



Injury Surveillance and Prevention in Gaelic Games

**GAA Games Development
Conference**

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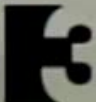
**UCD School of Public Health, Physiotherapy and
Population Science.**

John C Murphy, Medfit Proactive Healthcare, Dublin.

GAA Medical, Scientific and Player Welfare Committee



ALL IRELAND SFC ROUND 2

LAOIS V KILDARE
SATURDAY 6:30PM 

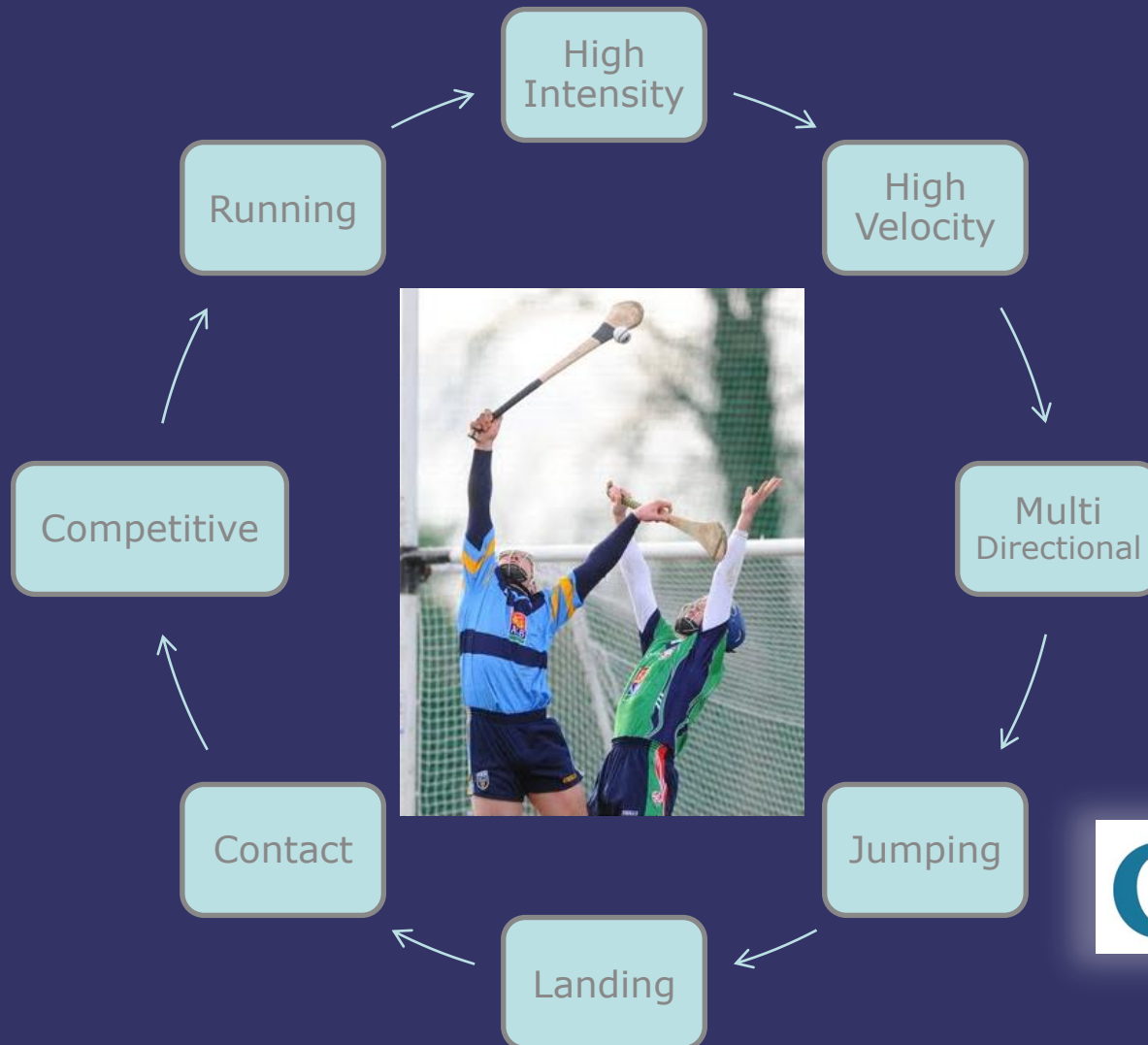
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“Participation in sports and their associated training exposes an individual to a risk of injury.”

(Van Mechelen et al, 1992)

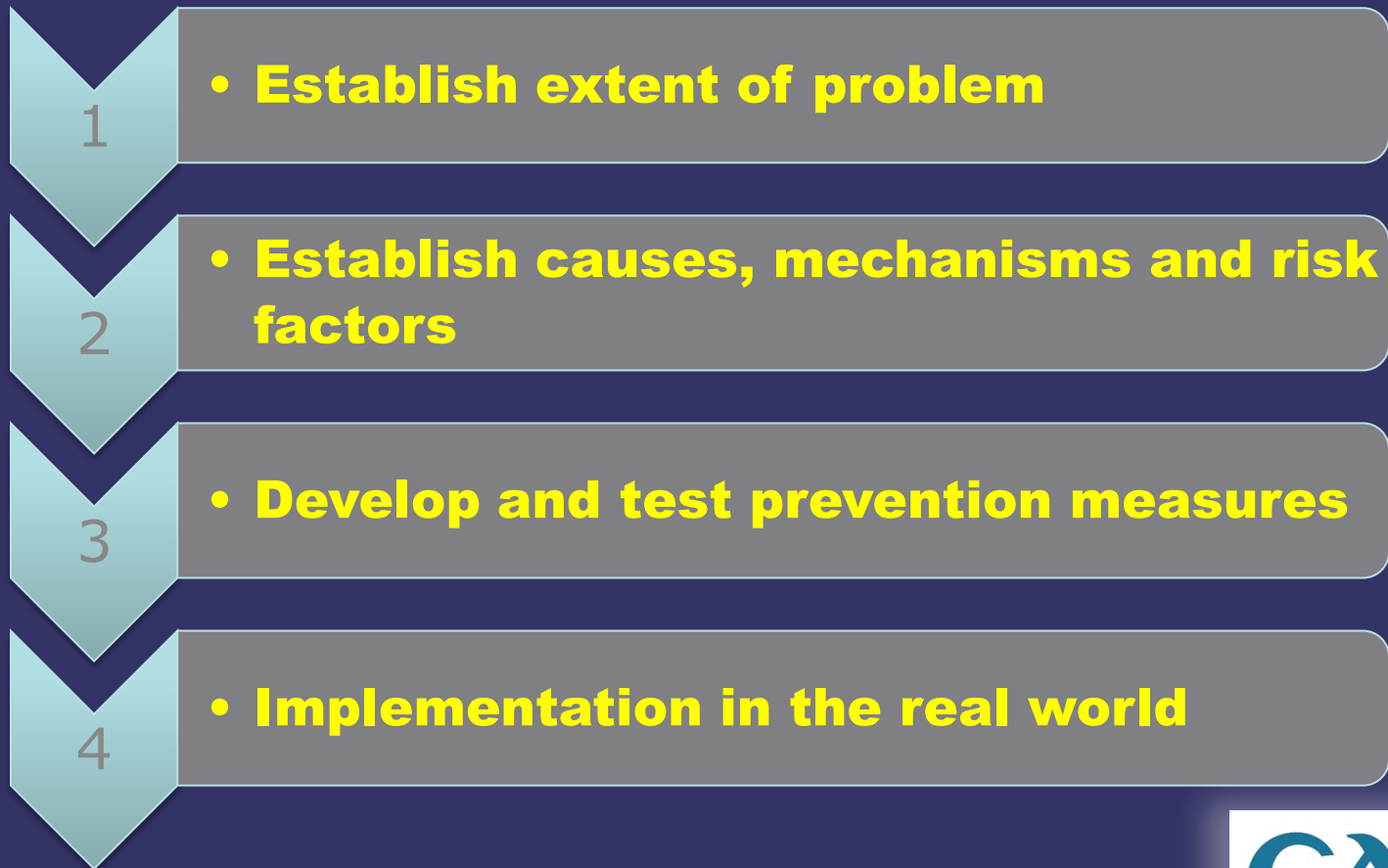


Running, Jumping, Landing, Rapid Twisting/Turning



To make a difference

Injury Prevention Framework



Injury prevention prioritised by GAA Medical Scientific and Player Welfare Committee

- **2007:** National GAA Injury Surveillance Database
- **Aims:** To enhance player welfare and establish the foundation for a reduction in injury rates

Team Physiotherapists or Doctors submit weekly information to a secure online web portal



Main Findings: 2007-11

	Football	Hurling
No. of teams	29	26
No. players seasons	1072	856
Age of players (yrs)	24.6 (18-36)	24.3 (18-36)
Total injuries	1180	1030
Players injured	67%	71%
Players >1 injury	35%	34%
Recurrent	25%	18%



Main Findings

2 out of every 3 players on a team will get injured in one season.

Over $\frac{1}{3}$ players will have multiple injuries.

Up to $\frac{1}{4}$ of injuries will be a recurrence of an old injury.

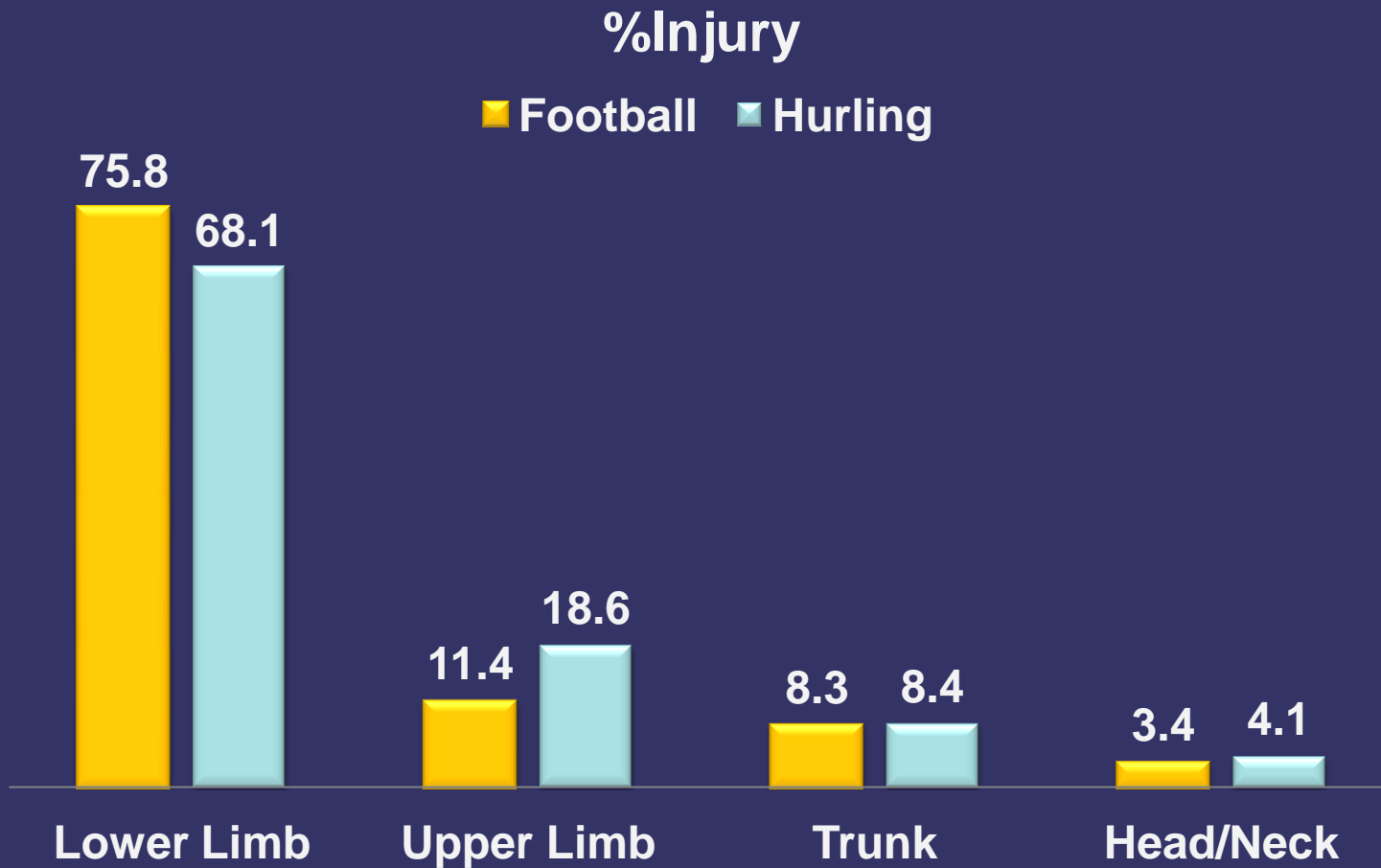


Where do injuries happen?

	Football	Hurling
Match injury	54%	57%
Training injury	39%	35%
Match rate/1000h	56.08	61.75
Training rate/1000h	4.04	2.99
Risk Match:Training	13.9	20.7



Where in the body?



Upper Limb Injury

	Football %	Hurling %
Shoulder	6.9	6.7
Elbow	1.1	0.1
Forearm	0.3	1.5
Wrist	0.8	1.5
Hand and Fingers	1.3	6.9
Thumb	1.1	1.9



Lower Limb Injury

	Football %	Hurling %
Thigh	32.9	22.9
Hamstring	23.4	16.1
Knee	12.5	11.8
ACL	1.4	1.7
Pelvis and Groin	9.2	10.3
Ankle	10.8	9.3
Calf	5.2	5.0
Foot and Toes	2.5	3.5
Shin	0.9	2.9



Head injury and concussion



Position Statement On Concussion In Gaelic Games

December 2007

1. What is a Concussion?

A concussion is the most common form of head injury suffered by players. Concussion can be caused by a direct or indirect hit to the head or body. This causes a change in brain function which results in a variety of symptoms and signs outlined below. With a concussion there are typically no structural brain changes, meaning imaging studies such as CT or MRI scan appear normal.

****Loss of consciousness (LOC) is not necessary for the diagnosis of concussion but if it occurs it requires immediate medical help.**

Some symptoms and signs include:

Symptoms	Signs
Nausea ,vomiting	Loss of consciousness
Dizziness	Poor coordination or balance
Confusion / Amnesia (memory difficulties)	Poor concentration and attention span
Fatigue	Slurred speech
Light headedness	Vacant stare / glassy eyed
Headaches	Slow to answer question or follow direction
Irritability	Inappropriate playing behaviour
Disorientation	Decreased playing ability
Seeing bright lights or stars	Fitting / Convulsion
Feeling of being stunned	Personality change
Depression & Sleep disturbance	Displaying inappropriate emotions

Concussion should be suspected in the presence of **ANY ONE** or more of either symptoms, signs or memory difficulties.

Football

- Injuries to head 3% of total
- Concussion 29% head injuries

Hurling

- Injuries to head 2.6% of total
- Concussion 30% head injuries



How long will a player be out?

	New (days)	Recurrent (days)
Hamstring	16.5	33
Knee	15	14
Pelvis/ Groin	10.5	23
Ankle	12	6

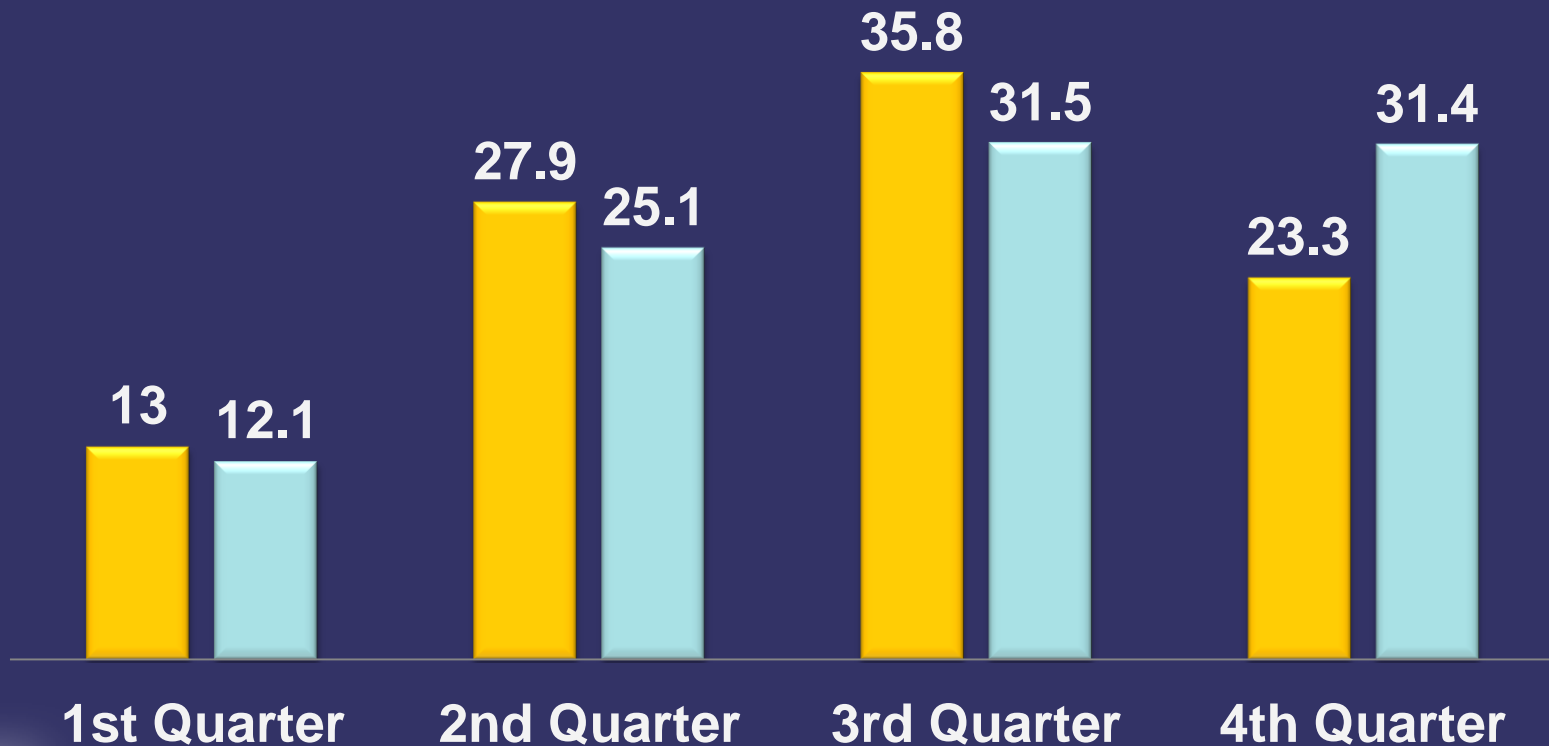
More than 2 weeks with a new hamstring injury,
but almost 5 weeks with a recurrent hamstring.



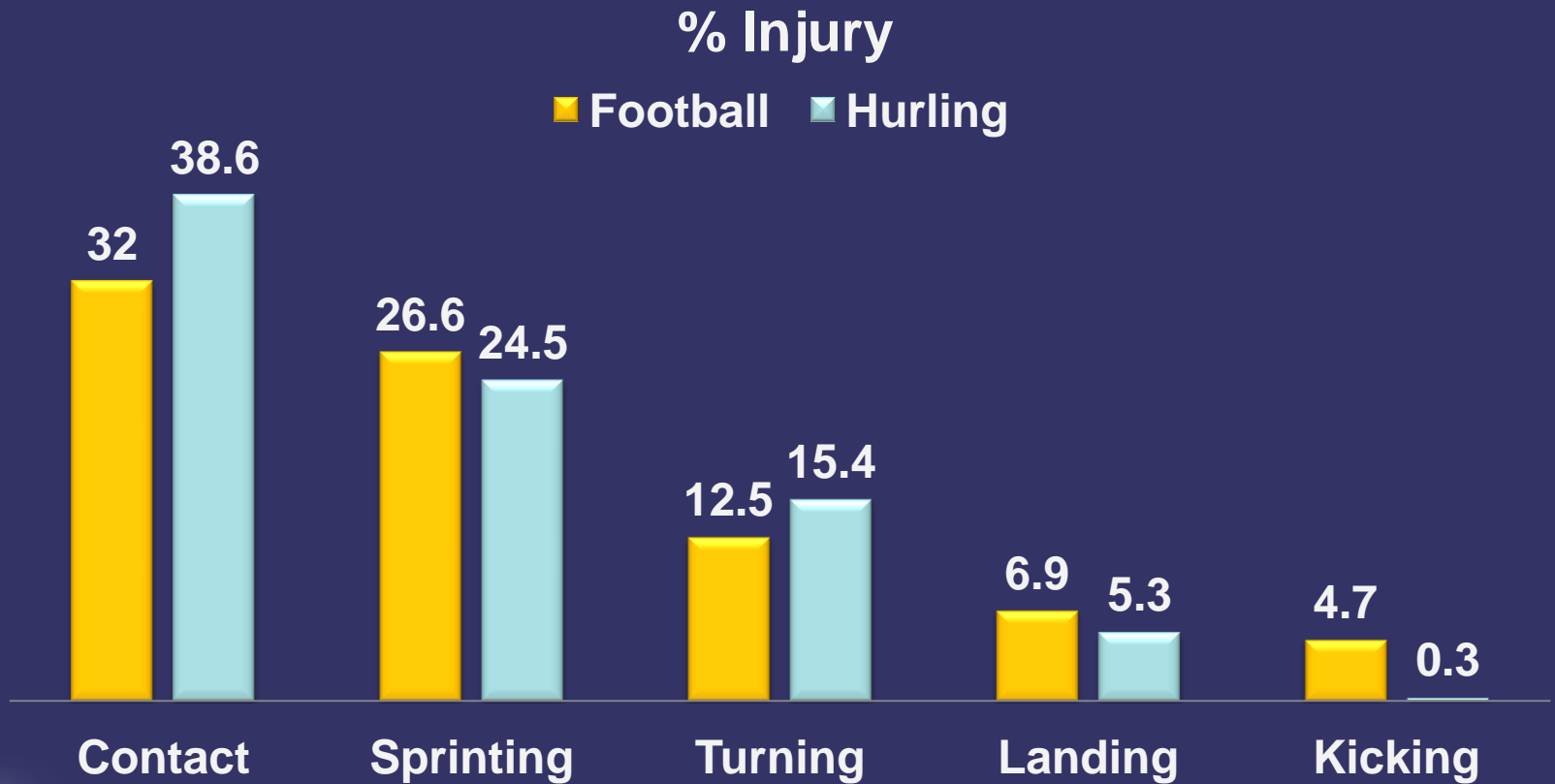
When do they happen?

% Injury

■ Football ■ Hurling



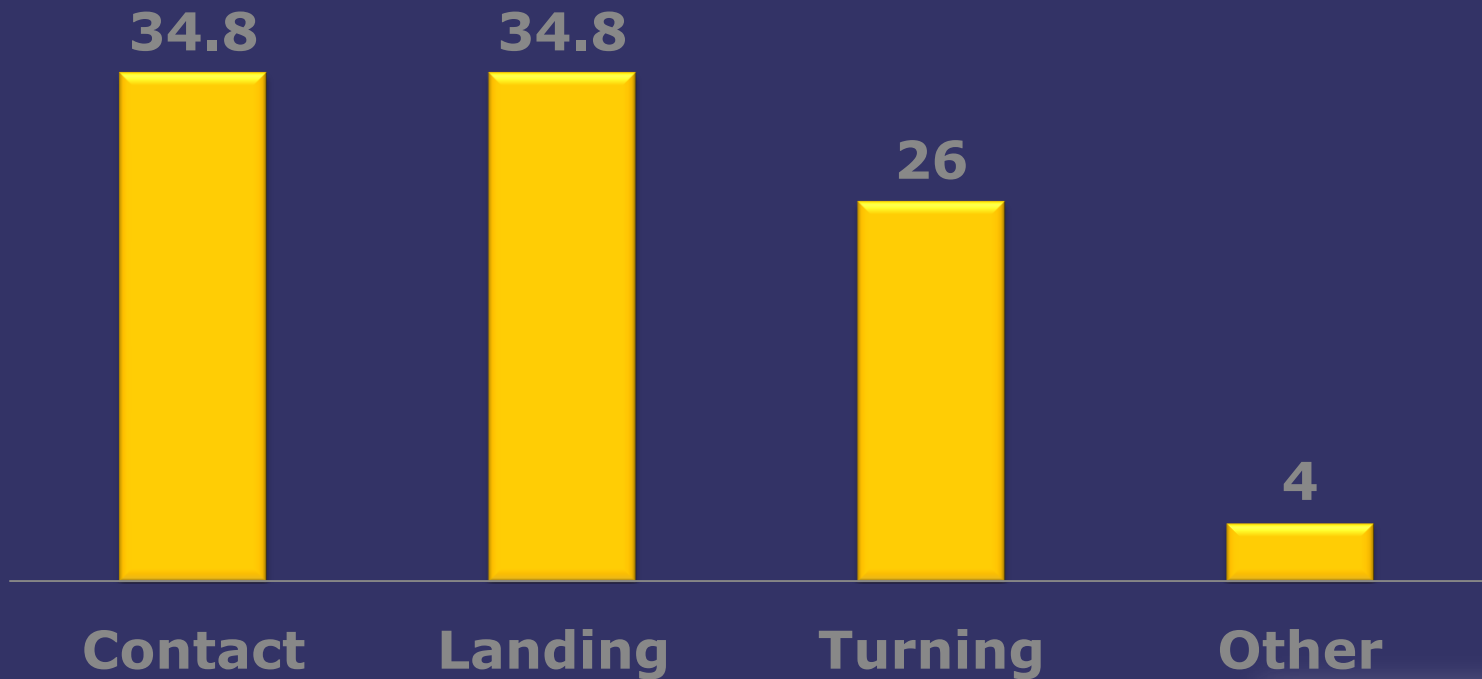
How are injuries happening?



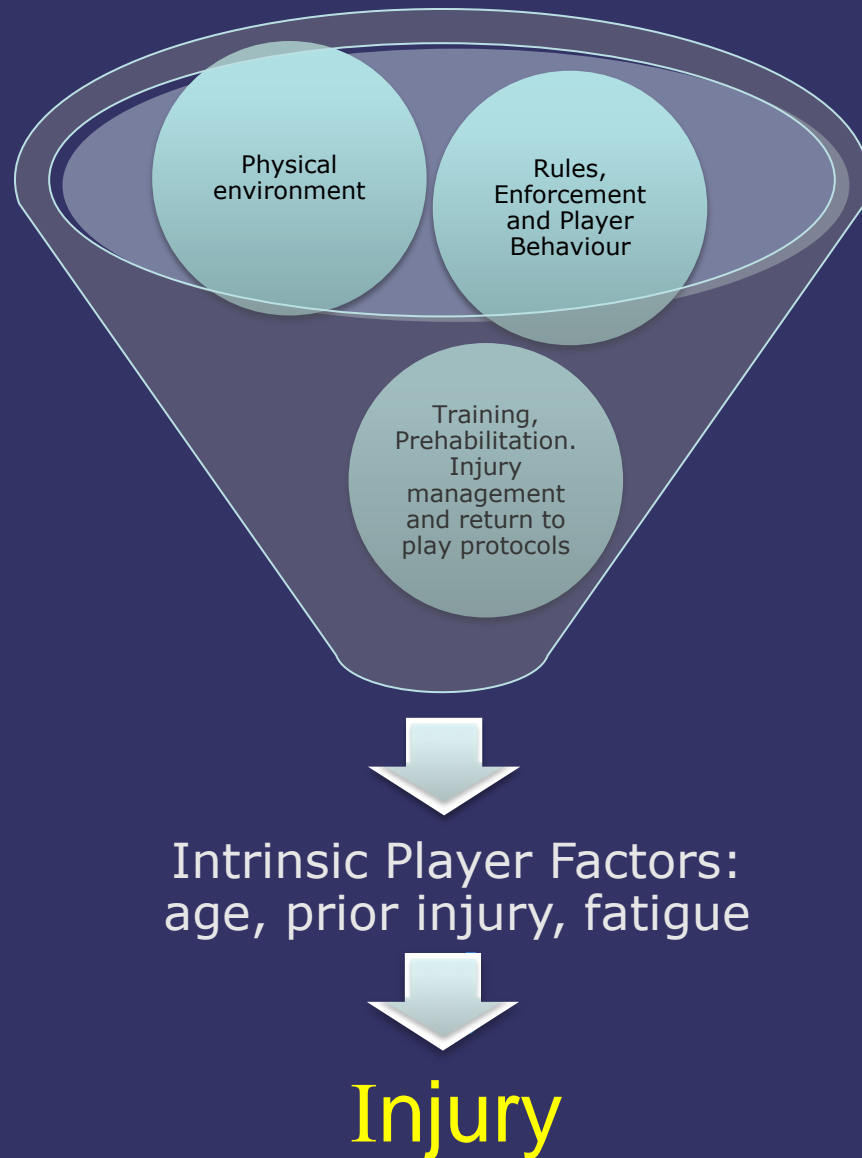
ACL injuries

% ACL injuries

■ ACL



Multiple factors in injury



Neuromuscular Control

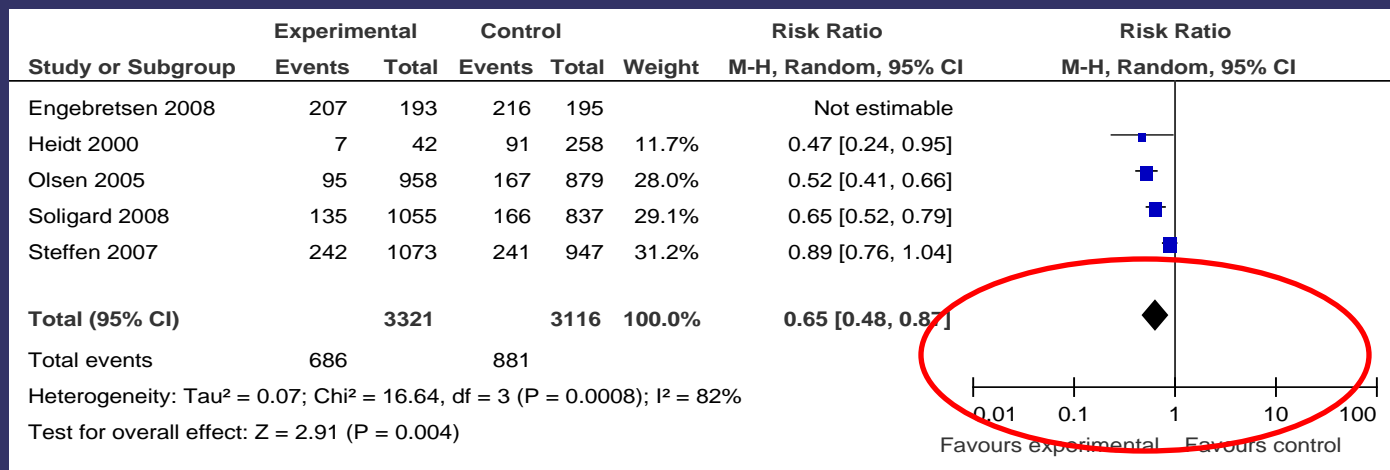
- **Allows the player to fire appropriate muscles to hold a good and strong position of the limbs.**
 - to decrease the loads and forces going through joints
 - protecting their bones, ligaments, cartilage, muscles from high loads sustained during training and matches.
- **Neuromuscular Training includes:**
 - Balance
 - Strength and Core
 - Plyometric
 - Agility
 - Sport-specific exercises



Analysis of existing research:

Multifaceted neuromuscular training

* Reduction in all injuries

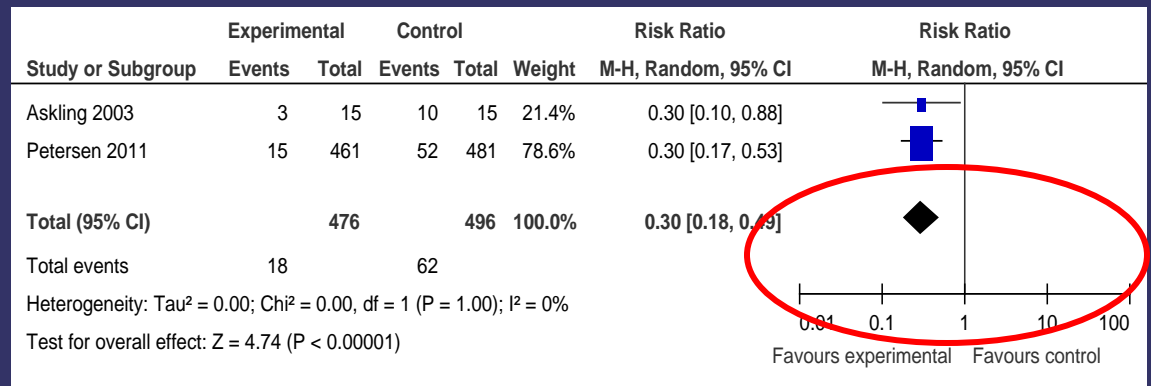


* Reduced ankle injuries

* Reduced knee injuries



Hamstring strengthening



GAA 15 - Injury Prevention Project

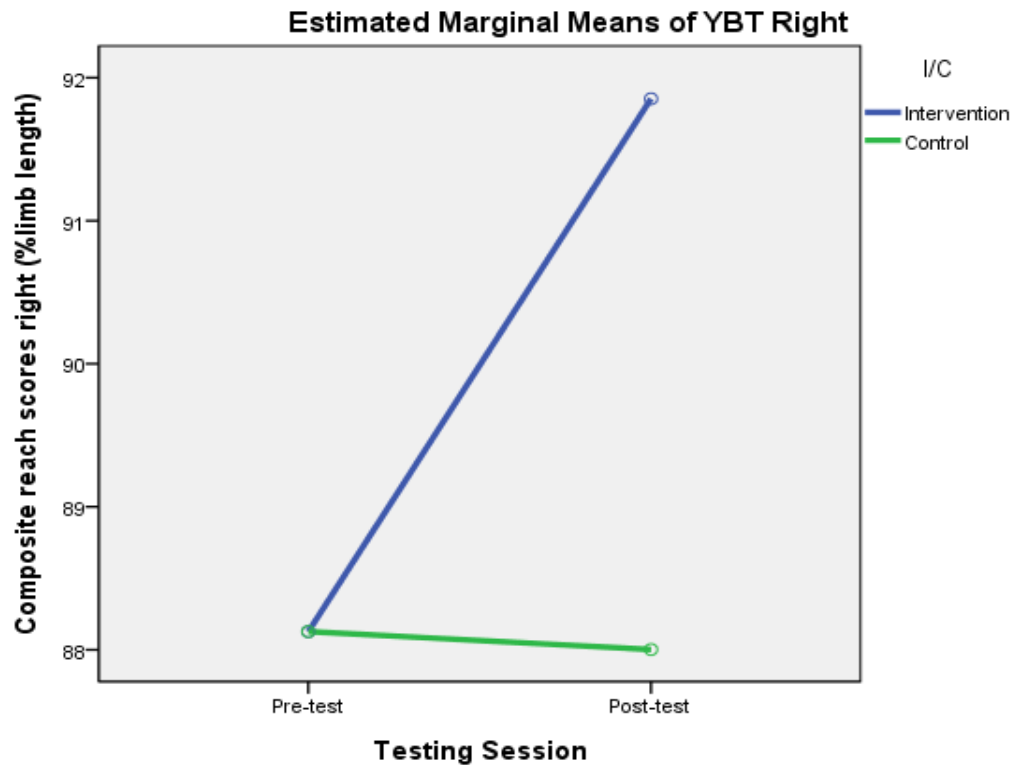
- Development of GAA specific training programme
Aim to reduce neuromuscular risk factors
- Tested in 4 teams at UCD: Already trained players
- **Group 1:** 41 players: 15 min warm up + normal training
- **Group 2:** 37 players: Normal training
- **Which group would demonstrate better improvements?**





RESULTS:

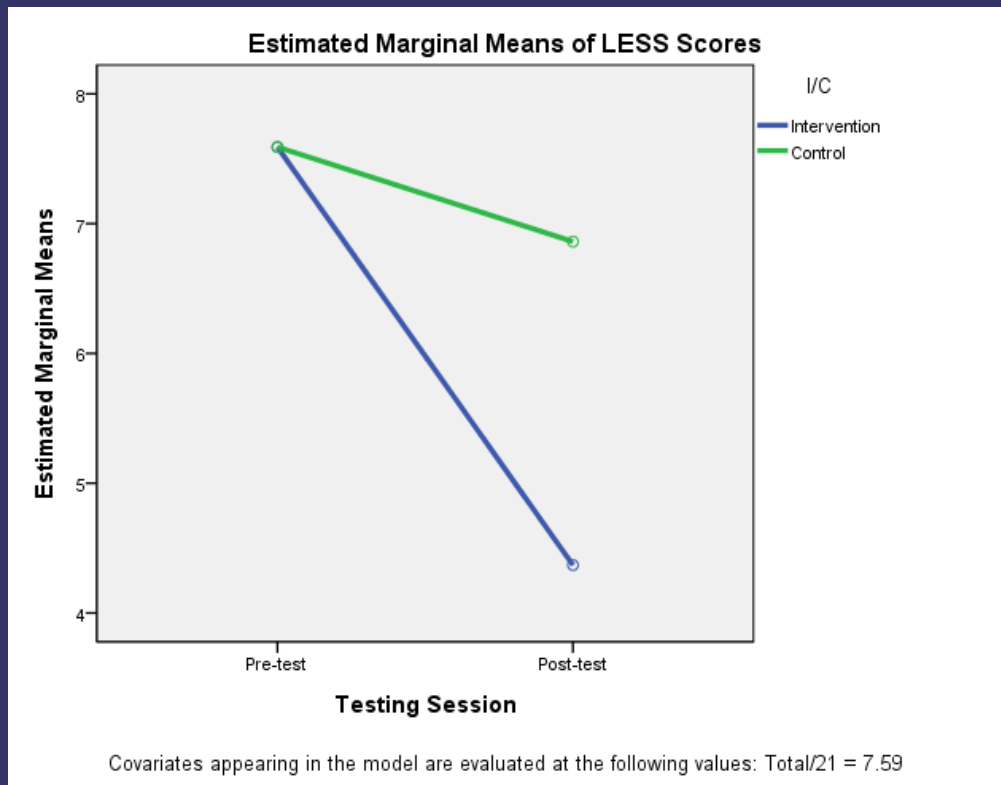
Y Balance Test: significantly greater improvement in training group



Covariates appearing in the model are evaluated at the following values: BaselineCompR = 88.1273

RESULTS:

**Landing Error Score:
Significantly reduced after
training**



Conclusions

- The programme, integrated into training warm up was effective in reducing neuromuscular risk factors for injury.
- Novel research in male sport; first randomised controlled trial in Gaelic games.



Take Home Message

- **Playing Gaelic football, Hurling and Camogie has an associated injury risk**
- **Proactive approach by GAA and LGFA**
- **Common injuries: Hamstring, Knee, Ankle, Groin**
- **Some injuries preventable, some are not**
- **International research shows injury incidence can be reduced by neuromuscular training.**
- **GAA-specific training programme reduces injury risk factors**



Acknowledgments

- **GAA Medical, Scientific and Player Welfare Committee.**
- **All of the teams, the Physiotherapists and the Doctors who have taken part in the Database.**
- **UCD GAA, Mr. Dave Billings, Fresher Football and Hurling teams. Team management.**

