



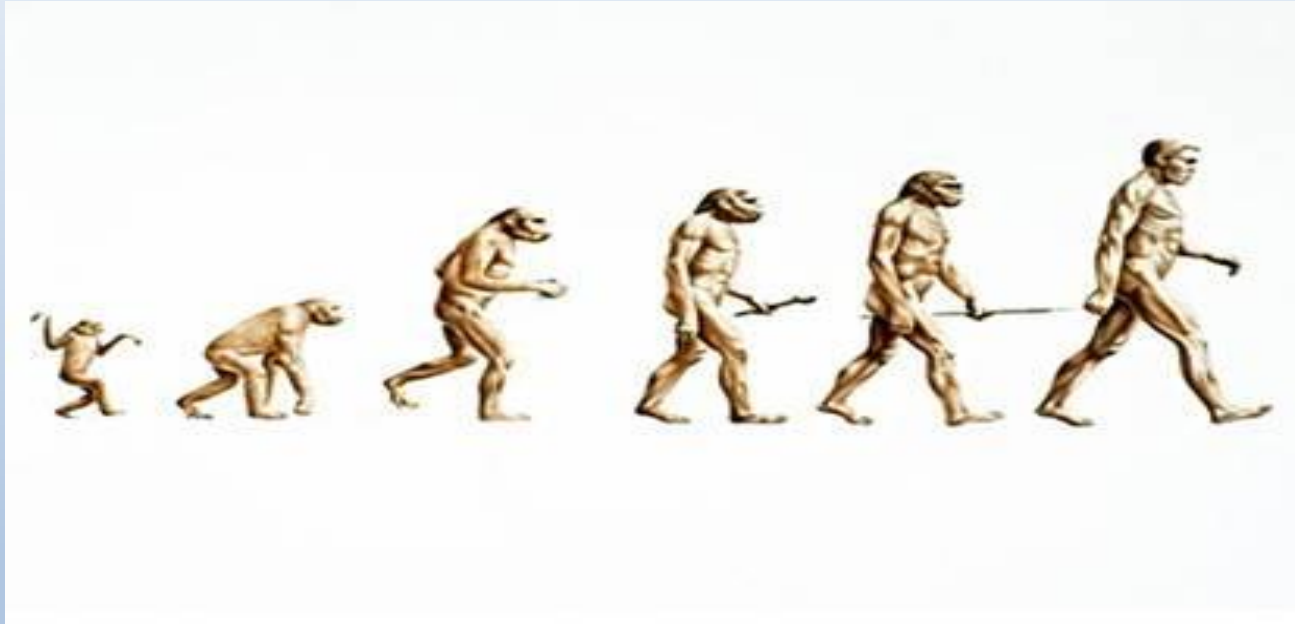
## Motorcycle collisions and the Consequences: A Medical Perspective

Dr Áine Carroll

National Director, Clinical Strategy and Programmes Division, HSE

3<sup>rd</sup> October 2016

# Evolution

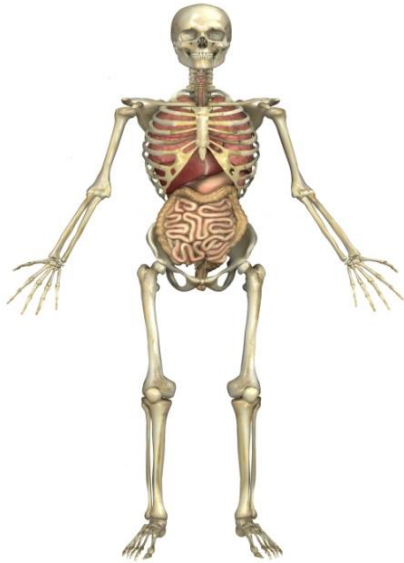


# Exoskeleton





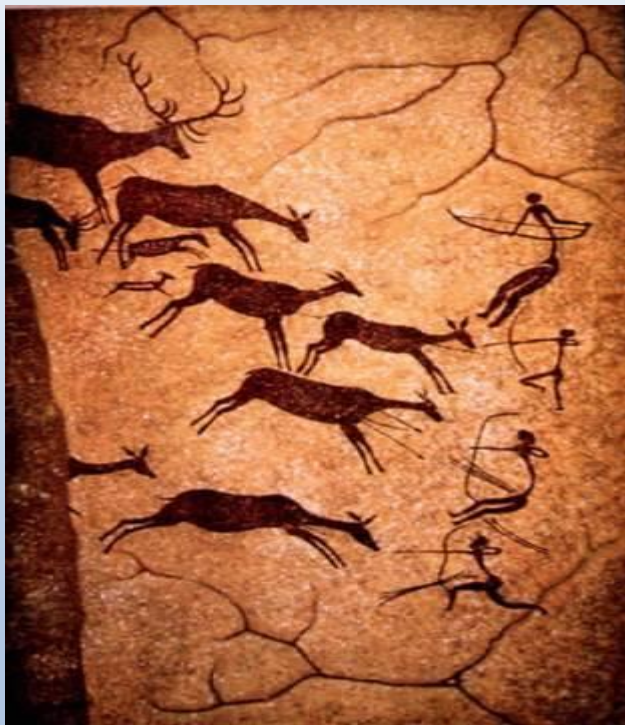
# Endoskeleton







# Lascaux







A TOTAL OF 166 PEOPLE HAVE LOST THEIR LIVES IN 2015.



IN 2015  
THERE WERE  
130 MALES AND  
36 FEMALES  
KILLED ON THE ROADS



COMPARED TO 193 IN 2014,  
A 14% DECLINE.

# 2015

ROAD SAFETY  
REVIEW



## VEHICLE OCCUPANT FATALITIES



103

0%

NO CHANGE  
IN DRIVER  
DEATHS  
(76)

31%

DECLINE IN  
PASSENGER DEATHS  
DOWN FROM  
39 TO  
27

## VULNERABLE ROAD USER FATALITIES

32



22% DECLINE  
ON 2014

22



8% DECLINE  
ON 2014

9



31% DECLINE  
ON 2014



29%  
OF DRIVERS AND  
PASSENGERS KILLED WERE  
NOT WEARING A SEATBELT

THE NUMBER OF CHILDREN\*  
KILLED IN 2015 REDUCED BY

77%

(down from 13 to 3)  
(\*14 years and under)

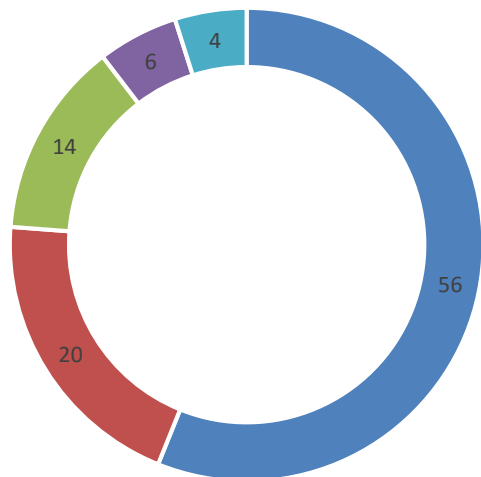


SUNDAY WAS THE  
MOST DANGEROUS DAY  
OF THE WEEK  
(32 FATALITIES)



BETWEEN 10AM AND 12PM WERE  
THE MOST DANGEROUS HOURS.

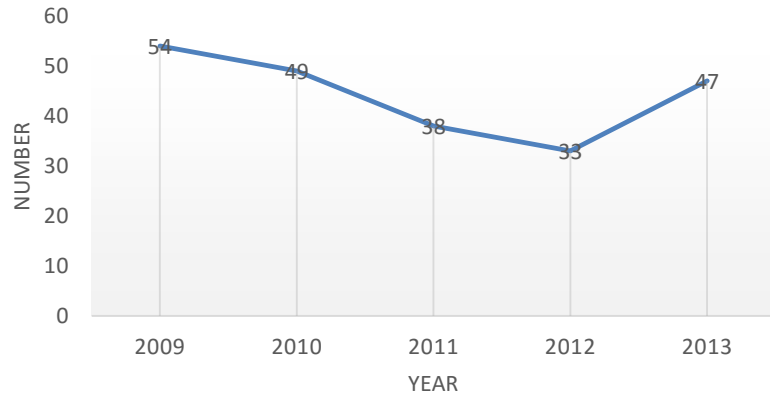
## All Road Users Killed 2015



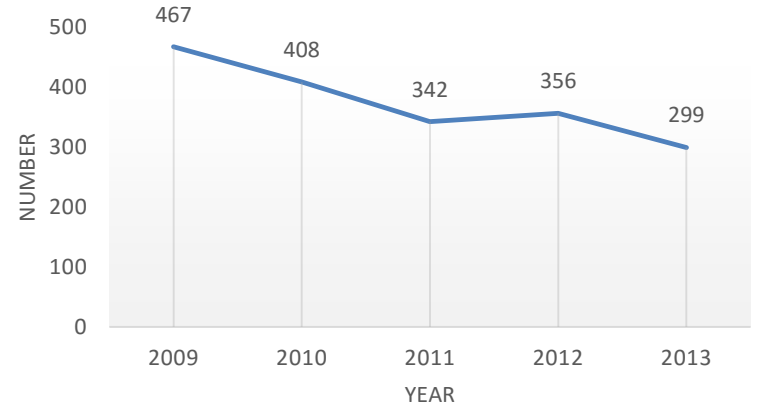
■ Car Users ■ Pedestrians ■ Motorcyclists ■ Pedal Cyclists ■ Other Users



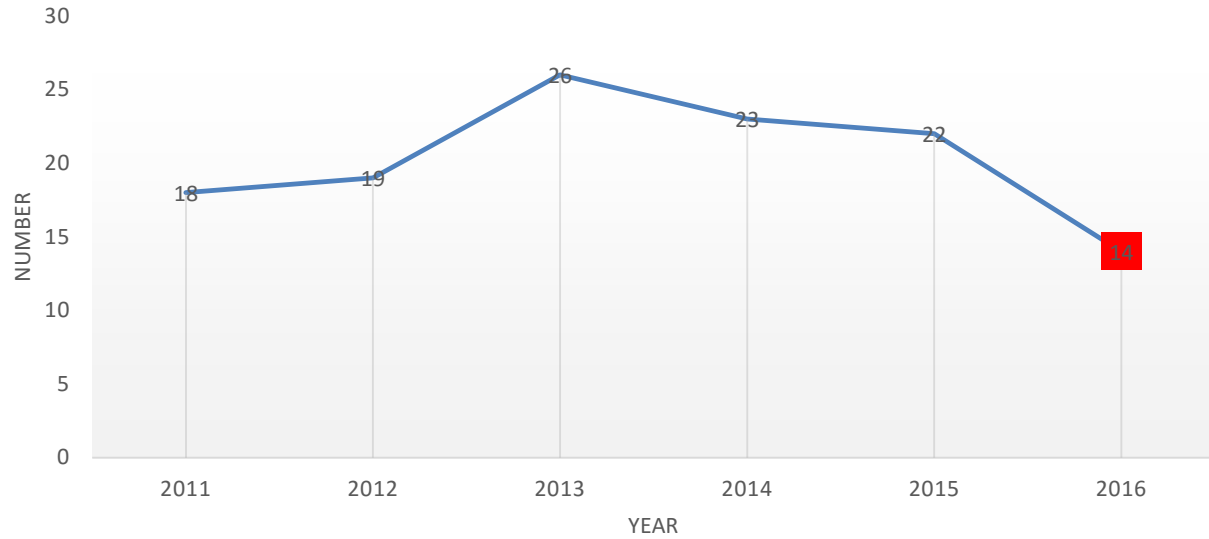
### Motorcyclist Serious Injury

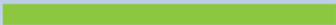


### Motorcyclist All Killed and Injured



## Motorcyclists Killed





<https://www.youtube.com/watch?v=AaYtnbcE8UM>





# Injuries

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**Head**



**Spinal**



**Limb**



**Internal Organs (blunt >70)**

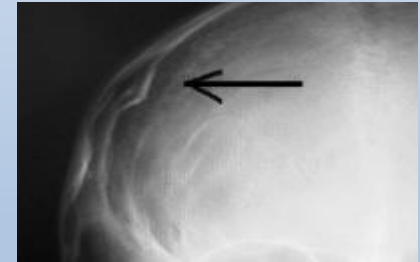
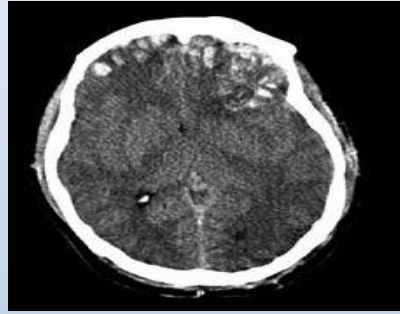
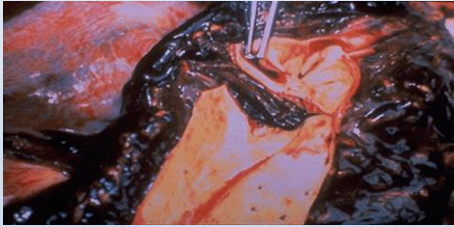
Solid organ > hollow viscera

Multi-organ > single

# High Velocity

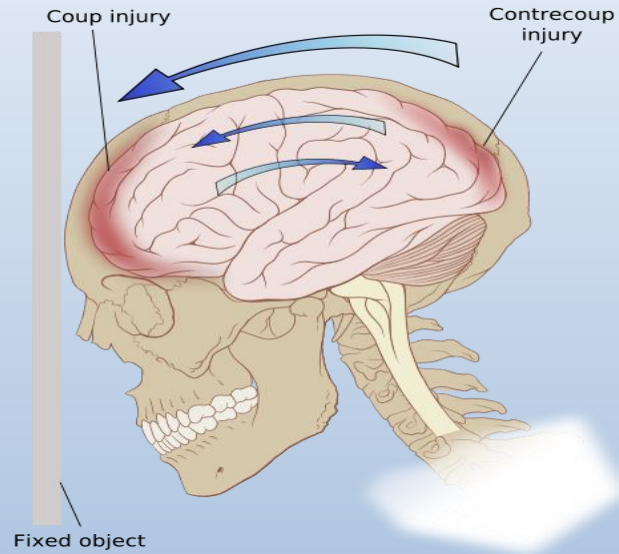


# High velocity

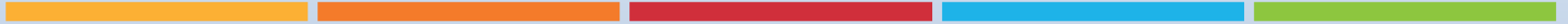




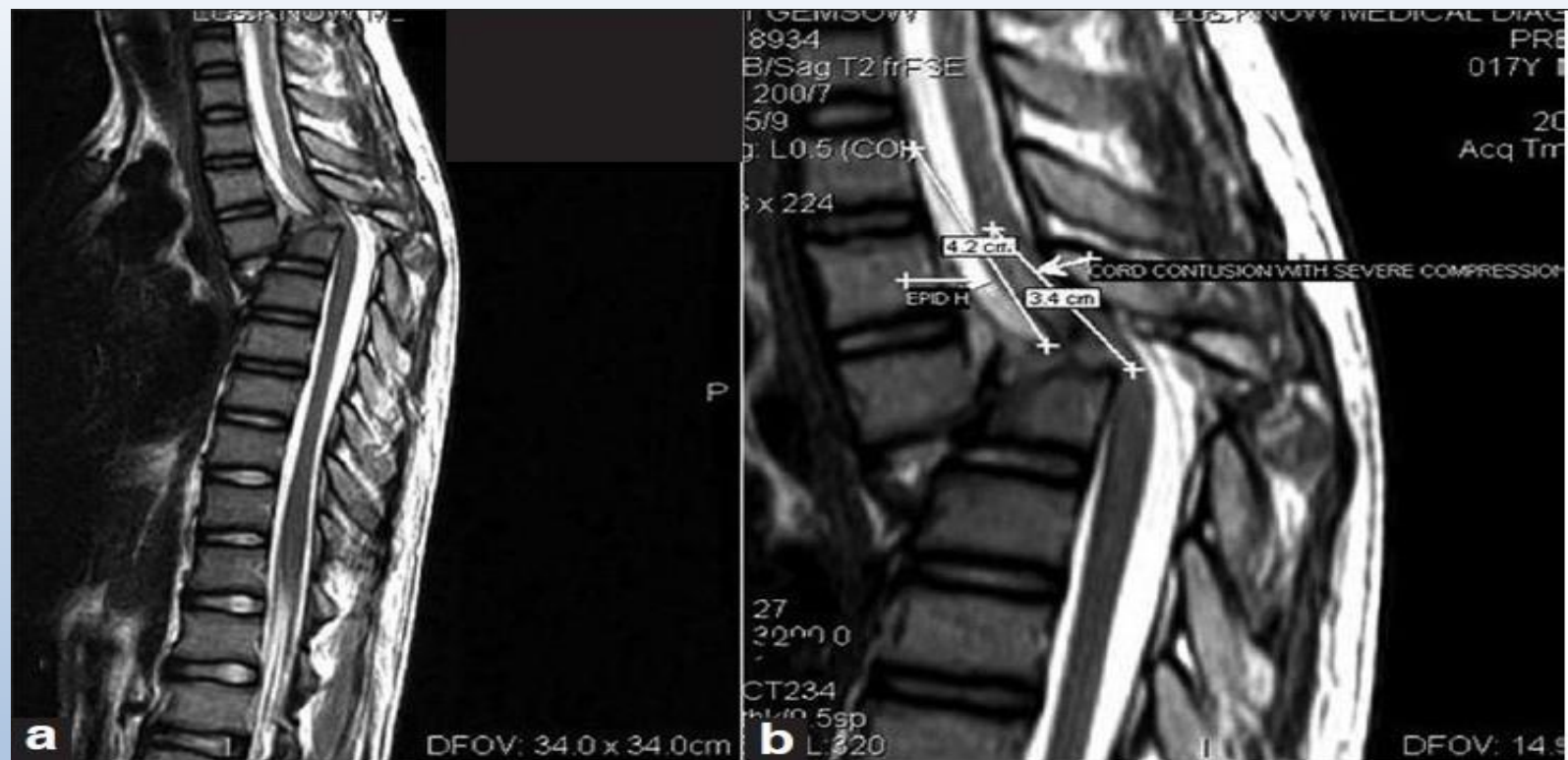
# Head Injury



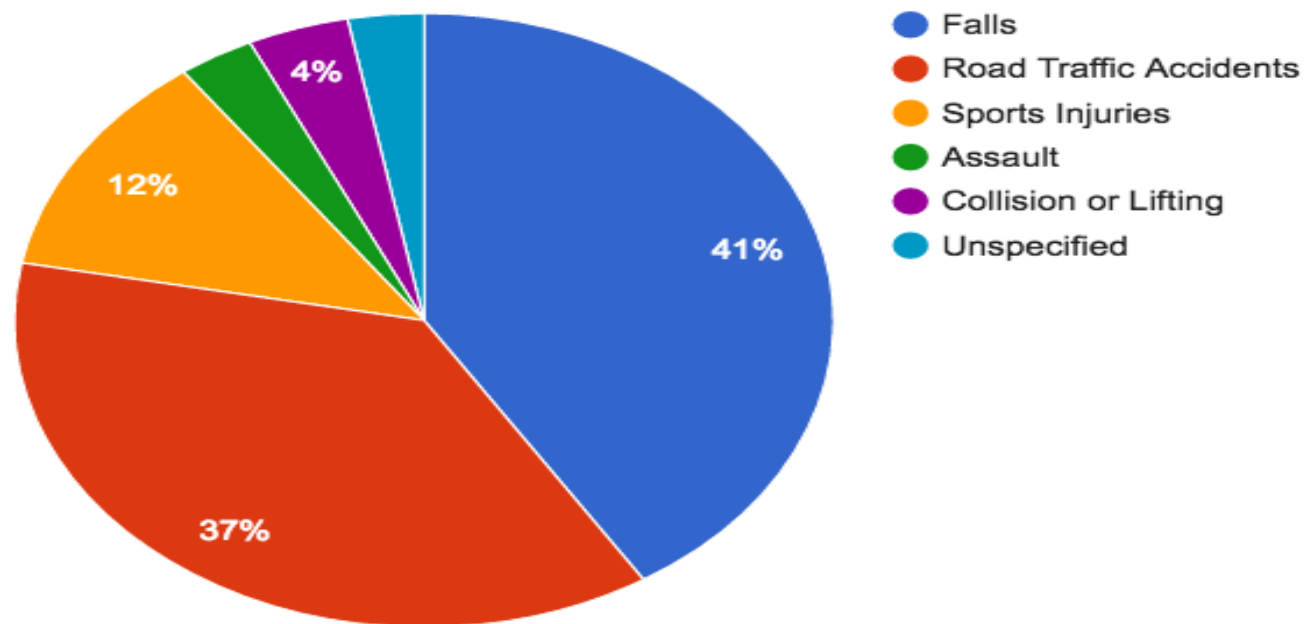
# SPINAL CORD INJURY



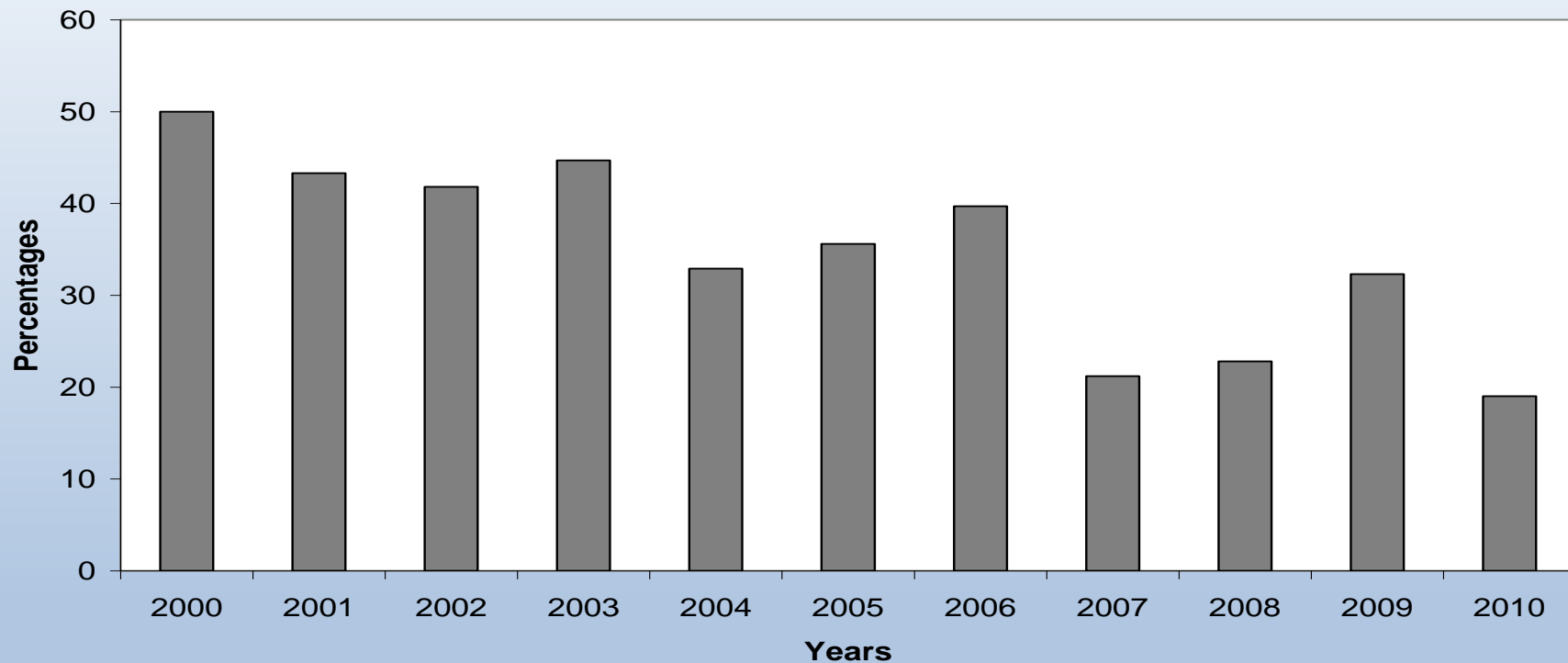




### Most common causes of SCI in 15-35 year olds in the UK per year

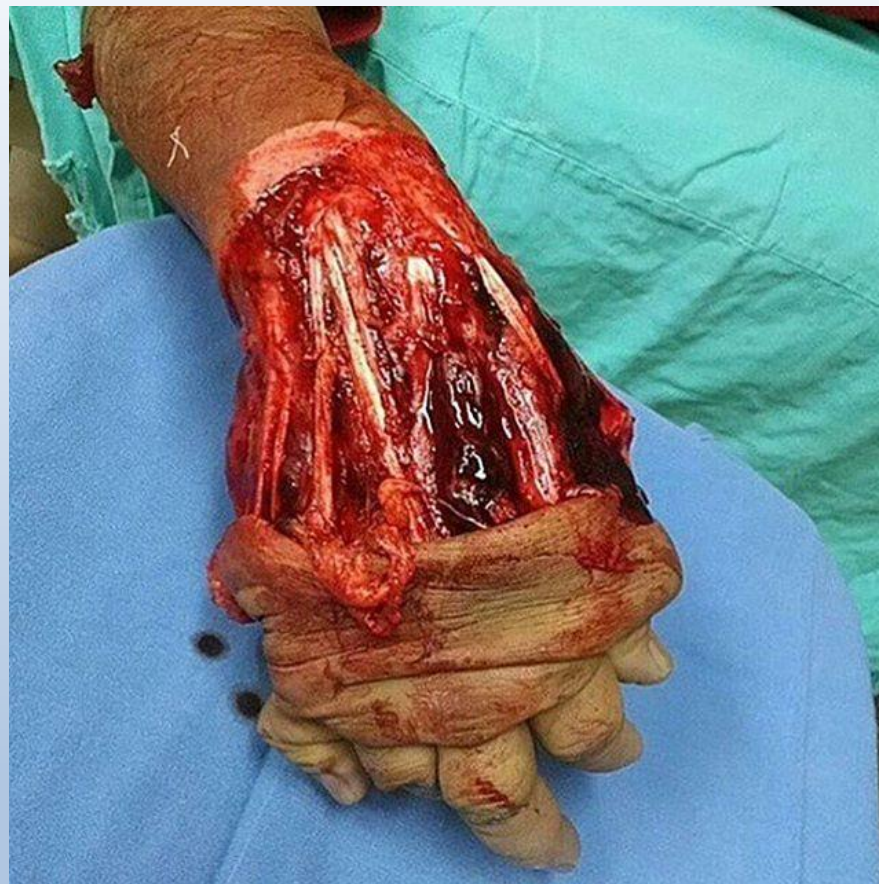


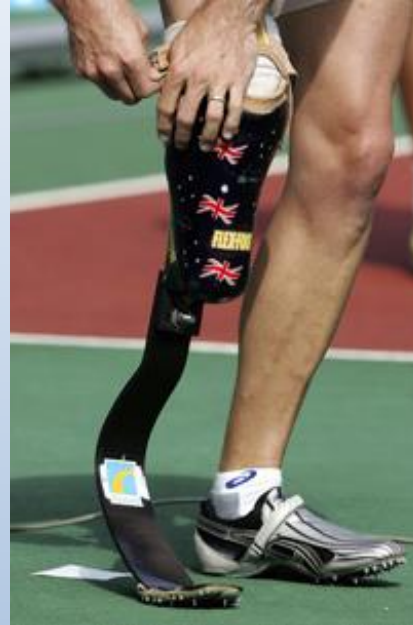
**Figure 1. TSCIs due to road collisions  
as a percentage of total TSCIs**



# DEGLOVING/TRAUMATIC AMPUTATIONS

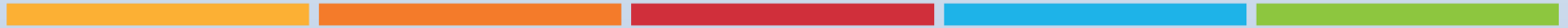








# Second victims







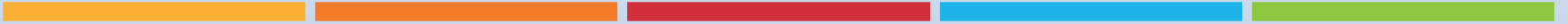
Family

The diagram consists of three light blue ovals with dark blue outlines. Two ovals are positioned at the top, one on the left and one on the right. A third oval is centered below them. Each oval contains text in a green, sans-serif font. At the bottom of the image, there is a horizontal bar composed of five colored segments: orange, orange, red, blue, and green.

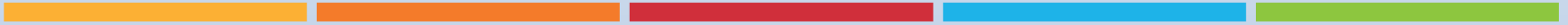
Friends

Work  
Colleagues

# WHAT CAN BE DONE?

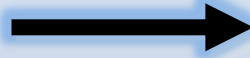


# TRAUMA SYSTEMS





*Ireland from space*



- 27 Receiving Trauma Hospitals
- 2 Adult Neurosurgical centres (Beaumont, Cork University Hospital)
- Pelvic Acetabular Centre (Tallaght)
- Spinal Centre (Mater)
- Burns Centre (St. James's)
- Cardiothoracic centres
- Plastic centres
- Maxillofacial centres
- Rehab Centre (NRH, Dún Laoghaire)



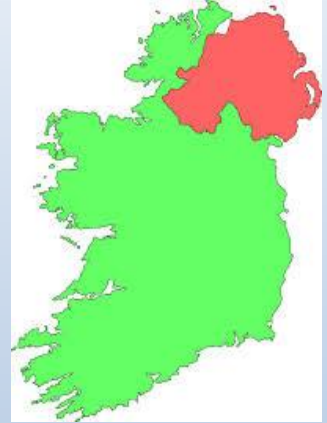


# Trauma System

## ***Fundamental Components***

- injury prevention
- pre-hospital care
- acute care facilities
- post-hospital care
- ***performance measurement through registry/audit***

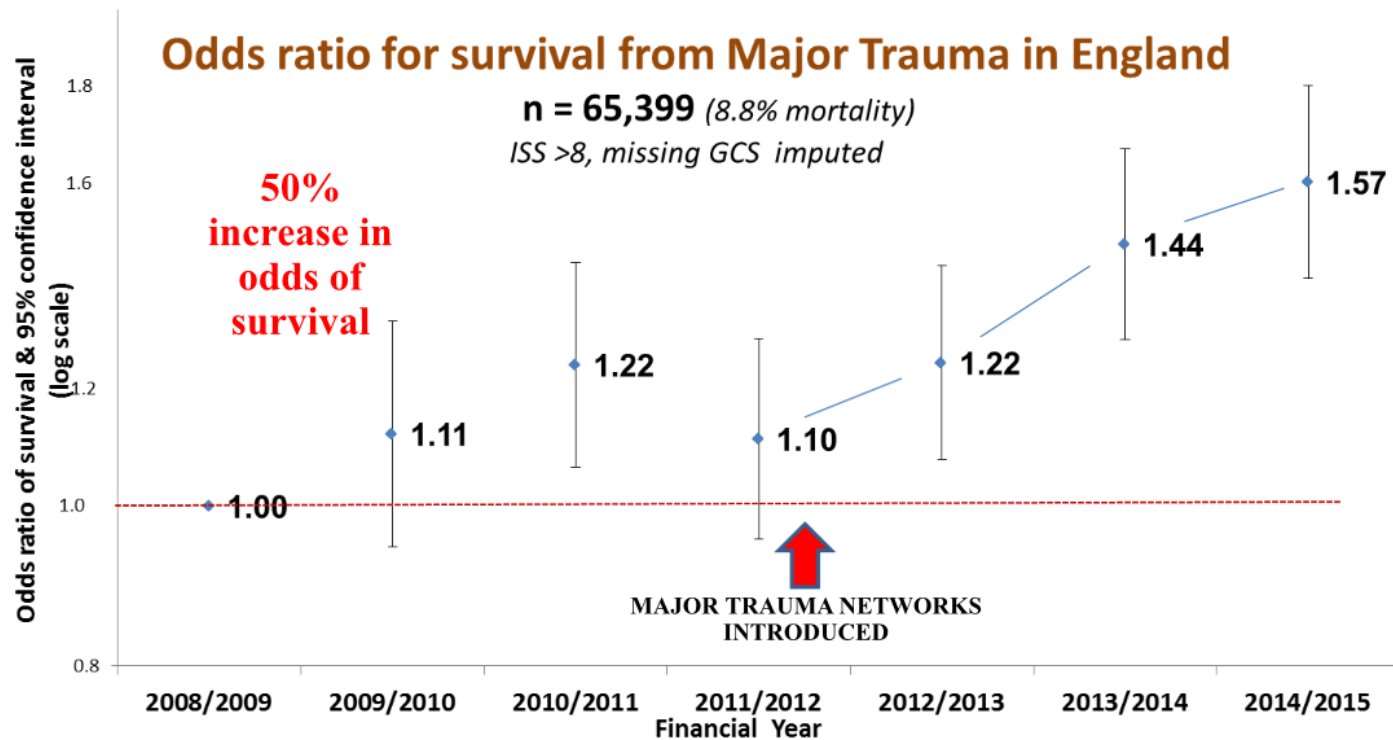
***Improving the journey from roadside to recovery***



## Odds ratio for survival from Major Trauma in England

**n = 65,399** (8.8% mortality)

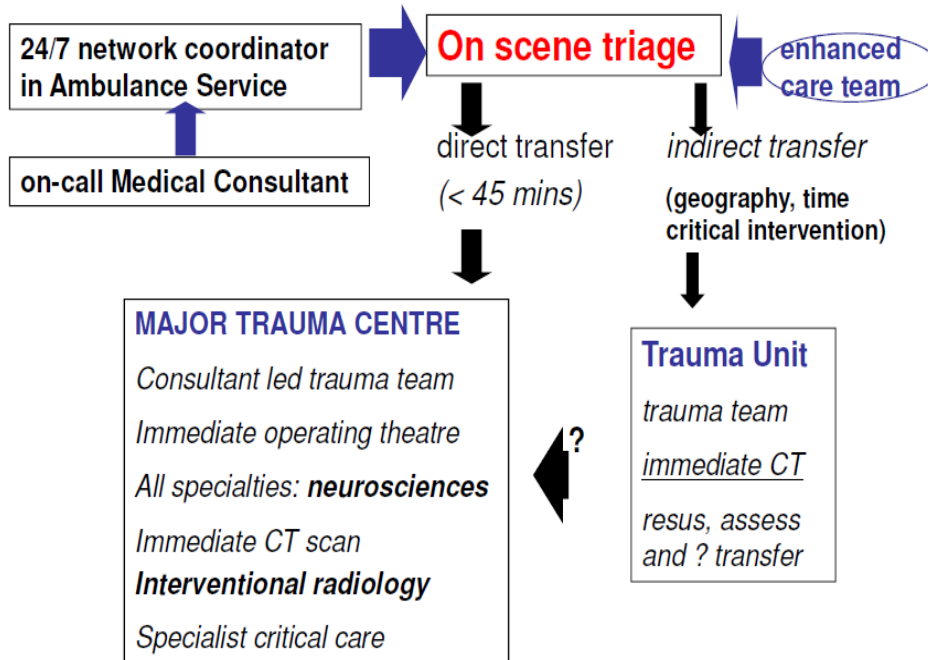
*ISS >8, missing GCS imputed*



## Preferred acute patient pathway



MAJOR TRAUMA



10

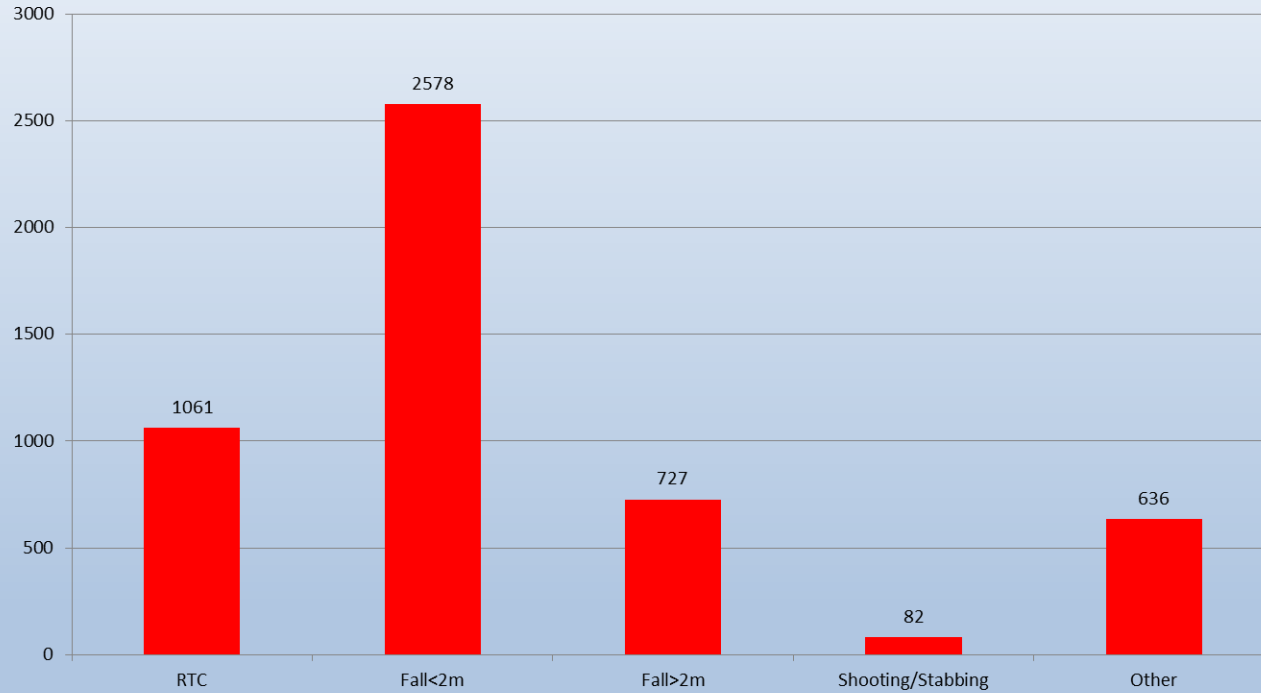


**Prof Keith Willett**

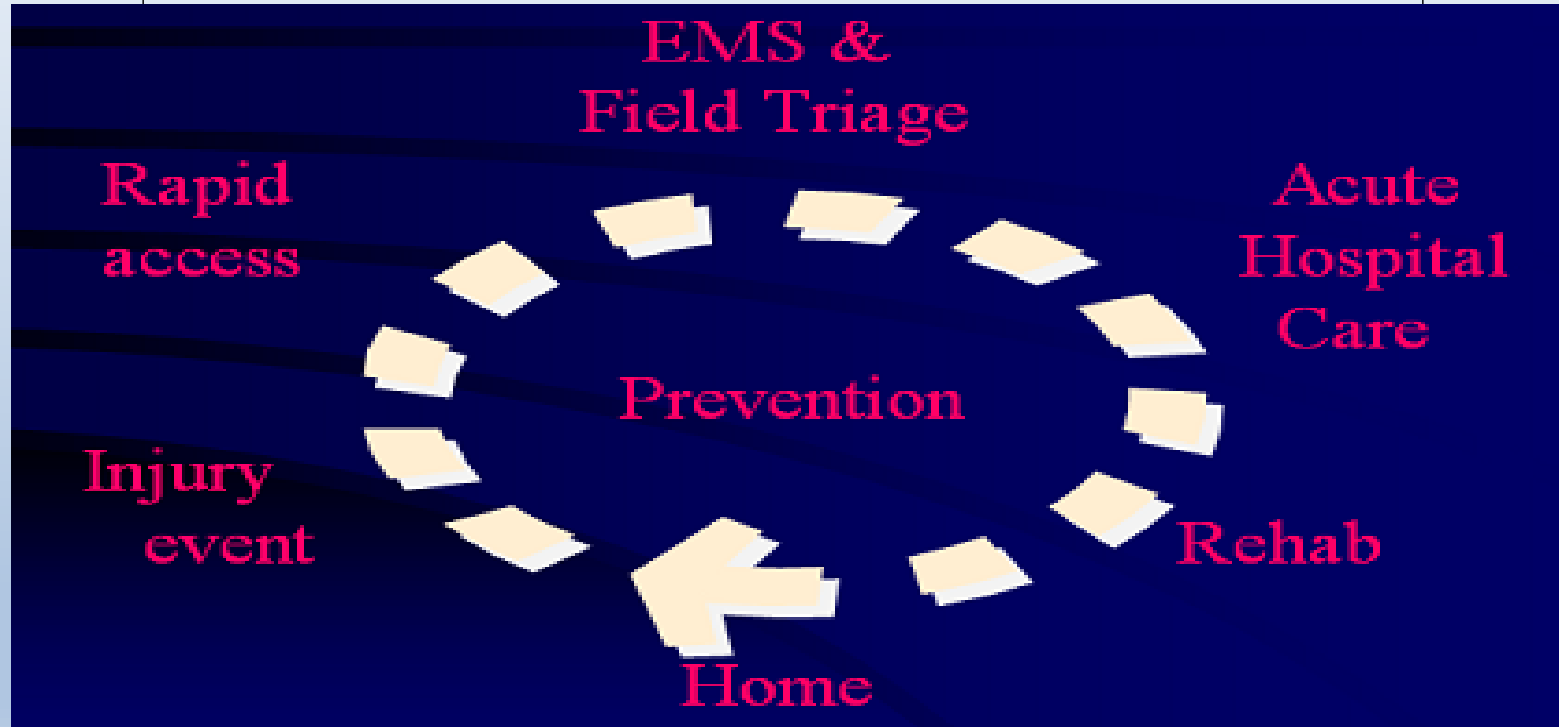


**Prof Chris Moran**

# Mechanism of Injury



An organized Trauma System links the necessary resources to maximize patient recovery



**PREVENTION IS BETTER THAN CURE**



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www.glasbergen.com



**"What fits your busy schedule better, exercising  
one hour a day or being dead 24 hours a day?"**





**NATIONAL MOTORCYCLE  
SAFETY ACTION PLAN**

**2010 – 2014**

Udarás Um Shábháilteacht Ar Bhóithre  
Road Safety Authority





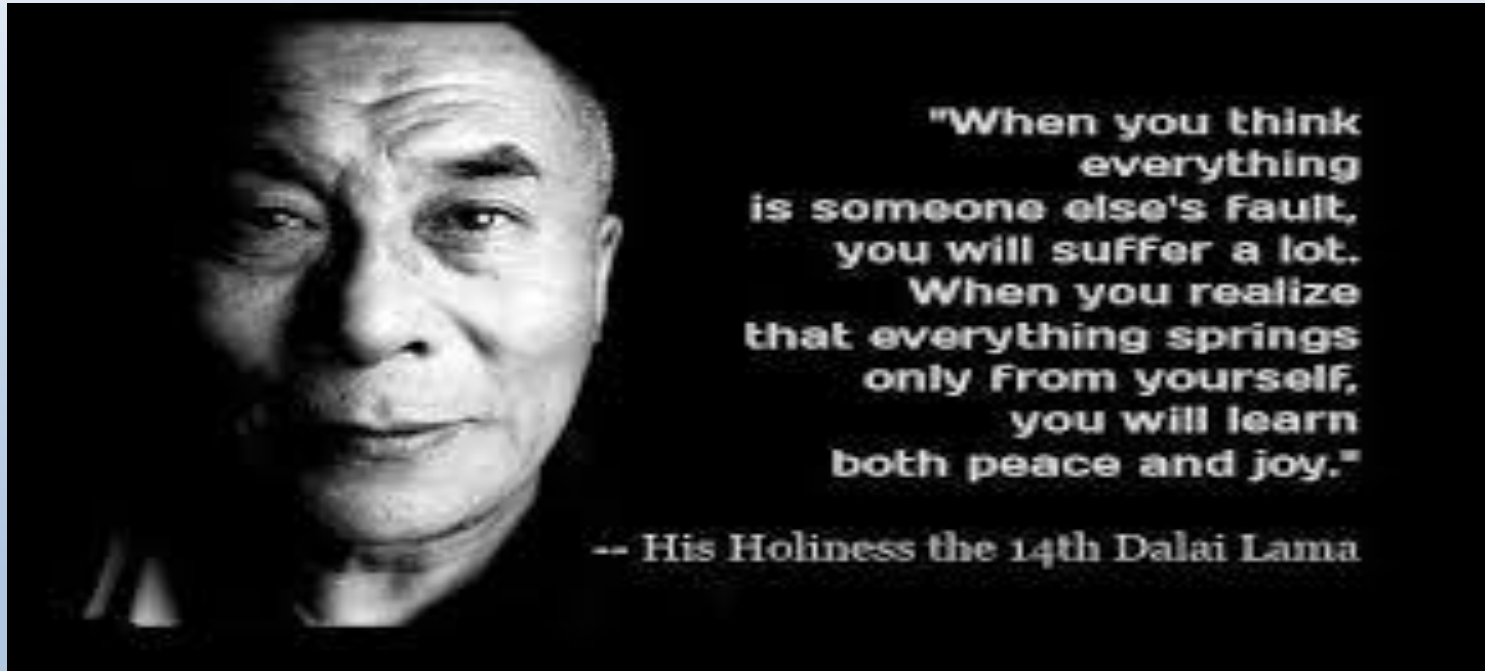
# Education

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# Personal responsibility

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**"When you think  
everything  
is someone else's fault,  
you will suffer a lot.  
When you realize  
that everything springs  
only from yourself,  
you will learn  
both peace and joy."**

**-- His Holiness the 14th Dalai Lama**



**Next time**



**you're out**



**driving...**



**THINK  
THINK**

**BIKE  
BIKER**

**THINK**

[www.dft.gov.uk/think/motorcycles](http://www.dft.gov.uk/think/motorcycles)





# Equipment





# Personal Protection Equipment

Without protective clothing

With protective clothing



Personal Protective Equipment (PPE) - A Guide to Selection & Use (2011)













**THANK YOU  
FOR YOUR  
ATTENTION  
AND  
KEEP SAFE**

