# Occupational Dermatology

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I’d like to discuss a few cases that illustrate 16 practical tips in occupational dermatology - a subject that many of you regard as a surreal exercise in futility

- Mr F was referred by another dermatologist on  account of 2 rashes – one on the face for 10 years or so, and another on the back for several months.

- The dermatologist wondered if these were a contact allergy to something at work.

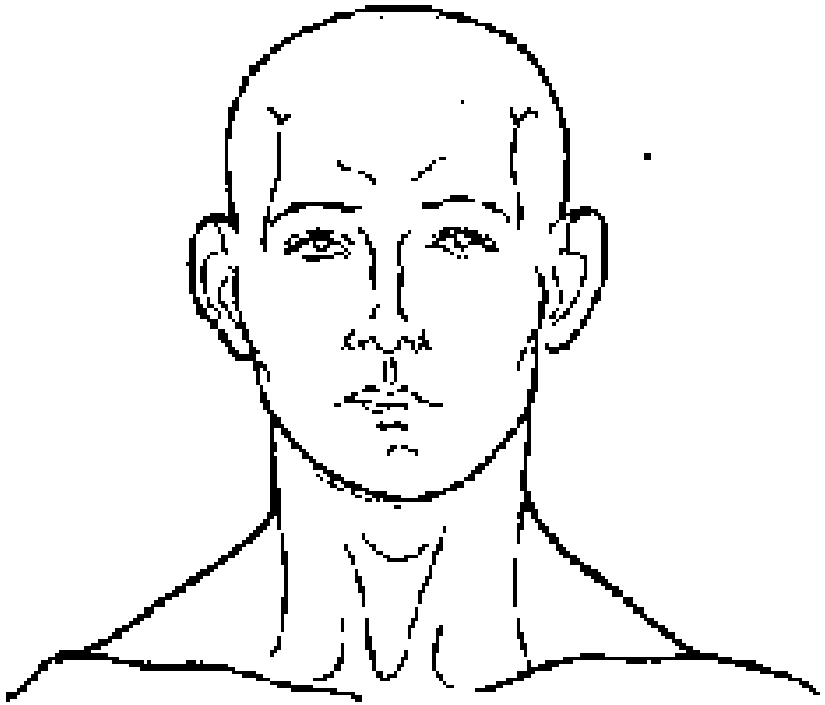
# On examination the rash looked like this……

- Damn!
- No rash!

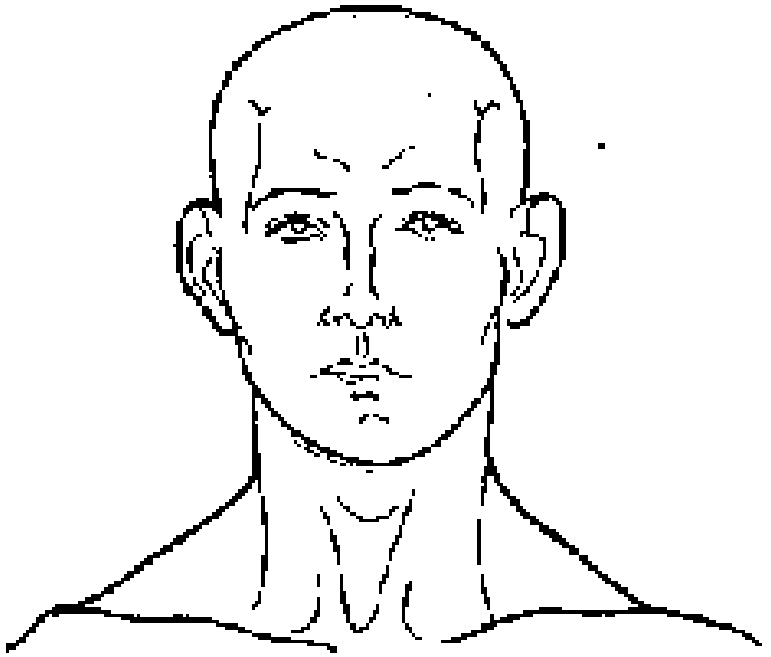
# Tip #1 – be clear ***where*** the rash is.

- It’s on the face
- Where on the face?
- Nose and eyelids
- Where on the nose? Where on the eyelids?

## Photosensitive or airborne

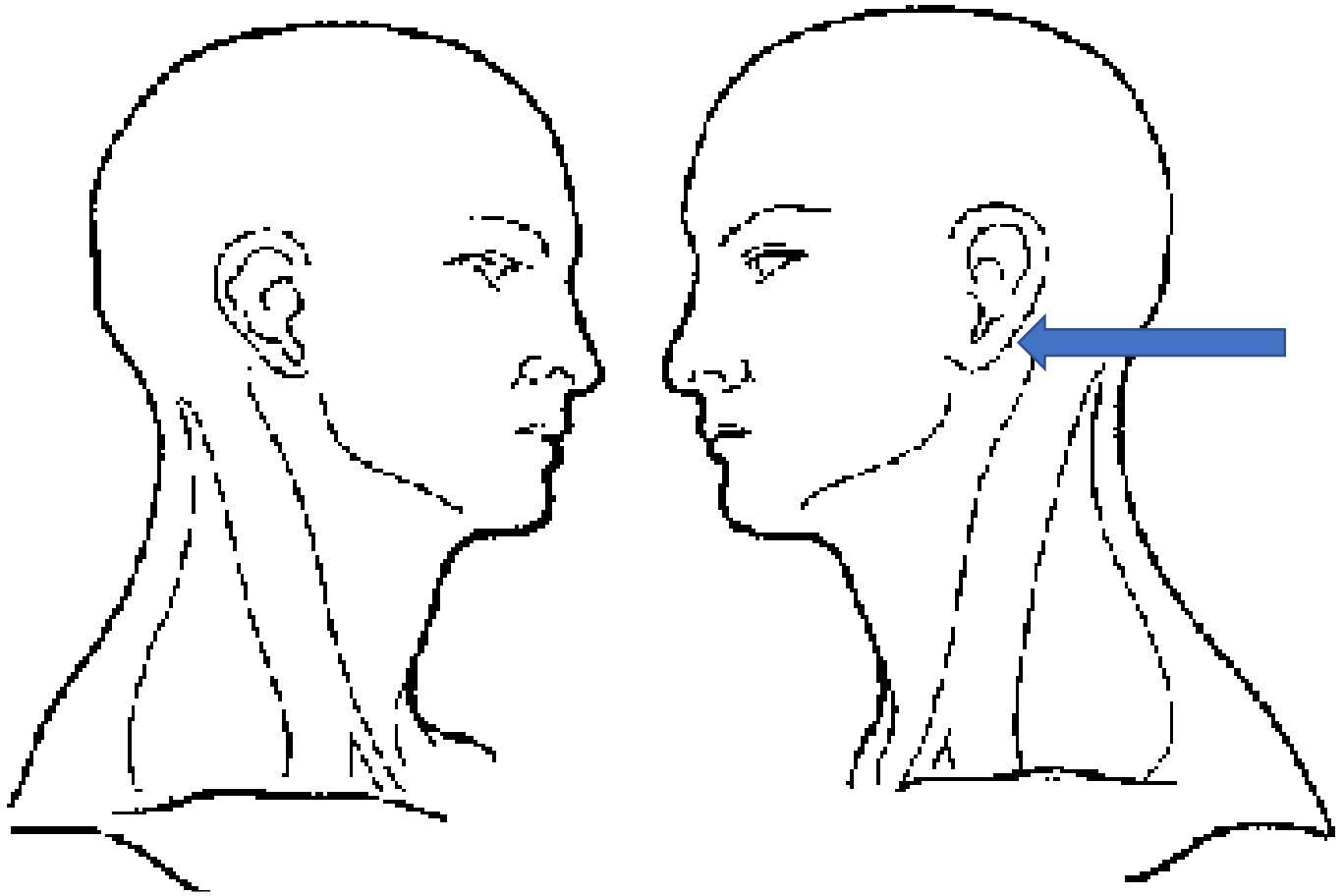


## Atopic eczema

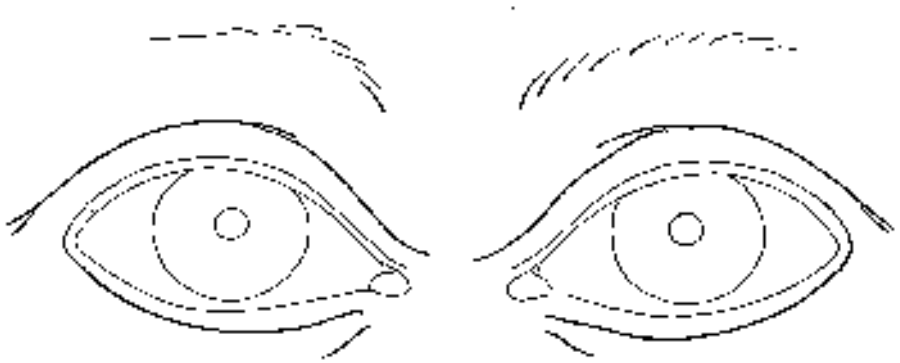


**Contact allergy to a hair product**

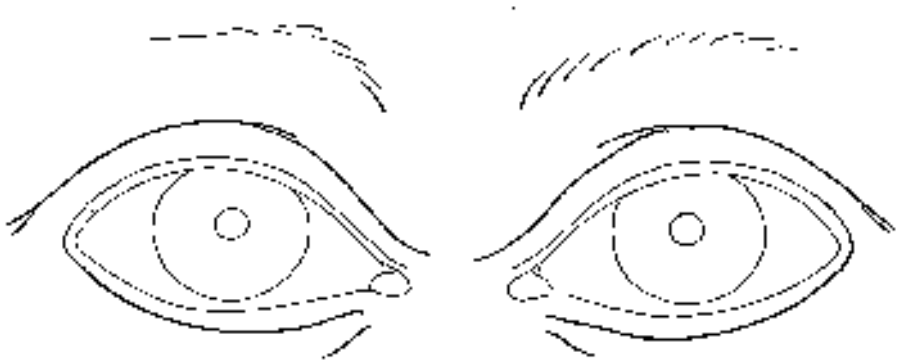
**Sure that's not discoid lupus?**



**Seborrheic dermatitis or psoriasis**



**Atopic eczema or contact allergy**



**Seborrheic dermatitis**

**Atopic eczema, contact dermatitis**

**Discoid lupus**

- The facial rash affects the sides of the nose, he says, and under the eyebrows

- He keeps it under control with Micreme H (miconazole with hydrocortisone) cream

- Sounds like seborrheic dermatitis

- He is more worried about the rash on the back

- Its due to the fluorescent shirts he says

- So – what does he do?
- He works in quality control in a plant which makes laminated veneer lumbar – bits of wood glued together with phenol formaldehyde resin

- He has brought in MSDS's which refer to bifenthrin (pyrethroid), triadimefon and cyproconazole (fungicides)

- Aha!
- You could spend an hour or two hunting for evidence of these chemicals (or their relatives) causing contact dermatitis.

# Tip #2 Don’t leap to conclusions

Just because someone is exposed to a potential allergen, it doesn’t mean it is the cause of their problem

Or even if it is the cause, it may not be the only cause –

- you can have more than one allergy,
- you can have a mixture of irritant and allergic contact dermatitis,
- you can have both allergic contact dermatitis and atopic dermatitis…..

- Gather all the evidence first, and then find the explanation(s) that best fit the data.


- Actually, our chap just wanders about with a clip board, and his exposure to chemicals is negligible

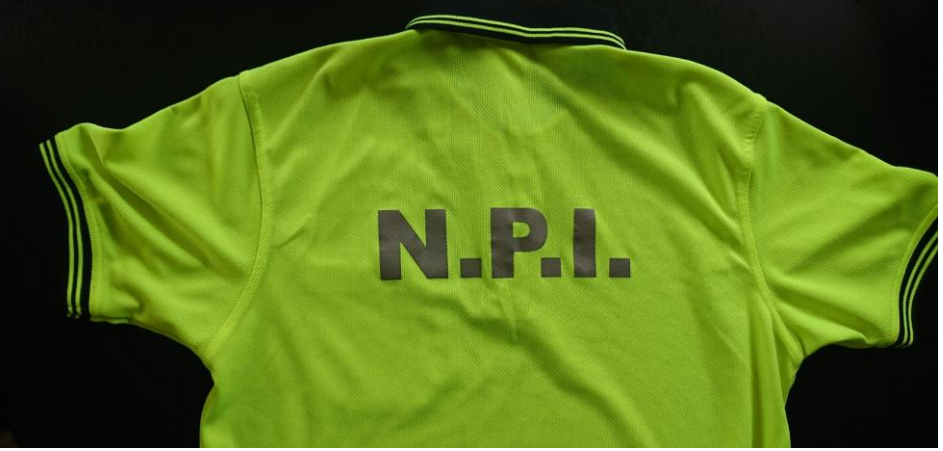
- ….this isn’t him btw – just an example of the genre.

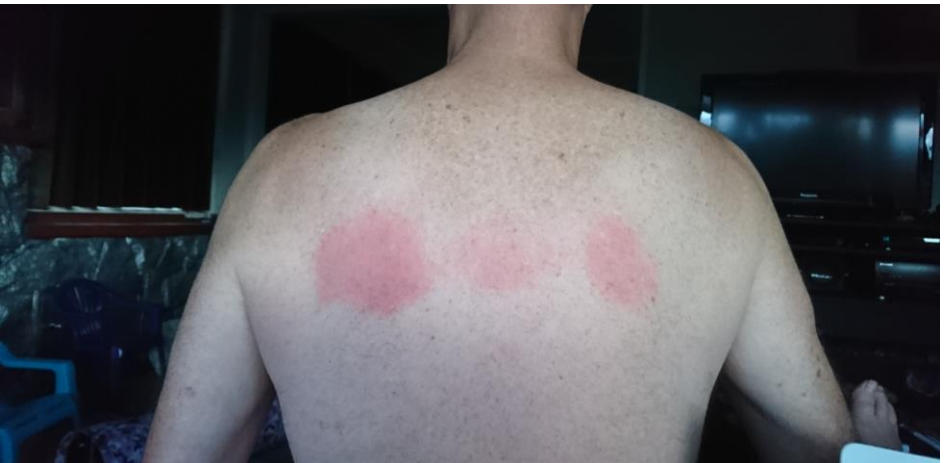
- He says the rash goes away when he has annual leave
- He doesn’t get it if he wears the old shirts  - only the new shirts, so meanwhile he will wear his old shirts
- The old shirts and the new shirts are **exactly** the same, he says.
- It’s the fluorescent stuff he says. He’s going to wash his new shirts a 100 times so that they turn into old shirts
- He only gets the rash on the upper back, but the shirt material is the same front and back. He must get sweatier on the back, he says.

# Tip #3 Eyewitnesses are not always reliable

- While its always worth getting a detailed account of events and exposures from the patient, their observations may be colored and edited by their preconceived notions of what's going on.

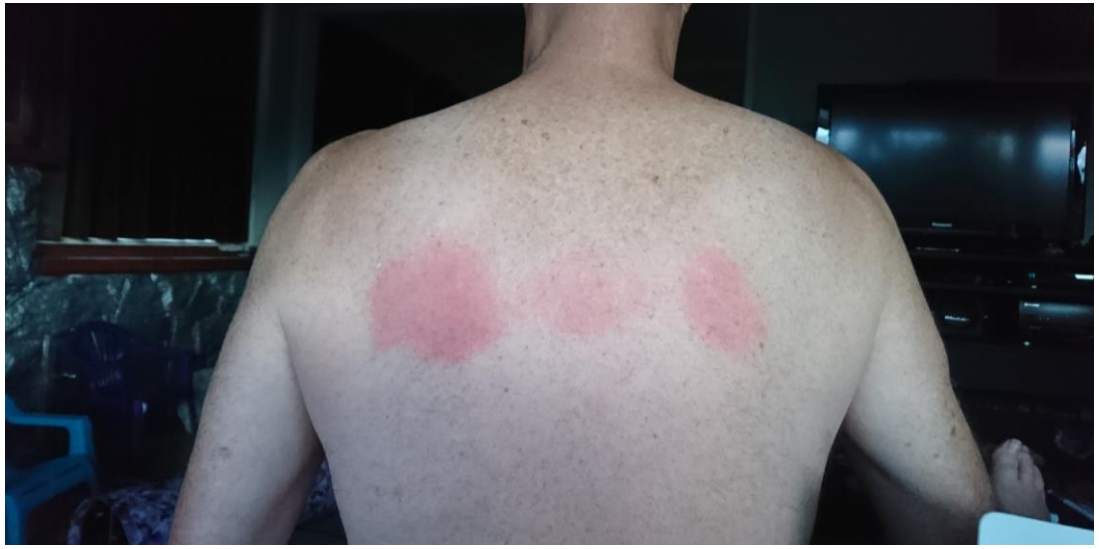
- Eg the patient is more likely to blame the nasty herbicide than the pretty pasture weed for their rash – but the Achillea is the more likely cause



# You ask for photos…

- Turns out the rash is not randomly or diffusely across the upper back, but 3 distinct patches
- The shirts aren't identical
- Until he took the photos of the shirt, he hadn't really noticed that the offending new shirt had N.P.I. inked on to the upper back
- It all becomes clear what the cause is, and therefore what the solution is

Also please note the area over the spine is less reactive…..that’s why you don’t put your patch tests there

# Tip #4 Sometimes it's the doctor that's confused, not the patient

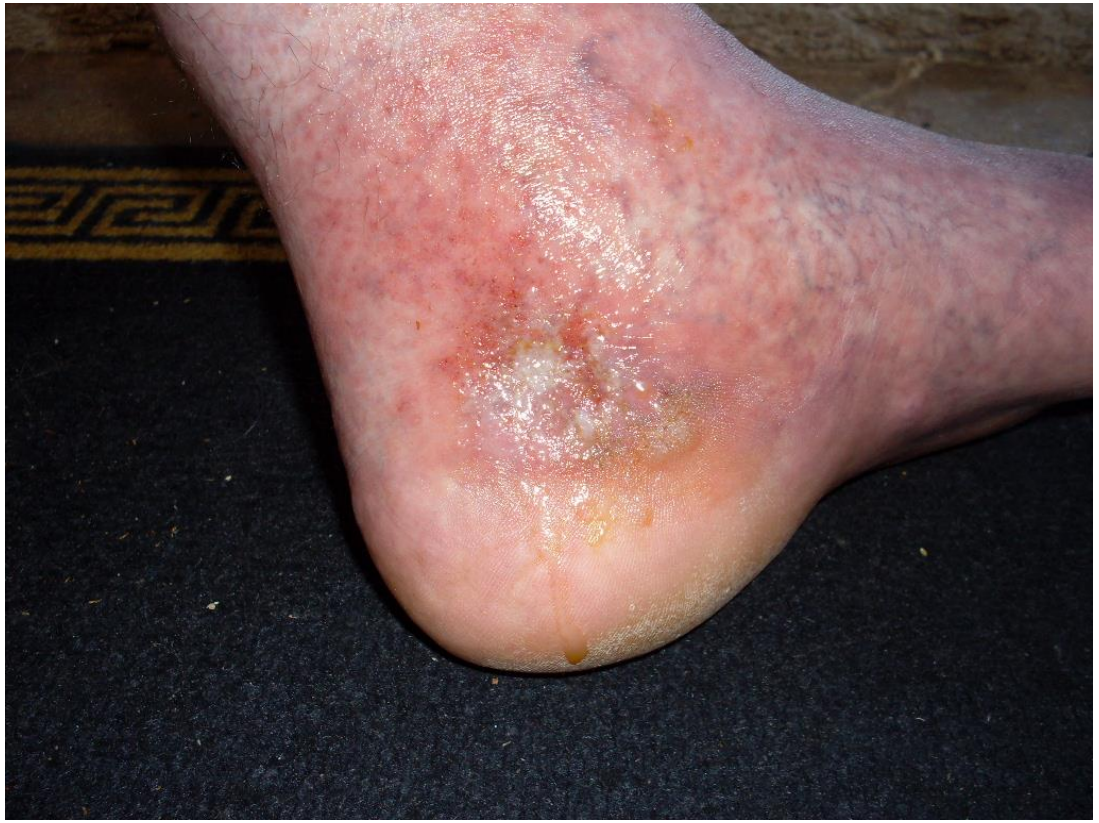
- Mr W has a long history of venous hypertension
- He's had the odd varicose ulcer
- He reacts to elastoplast
- He got some new boots and developed a friction blister on the left medial malleolus
- He was treated with dressings, and he was off work. It healed by October
- The nurses said he should use lots of moisturiser on the legs/ankles to keep his skin supple

- Just before Christmas, blisters developed on the left ankle and left leg

- He saw various doctors and nurses who said it was eczema, and opined that it was an allergy to his moisturiser

- He was referred to me for allergy testing

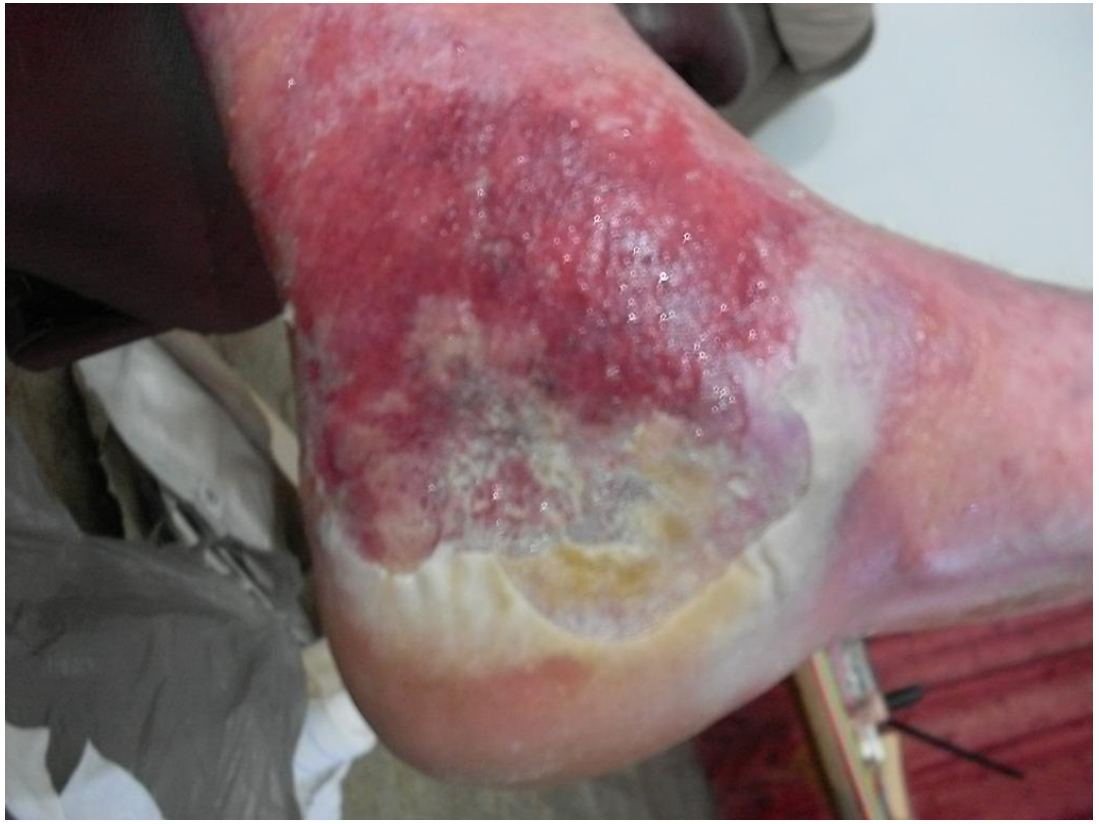
- I didn’t do any



- It had all healed up by the time I saw him, just some scarring

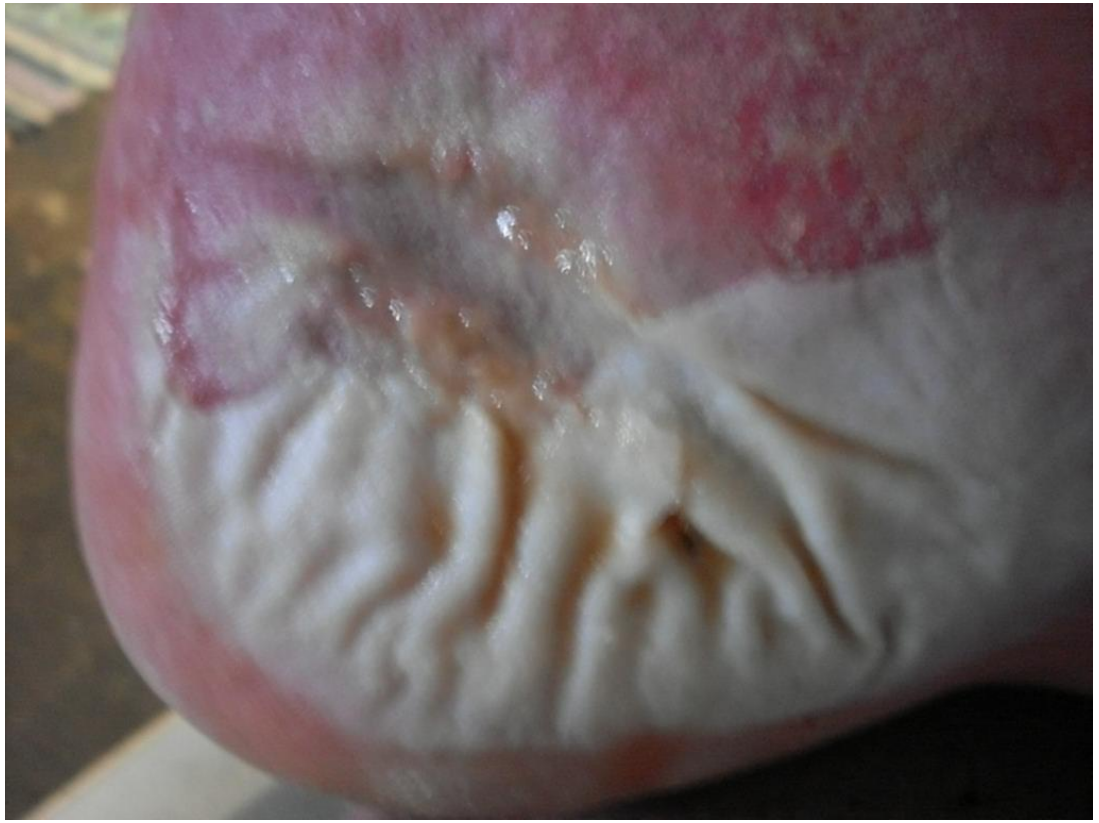
- But he advised that the problem had ONLY occurred at the site of the previous friction blister from his new boots, as well as a scarred area on the lower leg where he had once had a varicose ulcer

# Tip #5
# Contact allergic dermatitis always itches



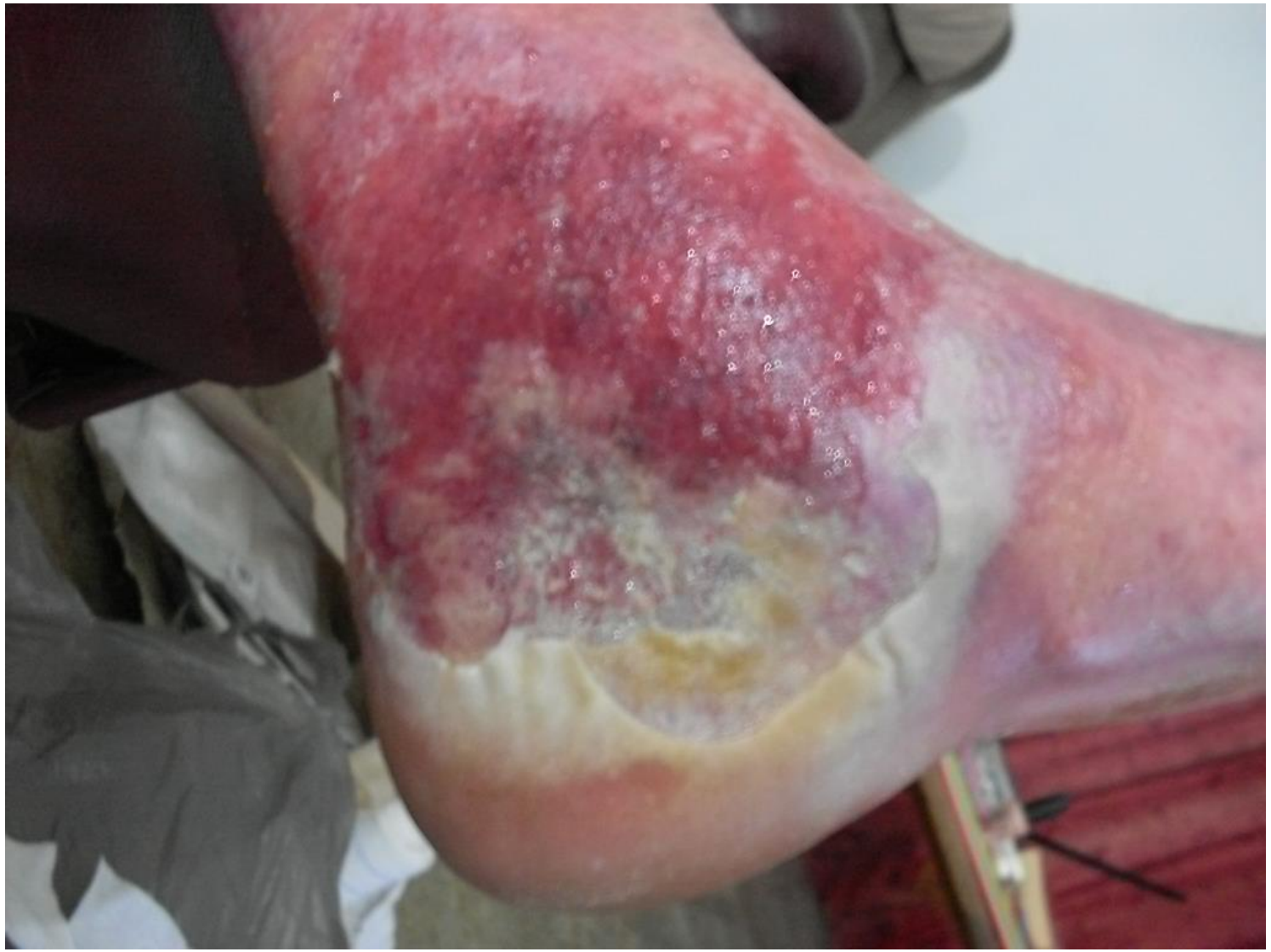
- This is one of the photos the patient supplied. A 3cm blister had turned into a 7cm blister, and then the skin went white and peeled off.

- No vesicles, no itch…no eczema actually.



- (Also a patient-provided photograph)
- It certainly isn’t a reaction to his moisturiser since this was smeared all over the lower leg and ankle, but the reaction was confined to sites of previous ulceration
- He self treated with a couple of over- the-counter creams with ‘clinically proven ingredients’ and the doctors gave him steroid ointments.

- He works in a vineyard, in Blenheim.
- He’s a jack of all trades, but prior to his blisters developing he had spent 8 hours in the December sun in a vehicle such as this
- He had work boots, thick socks, and pads over his skin to prevent friction blisters from the boots, and loads of moisturiser



- It is easier to create a friction blister in areas of previous scarring
- Skin fragility is increased by wetness
- The occlusion from thick moisturiser, dressings, thick socks, boots, plus a day in the scorching Blenheim sun will make for some VERY soggy feet and ankles

# Tip #6 – you need to understand what the problem is, in order to recommend treatment

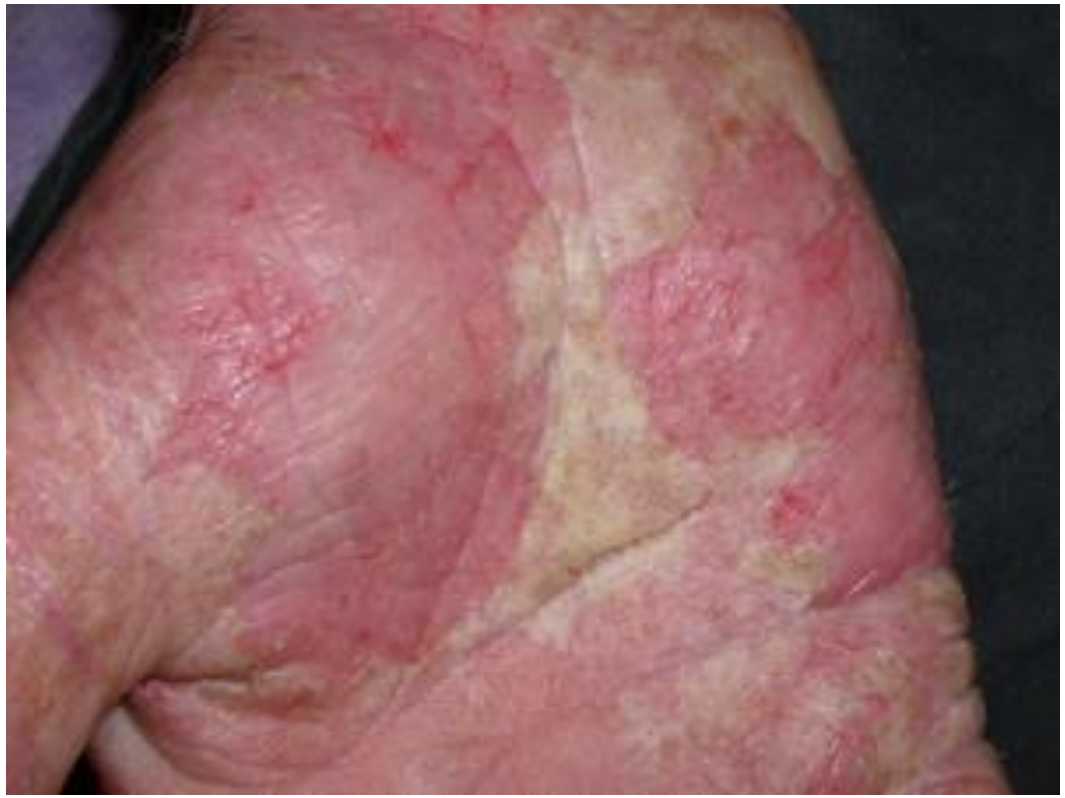
In this case the problems are:

- Areas of scarring (can't fix that)
- Wetness

Management:

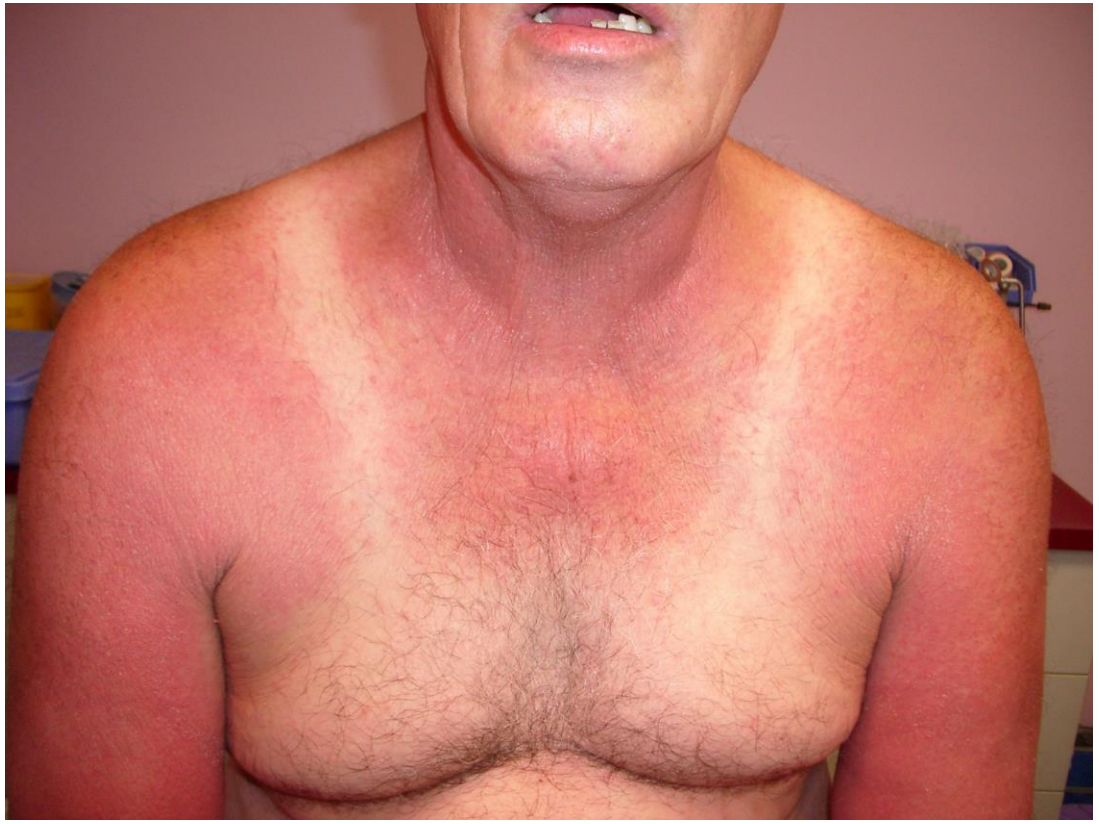
- Avoid moisturiser – if he *must* use one, choose a lotion or light cream that isn't occlusive
- If he needs padding over scarred areas, use a thin sanitary pad (readily available, cheap, and draws the moisture away)
- Air conditioned cab (yeah right – just joking).

# Tip #7 A good history will guide you in your choice of patch test haptens – it won't of itself provide the answer



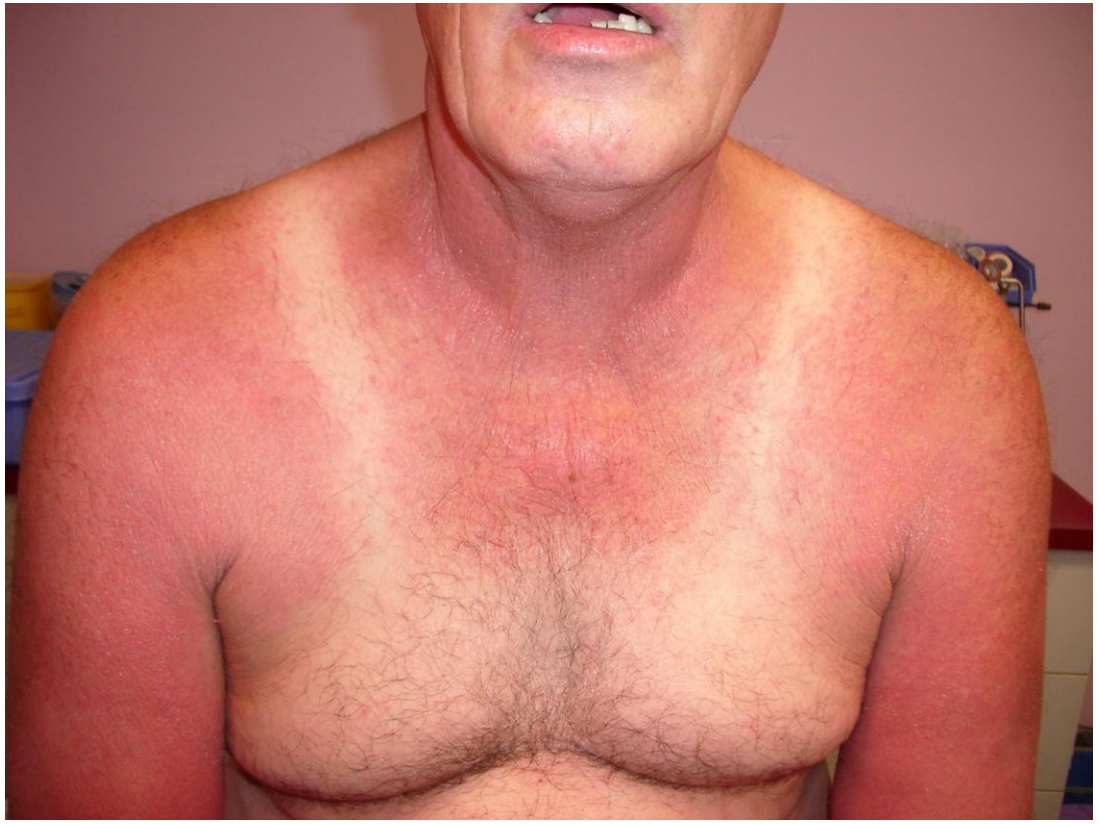
- Mr B works in a building supplies store
- He used to be a printer but gave it up over a decade ago because of hand dermatitis.
- Did his hand dermatitis go away in the interval? I tried hard to figure that out – I really did ….

- He thinks that handling wet timber makes his hands worse
- Handling bags of cement might make it worse
- He works 4 days a week. He doesn’t wear gloves. Apart from timber and cement he doesn’t seem to handle anything else
- He thinks he is allergic to betamethasone, but as far as I can tell it doesn’t aggravate his skin – it just doesn’t help

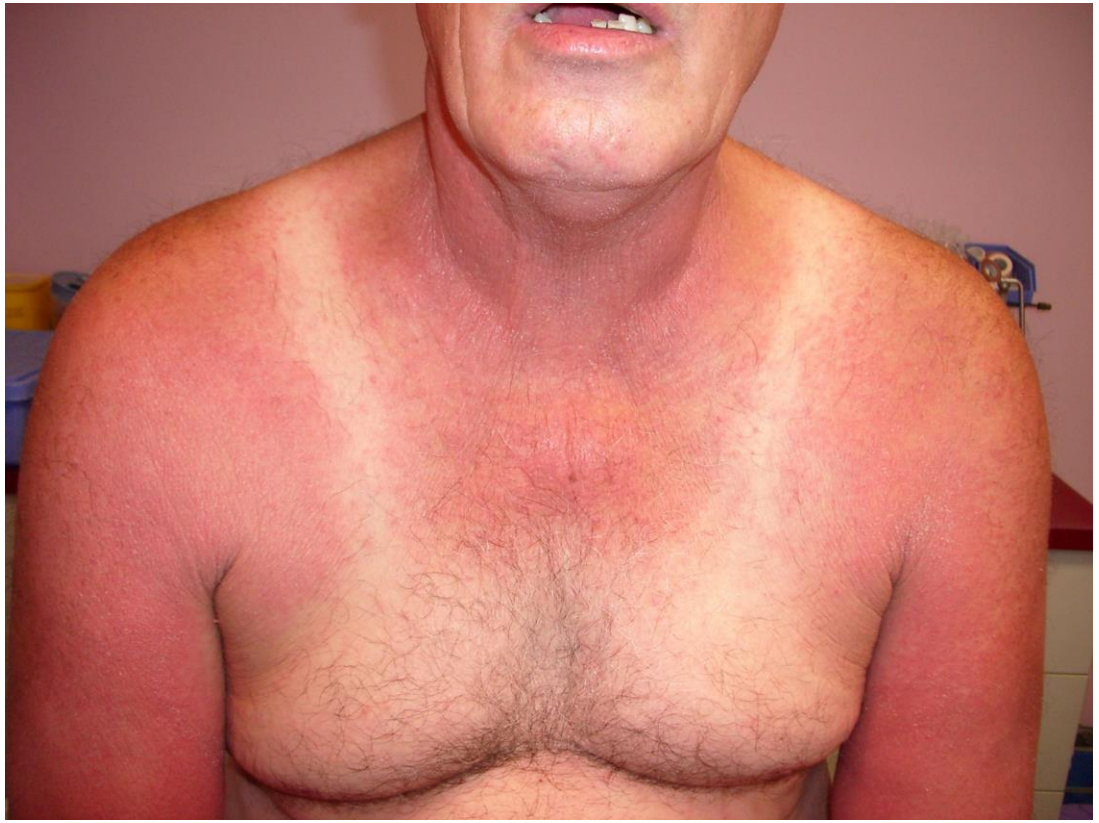


- He developed this rash 2 weeks before I saw him.
- The rash came up after he “did his wife’s brakes”. He used a solvent. He got the solvent inside his vinyl gloves. The solvent is the problem.
- It was very annoying of me to pester him about other matters when clearly THE SOLVENT IS THE PROBLEM

# Tip #8 It is OK to badger the patient to get a good history



- He was wearing a T shirt and a jersey when he ‘did his wife’s brakes’
- “Are you sure you weren’t wearing a singlet??”
- No. T shirt and a jersey
- “Maybe it was a hot day and you were in fact wearing a singlet”
- No. T shirt and a jersey



- Oh yeah, that’s right – he took his jersey off and was wearing a singlet because it was a hot day.
- No sunscreen – he was in the garage.
- Oh yes, and he used [Company name]’s foaming wheel cleaner. It says on the tin it can give you a rash. It doesn’t list its ingredients though.
- He used another brand of wheel cleaner too, and a degreaser

# Tip # 9 Its OK to badger the company to find out what's in their product

- The foaming wheel cleaner had the name and address, website, and phone number of the company.
- I looked up their website. It was under construction.
- I rang the number, and was advised to dial 3 for product information
- I dialled 3
- No one answered
- I tried another day. The nice lady denied having any such product
- I rang another day and got a different nice lady, who e-mailed their MSDS

- His patch tests showed reactions to **colophonium** – this is derived from pine resin and has a diversity of uses. He was involved in cutting pine wood, and exposure to pine sawdust may have been relevant in his hand dermatitis.

- He also reacted to **potassium dichromate** – found in Portland cement

- Also reacted to N-isopropyl –N-phenyl-4-phenylenediamine used in the manufacture of natural and synthetic rubber

- He denied any rubber exposure, but then he denied stripping off to his singlet too.

- He reacted to **coconut diethanolamide** – a foaming agent found in bath and shower products, and also in his foaming wheel cleaner

- He reacted to **methyl isothiazolinone** – a preservative in widespread use (preservatives of some sort are added to anything with water in them).

- He was told to look out for this product in sunscreens, moisturisers, cleansers etc etc. Its presence isn't always listed on the container – eg its found in pretty much all water based paint

- He also reacted to **octyl-isothiazolinone**. Uncertain relevance – but it may be used as a wood preservative

# Tip #10 Present the information in a way the patient can understand

- This fellow has a LOT of allergies
- He is allergic to chemicals with horrendous un-pronounceable names and lots of synonyms
- Lots of products don't list the ingredients on the container. Or they do, but its too small for us old farts to read, or the price tag is affixed firmly over the top of it.

A particular chemical might be found in a diversity of products that the patient wouldn't think of as being related in any way eg colophony (colophonium) is derived from pine resin but may be found in:

- mascara (not relevant to our chap)
- waterproofing on cardboard boxes
- to enhance grip in various sports including lawn bowls
- fluoride dental varnish (the hospital dental department sensibly requested a copy of his allergy test results)
- and lots of other places

- Providing a large wad of handouts wont work – it’s too much information – it gets thrown out
- Too little information, on the other hand, won’t serve your patient well
- There is a “just right” approach
- Apologies to the scientists amongst you for the 3 bears analogy, given that the contention that the baby bear’s small serving was the one that was neither too hot nor too cold but “just right” contravenes the laws of thermodynamics – clearly it should have been mamma bear’s.

- Providing the patient with just the right amount of information is easier said than done

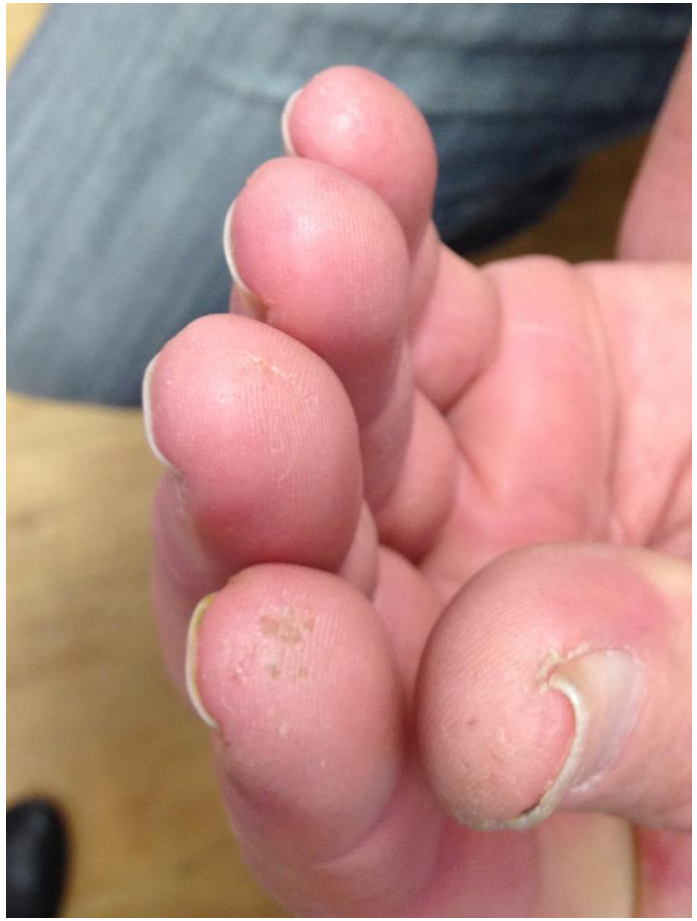
- Our chap had a flare of rash on his forearms a month after he was patch tested.

- He was renovating the house - wearing rubber gloves, dropping things into hydrochloric acid to clean, and using a variety of paints, potions, glues and sprays of largely unknown constituents

- Sigh.

# Tip #11 call for assistance

- A colleague, whose name isn't Bob, but we shall call him Bob, wants us to see a patient of his – to do some patch testing.
- But Bob….I can courier the patch test tapes to you, and you can do the test yourself
- *No, Bob would have to train his nurse*
- Put the tests on yourself, Bob
- *No, Bob doesn't have the facilities*
- What – no room? No light? What sort of outfit are you running there Bob?
- So the patient made the 4 hour journey to Wellington and stayed in a motel for the week of the patch test



- He doesn’t have a lot of eczema currently – but that’s because he is on 150mg of cyclosporin plus 150 mg of azathioprine.
- Creams did not control his eczema (and he tried a whole heap of them). He does not want to stop his pills, because his hands were so bad.
- He has a past history of mild atopic eczema as a child.

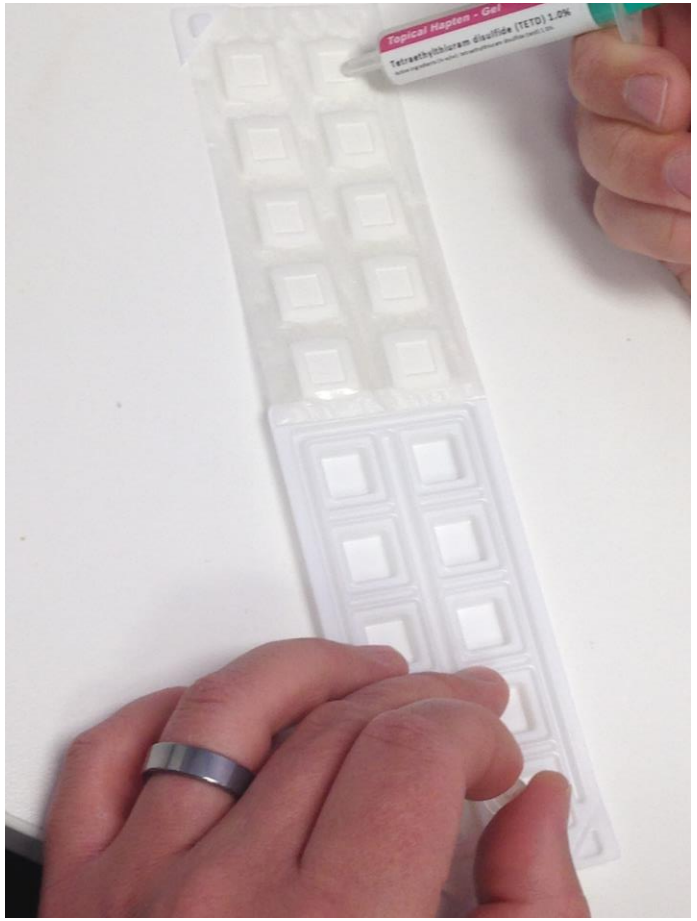
- For the last 22 years he has worked in the dairy industry, in the whey products area.
- Half his time is computer work
- The rest of the time he is mopping floors, water blasting, hosing, putting chemicals in foot baths, sampling for pathogens
- He washes his hands a lot. He wears rubber gloves sometimes.

# Tip #12 its ok to patch test on immunosuppressants

- In an ideal world we would stop immuno-suppressing drugs to do a patch test – but if they can't or won't – carry on.

- He brought the safety data sheets for all the cleaning chemicals he washes floors with and so on.

- He actually has two sorts of gloves – he didn't bring samples. One definitely rubber, but not sure about the other



His reactions were:

- Thiuram mix [o/+/+]
- Tixocortol [o/o/+]
- Methylisothiazolinone [+++/++/+]

- Thiurams can be found in rubber and nitrile gloves
- But are they in his gloves?
- We told him how to do a test with his own glove material – a do-it-yourself patch test in effect. It was negative.

# Tip #13 Relevant patch test reactions are missed if you don’t do a late reading at Day 7 or 8

- That tixocortol reaction [o/o/+] would have been missed if no late reading had been done – it wasn’t there until Day 7

- We advised that he should avoid steroids that cross react with this such as hydrocortisone, locoid (hydrocortisone butyrate), advantan (methylprednisolone aceponate), and prednisone

- Methylisothiazolinone  - the chemical to which he had the strongest reaction [+++/++/+] wasn’t mentioned in any of the safety data sheets he had brought.

# Tip #14 The handsoap is also a chemical

- Notwithstanding the fact that data sheets and product labels aren't always accurate, we suspected another source.
- No one brings data sheets for the handsoap – they don't think of it as a workplace 'chemical'
- As soon as we had that big reaction on the first reading, we asked him to ring the lady in the office to go check the handcleaner

# Tip #15 The lady in the office is your friend

- She took a photo of the ingredients listed on the container and emailed it to our patient

- Bingo! Methylisothiazolinone

- With allergen avoidance this man has been able to wean off all his medications.

# Tip #16
# You can’t figure it out without a patch test

- Oh pooh!

- There’s no dermatologist in my area
- There is a dermatologist in my area, but they don’t do patch tests.
- There is a patch testing service, but you have to wait a decade.

# Sorry, I don’t have anything comforting to say

- At Anwyl Medical Centre we provide a courier patch test service, and in some circumstances we may be able to help you out with advice and the wherewithal to do your own test.

- That solution is far from ideal. But an occupational medicine specialist should have the skills to do an exposure history, and interpret results, and the mechanics of doing the patch test can be readily explained

- There are other courier patch test services, but I am not sure if they are happy to assist occupational physicians