

UCT OCCUPATIONAL ALLERGY AND ASTHMA STUDY AMONG BAKERY WORKERS IN THE WESTERN CAPE PROVINCE OF SOUTH AFRICA – 2003

SKIN PRICK TEST PROCEDURES

1. *Explain the following to the participant*

The procedure

- Time involved i.e. 30 min
- Participants to describe any adverse effects during SPT (e.g. breathing difficulties). SPT would then be discontinued

2. *Administer SPT pre-test questionnaire*

- Check whether subject has not been on the following medication for the past 72 hours (Phenergan, Zyrtec, Telfast, Allergex, Clarityne, Celestamine, any flu or cough medication).
- Contra indications; previous severe reactions, on anti-histamines, pregnancy and severe skin disease.

3. *Procedure for SPT [technique, modified prick test]*

- Draw diagonal lines for 10 allergens and 2 for controls [pos and neg]
- Avoid 1 cm at wrist [least reactive] and 1 cm at elbow [most reactive]
- **R-fore arm:** Place a small drop of allergens on either side of the line. Start with negative control [base of testing solution; glycerol, phenol and saline] at the **L** side of the wrist and work your way up to the elbow, cross over and end with the pos control [histamine] on the **R** side of the wrist. Follow sequence used on data sheet. Drops must be placed next to but below the pen marks to avoid reaction from the ink.
- **L-forearm:** Repeat as for R forearm
- Prick with special lancets in the same order as the drops were placed and mark the time at the beginning of this process.
- Do prick and flick method, 45° angle. Listen for the click.
- Prick and wipe lancet between each prick to avoid cross contamination
- Use 1 lancet per arm.
- Wait for the pos control to react [\pm 3 min] before blotting the excess fluid from both arms using tissue paper
- Inform subject that it will itch but must refrain from scratching.

4. Extracts used for skin prick testing

4.1.1 Panel 1: General Allergens [volar left lower arm]

- Aspergillus (*Aspergillus fumigatus*)
- Dog (*Canis familiaris*)
- Cat (*Felis domesticus*)
- Cockroach (*Blatella germanica*)
- Bermuda grass (*Cynodon dactylon*)
- House dust mite (*D Pteronyssinus*)
- Rye grass (*Lolium perenne*)
- Mould mix (*Cladosporium herbarum, Alternaria alternata, Fusarium*)
- Grass mix (*Pollen lll-Avena, Hordeum, Triticum, Secale*)
- *Anisakis simplex*

4.1.2 Panel 2: Bakery Allergens [volar right lower arm]

- Corn flour
- Alpha-Amylase
- Barley flour
- Wheat flour
- Rye flour
- Soya flour
- Oats
- Peanut
- Spider mite (*T urticae*)
- Storage mite (*L destructor*)

4.1.3 Controls on both panels for both arms

- Positive Control [histamine]
- Negative control [base of testing solution; saline, glycerol and phenol]

4.1.4 Storage of SPT solutions

All SPT solutions should be kept in the fridge when not being used

5. Results

- Read results within 20 min of pricking procedure.
- Read positive control first according to the triple response [wheal, flare and itch] wheal must be at least 3mm to indicate a positive/true response if less, then test not accurate. Test must be re-done.
- Read negative control, must be negative, no re-action. Sometimes a red dot will be observed this is a reaction from the prick only.
- Compare all other results to positive control, normally at 4+. Wheal size is most important.
- Use black koki pen and mark the size of the wheal
- Place special tape over grid on both forearms, remove and place on grid on the data sheet.

6. After care

- Complete comment section re: subject results, any medications given, problems, symptoms, reasons test was not done or discontinued, etc.
- Apply antihistamine cream (e.g. calamine lotion or hydrocortisone)
- Advise participant to return to clinic or testing venue if late reactions or problems develop.
- Provide contact details to subjects for any further information or future queries

7. Management of an allergic reaction

7.1 Mild allergic reaction

- Stat dose of phenergan, 25 mg orally
- Observe patient until condition has stabilised
- Arrange transport for patient to go home
- Provide additional 2 doses of phenergan, 25mg p.o. to take home (3x daily)

7.2 Severe allergic reaction [anaphylaxis]

- If not shocked or unconscious, place patient in upright position,
- Administer **0,3 ml adrenaline subcutaneously or IMI** provided the patient still has a adequate blood pressure and circulation
- In the presence of shock or poor circulation, **add 1ml of adrenaline to 9ml of sterile water or saline (1:10 000)**
- Administer 3ml of this solution IV
- Repeat if no improvement or the condition begins to deteriorate
- Administer IVI fluid, Ringer lactate or normal saline [2 liters] followed by 50 mg [2ml] phenergan IV or IMI.
- Administer nebulizer or ventolin, 2 puffs 2min apart
- Nebulizer, 1ml Betotec + 2ml Atrovent + 2ml normal saline
- Give hydrocortisone (Solucortef) 500mg IV as a bolus
- Transfer to hospital

8. Contact numbers

- Dr Mohamed Jeebhay (w) 021 4066309 and (c) 073 1998750
- Sr Faieza Omar (w) 021 4066665 and (c) 082 2600152
- Dr Andreas Lopata (w) 021-4042395 and (c) 082 5979815