



# Photophytodermatitis (Celery Burns in Backpackers) Occupational medicine disrupts farming practice

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# The farm (near Gatton)



# Gatton Hospital

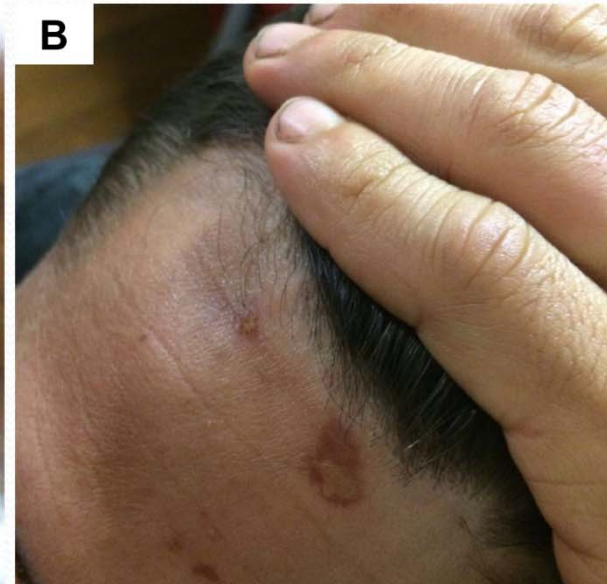


# Celery Burns – Gatton Hospital



# Celery Burns

- 4 Italians
- Backpackers
- Burns to
  - A) Hand -1
  - B) Forehead
  - C) Legs
  - D) Hand -2



# Nurses knew about celery burns

Celery burns every year

Backpackers (May)

Steroids, Antibiotics

? Celery Juice



# Celery Burns

Shorts and sneakers  
(not boots)

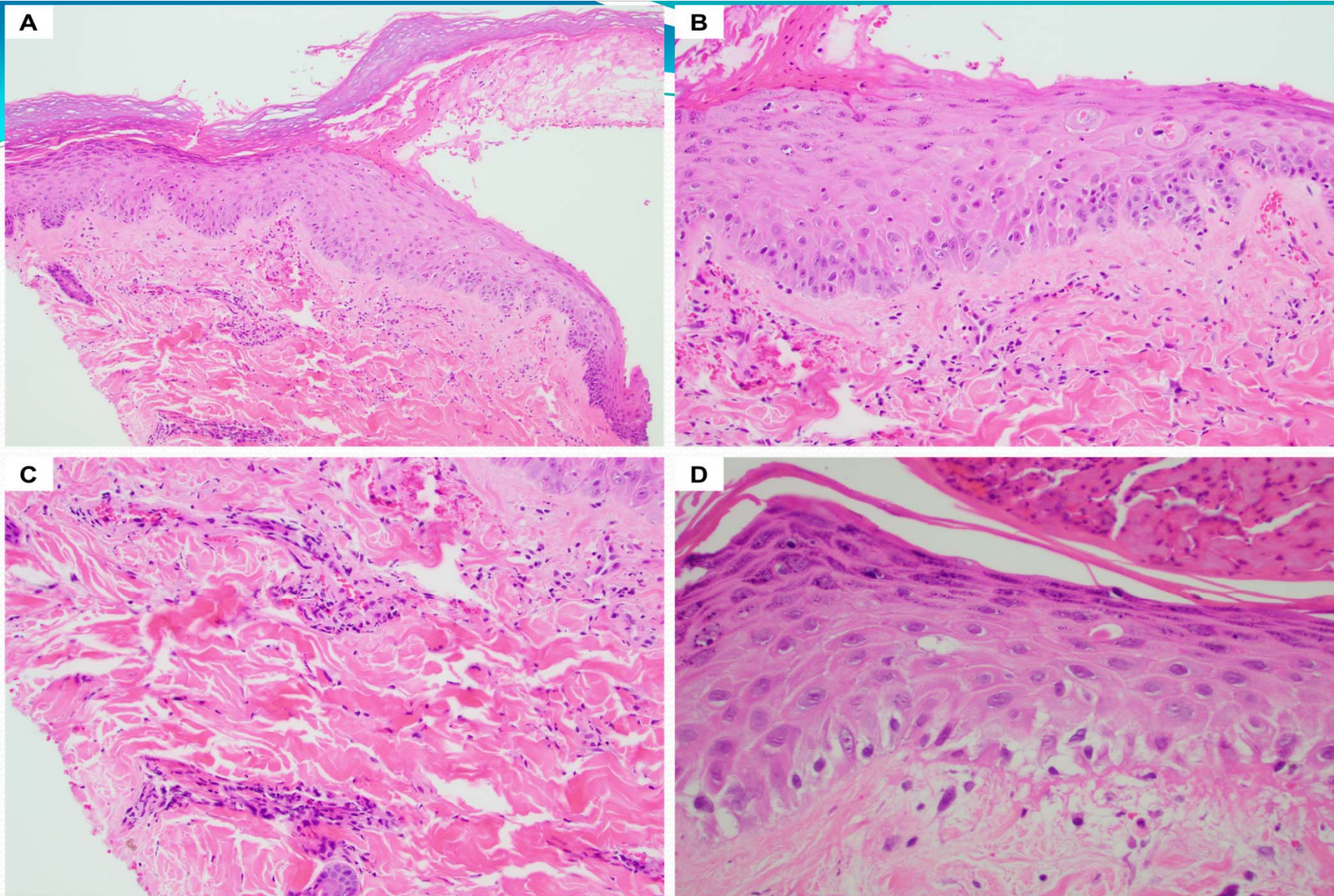
Gloves were provided

Hats – brought their  
own

Burns got worse  
before improving

Biopsy - hand blister





*Figure 3: Haemotoxylin and Eosin stained images of 2mm punch biopsies taken from dorsum of the hand.*

*A. x100 magnification displaying bullae and normal tissue.*

*B. x200 magnification of separated layers of epidermis exhibiting detachment of stratum corneum from stratum lucidum.*

*C. x200 magnification demonstrating stromal purpura with foci suggestive of early leukocytoclastic vasculitis.*

*D. x400 magnification image indicative of necrotic keratinocytes.*

# Phyto- photo- dermatitis

The other  
“lime”  
disease



**2 DAYS**



**2.5 DAYS**



**3 DAYS**



**4 DAYS**

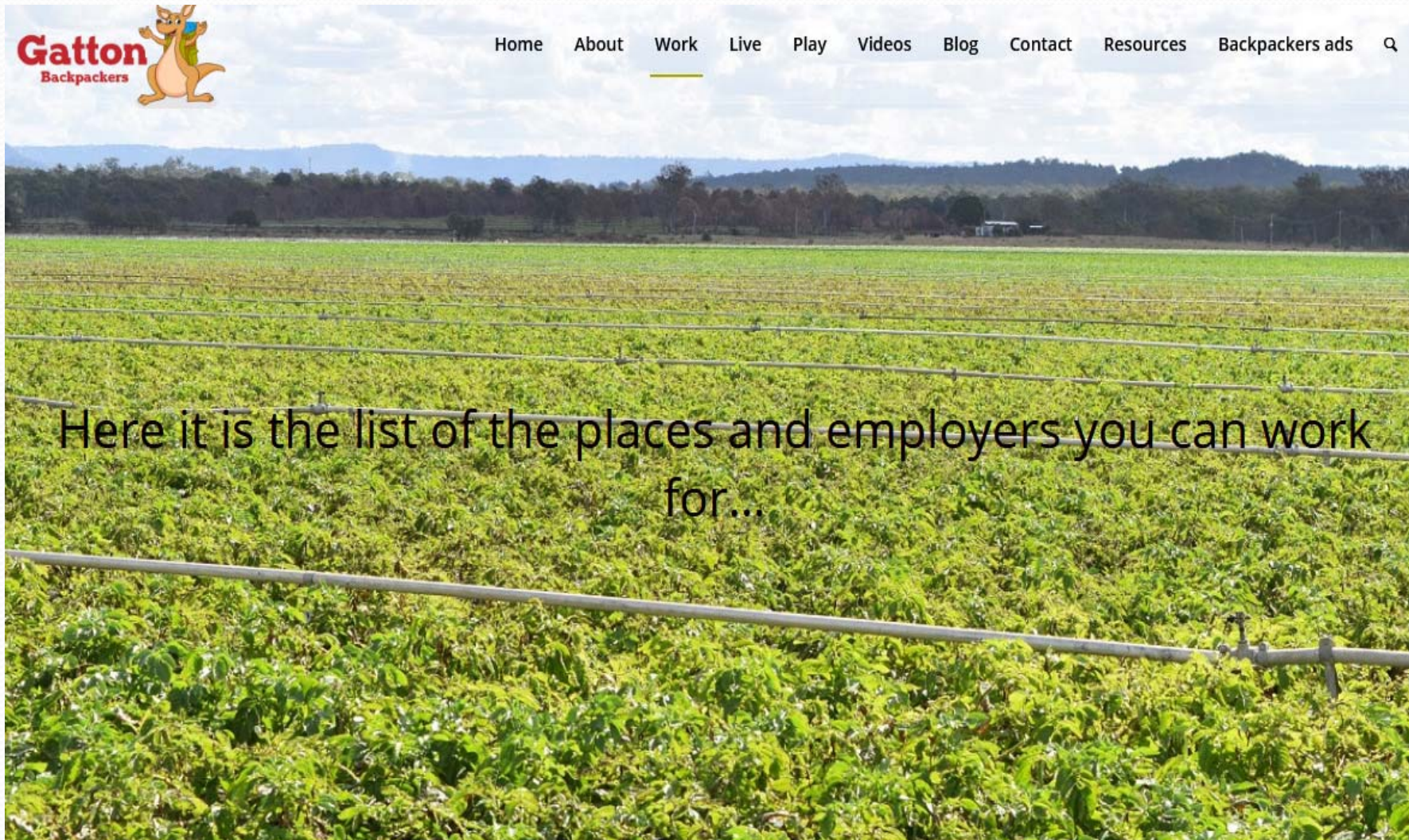


**1 WEEK**



**10 DAYS**

# Site Visit - With medical student



Two  
celery  
stalks  
sent for  
analysis -  
Southern  
Cross  
University





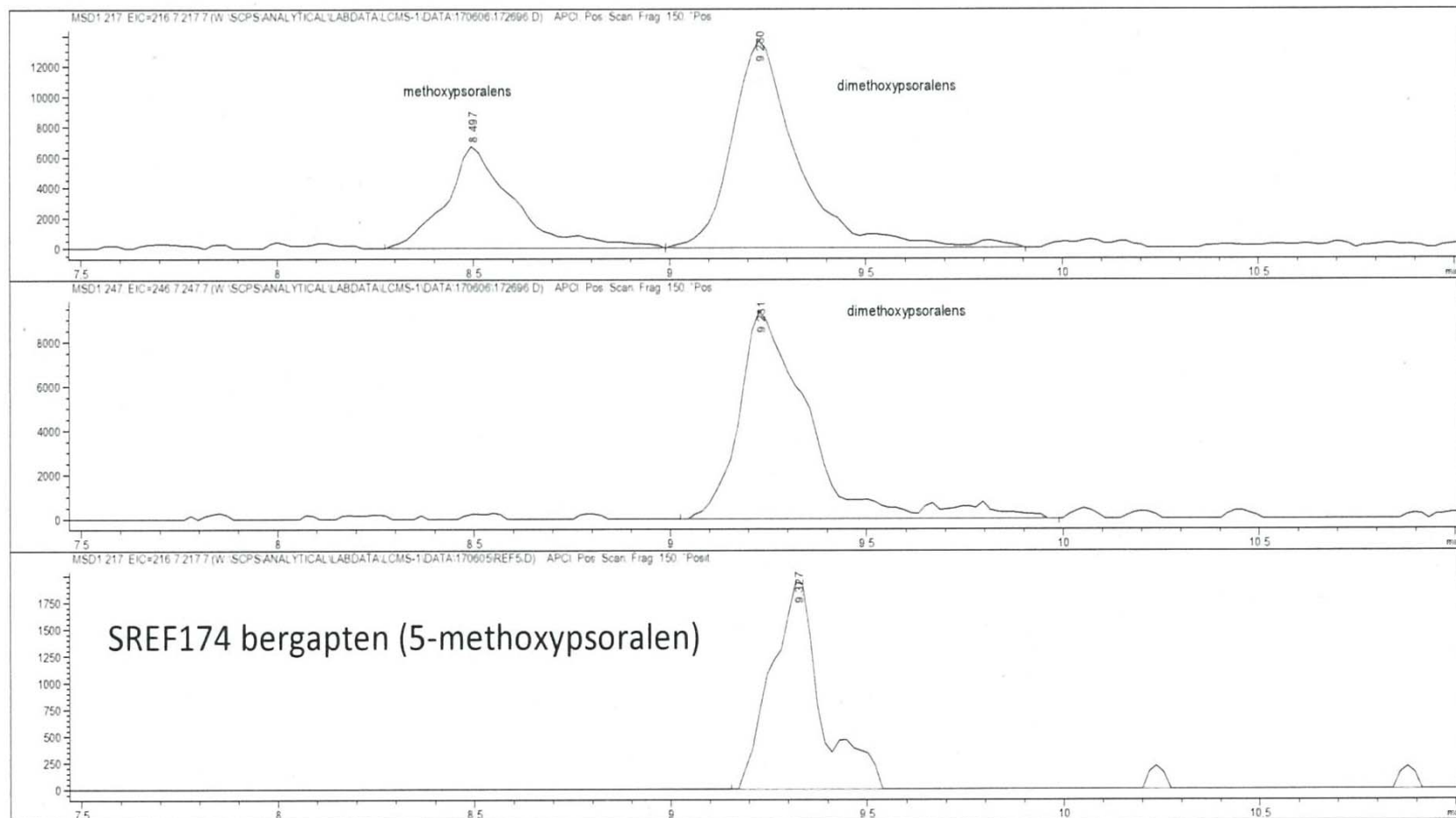
# Southern Cross Plant Science

## Analytical Research Laboratory

Sample name	Lab ID	Psoralens (ppm)
Celery 1	172695	61.78
Celery 2	172696	55.82

*Table 1: Estimated amount of Psoralens in celery samples calculated as bergapten*

# Celery – Bergaptens (like psoralen)





# Psoralen and Ultraviolet A Light Therapy for Psoriasis

Robert S. Stern, M.D.

August 16, 2007

N Engl J Med 2007; 357:682-690

DOI: 10.1056/NEJMct072317

# PUVA therapy -

Psoralen orally  
(Methoxsalen)

two hours prior to

UVA therapy

Treats

Psoriasis

Vitiligo



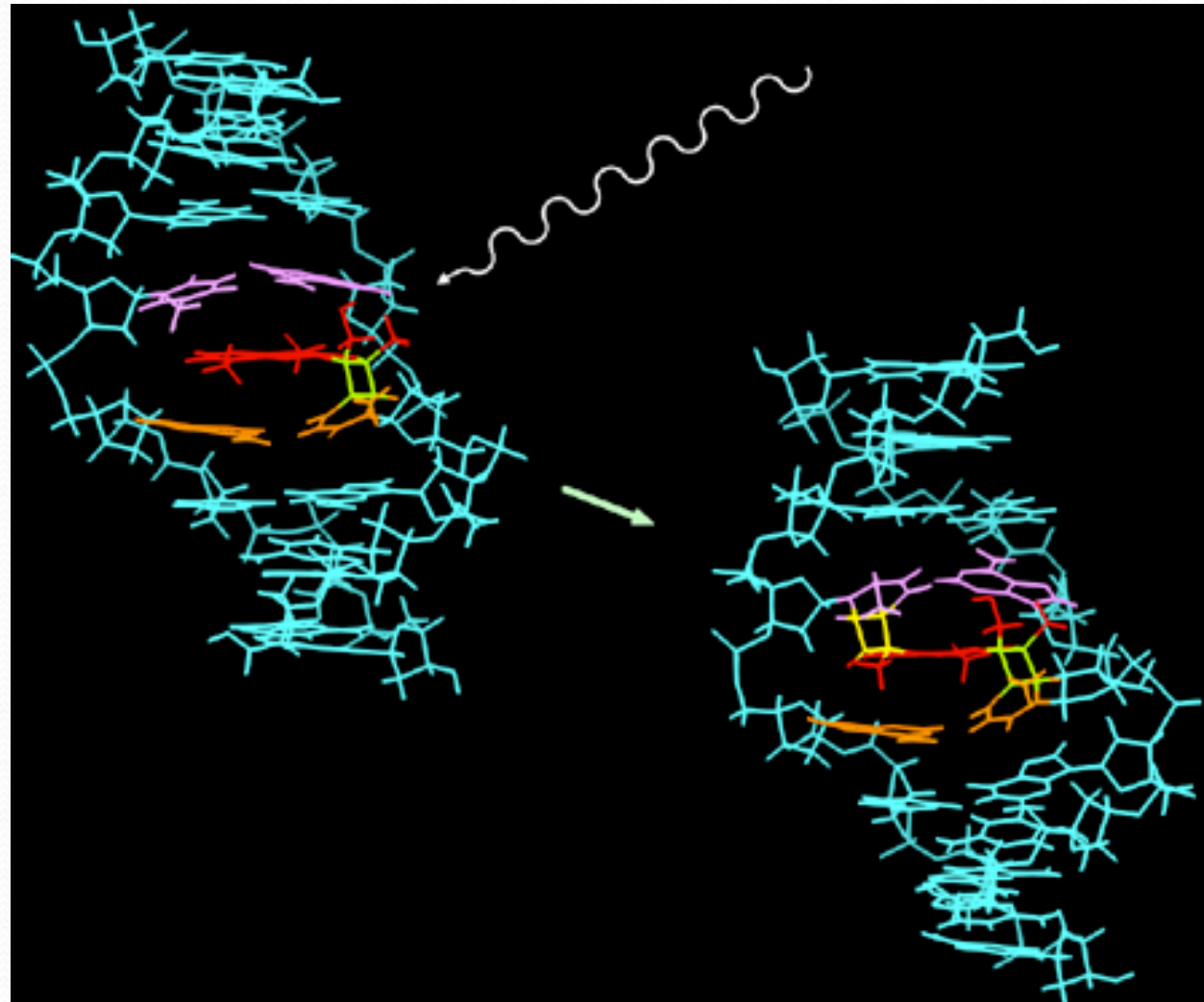
PUVA therapy for hands



Whole body PUVA therapy (psoralen)

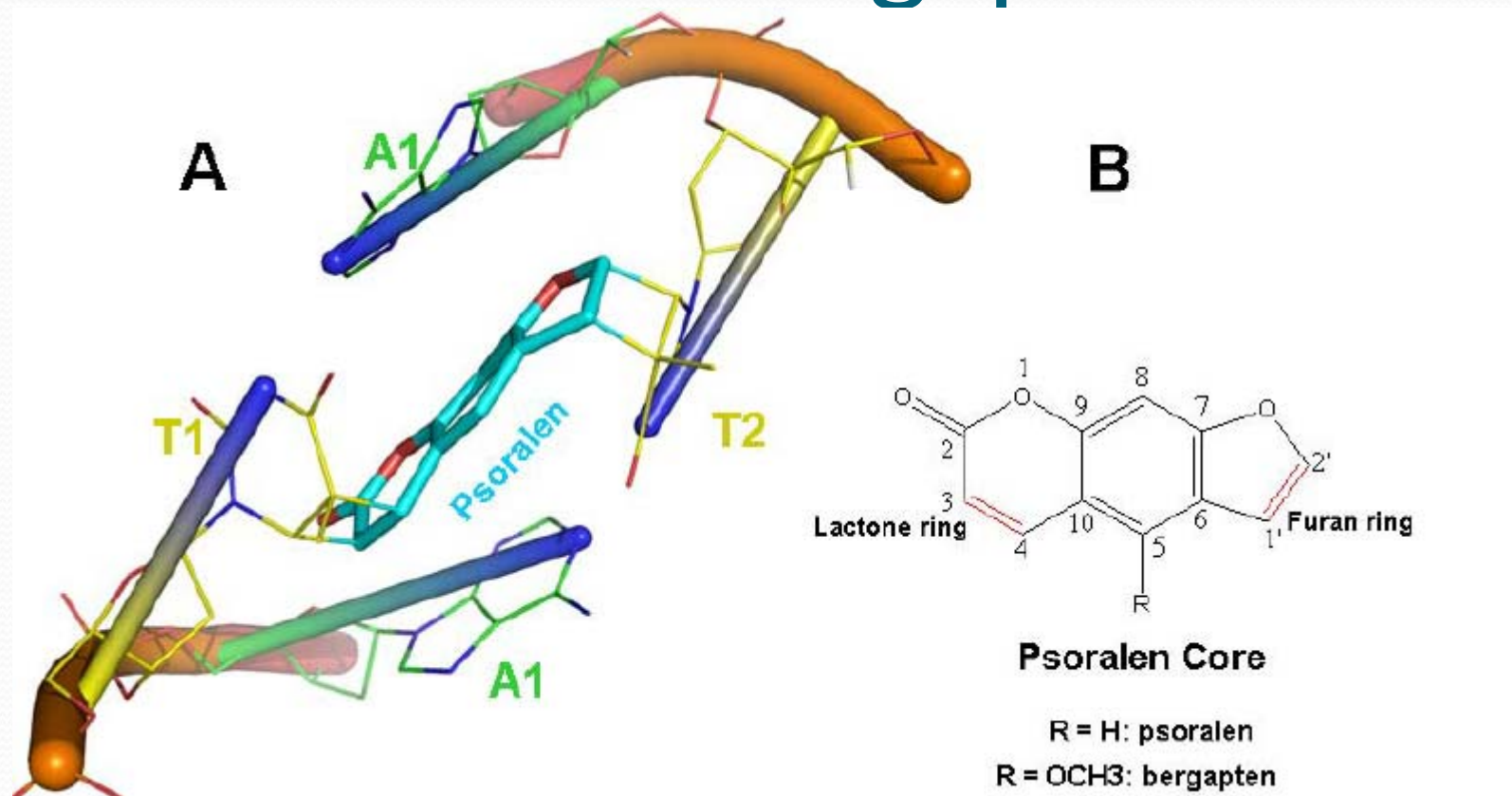
# Psoralen binds between DNA

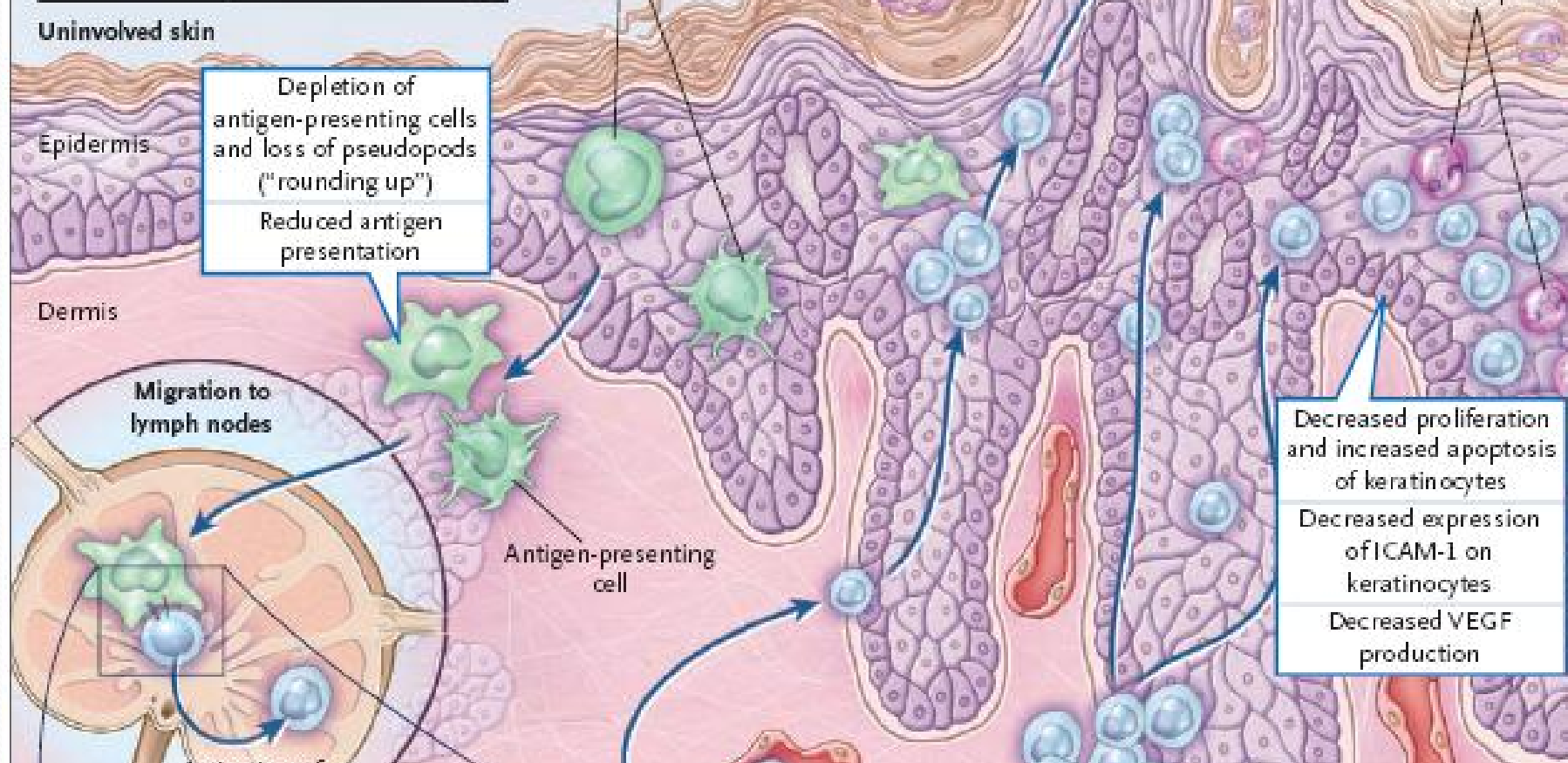
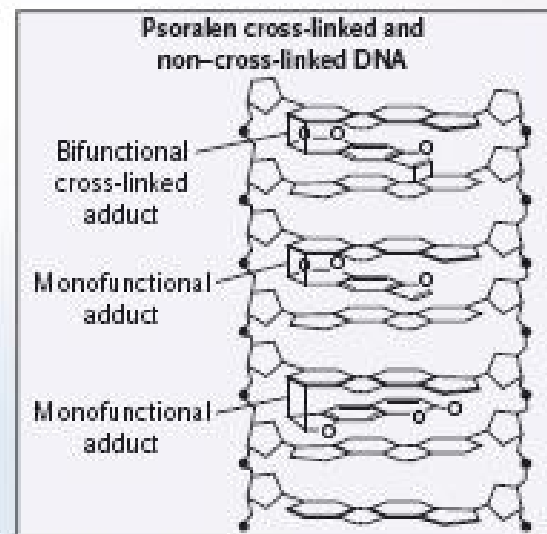
Becomes  
a mutagen  
when  
exposed  
to UVA



**Psoralen and Bergapten** Drugs used to treat vitiligo  
Dec 2009 Journal of Pharmacy and Pharmaceutical science

# Psoralens and Bergaptens







# Backpackers - precarious employment

1.Low skilled temporary migrant workers

2.Employment / OHS conditions

3.Vulnerable workforce

4.Harsh environment



# Quotes

"They (the farmers) don't care about you – just enough for you to come back tomorrow..."

"the pressure is to harvest quickly and continuously..

“dodgy contractors cram 25 illegal workers in a house...give them a mattress, and charge each one A\$85 to A\$125 a week rent

# Quotes

“... the scheme is so badly run it often amounts to little more than modern-day slavery.’

“they are exploited into carrying out Australians’ dirtiest, unsafest work, in the most remote and inhospitable areas.”

"The employers themselves often take advantage by paying workers next to nothing.

“Verbal and sexual abuse and harassment are rife”

Telstra 4G

9:32 pm



01:01



= 1:12



# **OSH : regulation and risk**

1. Risk-free work environment
2. Information, training, instruction and supervision  
(NESB)
3. Safe handling of substances ? Psoralen
4. Eliminate or minimise the risks. - ? How  
( Local worker – wore aprons / gloves )

# Quotes from paper

1. Farmers - provide PPE  
(low level of compliance)
2. Responsibility for managing risks  
- the workers
3. Farmers – think ‘common sense’  
‘part of the job’

# Mulitple deaths

27 yo Belgium Male ? Heat  
Watermelon picker Nov 2017

“We encourage people to take care of themselves and  
their mates, stay hydrated”



24-year-old German  
Died 2009 Heat stress  
In 2011 fined A\$25,000  
- Failing to supply  
drinking water





# Risk communication

WHO / Sandman

Farm managers. Farm workers

Be aware of risk

Strategy to reduce this risk

What can  
be done

**Health Risk Assessment  
Medium**

**Health Surveillance  
Weak**

**Instruction and Training  
Medium**

**First Aid and Medical Emergency  
Response                      Medium**

**Addressing Occupational Diseases  
Weak**

**Record Keeping  
Medium**

**Health Promotion  
Weak**



Return to Brisbane -Mater Emergency

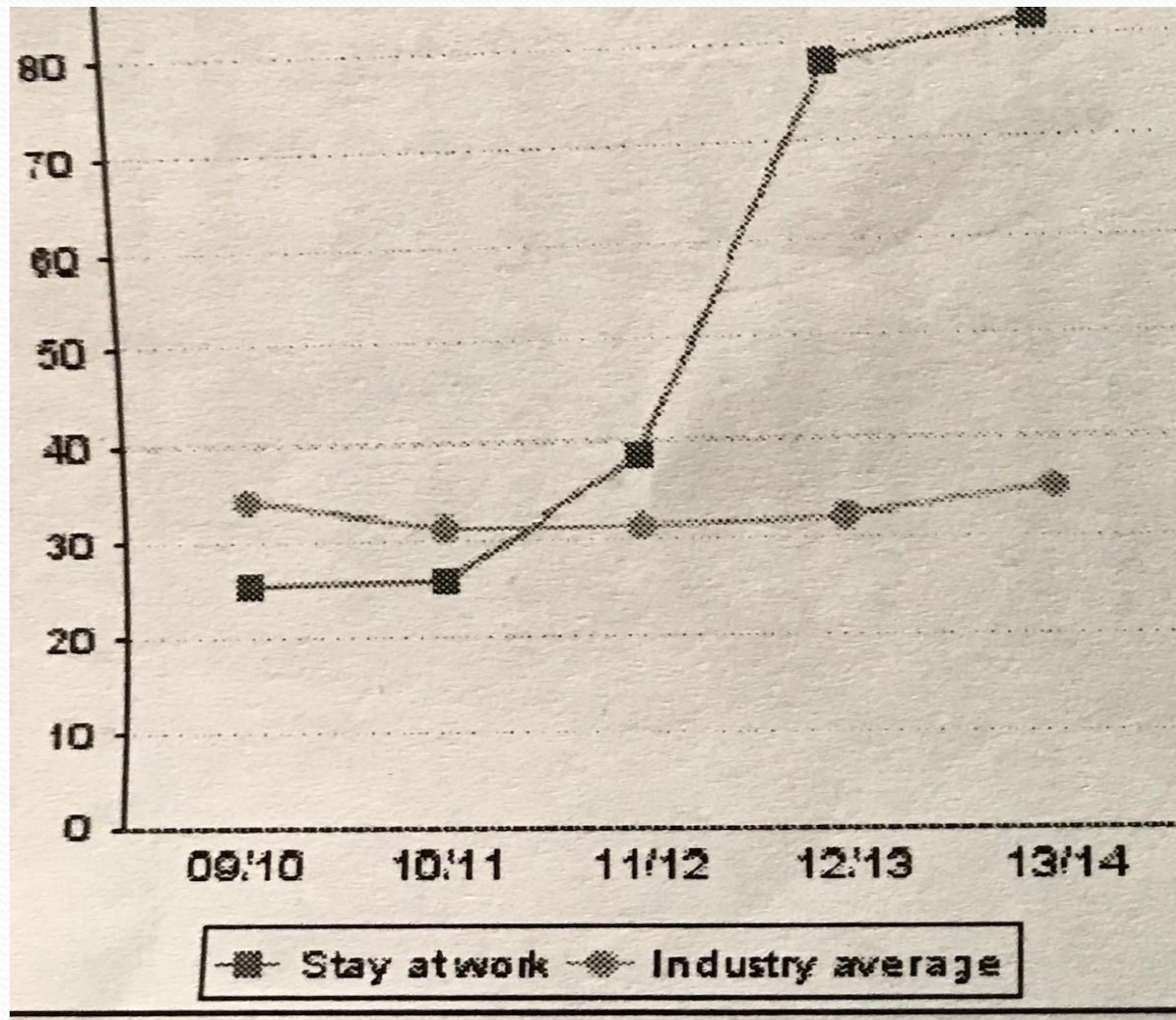
Started  
“TeleDr”

10 years at  
Mater -

Centre of Excellence - Work Injuries

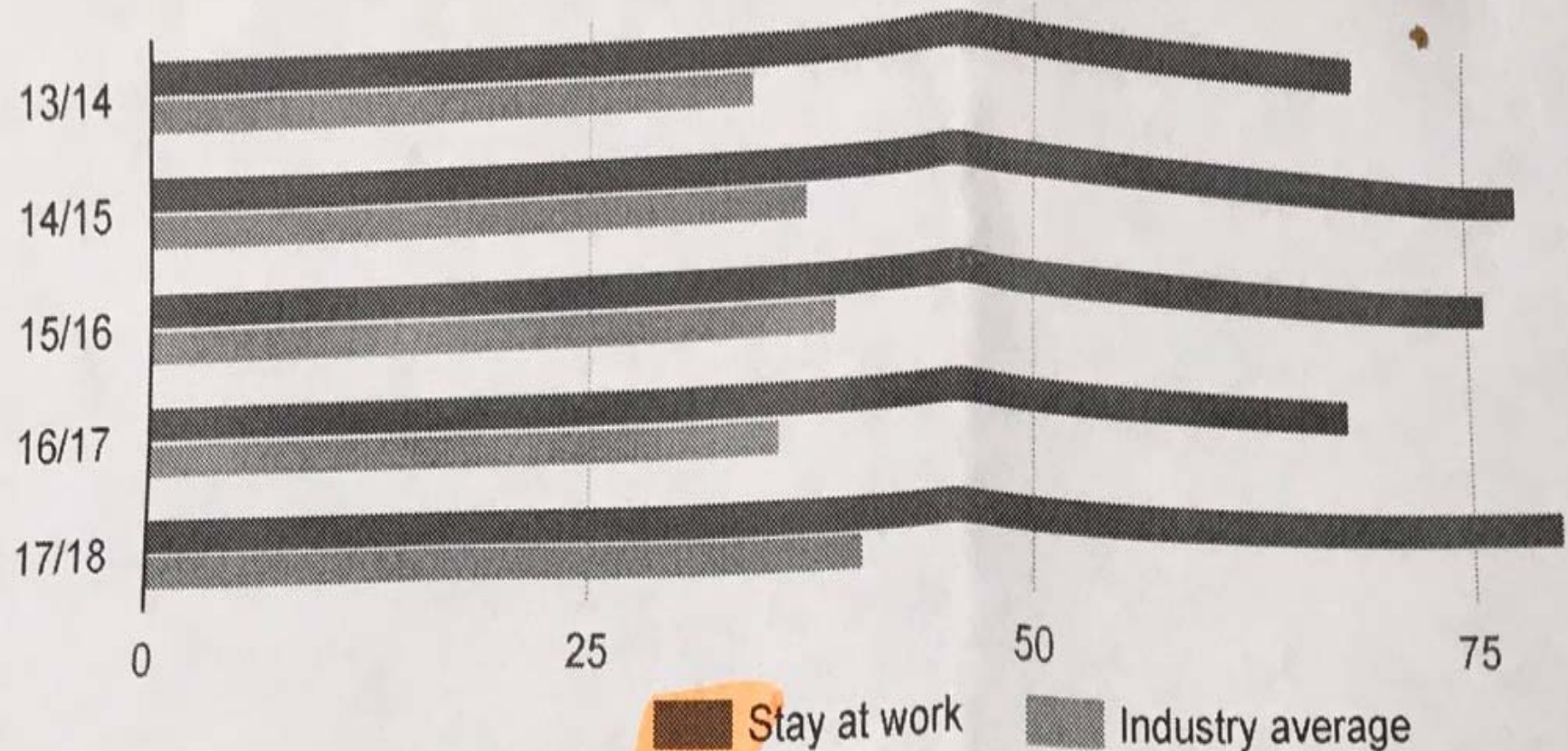


# Time to change practice - 4 years



# Stability vs Gig economy

Hospitals (Except Psychiatric Hospitals)





# Outbreak investigation

1. Identify investigation team and resources
2. Establish existence of an outbreak
3. Verify the diagnosis
4. Construct case definition
5. Find cases systematically
6. Epidemiology/develop hypotheses
7. Evaluate hypotheses/ additional studies
8. Implement control measures
9. Communicate findings
10. Maintain surveillance