



# Wound Care Workshop A Plastic Surgeon's perspective

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Oxford

# ... some background

- Whole career managing tissue damage & deformity
- General surgical training in 1970s – 80s ... wound infection and chronic wound management the norm
- Tanzania 1983-5
  - ‘kidonda ndugu’







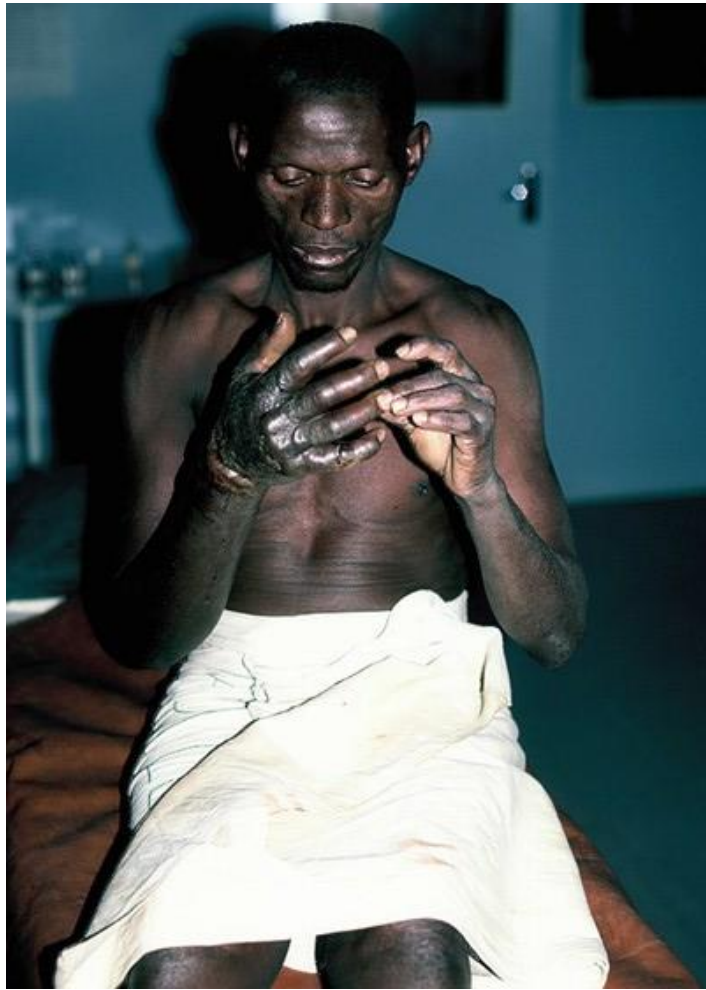














# Wounds in Africa circa late C20

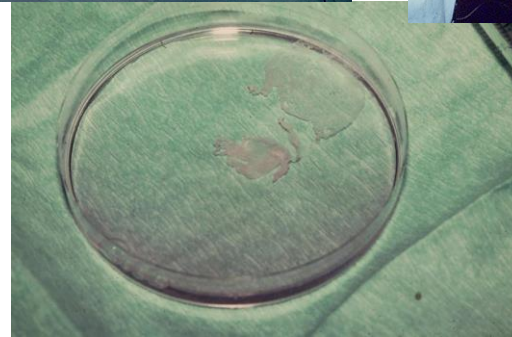
- Dressings limited to Vaseline gauze & linen
- Multiple co-morbidities esp. malnutrition
- Commercial engagement = zero!
- Surgical 'toolbox'
  - Cleaning and grafting
  - Maggots etc ...





# My early plastic surgical career ..

- Mt Vernon background
  - John Scales & 'high airloss bed' concept
  - George Winter studies on wounds
- Keratinocyte cell culture studies – Irene Leigh RLH
- Kings Cross Fire





**GEORGE D. WINTER**  
1927 - 1981



1962



**BIOPSY**  
AT 3 DAYS...



**WOUNDS ON PIGS**  
ONE COVERED ... ONE UNCOVERED



**CELL MIGRATION**

**TWICE THE RATE**  
IN COVERED WOUNDS!

WINTER THOUGHT  
**COVERED WOUNDS**



WOULD AID  
**RECOVERY**



EXPERIMENTS ON  
**PRISONERS**

(HINMAN, C. / MAIBACH H.)  
1963

REPEATED STUDY

**MOIST WOUND CARE**

IMPACT OF  
DRESSING  
ON HEALING...

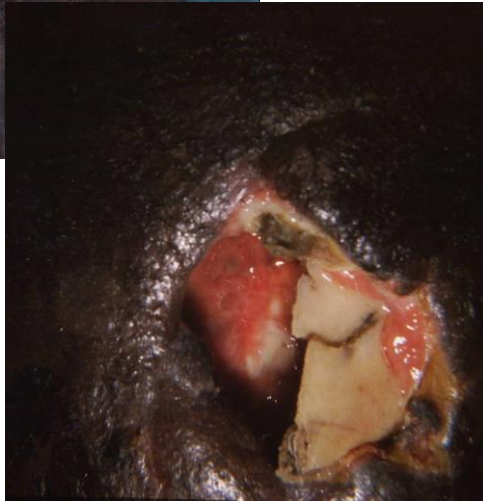




# Wounds which need cleaning before closure



# Some difficult wounds ....



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# The ‘reconstructive ladder ....’ ?

- Management based on always using the simplest suitable option is ....
- ...quite simply wrong!
- Such classical teaching leads to third rate, sub-optimal, outcomes



# What is primary wound excision and reconstruction aiming to do?

- Severely injured, non critical structures, will scar and fibrose; are they better removed and replaced?
- Essential structures (nerves, tendons, joints etc) need to be carefully repaired, and covered with well vascularised tissue to facilitate rapid healing and early restoration of function
- All tissue planes should be reconstructed to aim at healing by primary intention, and early return to function

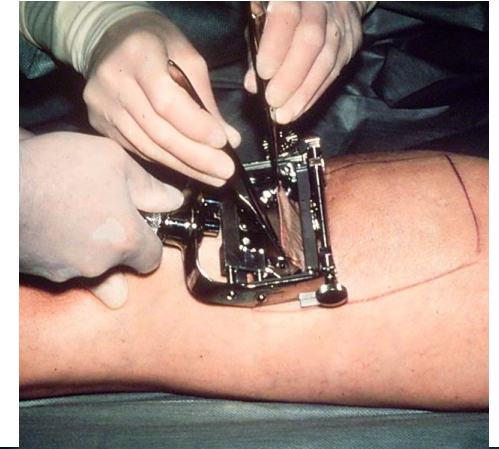
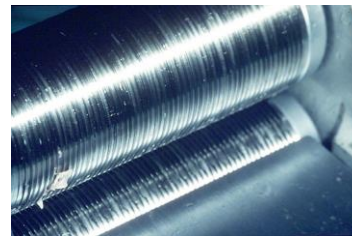
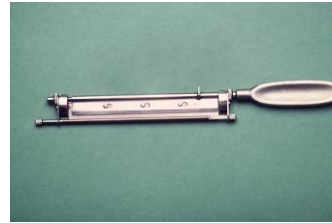


# When managing a complex injury...

- Aim to convert the wound into a clean defect which can be expected to heal with full function, or be closed with 'like' tissue in the shortest possible time
- Always have the long term in mind ...

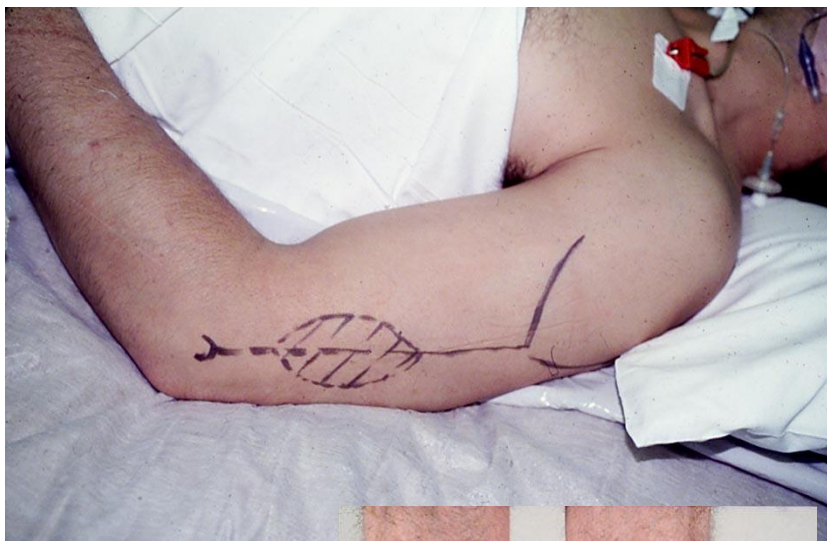
# Plastic Surgical Toolbox

- Original tools
  - Grafts (no blood supply)
  - Flaps (with blood supply)
  - Historic dressings ...
- Historic tools
  - Tube pedicle flaps
  - Cross leg flaps
  - High air loss beds
  - 'skin banks'
  - Bovine cartilage grafts etc
- New tools
  - Explosion of techniques
  - Microsurgery & super-micro..





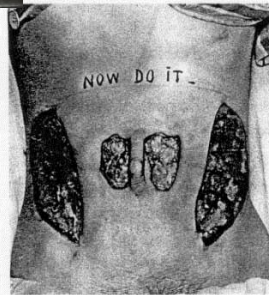
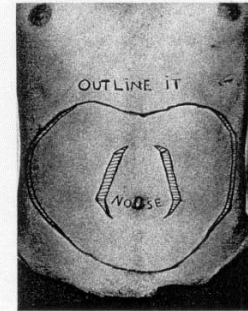
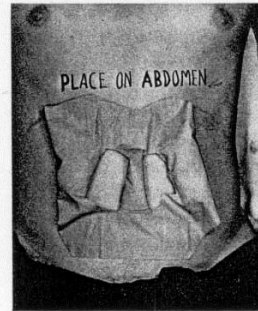
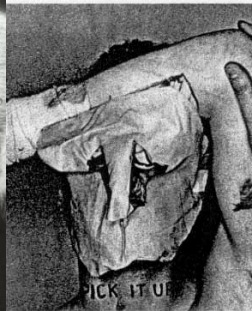
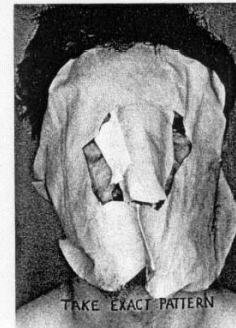




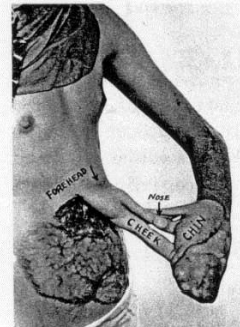


all the tube pedicles that I have made and those my assistants have made were laid end to end, by calculations at two and a half pedicles per week, they would string like sausages from Buckingham Palace down the Mall, straight on through the Admiralty Arch to Trafalgar Square and half-way up Nelson's monument. It is my ambition that before my last pedicle is made we will reach the top of this famous pinnacle with at least one pedicle left to go into the Admiral's palate.

This string, alas! has not been without its sloughs, and even after an experience which extends well over the Royal Mile, how is it still possible to lose a tube? So not to get involved, let's start out with a straightforward case.



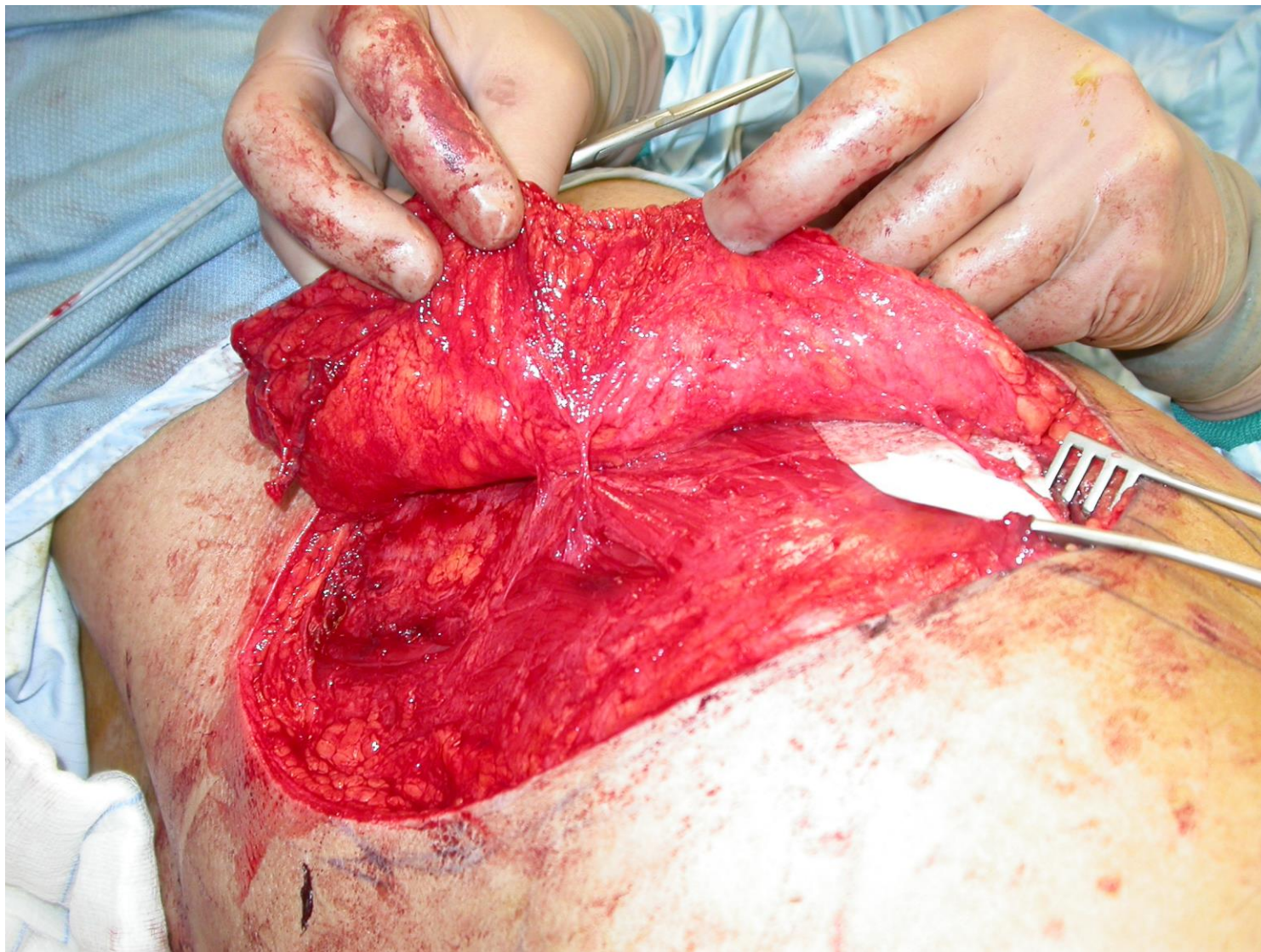
See Plate XII,

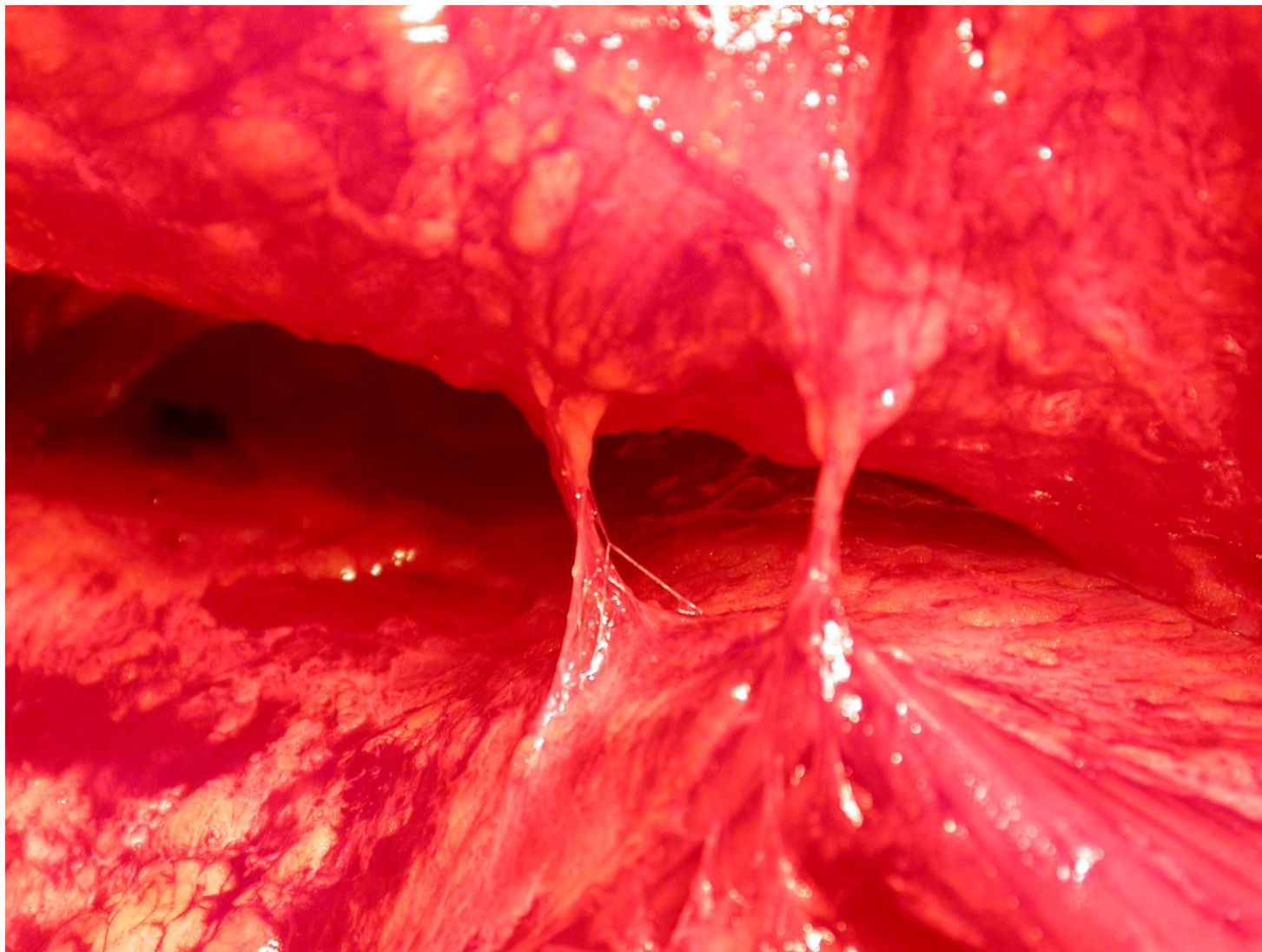


















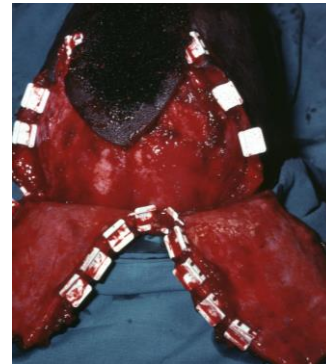
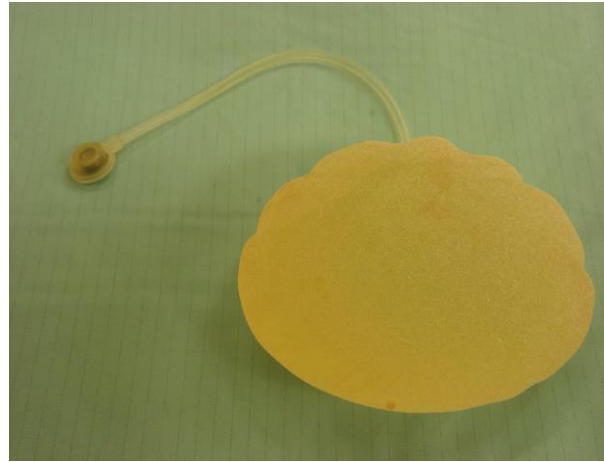
# ‘emerging methods ... ‘extreme flaps’..?

- ‘Free-style free flaps’
  - Take whatever piece of expendable soft tissue, and dissect out perforator pedicle
- ‘Super-thin perforator flaps’
  - Micro-dissection of subcutaneous fat



# New tools in my lifetime ...

- Tissue expansion
- Vacuum Assisted Closure (VAC)
- Transplantation
  - VCAs (vascularised composite allografts)
- Tissue engineering
  - Integra
  - Acellular dermal matrices
- Liposuction & fat transfer







# ... and so on ....

- 'Cosmecuticals'
- Injectables
  - Fillers
  - Botulinum toxins
  - Threads etc ..
- Laser treatments
- ... all come with commercial interests



# Changes in wound management

- Historic small army of diligent experienced community & specialist nurses ...
- Science of wound management evolving ..
- ‘tissue viability nurses’
- Wholesale reduction in tolerance of ulcers, sores, delayed healing etc



# Major changes in past few decades ..

- Inexorable increase in litigation – especially for pressure sores and adverse outcomes from primary management
- Ageing population
  - Extent of change unanticipated
- Wholesale commercialisation of healthcare ‘industry’



# The plastic surgeons perspective

- Most sophisticated contemporary techniques of wound management underused
  - Diabetic wound management with revascularisation and free tissue transfer
- Wound care to some extent the 'Cinderella area' of surgical disciplines



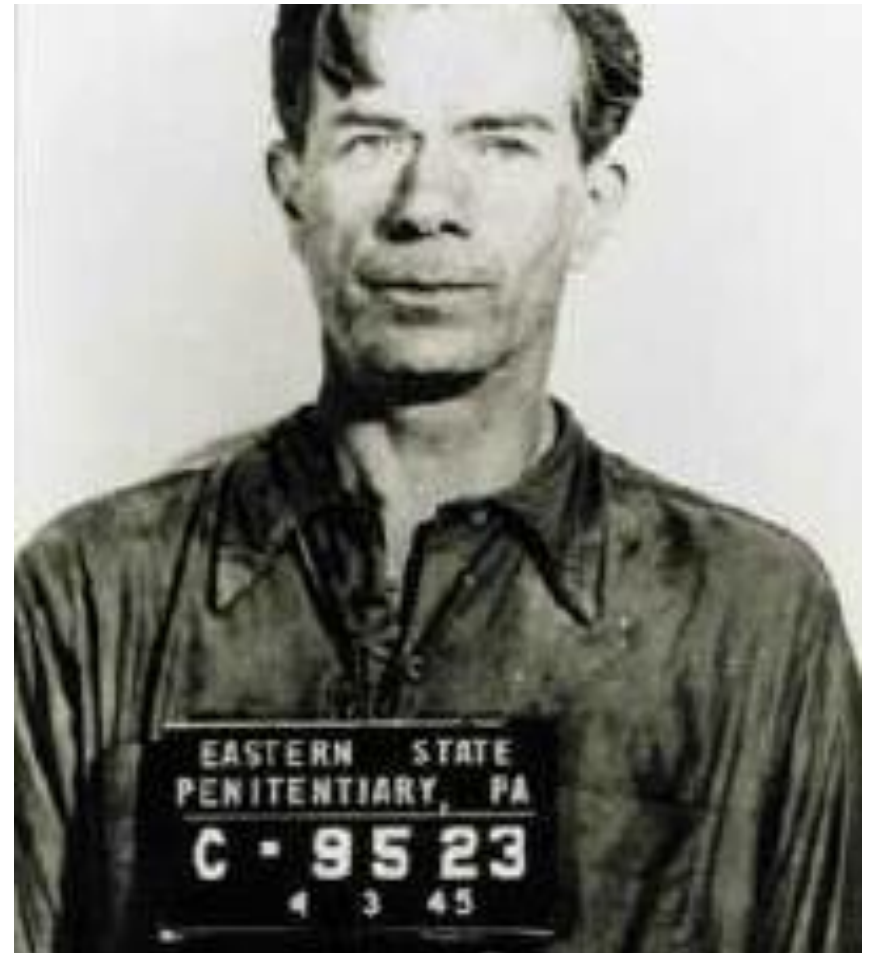
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# Willie Sutton's law ...

- Surgical management is under-represented in the forum of wound care generally.
- Is there an 'unconscious bias' generated within tissue viability training ..?
- Impact of commercial sponsorship from dressing and wound care product manufacturers is significant.





# Final perspective ...

- Of all deaths worldwide following road accidents, only 4% occur in the 9 most developed countries
- Surgically correctable disabling conditions in the non-elderly are vastly more common in developing countries



# The real need for development in reconstructive surgery in the 21<sup>st</sup> Century

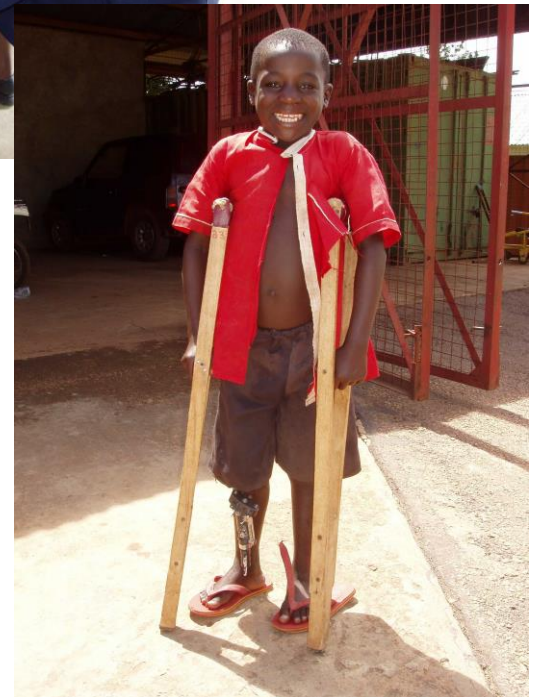
- Education, education, education ...
- To meet the needs of surgically correctable disability, basic plastic techniques need to be commonplace amongst non-specialist health workers





# The worldwide perspective ..

- We can no longer teach appropriate surgery for these conditions in the UK
- Partnership programmes for training are asked for, and needed urgently
- Knowledge not kit ..



# Pakistan – Kashmir 2005



# Kunming China 2006





Plastic Surgical methodology offers a way of meeting medical needs which is universally applicable



# A final global thought ...

- 1/6<sup>th</sup> world is in China
- 1/6<sup>th</sup> world is in India
- Poorest nations of world predominantly in sub-Saharan Africa
- The vast majority of wounds and ulcers are in those nations
- Can we rely on free market principles to promote the most effective and cost-efficient methods of wound care in the 'global south' in future..?







Thank You

