesthetic allergies
- bee or wasp sting allergy
- latex allergy

There are outpatient clinics where patients are initially assessed. For further testing patients may be followed at one of our special clinics or for some allergies we might undertake desensitisation immunotherapy.

How to refer

- A letter may be sent directly to one of the consultants for review.
- General Practitioners may refer through the Choose and Book system, followed by a written referral.
- Advice and guidance (without referral) is also available through the Choose and Book system
- Urgent referrals should be faxed and discussed by telephone.

Immunology Pages

Services

Clinics

Immunoglobulin Home Therapy

Contacts

Immunodeficiency Centre

Recent Immunology Posts

HAE patient day 7th

November 2015

September 17, 2015

We are delighted to have been invited to co-host the 2015 HAE-UK Patient Day in Birmingham. This annual event is an opportunity to meet up [...]

October 24, 2014

Where can I find an allergy centre?

bsaci
improving allergy care
through education, training and research

Join here... Links **Members Login**

Contact Us Search

Home About BSACI Professionals Resources for Allergy Sufferers & Carers Meetings, Education & Events Guidelines Publications & Resources News & Media

BSACI Allergy Service Finder

For an appointment at any of the listed allergy services, patients need to be referred by their GP

Find an Allergy Clinic

Age Group
Adults Only

Service Type
Venom Allergy

Search allergy service location (by town)
 Search by your Postcode

Your Full Postcode
B92

Distance
100 Miles

Search



Map showing search results for allergy clinics in the Birmingham area. Red pins are placed on the map to indicate specific clinic locations.

Your Clinic Search Results

Information about

- Birmingham Heartlands Hospital - Adult Allergy Clinic
Birmingham
- Birmingham Chest Clinic - Occupational Lung Disease
Birmingham
- City Hospital, Birmingham - Adult Allergy Clinic
Birmingham
- Glenfield Hospital - Allergy Clinic
Leicester
- Nottingham Childrens Hospitals - Paediatric Allergy Clinic
Nottingham

www.bsaci.org

Any Questions?



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