

# Re-operation and complication rates in acute lower limb amputations secondary to trauma

## Introduction

Lower limb amputation is associated with significant morbidity and mortality. 13.9% of lower limb amputations in UK are secondary to trauma <sup>(1)</sup>. Reflecting the predominance of vascular or diabetic disease as a cause for amputation, much of the available literature excludes amputation secondary to trauma in the reporting of complications rates. As such, there is paucity of literature with respect to the demographics, incidence and complication rates in this population.

## Aim

To describe the rate of complications, defined as:

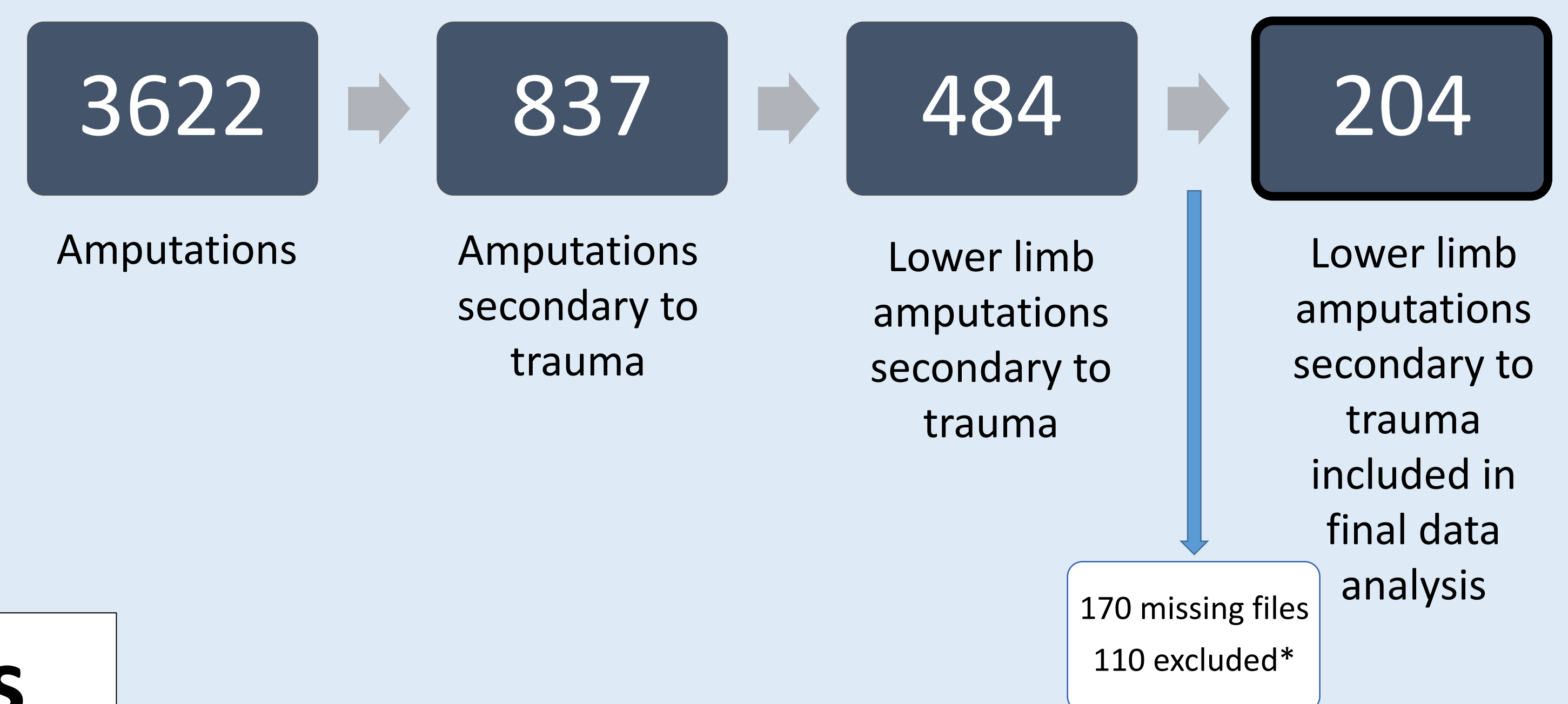
- Re-operation
- Infection (superficial or deep)
- Phantom limb pain
- Neuroma
- Contralateral limb osteoarthritis

in acute\* lower limb amputations secondary to trauma  
\* <6 weeks from index trauma

## Method

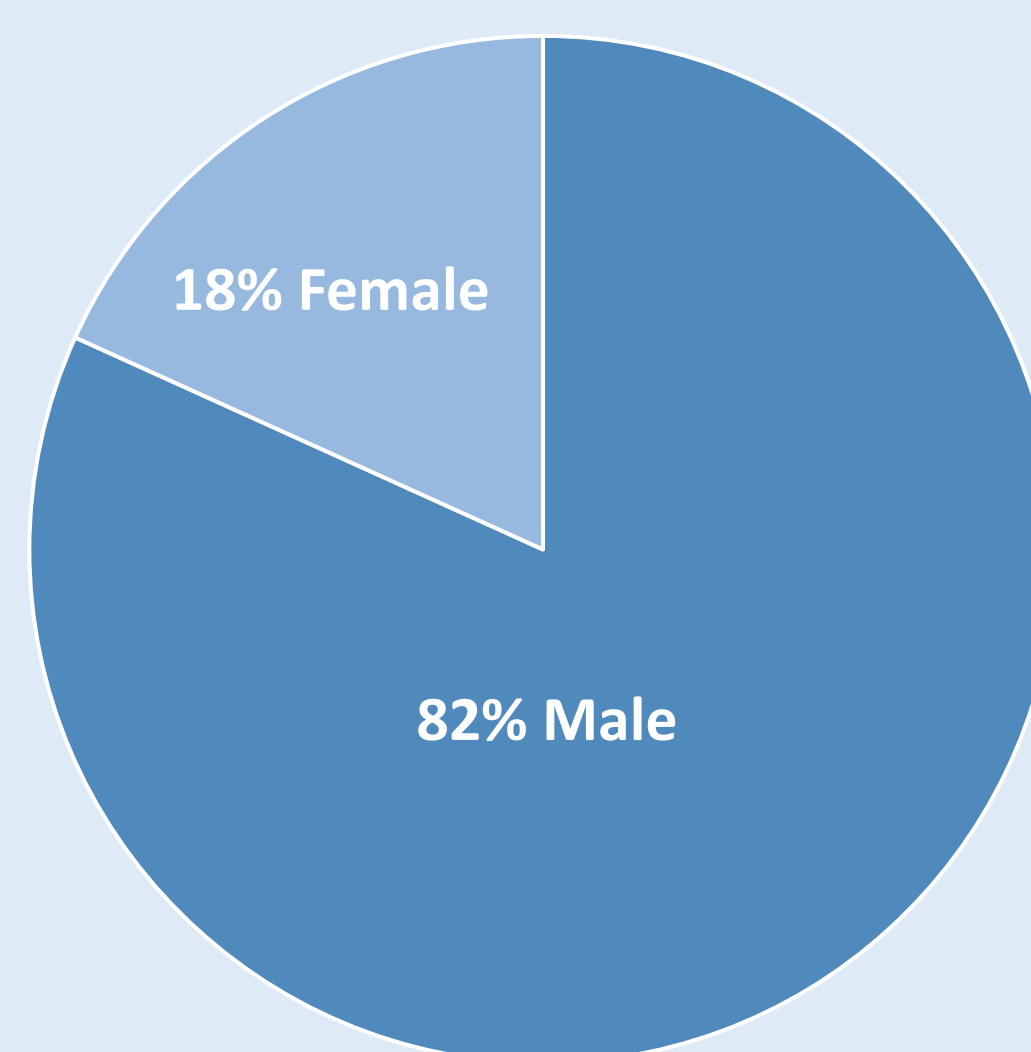
A retrospective analysis of prospectively collected database (Rehapp) from a regional multidisciplinary amputee service at (Queen Mary's Hospital, Roehampton).

Clinical records were reviewed and outcomes coded using Excel. A multivariate regression analysis was performed using Stata Version 17.



## Results

Number of amputations	204
Number of bilateral amputations	12
Number of amputees	192
Mean age at amputation (years)	33.43229
Mean follow up (months)	230.8073
Range (months)	2 - 734



Mechanism of injury	n=192	%
RTA	106	55.21%
Train	21	10.94%
Blast injury	19	9.90%
Unknown	16	8.33%
Firearms	12	6.25%
Workplace accident	12	6.25%
Assault	2	1.04%
Jump from height	2	1.04%
Fire/burns	1	0.52%
Degloving	1	0.52%

Outcomes	n=204	%
Re-operation	72	35.29%
Infection	53	25.98%
Re-operation + infection	31	15.20%
Change of amputation level	13	6.37%
Neuroma	21	10.29%
Phantom limb pain	79	38.73%
Contralateral osteoarthritis	12	5.88%

	Odds ratio	Standard error	p-Value
Gender	0.85	0.37	0.700
Age	0.98	0.01	<b>0.032</b>
Infection	3.89	1.52	<b>0.001</b>
Phantom pain	1.62	0.56	0.167
Neuroma	0.93	0.54	0.901

Patients with infection were at a 3.89 times increased risk for re-operation ( $p=0.001$ ). Older age is protective, with each year increase in age associated with a 2% decreased risk for re-operation ( $p=0.032$ ).

## Conclusion

Our data demonstrates that acute lower limb amputations secondary to trauma exhibit higher rates of re-operation and infection compared to those for vascular or diabetic amputees, with infection as a significant risk factor for re-operation.<sup>(2,3)</sup> Conversely, lower rates of neuroma and phantom limb pain are reported in lower limb amputations secondary to trauma when compared to non-traumatic amputations.<sup>(4,5)</sup> This first study to provide high quality data describing the incidence of complications in acute lower limb amputations secondary to trauma in the UK.