

Edinburgh Cyclists' Tram Injuries

PechaKucha - Cycling Scotland Conference 2017

Professor Chris Oliver

 @CyclingSurgeon

CyclingSurgeon.Bike

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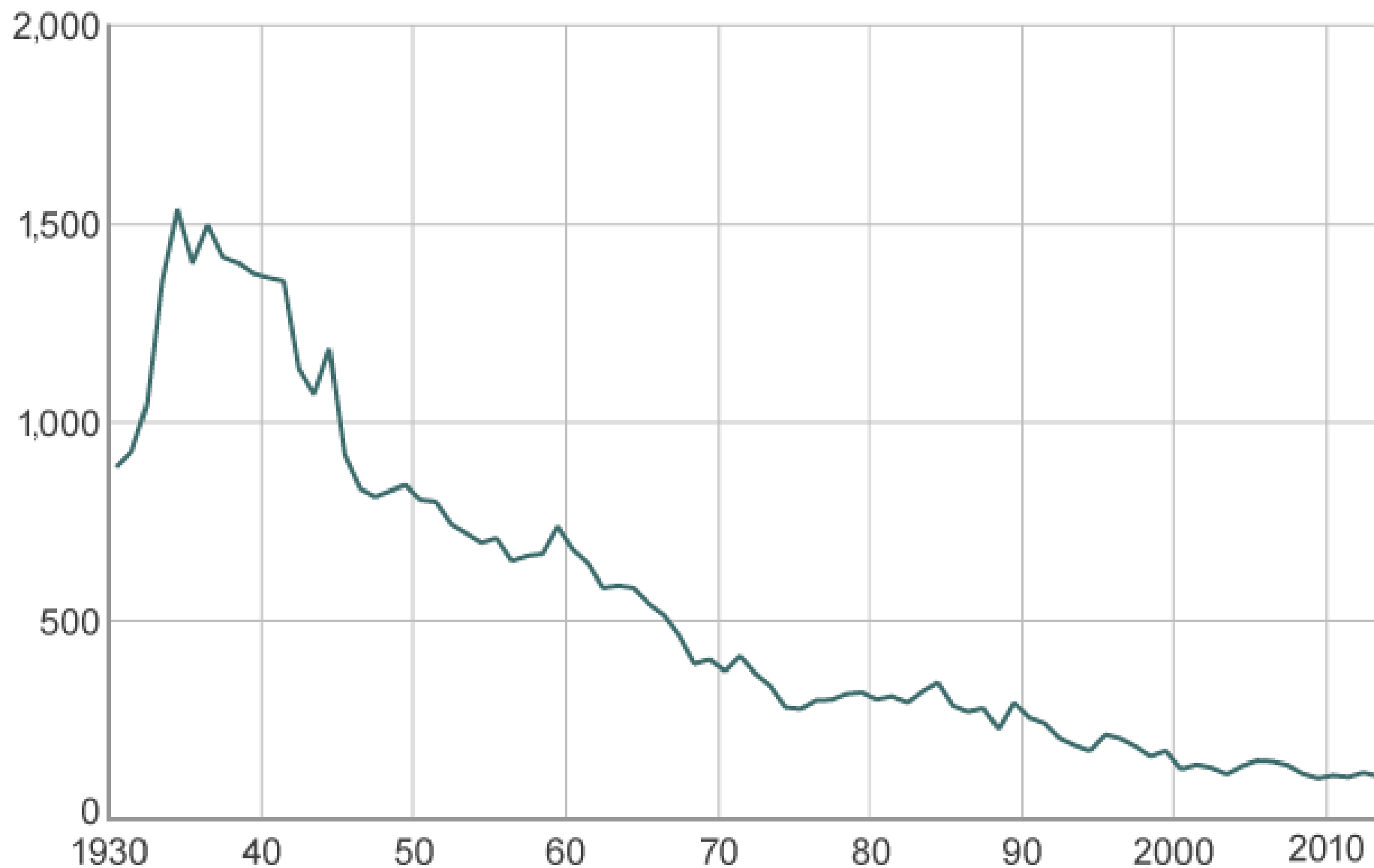


Some Cycling Safety Facts in Britain

- Benefits cycling outweigh life-years lost through injuries by 20:1
- One cyclist killed every 29 million miles travelled
- Unlikely to be killed cycling as walking
- Have good road safety record
- Cycle safety in is one of the poorest in Europe

Cycling deaths in Great Britain

deaths/year



Source: Department for Transport

Chart 10: Annual number of cyclists and all road users killed in Scotland

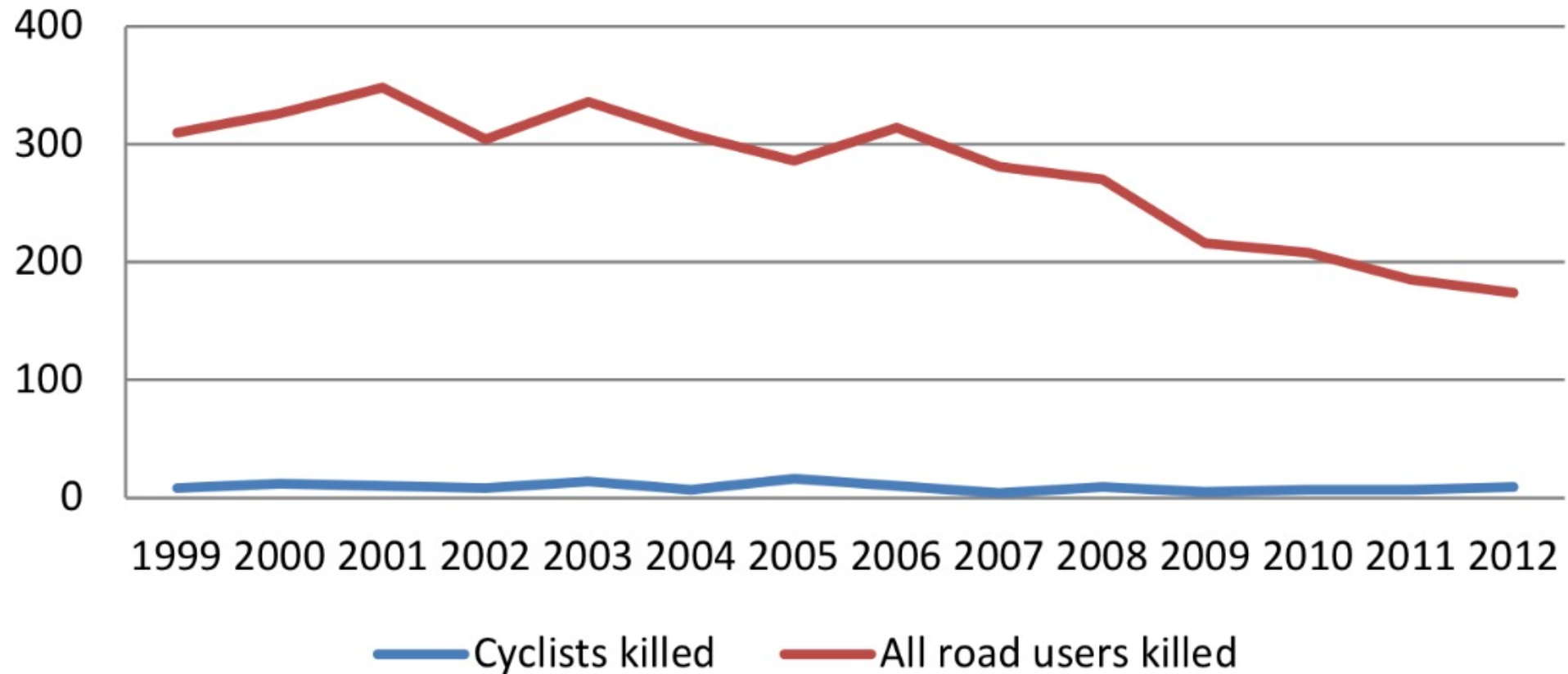
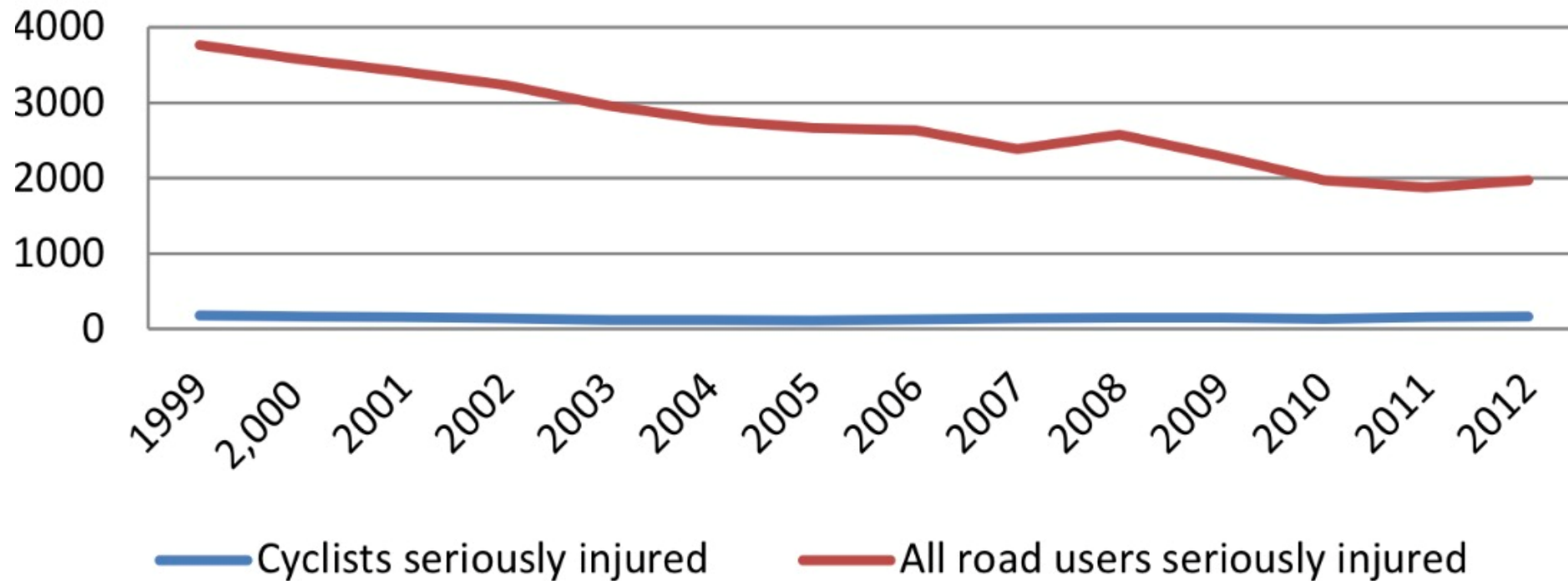


Chart 11: Annual number of cyclists/ all road users seriously injured in Scotland



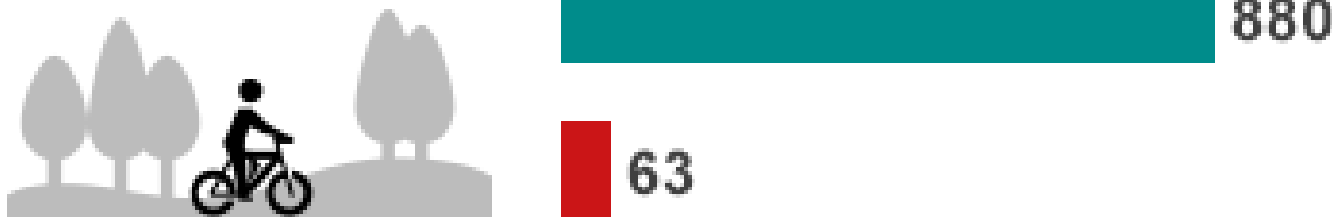
Pedal cyclist casualties by severity and road type, 2013

 Seriously injured  Killed

Urban areas



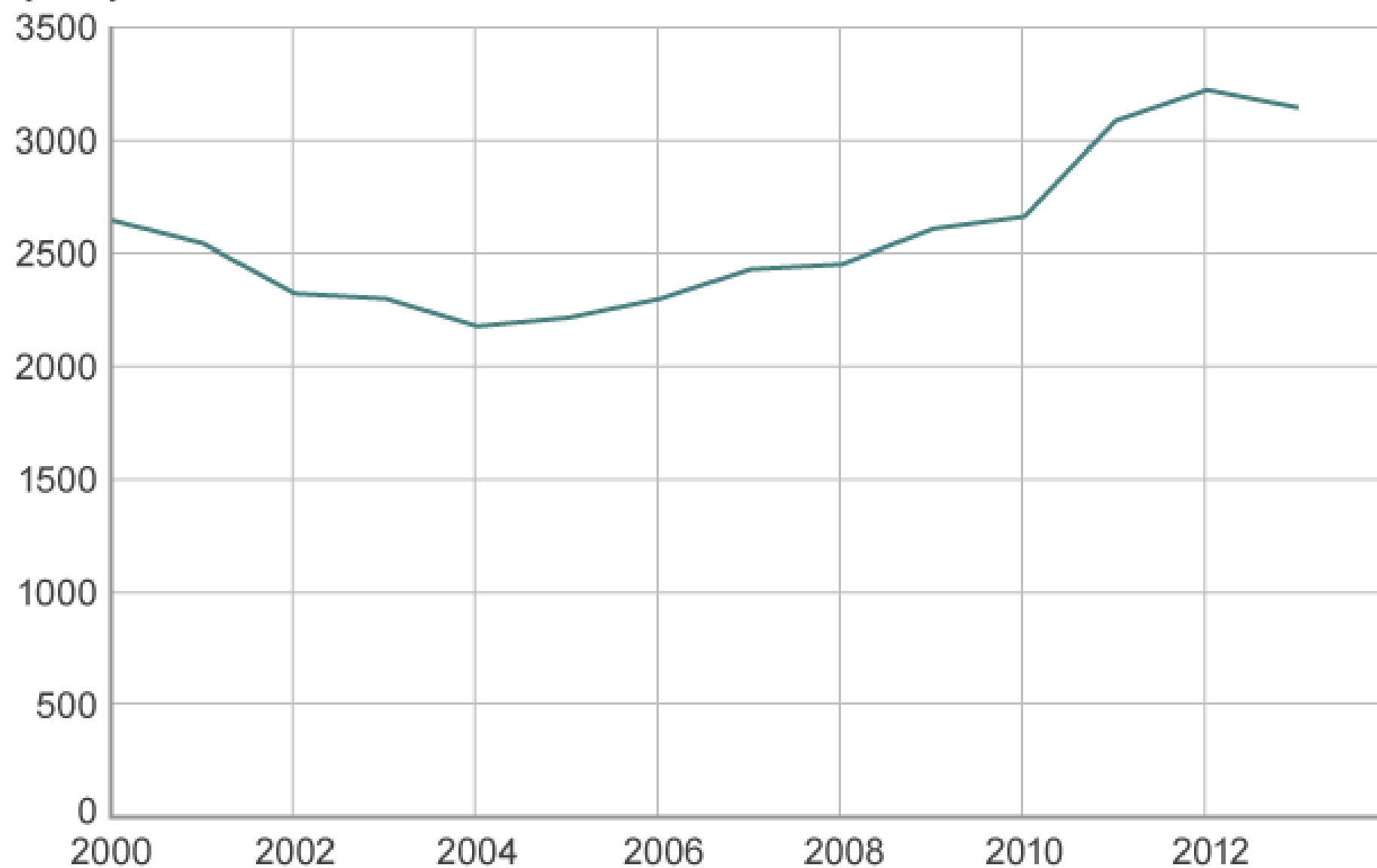
Rural areas



Source: Department for Transport

Cyclists seriously injured in Great Britain

injuries/year



Source: Department for Transport

Edinburgh Orthopaedic Trauma Unit

800,000 Lothian population

Lothian **per year**

- 223,000 attend A&E
- 3,460 all RTA to A&E
 - 1930 vehicle occupants
 - 340 motorcyclists
 - 230 pedestrians
 - 960 cyclists (total)
 - 80+ tram injured cyclists

Scotland recent

- 180 RTA deaths
- 12 cycling deaths



<http://www.ed.ac.uk/clinical-sciences/orthopaedics-trauma/clinical/trauma>

All Cycling injuries in Lothian PreTram

Cycling 11% of sports fractures (n=104).

- Mountain Biking 73, Road 25, BMX 6

Age: 31 years. 88% ♂ : 12% ♀

Upper Limb 91%: Lower Limb 8%: Axial 1%.

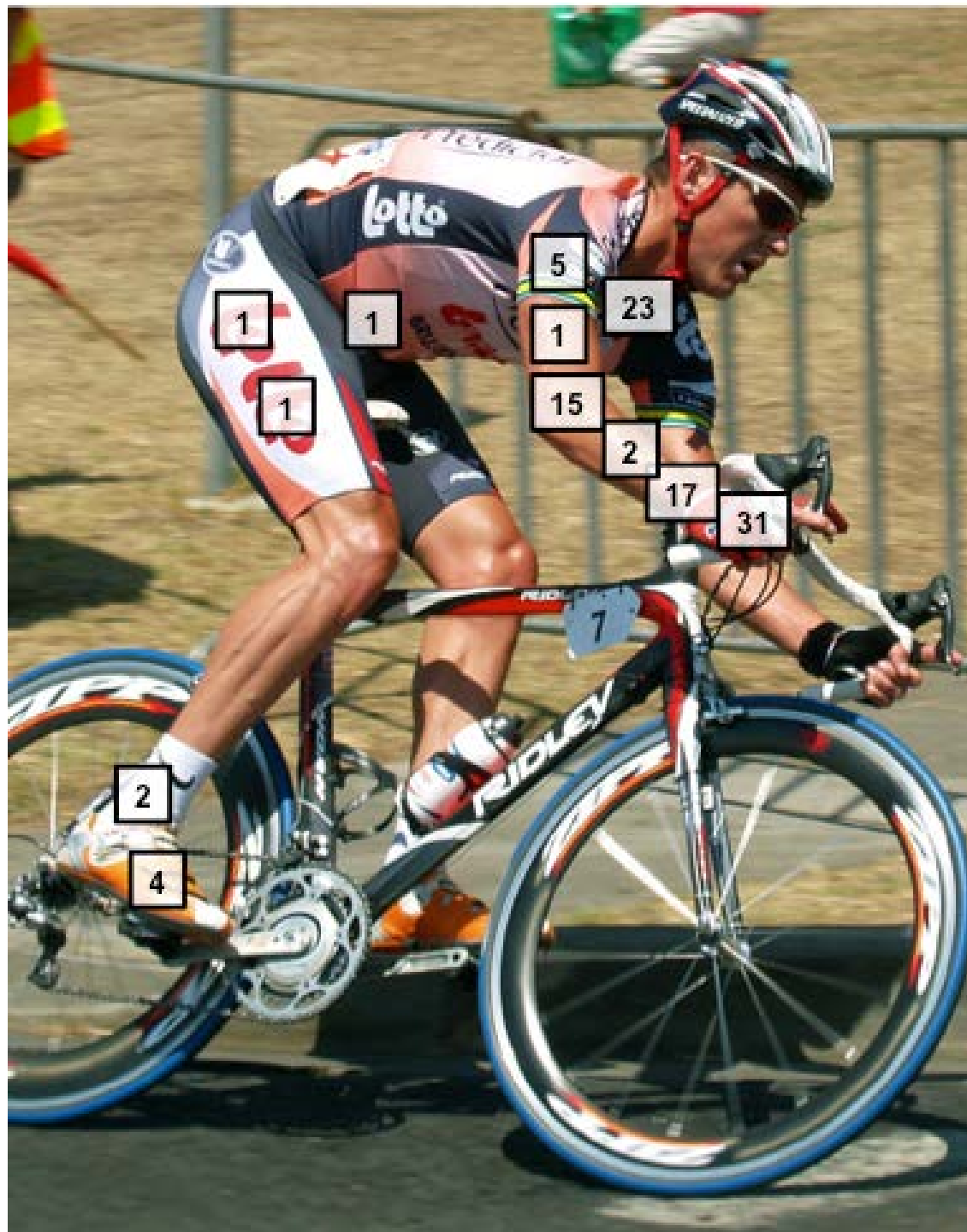
Commonest Upper Limb Fractures:

Clavicle (22%), Distal Radius (14%), Metacarpal (12%)

Proximal Radius (12%), Finger Phalanx (10%).

Commonest Lower Limb / Axial Fractures:

Toe Phalanx (2%), Ankle (1%), Pelvis (1%).



Greg Robertson EOTU



Retrospective review tram related Injuries

- 7 years
- 41.4 years +/- 16 years
- 24% weekends
- All to A&E in Lothian; RIE, SJH, WGH
- >1000 x-rays, 10 CT/MRI scans, blood tests
- 156 soft tissue injuries
- 64 fractures
- 29 operations
- Mean length of hospital stay 1.7days
- Economic impact unknown

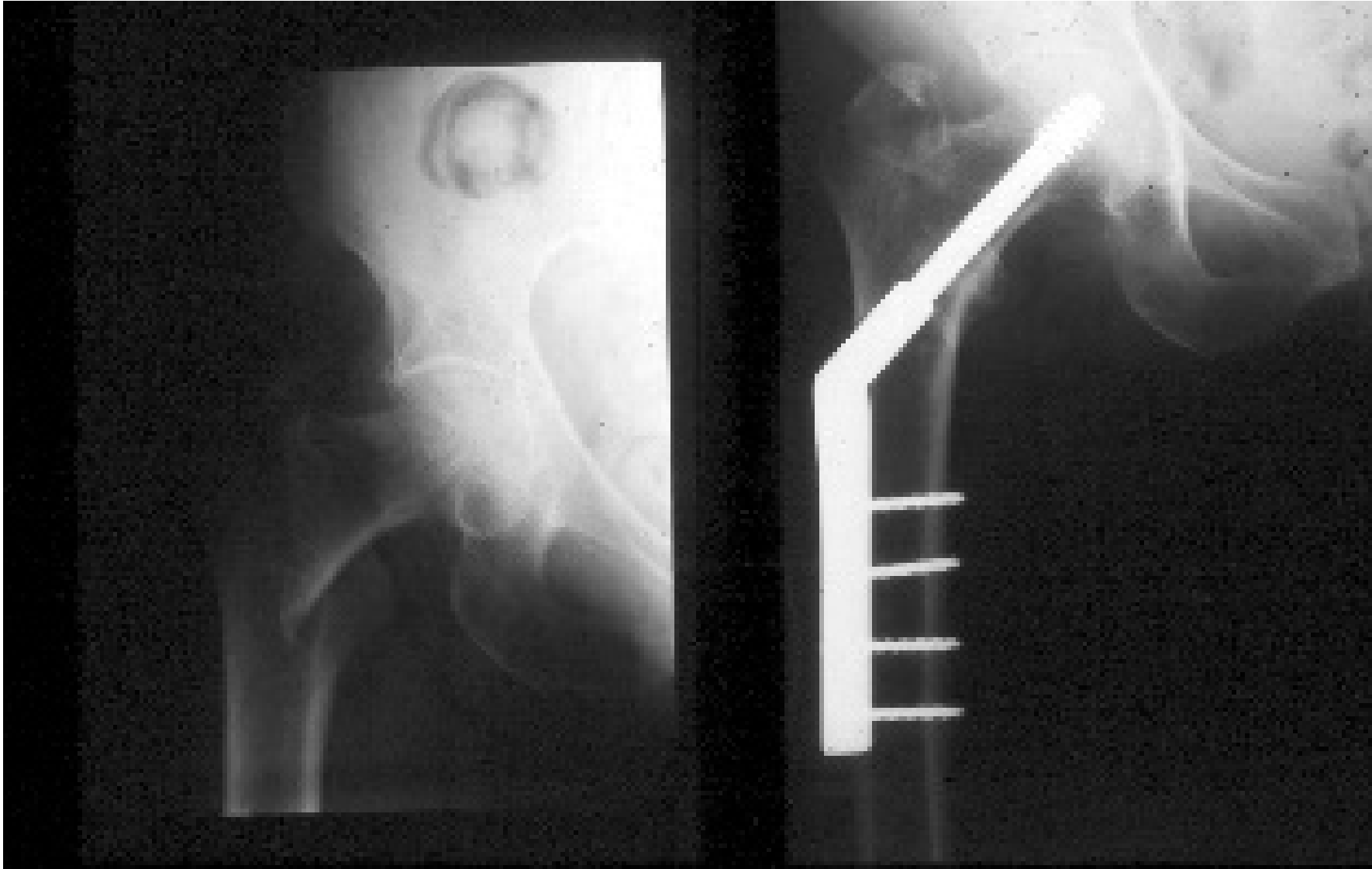
Tram related injuries Lothian Post Tram

Anatomical region	Soft tissue injury	Fracture
Head injury - minor	33	0
Head injury - serious	0	1
Thorax	5	0
Abdomen	4	0
Clavicle	0	4
Acromioclavicular joint	4	0
Proximal Humerus	15	4
Humeral shaft	0	2
Elbow	15	18
Forearm	2	1
Wrist	26	11
Hand	10	7
Finger	5	8
Hip	9	2
Thigh	2	0
Knee	21	2
Leg	2	0
Ankle	2	1
Foot	1	2
Toe	0	1
Total	156	64

Tram related injuries Lothian Post Tram

Procedure	Number
Dynamic Hip Screw	1
Cannulated Hip screws	1
Midfoot ORIF	1
Distal radius ORIF	6
Olecranon ORIF	2
Distal radius ex-fix	1
Phalanx ORIF	1
Distal Humerus ORIF	1
Emergency Carpal Tunnel Decompression	1
Rotator cuff repair	1
Nasal fracture MUA	1
Wound suturing in ED	12
Total	29

Hip fracture after tram cycling injury - Dynamic Hip Screw



Representative images

Mechanism of cycling tram injuries

- 143 wheels caught in tram track
- 32 wheels slipped on tram track
- 1 collision with tram
- Forced by other vehicle to change path and forced towards tram track
- Injury leads to lack of confidence
- Some never return to cycling





Infrastructure improvements

Follow the **red cycle lane** when turning right

It's the safest way to cross the tram tracks

• EDINBURGH • THE CITY OF EDINBURGH COUNCIL
Look out for each other
www.edinburgh.gov.uk/tramsafety



City of Edinburgh Council

Edinburgh Cyclists' Tram Injuries

- Significant new trauma workstream
- Active commuters
- Chronic disability
- Forced into path of tramlines by poor design
- Economic cost to
 - Cyclists
 - Health Service
- Inadequate planning for active travel infrastructure



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