Paediatric Immunology/Allergy receives a significant number of referral each week. The department has provided some clinical management strategies for the common diagnoses to assist in managing the patient until they obtain an appointment.

- All referrals are reviewed by a consultant and triaged based on clinical discretion.
- Should you require further information or wish to discuss your patient, please contact the Allergy Clinical Nurse Specialist at PMH on ph: 9340 7086

GPs can find excellent clinical resources and self-directed learning models at [www.allergy.org.au](http://www.allergy.org.au)

### Severe allergic reaction / anaphylaxis

Anaphylaxis is a generalized, potentially life-threatening multi-system allergic reaction including respiratory and/or cardiovascular symptoms including:

- Difficulty/noisy breathing,
- Swelling of tongue,
- Swelling/tightness in throat,
- Difficulty talking and/or hoarse voice, wheeze or persistent cough.
- Loss of consciousness, collapse, pallor and floppiness (in young children), hypotension.

A **generalized allergic reaction** is characterized by one or more symptoms, skin and or gastrointestinal tract involvement without respiratory and or cardiovascular involvement. These symptoms include:

- Urticaria, pruritus, angioedema, erythema, abdominal pain, vomiting, loose stools.

#### Diagnosis / Symptomatology | Evaluation | Management Options | Referral Guidelines
---|---|---|---
Severe allergic reaction / anaphylaxis | Anaphylaxis is a generalized, potentially life-threatening multi-system allergic reaction including respiratory and/or cardiovascular symptoms including:
- Difficulty/noisy breathing,
- Swelling of tongue,
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- Loss of consciousness, collapse, pallor and floppiness (in young children), hypotension.

A **generalized allergic reaction** is characterized by one or more symptoms, skin and or gastrointestinal tract involvement without respiratory and or cardiovascular involvement. These symptoms include:

- Urticaria, pruritus, angioedema, erythema, abdominal pain, vomiting, loose stools. | All patients with a history of anaphylaxis need an adrenaline autoinjector
Also consider prescribing adrenaline autoinjector in patients with a history of a generalized allergic reaction with one or more of the following factors:
- Asthma - concurrent or past history
- Adolescents (greater risk of fatal food anaphylaxis)
- Nut allergy (to peanuts or other nuts)
- Stinging insect allergy
- Limited access to emergency medical care

Complete the authorization form provided on this website | 1. ASCIA Anaphylaxis Action Plan
Anaphylaxis action plans for adrenaline autoinjectors can be located at [www.allergy.org.au](http://www.allergy.org.au).
Management should include education about symptoms and signs indicating when to use the adrenaline autoinjector and instructions on how to use the adrenaline autoinjector.

A copy of the ASCIA anaphylaxis action plan must be supplied to schools, kindergarten, crèche etc and the adrenaline autoinjector must be carried with the patient at all times.

2. Education on The Avoidance of Trigger (If Known)
This is particularly important with food anaphylaxis.

3. Recommendation on Medic-Alert Bracelet
### Allergic rhinitis / conjunctivitis

**Initial treatment:**
Appropriate management includes
- intranasal spray containing topical steroids (e.g. Nasonex®, Rhinocort®, Avamys® or Beconase®) either preventatively or at the beginning of spring
- Non-sedating antihistamine tablets or syrups (e.g. Zyrtec®, Claratyne®)

Also of use can be:
- Medicated nasal sprays containing: antihistamines - (e.g. Livostin®) effective quickly (within minutes) in controlling sneezing and itching
- ipratropium bromide - (e.g. Atrovent®) good for drippy noses
- cromoglycate (e.g. Rynacrom®) to reduce inflammation

Medicated eye drops may contain soothing lubricants, antihistamines (e.g. Livostin®) or drugs to reduce inflammation with regular use

**Need to trial treatments for 6-8 weeks**

### Preparing your patient for the Immunology clinic appointment:
- Treat acute symptoms appropriately (nasal steroids, antihistamines)
- Consider sinusitis and treat accordingly (as above plus oral antibiotics)
- Antihistamines MUST be discontinued at least 5 days prior to the appointment whereas topical nasal steroids can be used without interruption
- If your patient would like further information, please refer to: www.allergy.org.au (Website of ASCIA – Australasian Society for Clinical Immunology and Allergy)
- Your patient will be receiving Skin Prick Testing to determine the triggers for his/her allergic rhinitis. In some cases RAST testing will be indicated.
- Respiratory function testing will be performed for all patients with asthma.
<table>
<thead>
<tr>
<th>Diagnosis / Symptomatology</th>
<th>Evaluation</th>
<th>Management Options</th>
<th>Referral Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atopic dermatitis</td>
<td></td>
<td><strong>Everyday</strong> - These treatments are ongoing regardless of the presence / absence of active eczema:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Avoid irritation and aggravation: heat, prickly/rough materials, stress</td>
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<tr>
<td></td>
<td></td>
<td>• Keep skin well moisturized and always moisturize immediately after bathing/swimming</td>
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<tr>
<td></td>
<td></td>
<td>Recommended moisturizers: Dermeeze® (50% liquid paraffin, 50% white soft paraffin), Aqueous cream or Sorbolene cream with 10% Glycerin, QV cream</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Avoid soap, use bath oils / aqueous cream instead. Bath and shower oils e.g. Q.V. Bath Oil ®, DermaVeen Shower and Bath Oil ®, Oilatum Shower Gel ® can be used in the bath or can be applied from a spray bottle by the older child after a shower Patient compliance with treatment is a critical success factor</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>Need to trial treatments for 6-8 weeks</strong></td>
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</tbody>
</table>
## Atopic dermatitis

**Active Treatment:** Topical steroids should be used as soon as there is an acute deterioration such as erythema and/or itchiness and should be weaned once symptoms have disappeared. Use corticosteroid ointment rather than creams and apply to inflamed skin, then apply moisturizer top to toe. Parental fears about the use of topical steroids are common and if not addressed will affect compliance with treatment:

- Adverse effects (skin atrophy, capillary fragility) are rare.
- Studies suggest wet dressings with topical steroid do not significantly affect short-term growth or hypothalamic-pituitary-adrenal axis and that controlling eczema effectively with topical steroids results in improved growth (i.e. eczema as a chronic illness results in reduced growth).

**Choice of steroid based on severity of eczema and location:**

<table>
<thead>
<tr>
<th>Face and nappy area / groin</th>
<th>Body (trunk, limbs, and scalp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1% hydrocortisone ointment twice daily</td>
<td>Methylprednisolone 0.1% ointment (Advantan fatty ointment®) daily</td>
</tr>
<tr>
<td>If not responding: Tacrolimus or Pimecrolimus cream 1% twice daily (intermittent use only)</td>
<td>Mometasone ointment (Elocon®) daily</td>
</tr>
<tr>
<td></td>
<td>If not responding (discoid eczema, lichenification):</td>
</tr>
<tr>
<td></td>
<td>- Betamethasone 0.05% dipropionate ointment (Diprosone ®) daily - short term use only</td>
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</tbody>
</table>

**Consider infection see below**
### Bacterial Infection / Herpetic Infections

**Symptoms**

Secondary bacterial infection of eczematous skin is common, mostly caused by *Staphylococcus aureus*.

Secondary herpes simplex infections are characterized by a sudden onset of small grouped, white or clear fluid filled vesicles, pustules and erosions, which are often tender, painful and itchy. Patients must be referred to the Emergency Department for assessment and antiviral treatment.

**Differential diagnosis**

Psoriasis, Histiocytosis, Zinc deficiency (if peri-orificial distribution), Miliaria, Scabies, Immunodeficiency (failure to thrive, chronic diarrhoea, recurrent infection)

**Evaluation**

Symptoms include crusting, weeping, erythema, frank pus and/or multiple excoriations.

**Management Options**

Treatment:
- Remove crusts and weeping while patient is bathing, wipe infected areas with a disposable towel until crusts removed
- Systemic oral antibiotics (Cephalexin or Flucloxacillin) for 10 days
- Consider treatment with mupirocin 2% ointment to nares and antibacterial washes (rinse well)

**Referral Guidelines**

Unwell or febrile patients must be referred to the Emergency Department for assessment and possibly admission.

Patients with secondary herpes simplex infections must be referred to the Emergency Department for assessment and antiviral treatment.

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**Other information and resources**

The Eczema Association of Australasia: [www.eczema.org.au](http://www.eczema.org.au)

Australian College of dermatologists: [www.dermcoll.asn.au](http://www.dermcoll.asn.au)

Australian Dermatology Nurses Association: [www.adna.org.au](http://www.adna.org.au)

The New Zealand Dermatological Society: [www.dermnetnz.org](http://www.dermnetnz.org)
### Diagnosis / Symptomatology

<table>
<thead>
<tr>
<th>Adverse reaction to mosquito bites.</th>
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<tbody>
<tr>
<td>• Most insect bites and stings result in a localised itch and swelling that settles within a few days</td>
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<tr>
<td>• severe allergic reactions are very rare, even when the swellings are very large and uncomfortable</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• These reactions tend to become less severe with time.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Management Options</th>
<th>Referral Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is no specific treatment for these reactions other than symptomatic measures such as:</td>
<td>• topical cooling,</td>
<td>Reassurance – no referral required.</td>
</tr>
<tr>
<td></td>
<td>• oral antihistamines and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• topical steroid application.</td>
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</table>

<table>
<thead>
<tr>
<th>Urticaria (acute &lt; 6 weeks)</th>
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</thead>
<tbody>
<tr>
<td>Causes:</td>
<td></td>
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<tr>
<td>• post-infectious (infection 7-10 days prior): most common</td>
<td></td>
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<td></td>
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<tr>
<td>• immediate hypersensitivity reaction (insect bite, food ingestion, medication)</td>
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</tbody>
</table>

| Urticaria occurring on a daily basis, whether it is for 2 weeks or 2 years, is rarely allergic | | | |
|---|---|---|
| • often involves a large surface area & can be accompanied by angioedema, swelling of hands, feet | | | |
| Investigations: | | | |
| • FBE, ESR, LFTs, thyroid autoantibodies: will be normal in most cases | | | |
| | • Tests for specific IgE (RAST) are generally non-contributory. | | |

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Non sedating antihistamines e.g. Cetirizine, Loratadine: symptomatically (acute) or on a regular basis (chronic Urticaria)</td>
<td>• if not responding, consider addition of a H2-receptor antihistamine (eg. cimetidine or ranitidine)</td>
<td>Most patients respond to explanation, symptomatic treatment and clinical follow-up with their GP</td>
</tr>
<tr>
<td></td>
<td>• others: oral corticosteroids: short course only, consider side-effects</td>
<td></td>
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<tr>
<td></td>
<td>• not indicated: Leukotriene inhibitors (Montelukast)</td>
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<tr>
<td></td>
<td>• time is a wonderful healer</td>
<td></td>
</tr>
</tbody>
</table>
### Urticaria (chronic < 6 weeks)

**Causes:**
- Idiopathic (most cases)
- Autoimmune (thyroid)
- Chronic streptococcal / parasitic / Helicobacter pylori infection
- Antibiotics, anti-inflammatory medication (aspirin and NSAIDs)
- Vasculitis (lesions persist in one site for more than 24 hours)

**Evaluation**
- Specific forms of chronic urticaria:
  - Symptomatic dermatographism: common, treatment usually not required.
  - Cholinergic or heat-induced: typically occurring after exercise, sweating, showering, emotional stress or fever.
  - Papular Urticaria: reaction to insect bites, leading to excoriation/infection

**Management Options**
- Urticaria is a common, distressing but generally benign and self-limiting condition affecting 2-3% of children.
- Adrenaline autoinjector required
- Adrenaline autoinjector required

**Referral Guidelines**
- Most patients respond to explanation, symptomatic treatment and clinical follow-up with their GP

If you require specialist approval for the prescription of Adrenaline autoinjector ®, please call the Immunologist on-call (ph: 08 9340 8222)
## Insect venom allergy

Allergies to venoms from stinging insects are one of the most common causes of serious allergic reactions (anaphylaxis) in Australia. In Western Australia these insects include honey bees (most common), paper wasps and European wasp. As their venoms are very different, allergy to one does not usually increase the risk of reaction to another.

### Evaluation

<table>
<thead>
<tr>
<th>Please organize:</th>
<th>Treatment for patients with anaphylactic insect venom allergy:</th>
<th>Immunotherapy for insect venom allergy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• RAST for suspected insect causing reaction (honey bee, Paper wasp, European Wasp) at least 4 weeks after sting</td>
<td>• Prescribe Adrenaline autoinjector (Adrenaline autoinjector Junior for children 10-20kg, Adrenaline autoinjector for children &gt;20kg)</td>
<td>• Only available for bees and wasps, no other insects</td>
</tr>
<tr>
<td>• Serum-Tryptase if patient required adrenaline administration</td>
<td>• Anaphylaxis Management Plan (found on: <a href="http://www.allergy.org.au">www.allergy.org.au</a>)</td>
<td>• Treatment duration 3-5 yrs</td>
</tr>
<tr>
<td></td>
<td>• Consider MedicAlert Bracelet</td>
<td>• Success rate is 80-85% for bees, 90-95% with wasps</td>
</tr>
<tr>
<td></td>
<td>• Referral to Immunology Clinic</td>
<td>• Will be commenced at the Immunology day-ward at PMH (RUSH therapy protocol), then continued with monthly injections at GP</td>
</tr>
</tbody>
</table>

### Referral Guidelines

- All systemic reactions to insect venom (non-anaphylactic and anaphylactic)

### Referral necessary for:

- All systemic reactions to insect venom (non-anaphylactic and anaphylactic)

### Referral unnecessary for:

- screening because patient has other allergies
- small or large local patients with a family history of insect venom allergy
### Immunisation with MMR (Measles, Mumps & Rubella) Vaccine in the presence of egg allergy.

In accordance with the Australian Immunisation Handbook, children with egg allergy, even anaphylactic egg allergy, can be safely given MMR vaccine as egg allergy is not a contraindication for these vaccines.

### Contraindications against MMR vaccine:
- Anaphylaxis following a previous dose of MMR
- Anaphylaxis following any component of the vaccine
- Those with primary or acquired cellular immunodeficiency states
- Those taking high-dose oral corticosteroids (>2 mg/kg/d prednisolone (≥20 mg/d total) for >1/52 or >1 mg/kg/d for >4/52)
- Those receiving high-dose systemic immunosuppressive treatment, general radiation or x-ray therapy
- Those suffering from malignant conditions of the reticuloendothelial system
- Recent administration of antibody-containing blood product

On refer to PMH immunology if your patient has a contraindication as listed.