



# The impact of clinical trials in treating inflammatory skin disease

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# St. John's Institute of Dermatology

- World class centre of Dermatology excellence
- Offers nationally regarded tertiary services
- Runs specialist services for inflammatory skin disease
  - Severe psoriasis
  - Severe eczema
- Research is a fundamental part of these clinics
- Very high impact research output
- Increasing portfolio of commercial and non-commercial trials

# Why do we run clinical trials?

## **Benefit to patients**

Access to latest treatments  
Bypass existing funding barriers

Scientific advance  
Translate laboratory science in to  
practice, introduce new  
therapies

Benefit to clinical team  
Training, morale, reputation

Benefit to Trust  
Improve health, reduce demand on services

# Objectives: Discuss two examples of trials

1

Pharmaceutical company trials

Commercial

*Eczema and psoriasis*

2

Laboratory science



Clinic

Non-commercial

*Pustular psoriasis*

# Eczema



- Common – 10% children/ young adults
- Commonly persists in to adulthood
- Severe disease is debilitating
- Large effect on quality of life
- > 400 patients under our severe adult eczema service

# Eczema - treatments

- Topical treatment – ie. creams/ ointments
- UV light therapy
- Systemic immunosuppressants
  - Methotrexate
  - Azathioprine
  - Mycophenylate mofetil
  - Ciclosporin

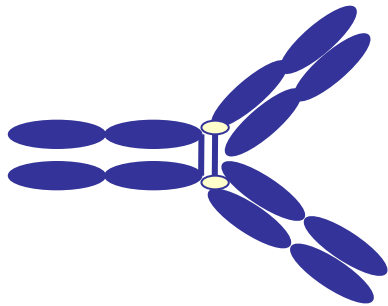


**Non-specific treatments**

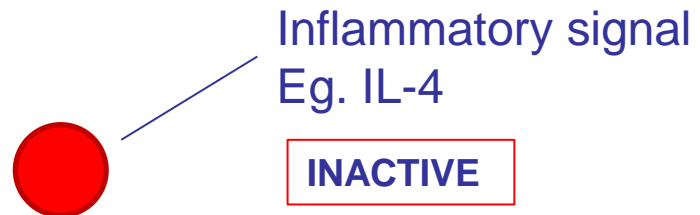
**Current lack of effective treatment for severe disease**

# Eczema – new developments

- New biologic injection treatments emerging
  - Dupilumab (anti IL-4)
  - Lebrikizumab (anti IL-13)



**Dupilumab**



# Eczema – dupilumab in practice



**Treatment working very well**



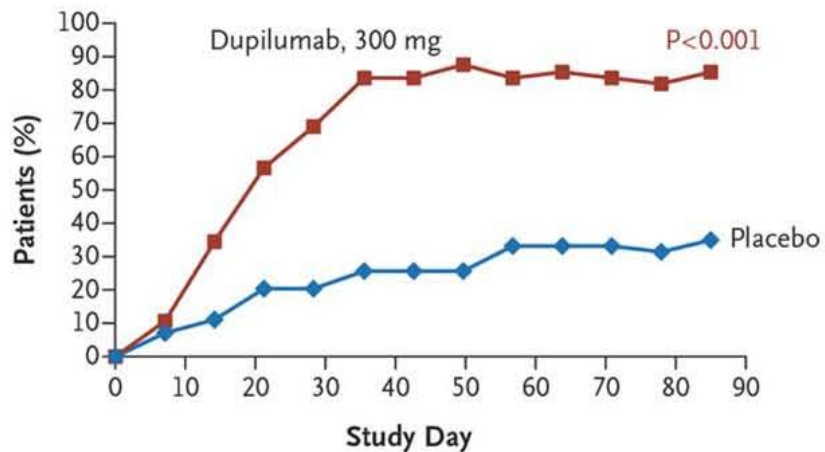
# Eczema – dupilumab results

- Trial results:

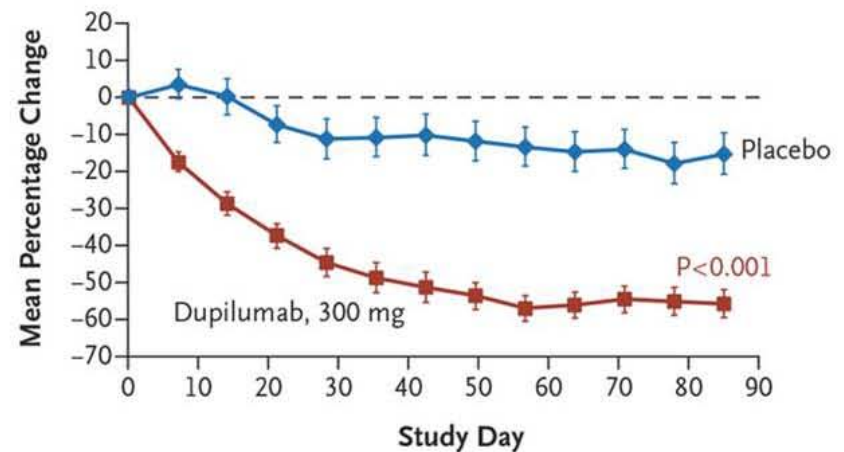
% getting at least 50% improvement  
=> 85%

% reduction in itch  
=> 60%

C EASI-50, Study M12



D Change in Average Weekly Pruritus Numerical-Rating Scale Score, Study M12



# Psoriasis



- Common – 2% adults in the UK
- Chronic
- Large effect on quality of life
- Often associated with anxiety and depression
- > 400 patients under our severe adult psoriasis service

# Psoriasis - treatments

- Topical treatment – ie. creams/ ointments
- UV light therapy
- Systemic treatments
  - Acitretin
  - Methotrexate
  - Ciclosporin
- Biologic antibody therapies
  - 5 now available
  - Becoming more and more effective

# Psoriasis – why do we need trials?

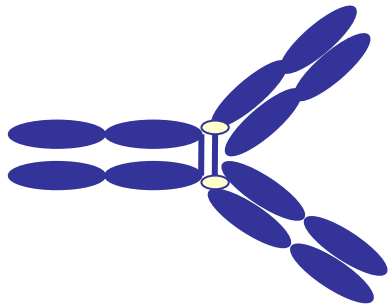
- Therapies don't always work
- Lose their effect over time
- Poorly tolerated
- Cannot be used due to other medical conditions

**New therapies are still needed**

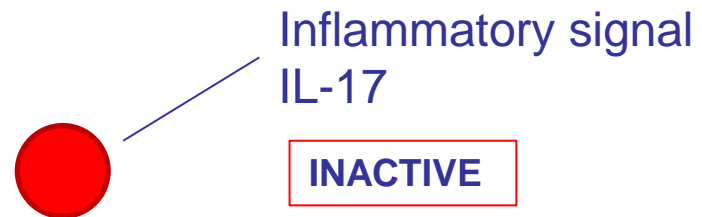
Especially when managing severe patient cohorts

# Psoriasis – new developments

- New biologic injection treatments emerging
  - Secukinumab (anti IL-17 antibody)



**Secukinumab**



# Psoriasis – Secukinumab in practice



**Treatment works very well in vast majority of patients**

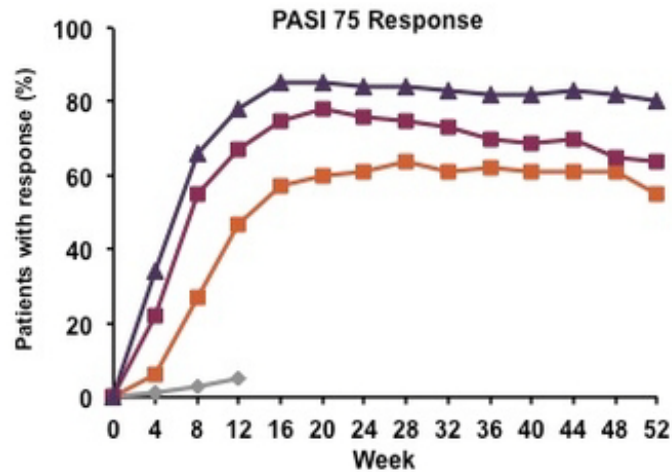


# Psoriasis – Secukinumab

- Trial results:

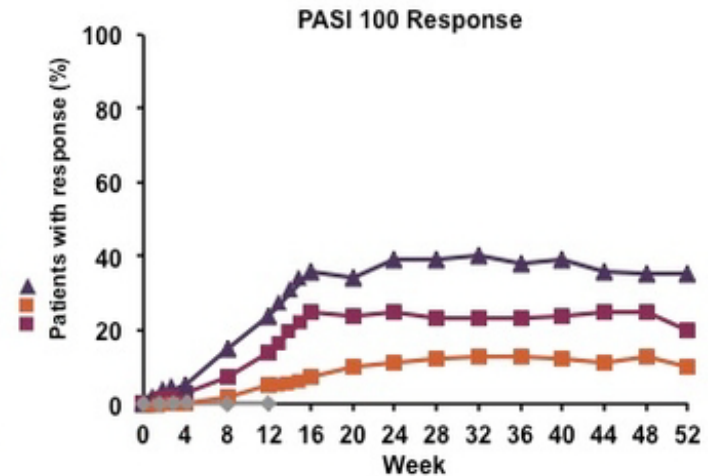
% patients getting 75% improvement

= > 80%



% patients getting clearance

= 40%



— Placebo (n=324)    — Etanercept (n=323)    — Secukinumab 150 mg (n=327)    — Secukinumab 300 mg (n=323)

# Two examples of trials

1

Pharmaceutical company trials

Commercial

*Eczema and psoriasis*

2

Laboratory science



Clinic

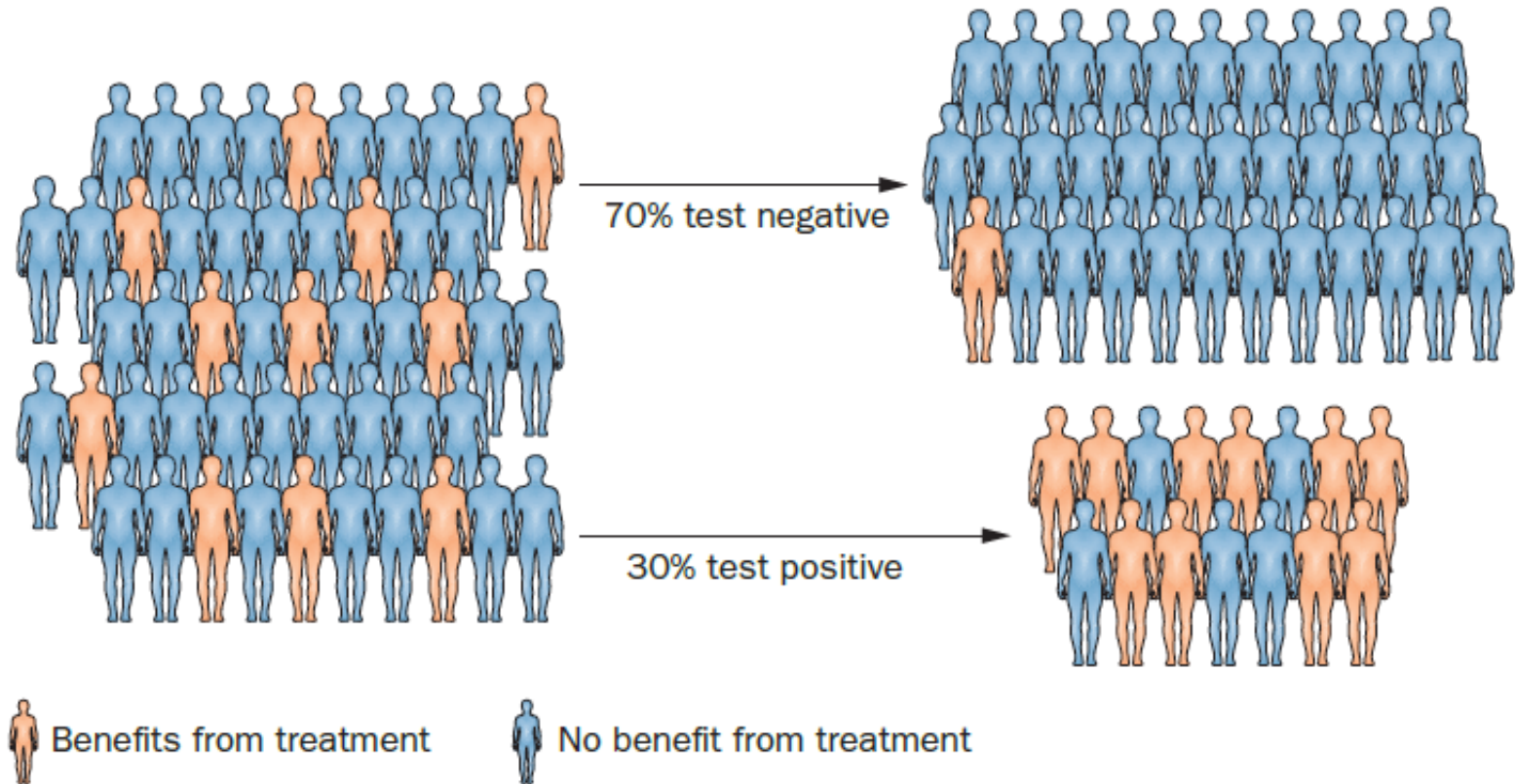
Non-commercial

*Pustular psoriasis*



# Personalised Medicine

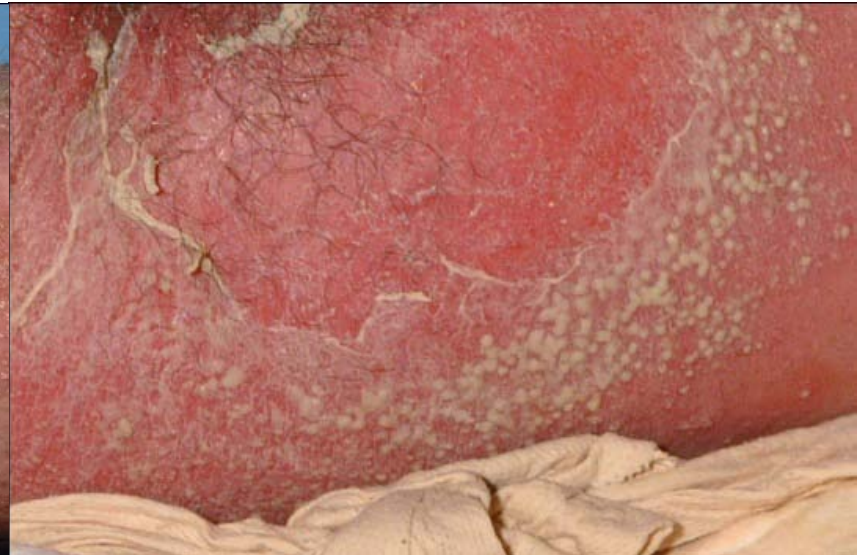
*'right medicine for the right patient at the right time'*



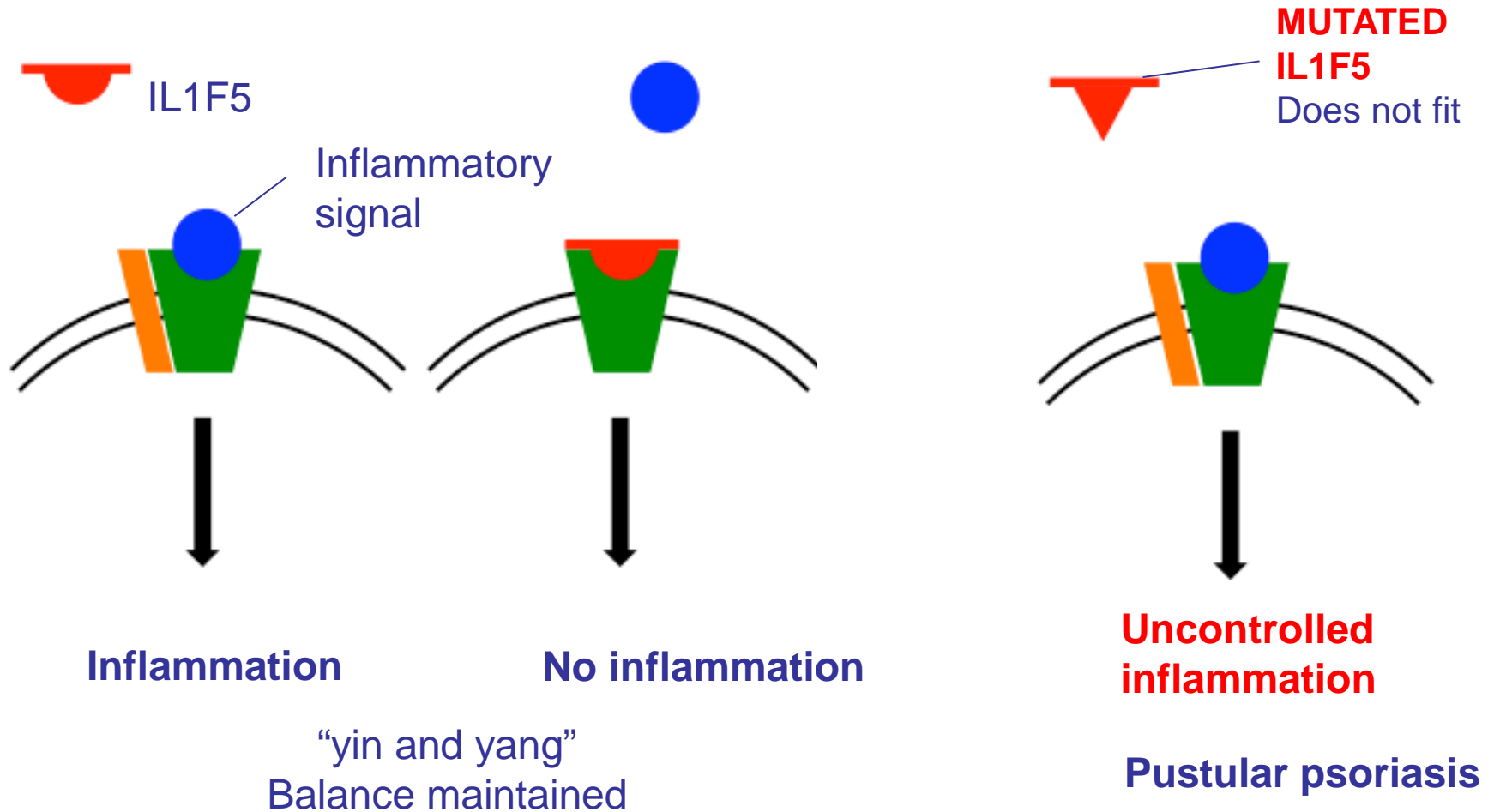
*Matthews et al. Nat. Rev Neurol. 2014*

# Psoriasis genetics

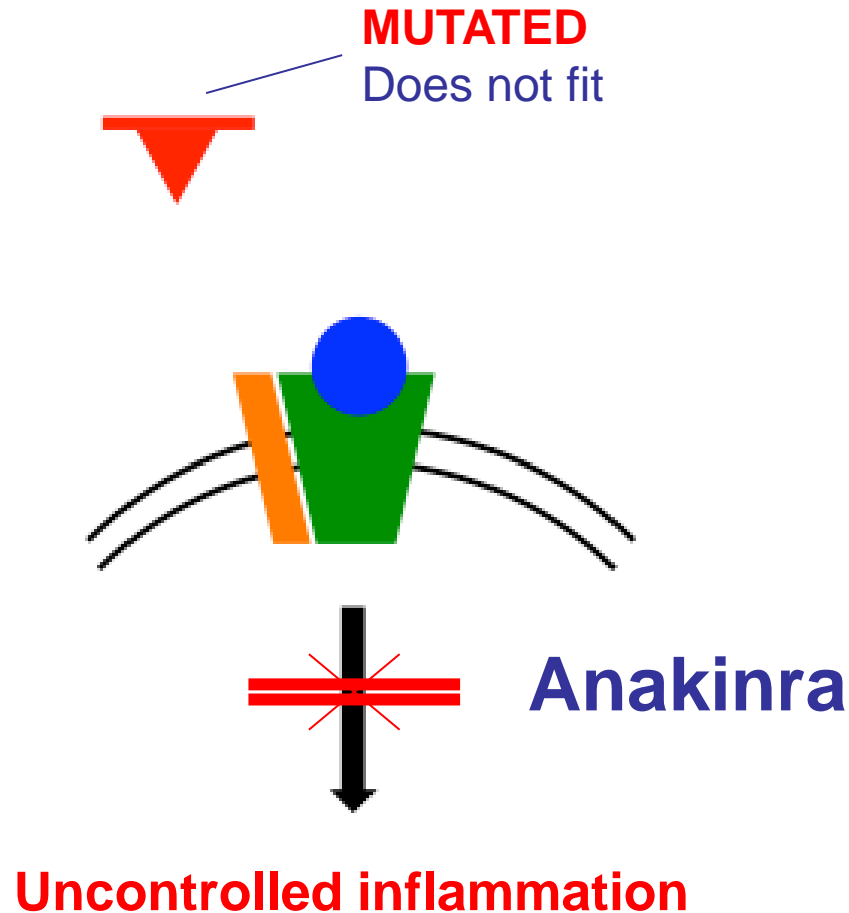
- There is a genetic predisposition to psoriasis
- Genetic investigation of psoriasis is a key research interest here
- In 2013 our group reported the first identified mutations in a variant of psoriasis called **pustular psoriasis**
- Mutations identified in a gene called IL1F5



# Pustular psoriasis pathway



# Pustular psoriasis – potential therapy



# Pustular psoriasis – potential therapy

- Trial of anakinra versus placebo in the treatment of a variant of pustular psoriasis called palmar plantar pustulosis
- Potential to translate genetic discovery in to clinical treatment



# Future trial work

- Many more trials in work up for severe eczema and psoriasis
- Offering fresh hope for people who have failed to respond to or are unable to take existing treatments
- Developing our trial infrastructure:
  - Building the team
  - Establishing the key processes
  - Diversifying our portfolio
  - Increase our capability to offer trials on a more regular basis to more patients



# Team

- Professor Jonathan Barker
- Professor Catherine Smith
- All members of the Skin Therapy Research Unit
- Dermatology research manager – Bala Thirugnanabalan
- Dr Francesca Capon and research team
- Professor Michael Simpson and research team

## Contributors:

- Biomedical Research Centre
- Clinical Research Network
- NIHR

# Thank you