



**CHANGE
YOUR
WORLD.**

**CHARLES
DARWIN
UNIVERSITY**

What's new in scabies? Will it make a difference?

Bart Currie

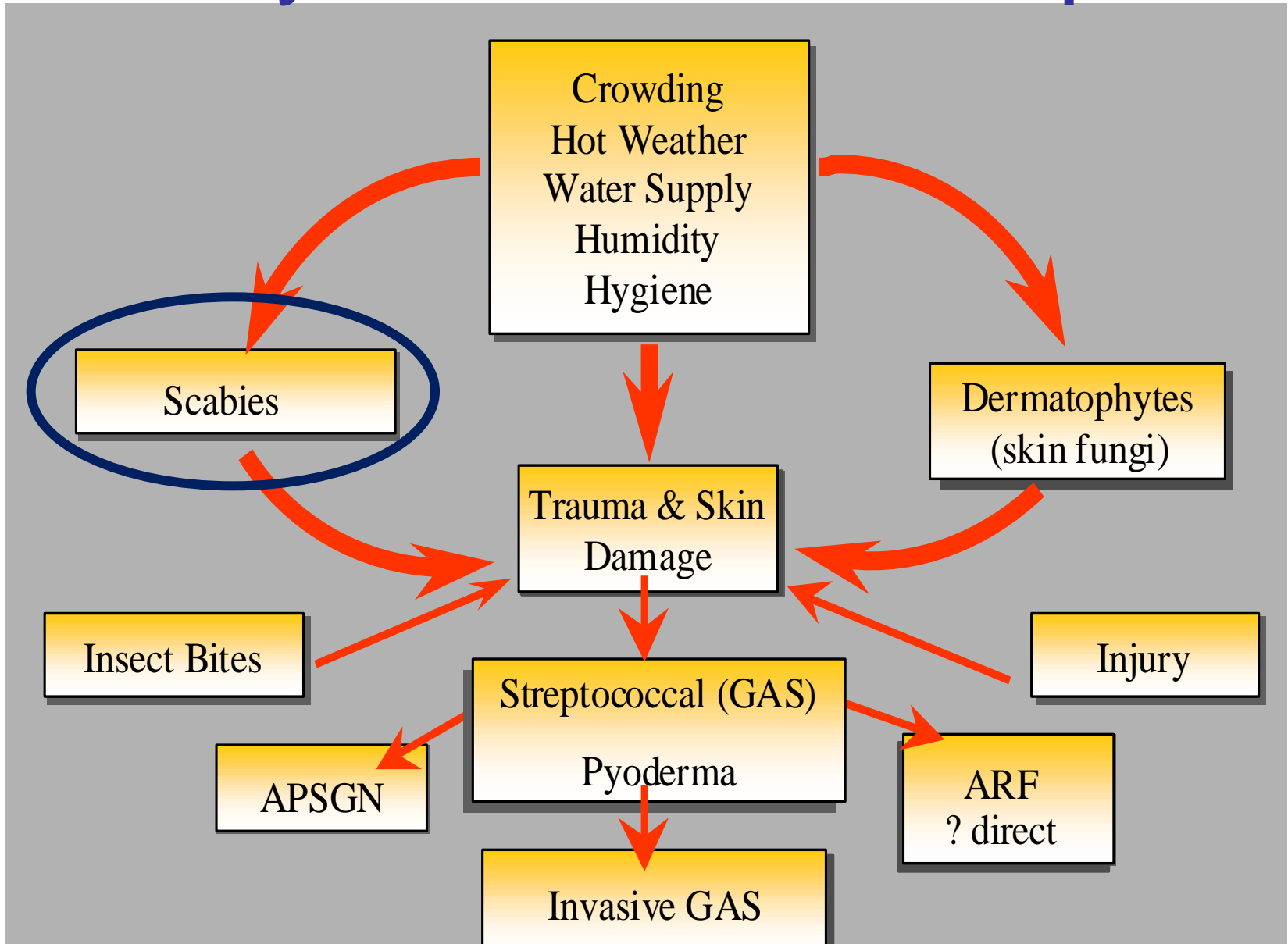
Infectious Diseases Department, Royal Darwin Hospital

**Global and Tropical Health Division, Menzies School of
Health Research at Charles Darwin University**

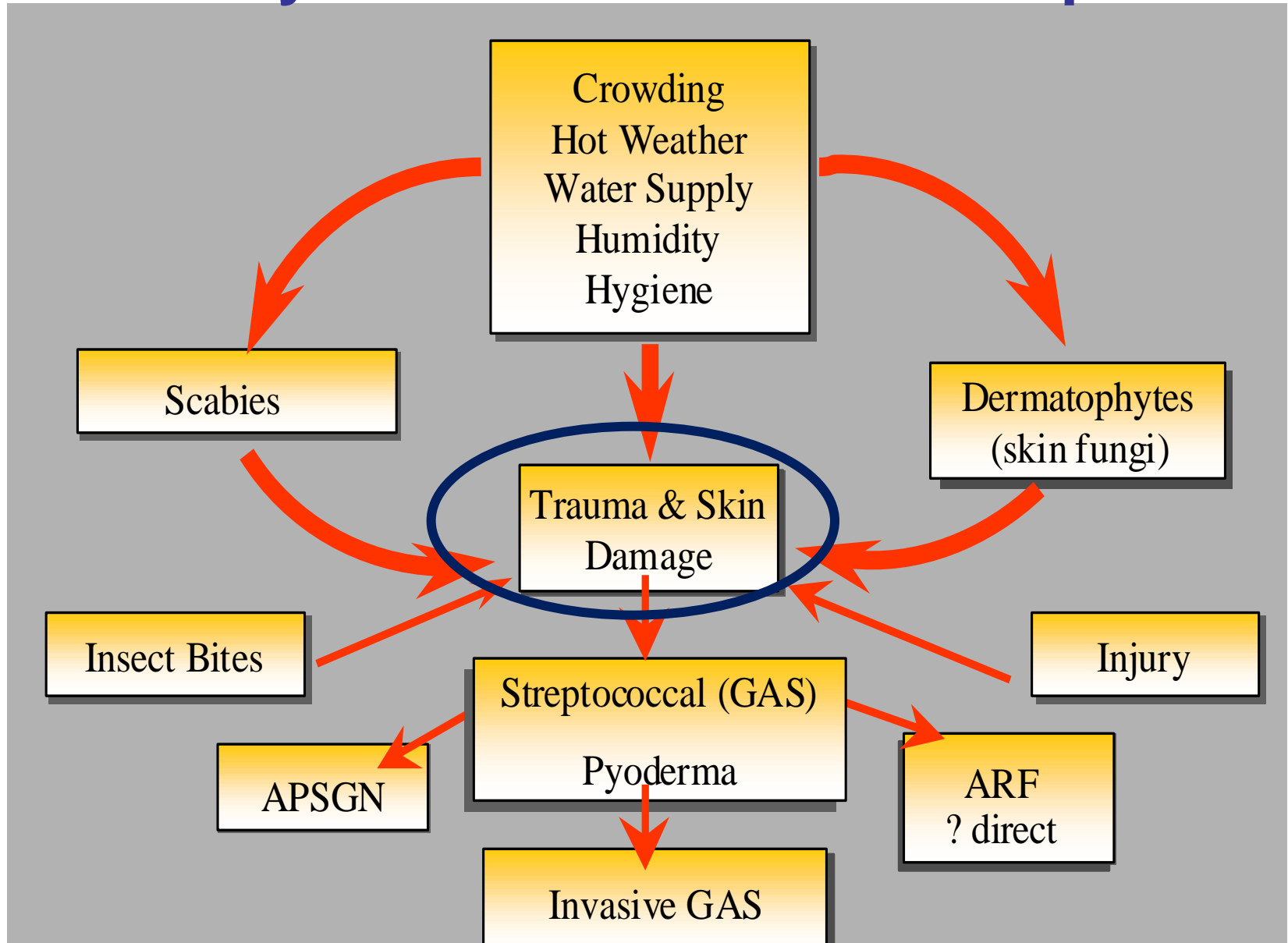
Scabies in Remote Indigenous Communities in Australia

- Prevalences currently high (but weren't always)
 - children up to 50%
 - adults up to 25%
- Underlie 50 - 70% of streptococcal pyoderma
- Multiple overlapping epidemic cycles
- “Core-transmitters” with hyper-infestation (crusted/Norwegian scabies) important in some communities

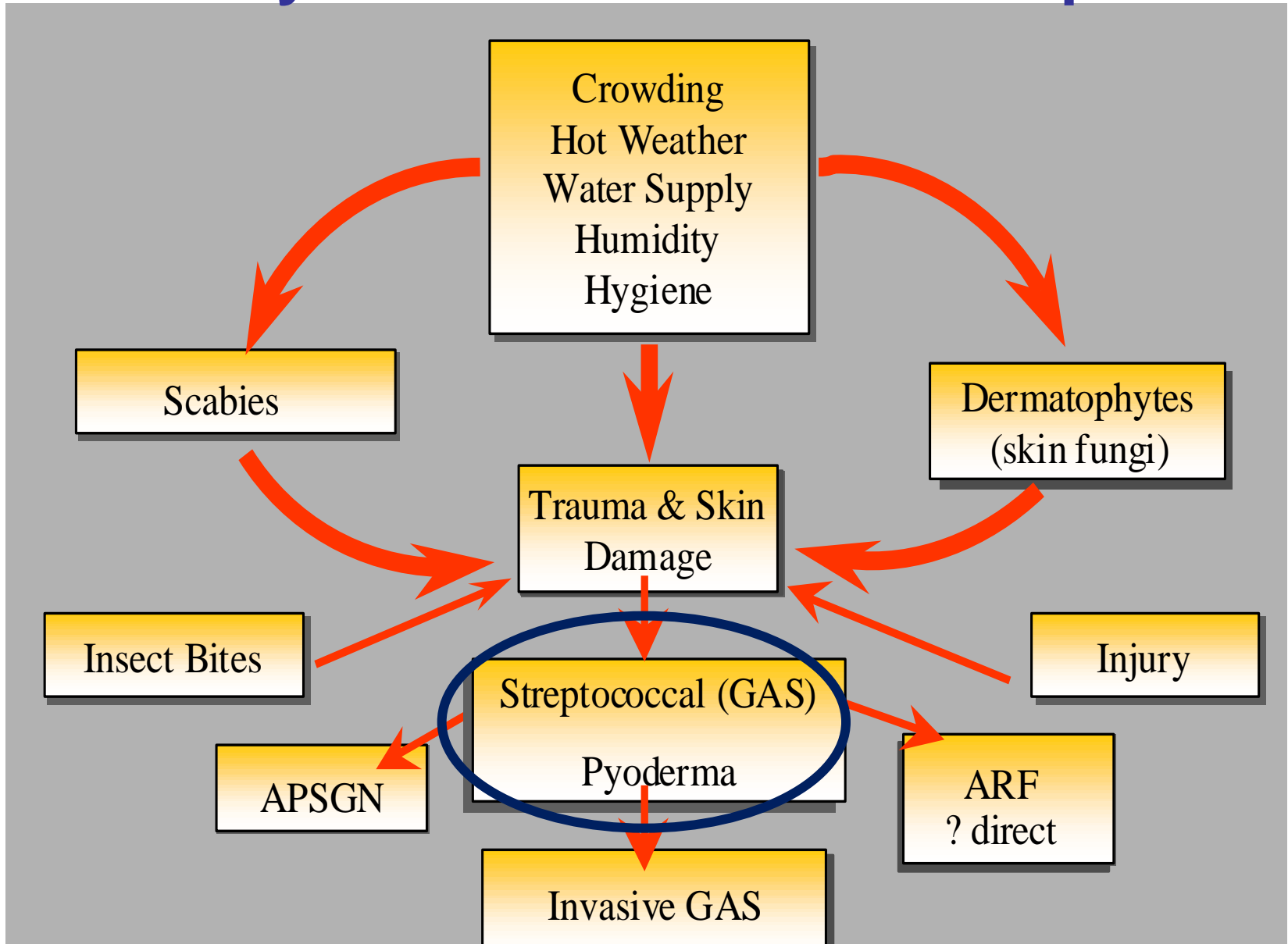
Pathway of skin infections & sequelae



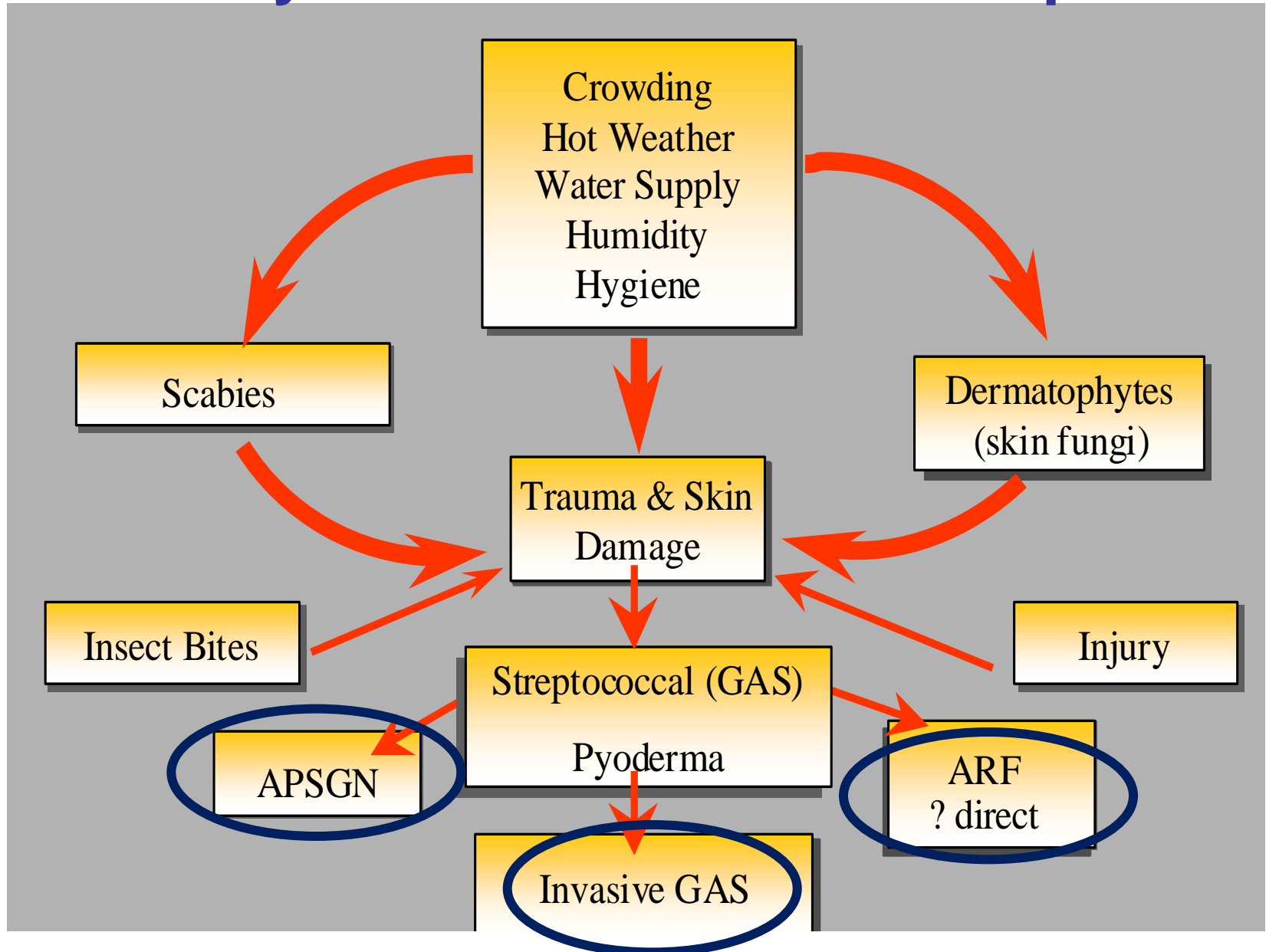
Pathway of skin infections & sequelae



Pathway of skin infections & sequelae



Pathway of skin infections & sequelae



Scabies





Chosidow O. N Engl J Med 2006;354:1718-27
Copyright © 2006 Massachusetts Medical Society

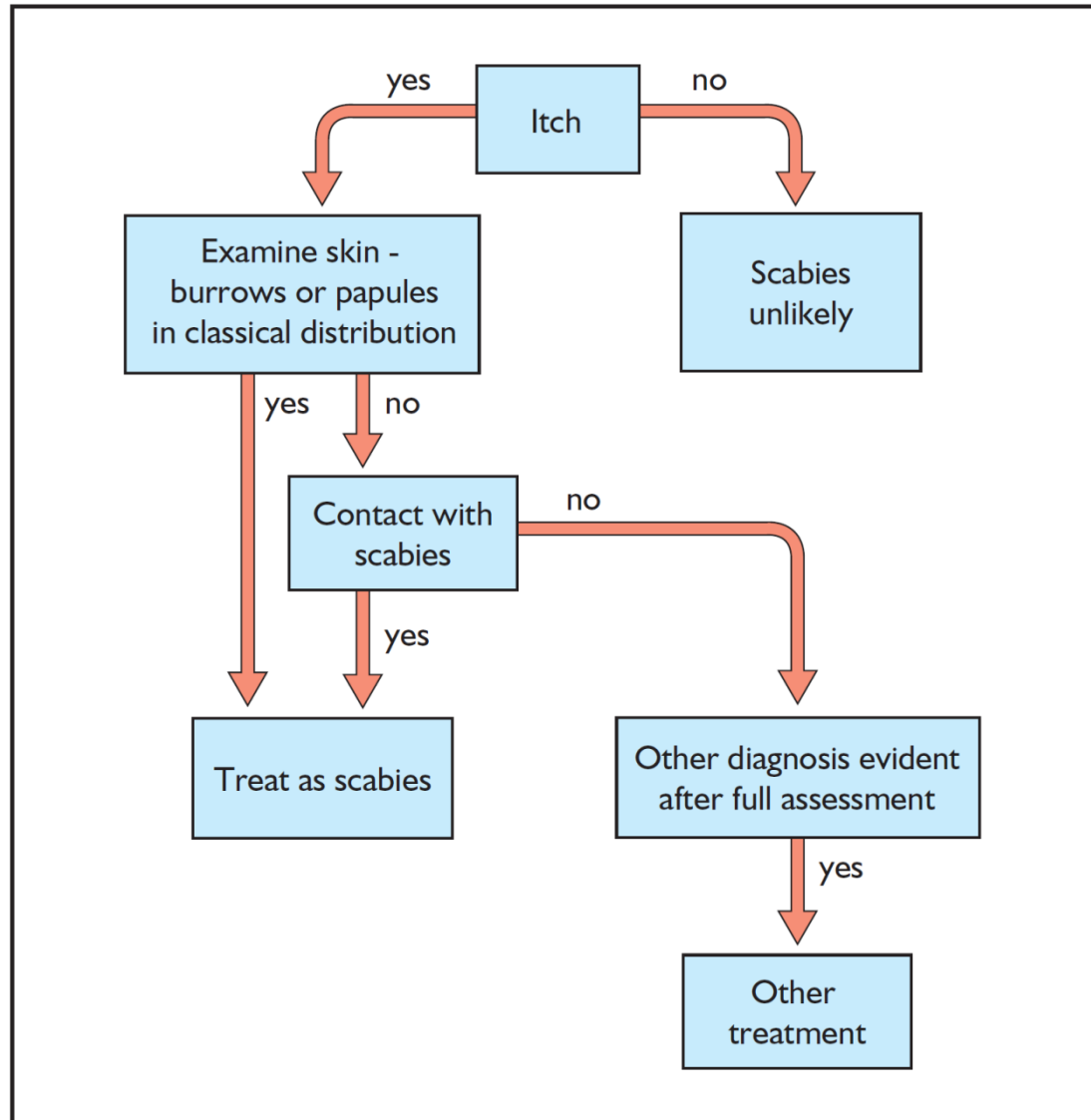
Norwegian (crusted) scabies



Scabies Diagnosis

- Clinical
- Microscopy of skin scrapings (oil, 10% KOH)
- Dermatoscopy (epiluminescence microscopy) (x10 – x1000)
- Microscopy of adhesive (“sticky”) tape
- Videodermatoscopy
- Serology under development

Scabies algorithm for presumptive diagnosis and treatment



The Diagnostic Accuracy of Dermoscopy for Scabies

Ju Hyuk Park, M.D., Chul Woo Kim, M.D., Sang Seok Kim, M.D.

Department of Dermatology, Kangdong Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea

Conclusions

A handheld dermatoscope (x10) is a useful tool for diagnosing scabies, but “**extensive training is required to avoid confusion of artifacts**” (ie false +ves).

Can direct area for skin scrapings.

Good for “scabies incognito” (eg patient on steroid therapy)

The Diagnostic Accuracy of Dermoscopy for Scabies

Ju Hyuk Park, M.D., Chul Woo Kim, M.D., Sang Seok Kim, M.D.

Department of Dermatology, Kangdong Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea



Fig. 1. Under 10× dermoscopic magnification, numerous hanglider-like triangles indicating the scabies mites' head (arrows) were observed.

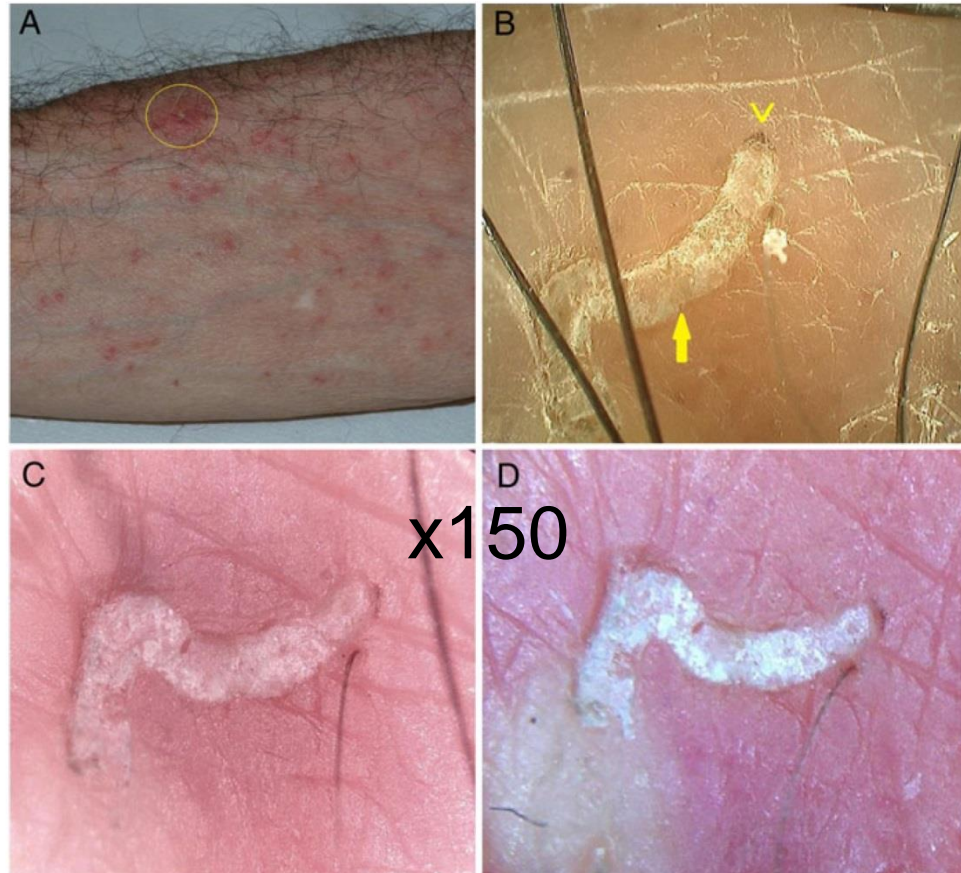
Videodermatoscopy: Telemedicine application?

Clinical Infectious Diseases Advance Access published November 8, 2014

0 NOVEMBER

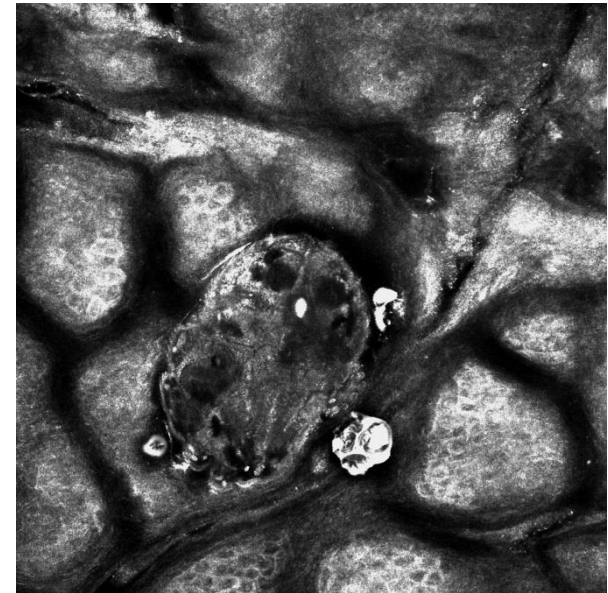
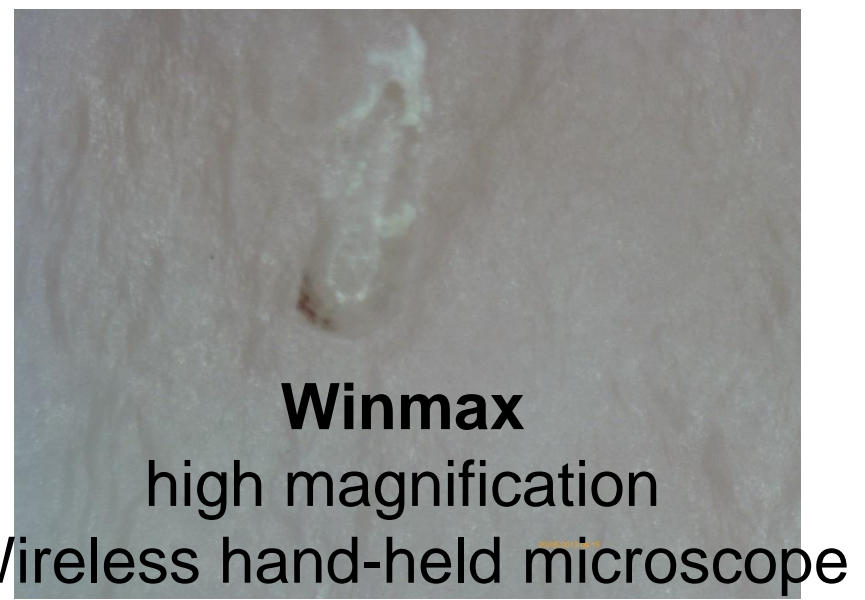
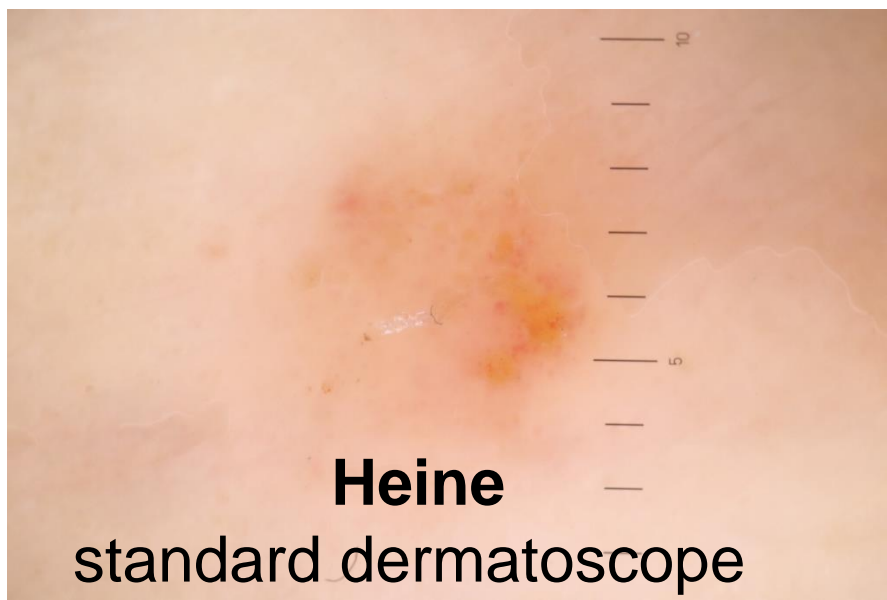
Correspondence

**Low-Cost Equipment for
Diagnosis and Management
of Endemic Scabies
Outbreaks in Underserved
Populations**



**High
cost
\$20,000**

**Low
cost
\$30**



Mass Drug Administration (MDA)

The NEW ENGLAND JOURNAL *of* MEDICINE

ESTABLISHED IN 1812

DECEMBER 10, 2015

VOL. 373 NO. 24

Mass Drug Administration for Scabies Control in a Population with Endemic Disease

Lucia Romani, M.Soc.Dev., Margot J. Whitfeld, M.B., B.S., Josefa Koroivuetu, M.B., B.S., Mike Kama, M.B., B.S.,
Handan Wand, Ph.D., Lisi Tikoduadua, M.B., B.S., Meciusela Tuicakau, M.B., B.S., Aminiasi Koroi, B.A.,
Ross Andrews, Ph.D., John M. Kaldor, Ph.D., and Andrew C. Steer, Ph.D.



NEGLECTED
TROPICAL DISEASES

October 30, 2015

RESEARCH ARTICLE

Impact of an Ivermectin Mass Drug Administration on Scabies Prevalence in a Remote Australian Aboriginal Community

Thérèse M. Kearns^{1*}, Richard Speare², Allen C. Cheng³, James McCarthy⁴, Jonathan
R. Carapetis⁵, Deborah C. Holt¹, Bart J. Currie¹, Wendy Page⁶, Jennifer Shield⁷,
Roslyn Gundjirryirr¹, Leanne Bundhala¹, Eddie Mulholland⁶, Mark Chatfield¹, Ross
M. Andrews¹

2016-2017: Crusted scabies CDC notifiable in the NT
NT CDC Healthy Skin Guidelines updated and promoted
“One Disease at a Time” Care pathways & community-support
Moxidectin looks very promising for scabies Tx and MDAs

RESEARCH REPORT

Factors supporting sustainability of a community-based scabies control program

Li-Chuen Wong,¹ Beth Amega,³ Ruth Barker,² Christine Connors,⁴ Mary Elizabeth Dulla,⁵ Angela Ninnal,⁵ Margaret Mary Cumaiyi,⁵ Loyola Kolumboort⁵ and Bart J Currie⁶

¹*Skin and Cancer Foundation, Sydney,* ²*The Children's Hospital at Westmead, Westmead, New South Wales,* ³*Wadeye/Port Keats Community Health Centre and* ⁵*Port Keats Community, Port Keats,*

⁴*Co-operative Research Centre for Aboriginal and Tropical Health and Department of Health and Community Services and* ⁶*Northern Territory Clinical School and Menzies School of Health Research, Darwin, Northern Territory, Australia*



Figure 1 Logo for 'Scabies Day', June 2001, created by the well-known local artist Timothy Dumoo (reproduced with the artist's permission).

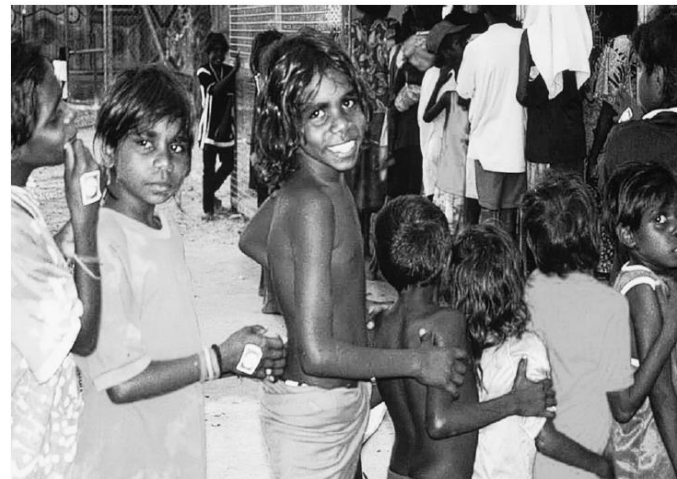


Figure 2 Children with 'antiscabies' sticker: ticket of admission to the community barbecue (published with the permission of the community elders).

Community involvement and initiative was achieved as part of this 'Healthy Skin' intervention. This included local council initiatives such as the monthly 'best backyard' competition, with prizes such as a washing machine.

rate. Similar programs have been tried in other Aboriginal communities with variable results.^{2,11,12} The majority of these programs have been successful in achieving an initial reduction in scabies and pyoderma. However, the sustainability of these programs has been problematic, with a rise in scabies prevalence back towards pre-intervention levels within 1 year in some cases. We believe the success of our program relies on three factors: regular rescreening, community education and community involvement.

Although our program has been successful in reducing the prevalence of scabies in this community, the lower rates may be unsustainable unless all related communities within the area achieve a similar reduction in scabies prevalence.

March 17, 2016

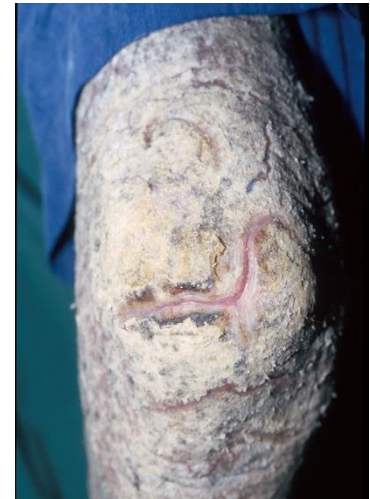
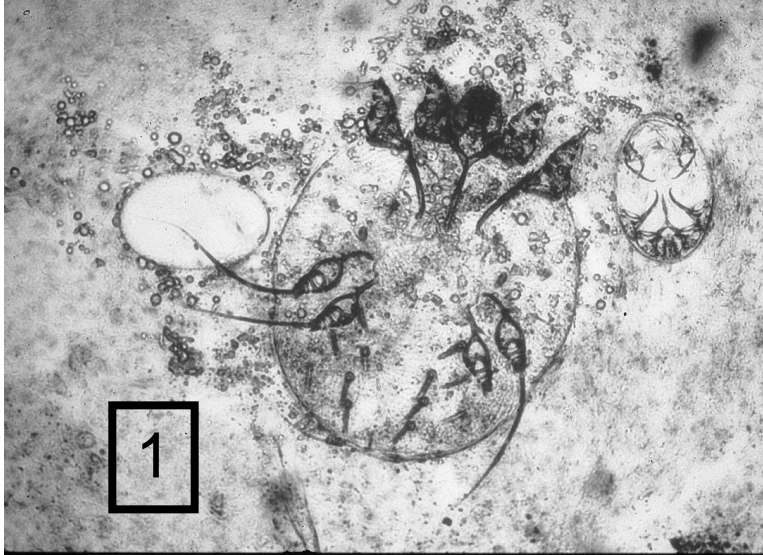
VIEWPOINTS

Prospects for Moxidectin as a New Oral Treatment for Human Scabies

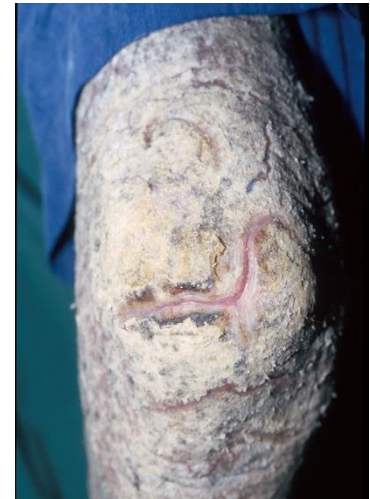
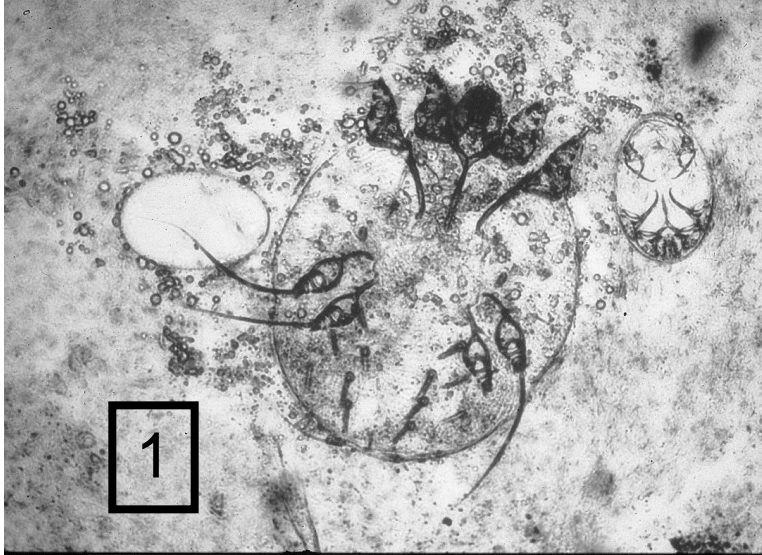
Kate E. Mounsey^{1,2*}, Charlotte Bernigaud³, Olivier Chosidow^{3,4}, James S. McCarthy^{2,5}

- Moxidectin is a second-generation macrocyclic lactone, related to ivermectin but with critical pharmacokinetic differences
- Superior bioavailability: half-life >20days versus 14hours for ivermectin
- No CNS toxicity in collie dogs
- When it comes to scabies, this factor could be a game changer—if the drug is retained at therapeutic concentrations in the skin through the 14-day scabies life cycle, a single-dose regimen may be possible

Why is scabies so hard to eradicate?

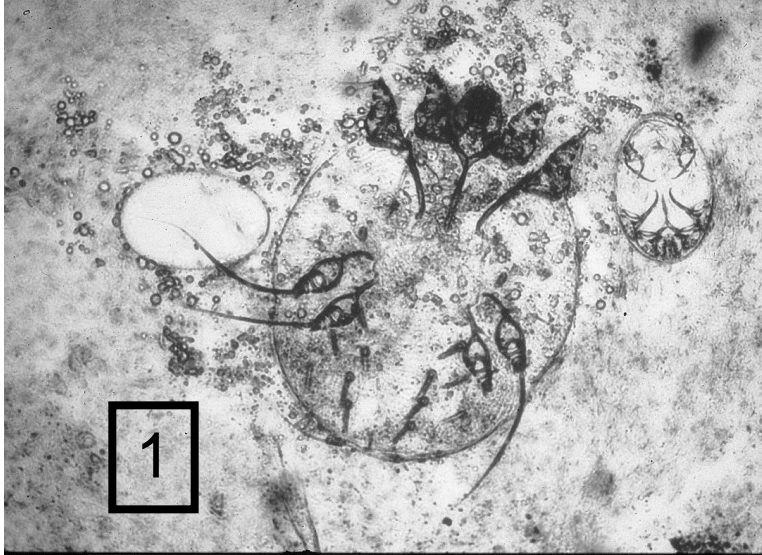


Why is scabies so hard to eradicate?

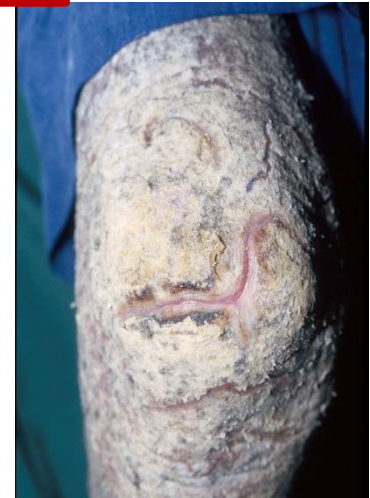


4: population mobility

Why is scabies so hard to eradicate?



5: primordial factors



4: population mobility

Primordial prevention of scabies

- Housing
- Education
- Employment
- Communications
- Transport & access to services



McDonald E et al. BMC Public Health 2008; 8:153

McDonald M et al. Clin Infect Dis 2006;43:683-9

Bailie R et al. BMC Public Health 2010; 10:147

Primordial prevention of pyoderma

- Housing
- Education
- Employment
- Communications
- Transport & access to services



McDonald E et al. BMC Public Health 2008; 8:153

McDonald M et al. Clin Infect Dis 2006;43:683-9

Bailie R et al. BMC Public Health 2010; 10:147

Primordial prevention of ARF/RHD

- Housing
- Education
- Employment
- Communications
- Transport & access to services



McDonald E et al. BMC Public Health 2008; 8:153

McDonald M et al. Clin Infect Dis 2006;43:683-9

Bailie R et al. BMC Public Health 2010; 10:147



Primordial prevention of trachoma

- Housing
- Education
- Employment
- Communications
- Transport & access to services



McDonald E et al. BMC Public Health 2008; 8:153

McDonald M et al. Clin Infect Dis 2006;43:683-9

Bailie R et al. BMC Public Health 2010; 10:147