



O'Neills® + ULSTER GAA

COACHING AND GAMES DEVELOPMENT CONFERENCE

Player Welfare & Injury Prevention: What now?

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WWW.ULSTER.GAA.IE



Making Headlines

- GAA Injuries: The tipping point

Conor McCarthy, Irish Examiner January 28th 2012

- 'Rugby players don't know how they do it'

Marie Crowe, Sunday Independent January 29th 2012

- “GAA players pushed beyond breaking point.”

Dr Tadhg MacIntyre, Belfast Telegraph February 9th 2012

- “Rebel rages that Cork GAA left him with €7000 medical bill”

Fintan O'Toole, Irish Examiner February 20th 2012

- “Cruciate curse crippling GAA”

Irish Examiner February 16th 2012



Still making headlines...

- “Knee Injuries top list as GAA shell out €8m in insurance claims”

Irish Independent Feb 2014

- “Please stop this abuse”

Sunday World Jan 2014

- “Are hip injuries just the price we pay for a stronger, faster, more powerful game”

Irish Times Jan 2014

- “Moyna warns of training health risks”

Irish independent Jan 2014



Groundhog Day....

- What's the point?

Joe Brolly, Gaelic Life, 11th January 2015

- Saving the GAA

Joe Brolly, Gaelic Life, 19th January 2015

- Enough words, now its time for action

Joe Brolly, Gaelic Life, 26th January 2015

- Treat the lifeblood with respect

Joe Brolly, Gaelic Life, 8th February 2015

- Paraic Duffy says GAA to tackle fixtures and welfare issues
Irish Times 28th January 2015

- Its not dark yet, but it's getting there
Eamon Sweeney, Sunday Independent
18th January 2015

- Earley pays price for playing through pain
Irish News, 19th February 2015



How big is the problem really?

- What is the reality?
- How has this come about?
- What can we do about it?



What Percentage of players in a senior inter county squad will get injured each year?

67%

Incidence of Injury in Gaelic Football

A 4-Year Prospective Study

John C. Murphy,* MSc, Edwenia O'Malley,^{††} BSc, Conor Gissane,[§] PhD,
and Catherine Blake,[†] PhD

Investigation performed at University College Dublin, Dublin, Ireland





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Some players get injured more than others

34 players = 40 injuries

1.2 injuries per player per season

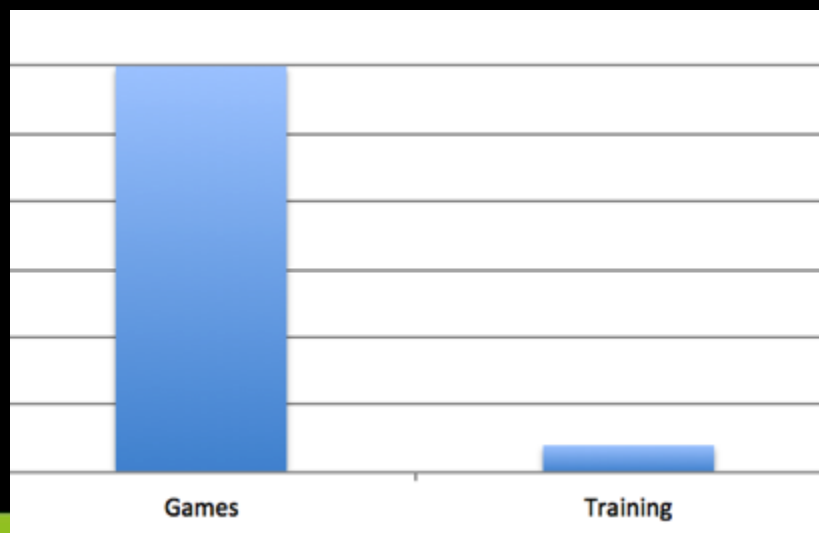


More likely to get injured during matches or training?

Matches

15 times more likely to get injured in matches

Bigger the match the more likely you are to get injured





25% of all injuries are
recurrent injuries

Previous injury is the No. 1 risk
factor for future injury



What are the most common injuries in GAA?

- Hamstrings 20%
- Pelvis/hip/groin 13%
- Knee 11%
- Ankle 10%



Hamstrings

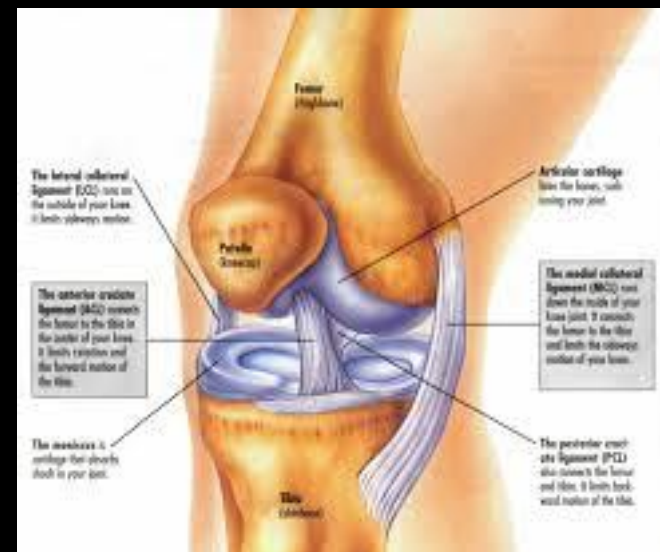
- 2007-13 average 18%
- 2014 season 26%
- Why the surge?





ACL

- 1% of total
- Large time loss
- 1/squad/biannually
- Knee OA unavoidable
- Significant changes in 10-15 yrs
- Financial Loss
- QOL



The Long-term Consequence of Anterior Cruciate Ligament and Meniscus Injuries Osteoarthritis

L. Stefan Lohmander, MD, PhD^{†,*}, P. Martin Englund, MD^{†,‡}, Ludvig L. Dahl, PT[†], and Ewa M. Roos, PT, PhD[†]



How do GAA injuries happen?





Contact v Non contact

32% v 68%

- Sprinting 27%
- Turning 12%
- Landing 7%
- Kicking 5%

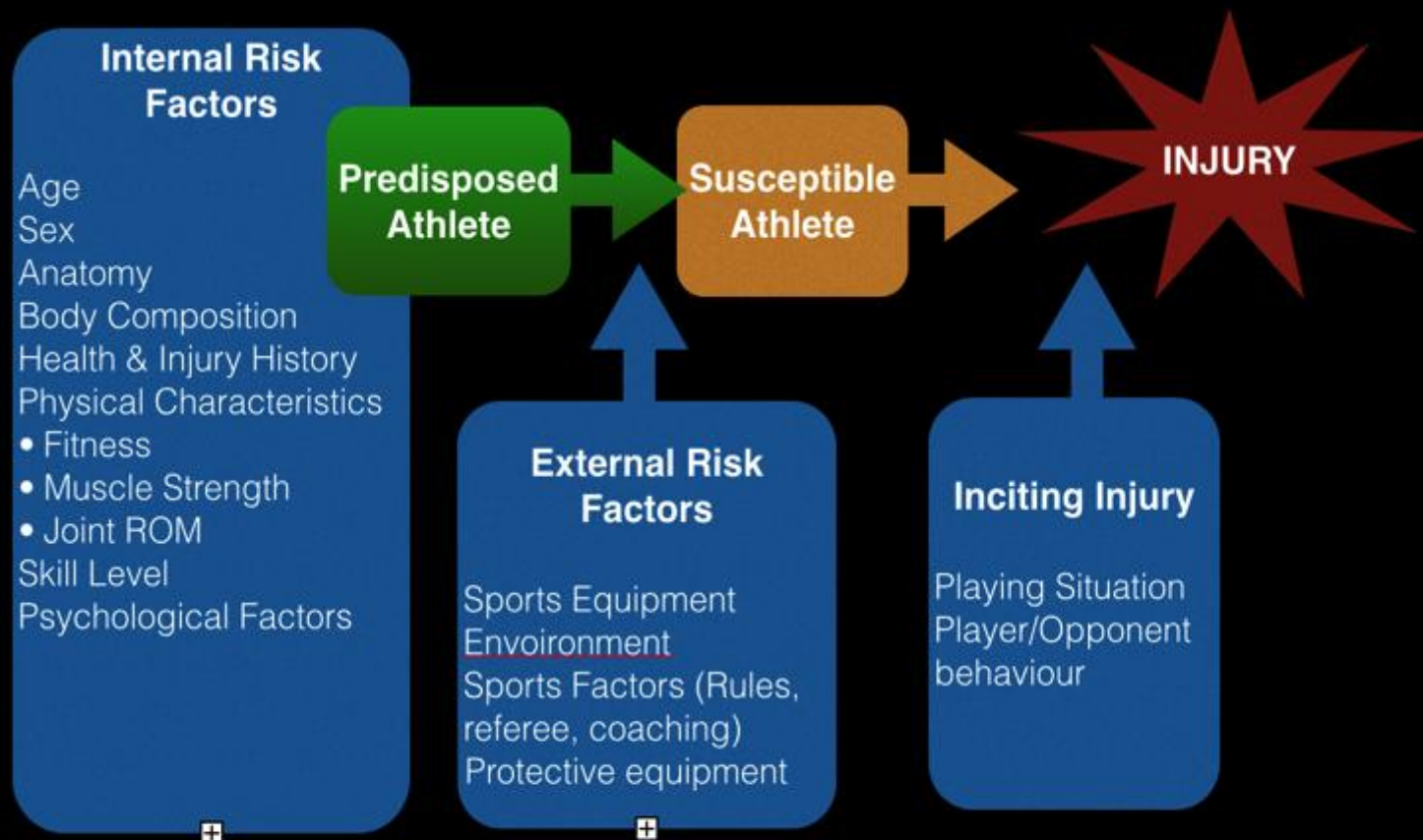


Why do injuries happen?





The causes of acute sports injuries



Oslo Sports Trauma Research Group

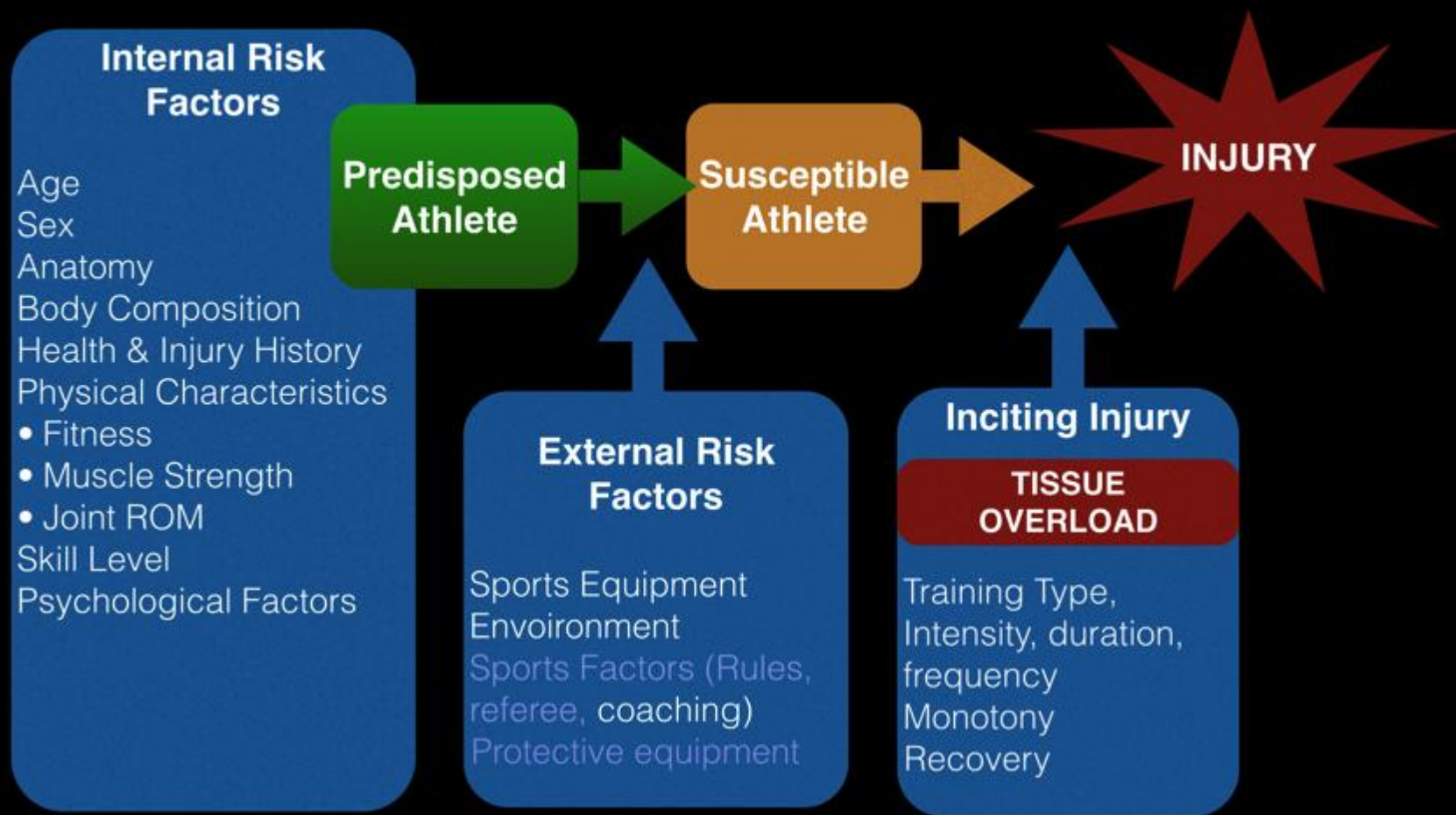


Unfortunately its not as simple as that...





The Causes of Overuse Sports Injuries



Oslo Sports Trauma Research Group



Summary

- High injury rate in GAA (2/3 of squad)
- 68% of all injuries are non-contact injuries (?preventable)
- 25% of all injuries will reoccur
- Previous injury, decreased flexibility, strength and control can cause future injury
- Big 4 - Hamstring, groin, knee, ankle
- Potentially large number of undocumented overuse injuries
- Some Injuries are catastrophic and having wider ranging effect beyond sporting life



Why are we so injury prone?

- Previous injury, decreased flexibility, strength and control can cause future injury
- Fixture calendar
- Decreased recovery / Overtraining / Non-application of sports science
- Early specialisation
- Developing S&C culture

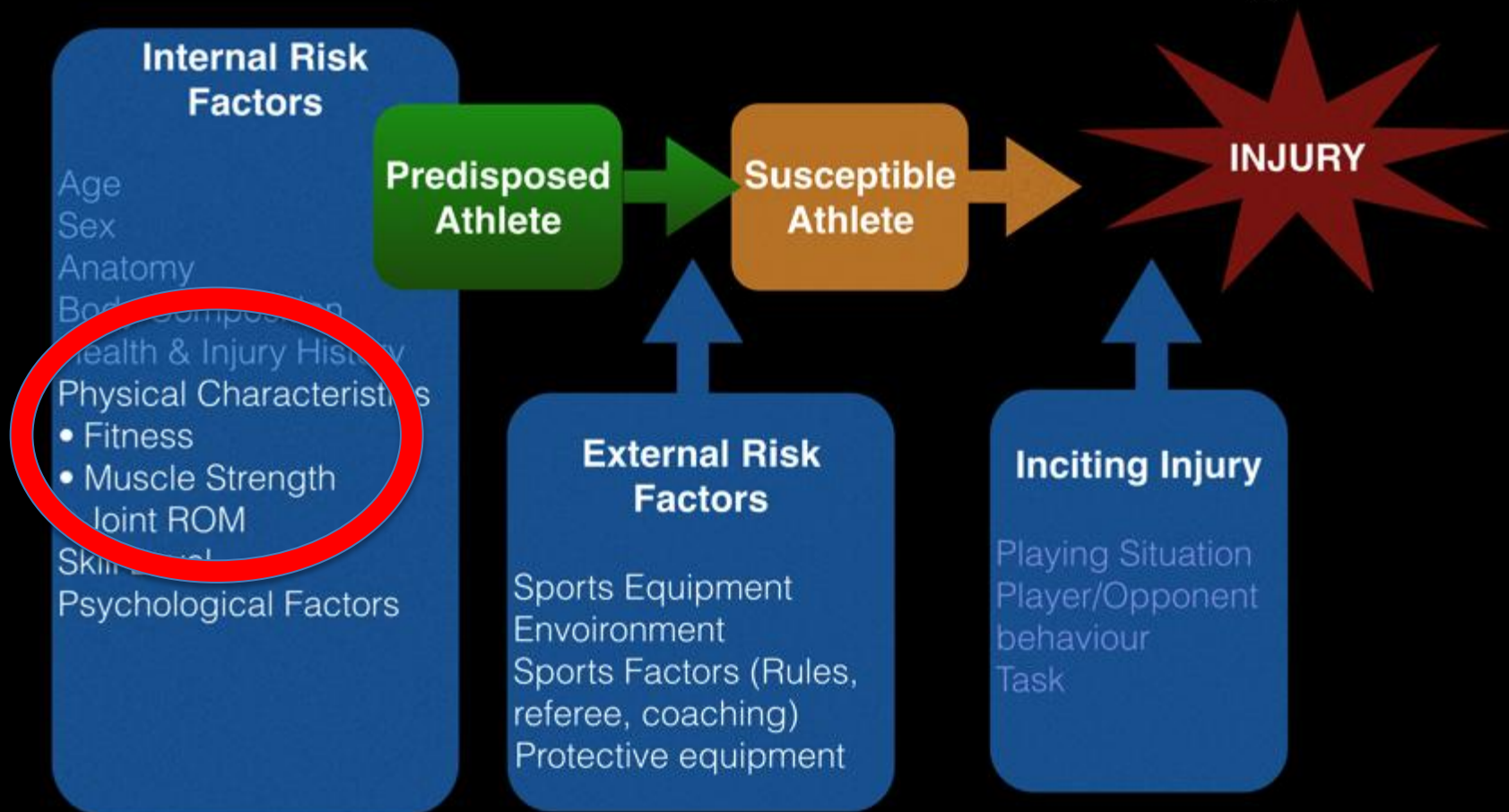


What can we do about it?





What factors can we change?







Individual Intervention or Group Intervention




Group Intervention

activategaa.sini.co.uk — Home — Activate GAA Warm-up

 **activate**
GAA warm-up


 **Sports Institute**
Northern Ireland



[Home](#) [About](#) [Training Videos](#) [Downloads](#)

The Activate GAA Warm-Up: Enhance Performance and Reduce Injury

Activate is a GAA specific warm-up for training and matches that improves movement skills and reduces injury. It is a dynamic warm up which includes the ball. This website contains resources and training videos to complement [Ulster GAA coaching courses](#) and support the delivery of the warm-up to squads.





Contact v Non contact

32% v 68%

- Sprinting 27%
- Turning 12%
- Landing 7%
- Kicking 5%



activategaa.sini.co.uk/training-videos/ — Training Videos - Activate GAA Warm-up

untitled folder ▾ Damian Grif...dic Surgeon Suggested Sites Web Slice Gallery

Training Videos

Activate is a dynamic GAA warm-up comprised of three phases designed to enhance performance and reduce injury. All [three](#) phases should be performed on training nights, with only phases 1 and 3 performed before games. Phase 2 has two circuits which should be alternated monthly.

```
graph LR; P1[Phase 1  
Running, Cutting and  
Landing Mechanics] --> P2[Phase 2  
Circuit 1: Strength,  
Plyometrics and Balance]; P2 --> P3[Phase 3  
Agility and Power];
```



activategaa.sini.co.uk/training-videos/ — Training Videos - Activate GAA Warm-up

Phase 1: Running, Cutting and Landing Mechanics

Drill 1
2 reps

Out: Jog (Upper body focus)
In: A Skip

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Phase 1: Running, Cutting and Landing Mechanics

Drill 2
2 reps

Out: ½ Pace Run (lower body focus)
In: Ice Hockey Stops

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Phase 1: Running, Cutting and Landing Mechanics

Drill 3
2 reps

Out: Jump, Catch and Land
In: Pick Ups

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Phase 1: Running, Cutting and Landing Mechanics

Drill 4
2 reps

Out: Partner Shuffle
In: Lunge Stops

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Phase 1: Running, Cutting and Landing Mechanics

Drill 5
2 reps


Out: Slow Plant & Cut
In: Squat Stops


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GAA warm-up


Sports
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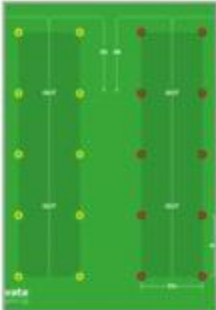


Home About Training Videos Downloads

Downloads

[Activate Coaching Guide](#)


[Activate Quick Guide](#)


[Activate Set Up](#)


Useful Links

[Ulster GAA](#)

[Sports Institute Northern Ireland](#)

[FIFA 11+](#)



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Downloads - Activate GAA Warm-up


activategaa.sini.co.uk/wp-content/uploads/2014/01/Long-guide-amended.pdf

www.activategaa.sini.co.uk

PHASE 2 – STRENGTH, PLYOMETRICS AND BALANCE

Alternate between Circuits 1 and 2 on a monthly basis


CIRCUIT 1



Exercise 3
10 reps
– 5 reps each leg

PARTNER PUSH INTO LUNGE (STRAIGHT)


- Player drops into a forward lunge after expected straight push in the back from partner.
- Keep front knee in line with hip and ankle.
- Land and push off heel.



Exercise 4
5 reps initially (increase to 10 over time)

NORDIC HAMSTRING CURL


- Partner keeps feet firmly pressed to ground.
- Head, body and thighs stay in line.
- Movement should only occur in the knees.



Exercise 5
Hold for 10secs (increase to 30secs over time)

FRONT PLANK

- Assume press-up position with hands under shoulders.
- Keep body in a straight line.
- Tighten abdominals and hold trunk stable.




Exercise 6
10 reps each side

SIDE PLANK WITH LEG LIFT – BENT KNEE

- Flex lowermost leg to 90°.


CIRCUIT 2



Exercise 3
10 reps

PARTNER PUSH INTO LUNGE (MULTI-DIRECTIONAL)


- Player drops into a lunge after varied push from behind.
- Prevent knee from corkscrewing in.
- Land and push off heel.



Exercise 4
5 reps initially (increase to 10 over time)

NORDIC HAMSTRING CURL


- Partner keeps feet firmly pressed to ground.
- Head, body and thighs stay in line.
- Movement should only occur in the knees.



Exercise 5
10 reps holding for 2 secs

FRONT PLANK WITH LEG LIFT

- Assume press-up position with hands under shoulders.
- Keep body in a straight line.
- Alternate leg lifts without losing form.



Exercise 6
10 reps each side

SIDE PLANK WITH LEG LIFT – STRAIGHT LEG

- Lie on side and support body on elbow with




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Downloads - Activate GAA Warm-up

activategaa.sini.co.uk/wp-content/uploads/2014/01/Long-guide-amended.pdf


Reader



Exercise 7
5 reps per leg

SPLIT LEG SQUATS


- Drop back knee to the ground.
- Prevent front knee corkscrewing towards middle.
- Prevent front knee from passing toes.



Exercise 7
10 reps

SCISSOR JUMPS


- With hands on hips, assume split squat position and jump vertically.
- Knees stay in line with feet and hips during transitions.



Exercise 8
5 reps per leg

LATERAL HOP AND HOLD


- Land on a slightly flexed knee with weight on forefoot.
- Upper body & hip should remain aligned.



Exercise 8
5 reps per leg

DIAGONAL HOP AND HOLD


- Remember to pause after each small diagonal hop.
- Upper body & hip should remain aligned.



Exercise 9
10 reps

PRISONER SQUATS


- With feet hip width apart and facing forwards: break at hips to sit back and down.
- Aim to get thighs to horizontal.



Exercise 9
10 reps

PRISONER SQUATS


- With feet hip width apart and facing forwards: break at hips to sit back and down.
- Aim to get thighs to horizontal.



Exercise 10
5 reps per leg

COUNTER MOVEMENT JUMP

- From a semi-squat use arms to jump high in air.
- Keep feet hip width apart.
- Prevent knees coming together when jumping and landing.



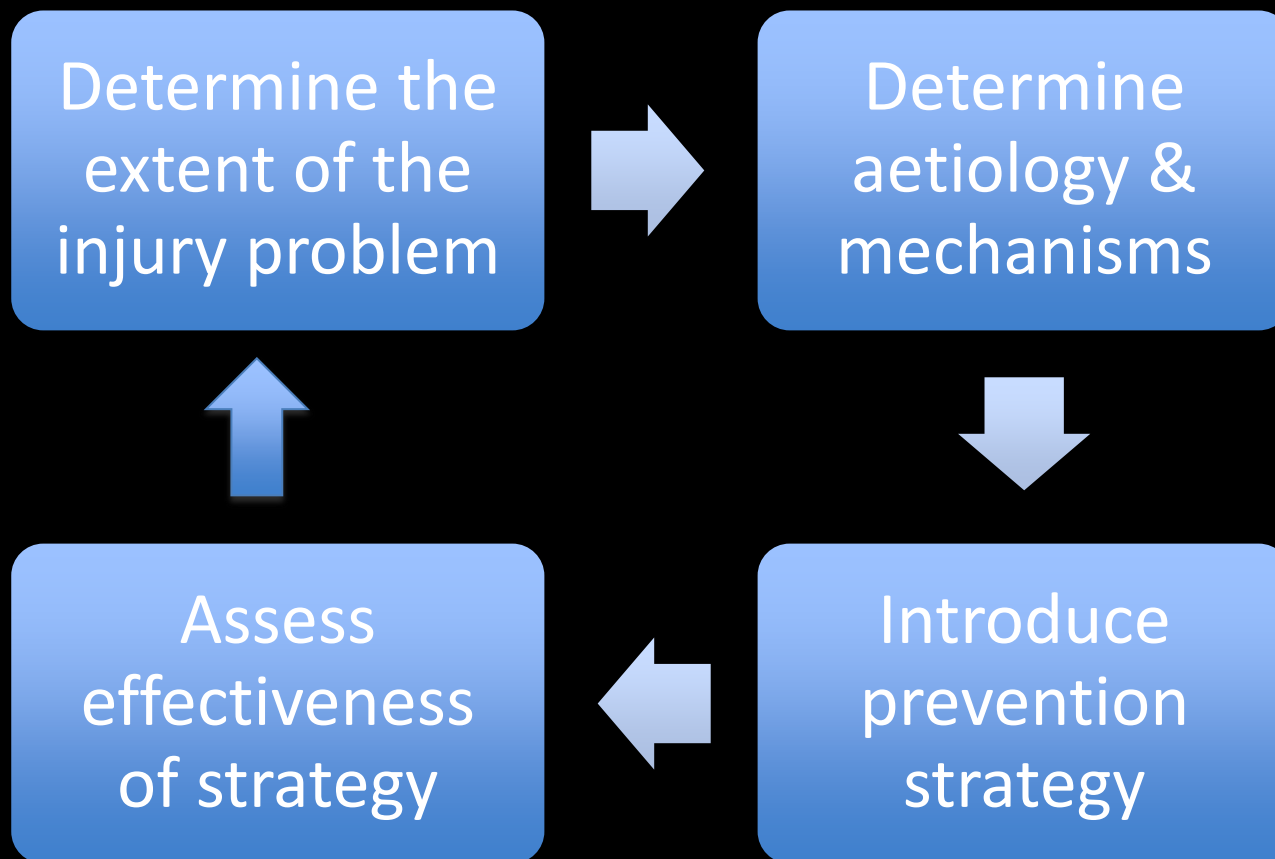
Exercise 10
10 reps

COUNTER MOVEMENT JUMP WITH A TWIST

- From a semi-squat use arms to jump high in air.
- Keep feet hip width apart.
- Prevent knees coming together when jumping and landing.



The Sequence of injury prevention





Implementation Stage

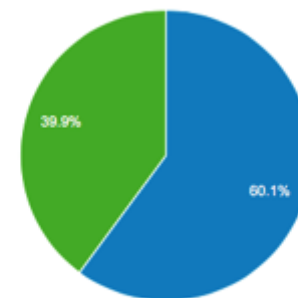
- Launched at 2014 conference by Mario Bizzini (FIFA) to 400 Delegates
- SINI launch to sports medicine community (100+)
- 50 Workshops
- Rolled out to over 1000 coaches
- 4/5 workshops in each of the 9 counties



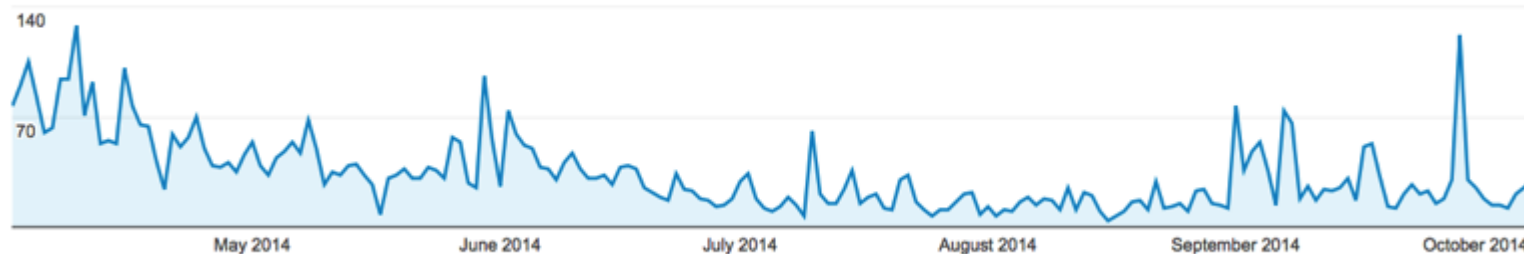
Website

- 54,000 hits
- Over 8000 unique users
- Viewed from 11 countries GB, USA, Canada, Australia, Scandinavia & Spain

■ New Visitor ■ Returning Visitor



● Sessions



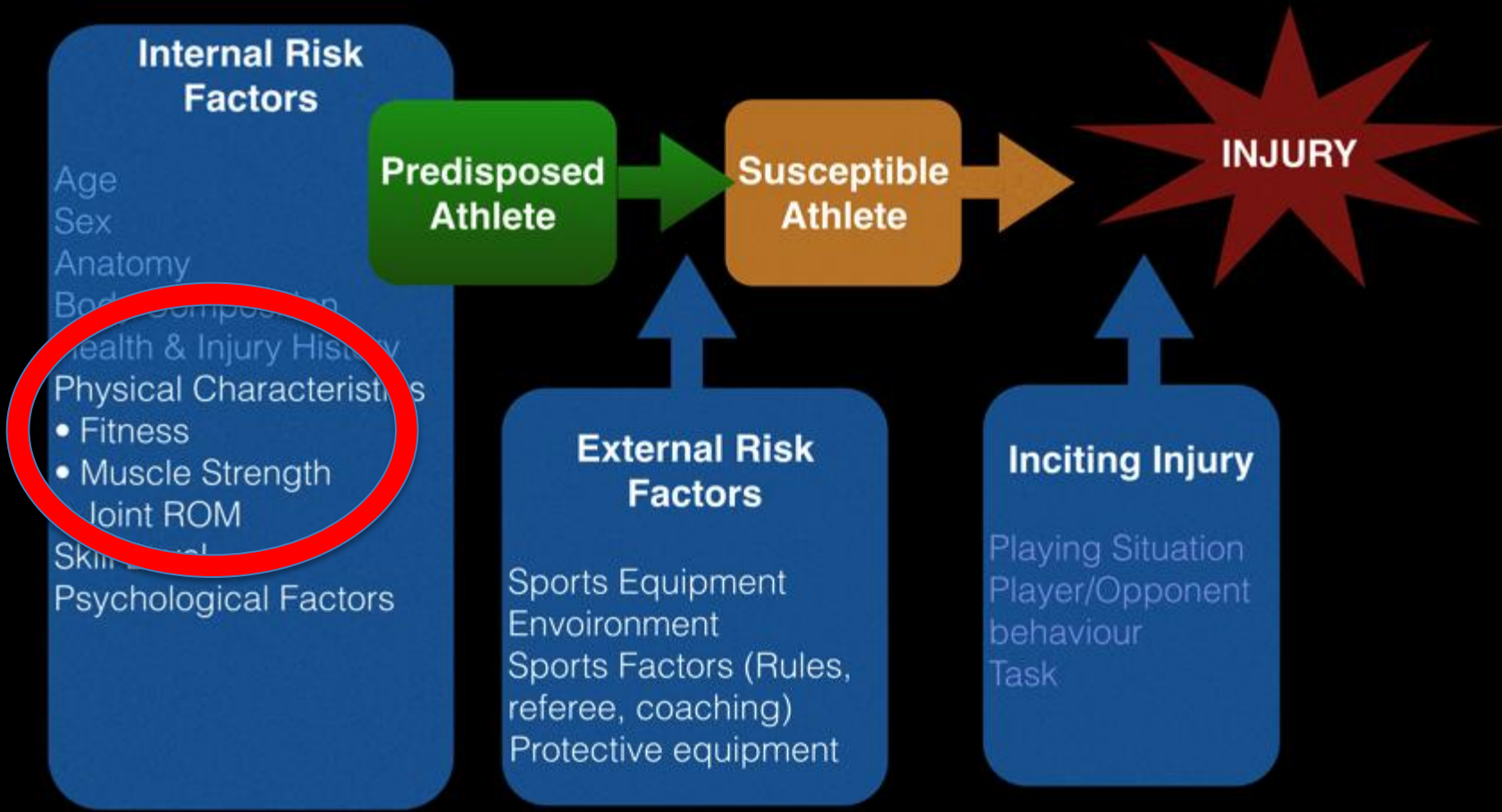


Individual Intervention



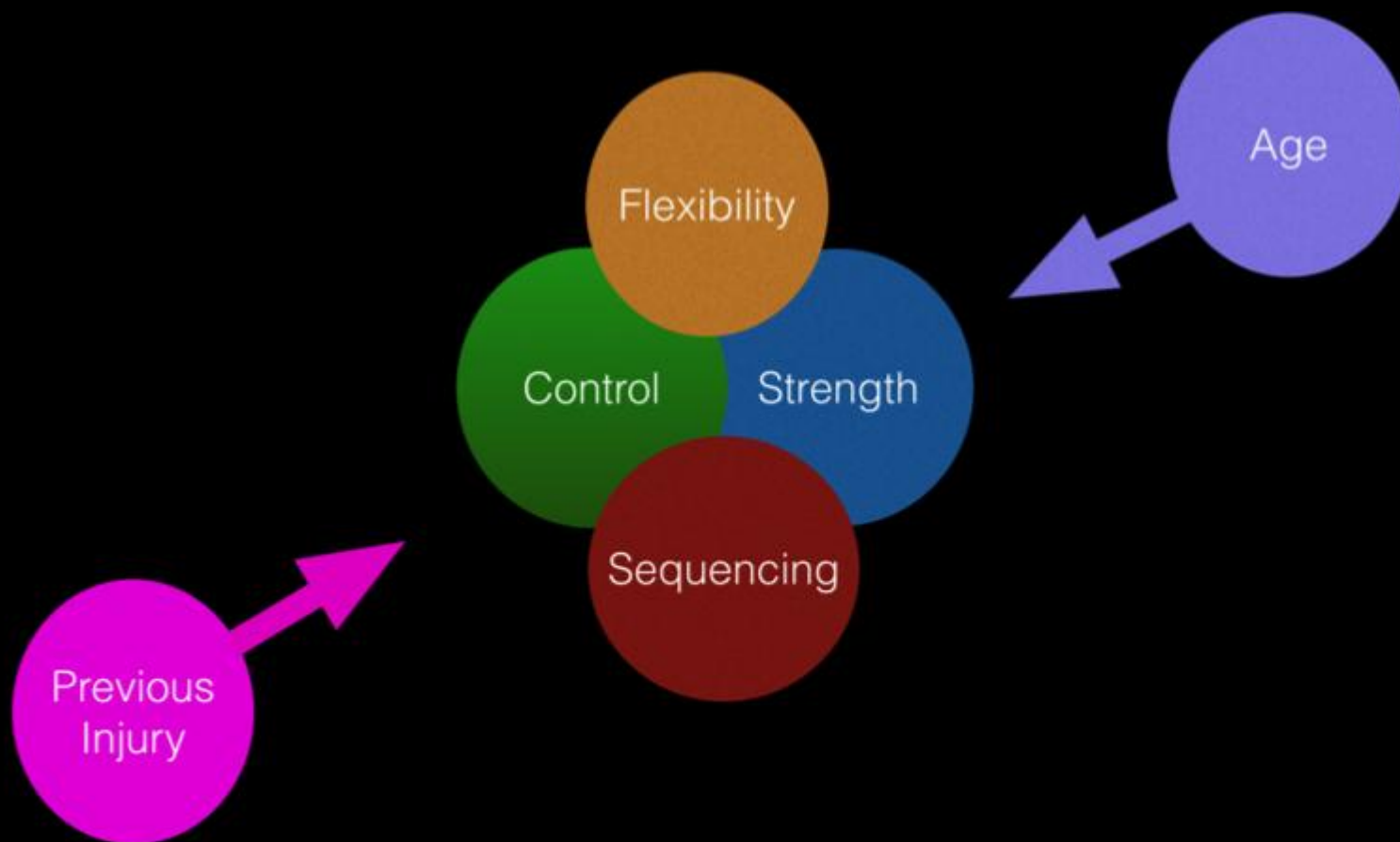


What factors can we change?





Predicting who is at risk





Screening





The Big 4





Screening for Hamstring Injury

1. Previous Injury
2. Hamstring Strength
(Single leg hamstring bridge test)



Figure 1 Single leg hamstring bridge.



Screening for Hip/Groin Injuries

1. Previous Injury
2. Hip ROM tests (FADIR, IR ROM)
3. Provocation Tests (squeeze test)





Knee Screening Tests



1. Previous Injury
 2. Landing/cutting technique
- Tuck Jumps
LESS

Tuck Jump Assessment	Pre	Mid	Post	Comments
<u>Knee and Thigh Motion</u>				
① Lower extremity valgus at landing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
② Thighs do not reach parallel (peak of jump)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
③ Thighs not equal side-to-side (during flight)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>Foot Position During Landing</u>				
④ Foot placement not shoulder width apart	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
⑤ Foot placement not parallel (front to back)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
⑥ Foot contact timing not equal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Excessive landing contact noise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>Plyometric Technique</u>				
8. Pause between jumps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Technique declines prior to 10 seconds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Does not land in same footprint (excessive in-flight motion)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Total _____	Total _____	Total _____		



Initial Contact



Max Knee Flexion



Figure 2 Tuck Jump Assessment: Six common mistakes that clinicians should aim to correct for their athletes while they perform the tuck jump exercise: (1) athletes display unwanted medial knee collapse, (2) athletes do not achieve the desired knees parallel position at top of flight, (3) athletes do not display synchronized lower limb positions during flight, (4) athletes land with their feet too close together, (5) athletes land in undesirable staggered position, and (6) athletes do not land with both feet at the same time.



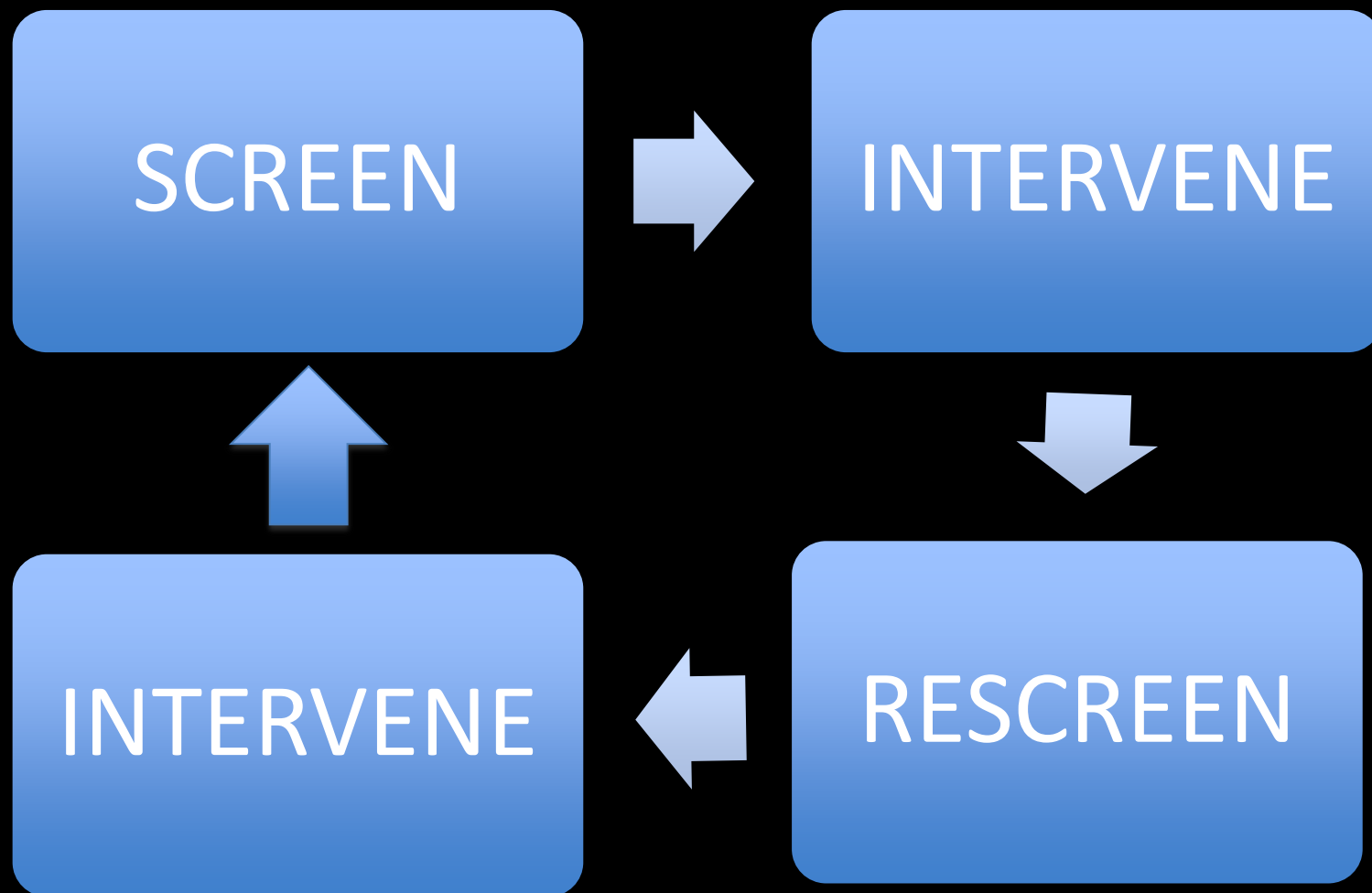
Ankle Screening Test

1. Previous Injury
 2. Balance Deficit
- Star Excursion Balance Test (SEBT)





ONGOING PROCESS





Why are we so injury prone?

- Previous injury, decreased flexibility, strength and control can cause future injury
- Fixture calendar
- Decreased recovery / Overtraining / Dearth of sports science
- **Early specialisation**
- Developing S&C culture



Early Specialisation

- Cam Deformity
- Link to hip pathology, loss of ROM & Hip/Groin pain
- Form pre PHV
- Unlikely to form after 14
- Dose related





Early Specialisation

- Playing 4 times a week at 12/13 increases likelihood of hip pathology
- Relevance to elite u-14 squad
- Overlapping seasons of school, club and county

Downloaded from <http://bjsm.bmj.com/> on February 19, 2015 - Published by group.bmj.com

BJSM Online First, published on January 7, 2015 as 10.1136/bjsports-2014-094130

Original article

The relationship between the frequency of football practice during skeletal growth and the presence of a cam deformity in adult elite football players

Igor Tak,^{1,2} Adam Weir,³ Rob Langhout,⁴ Jan Hendrik Waarsing,⁵ Janine Stubbe,^{6,7}
Gino Kerkhoffs,² Rintje Agricola⁵

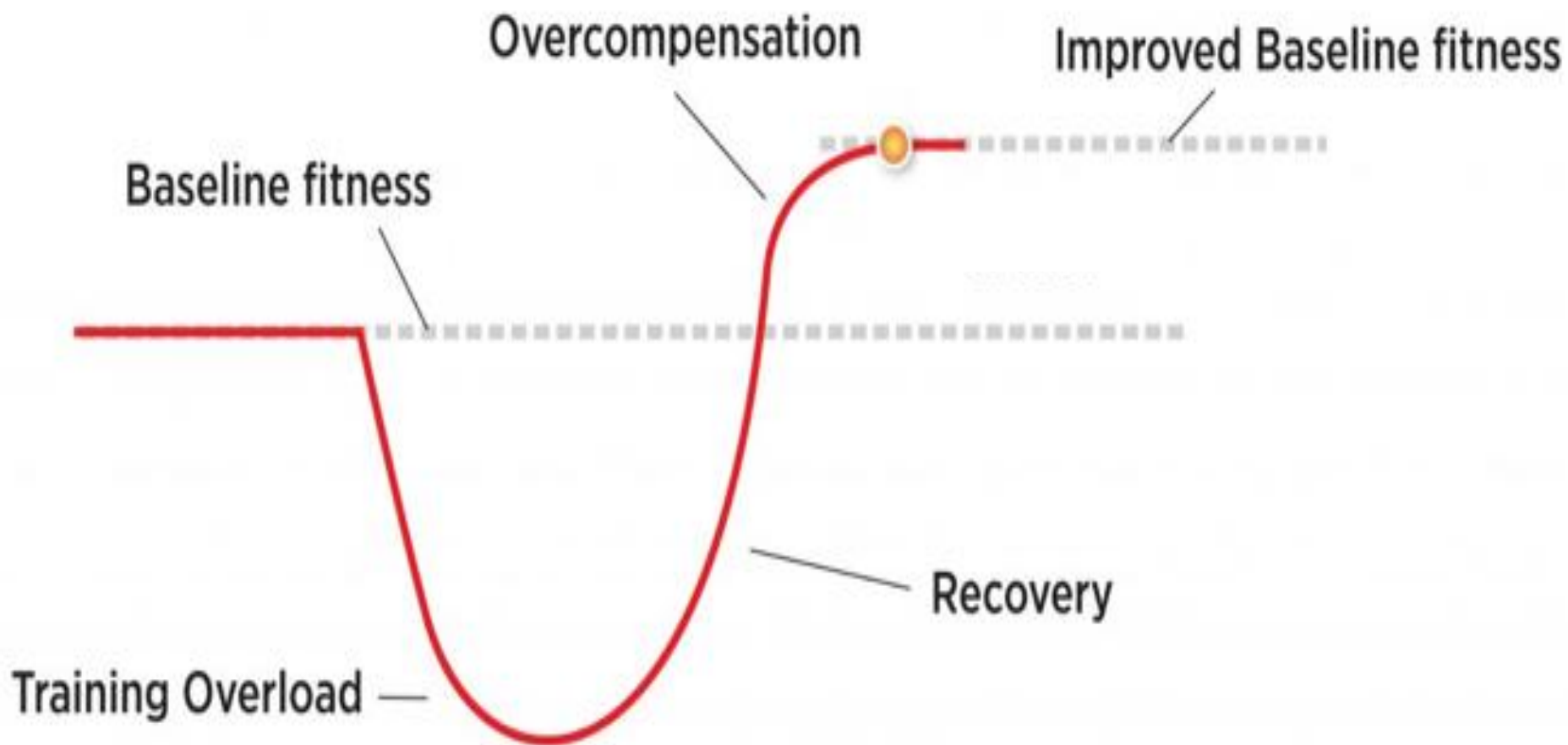


Why are we so injury prone?

- Previous injury, decreased flexibility, strength and control can cause future injury
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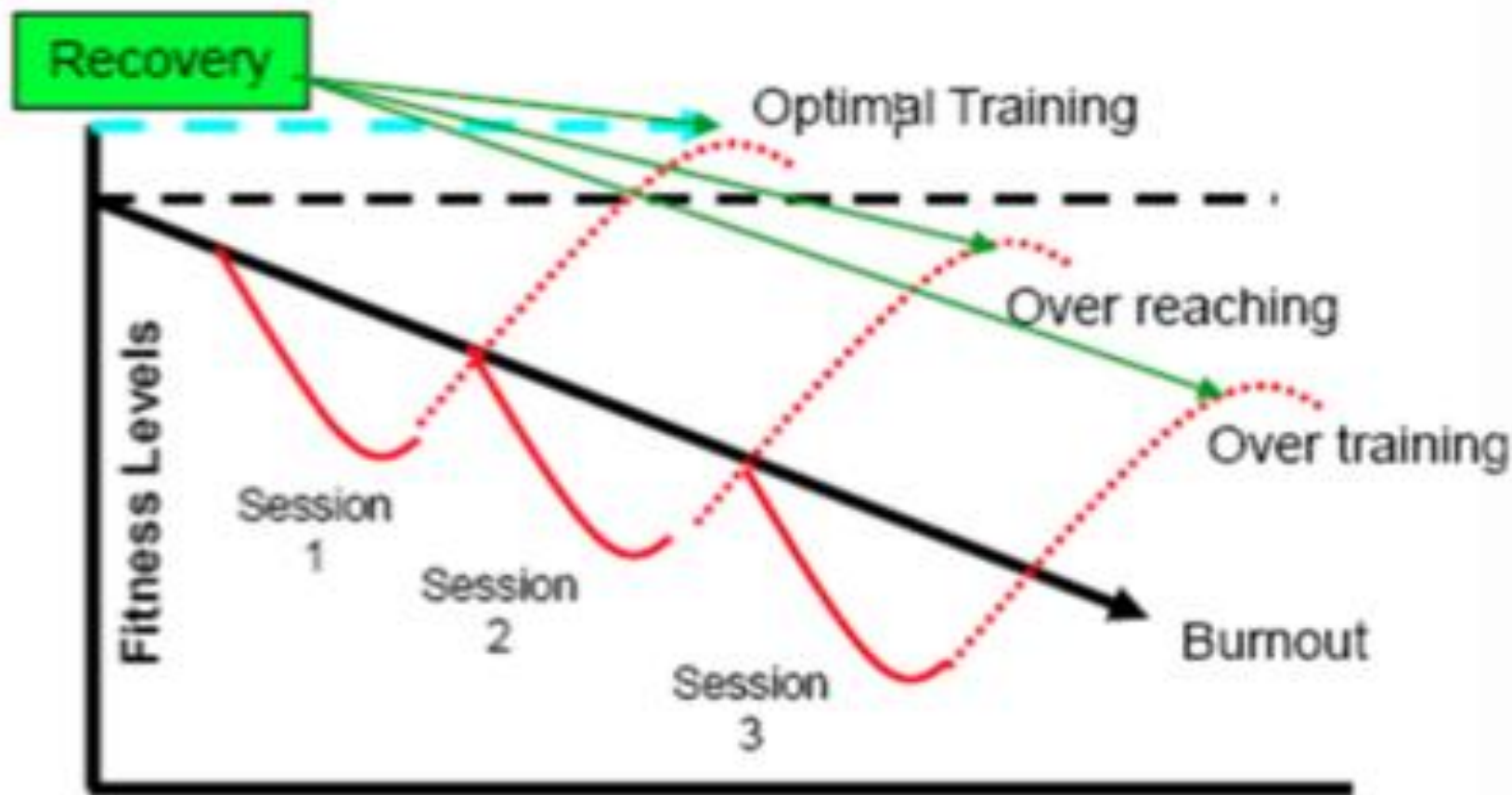


Training Response





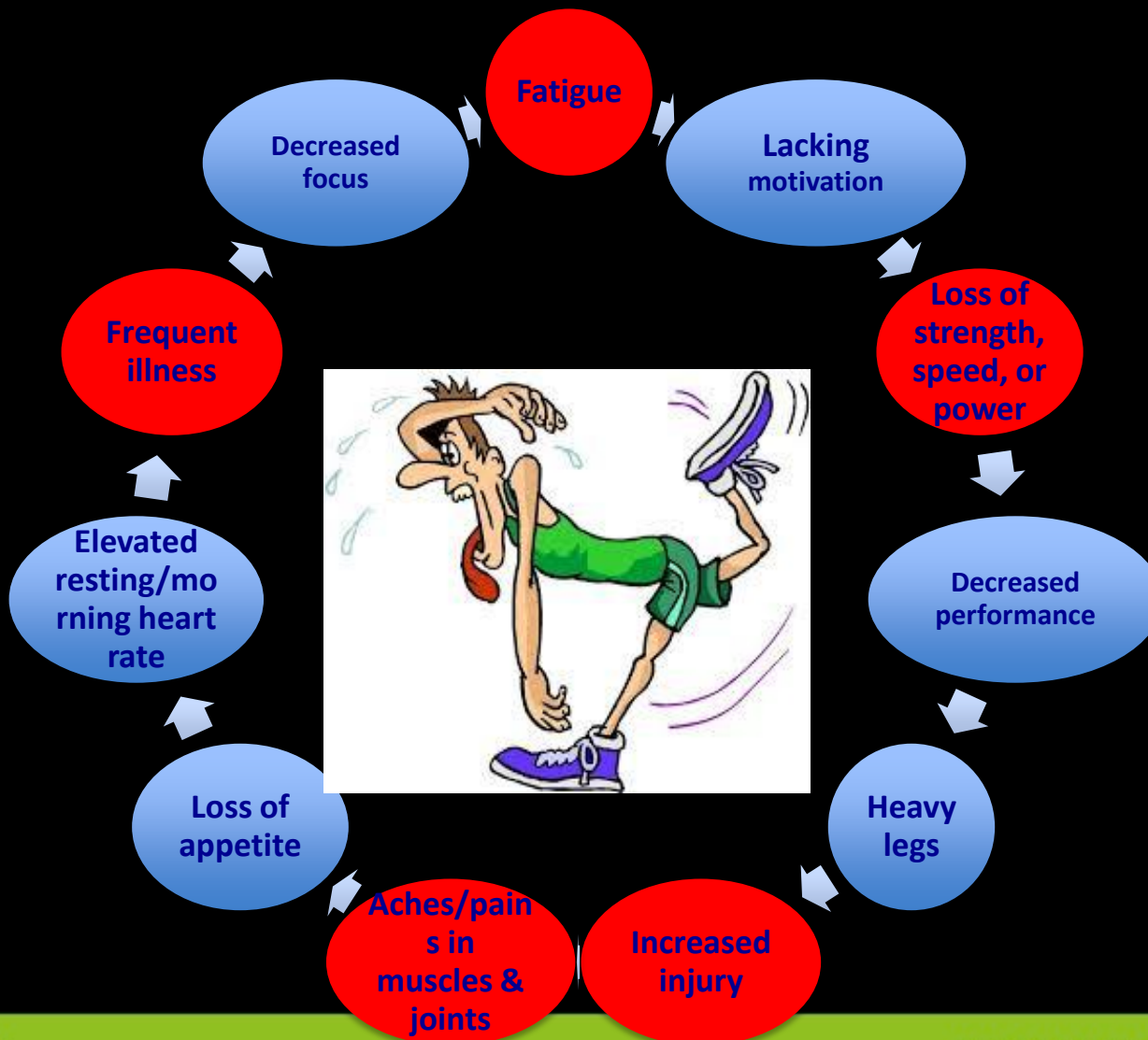
Insufficient RECOVERY



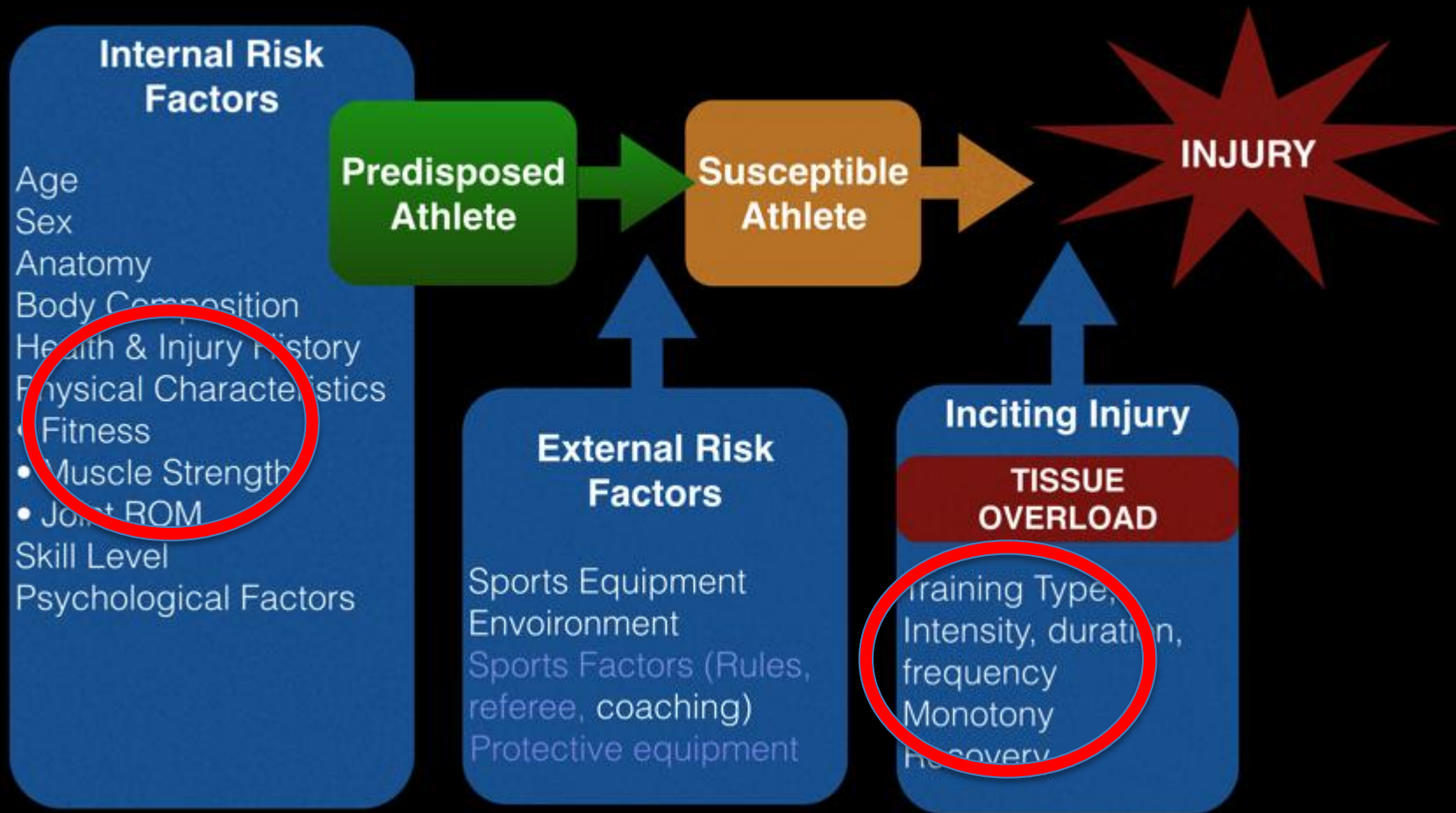
Body adapts to the exercise load during the RECOVERY process.



Overtraining Symptoms



The Causes of Overuse Sports Injuries



Oslo Sports Trauma Research Group



Overuse

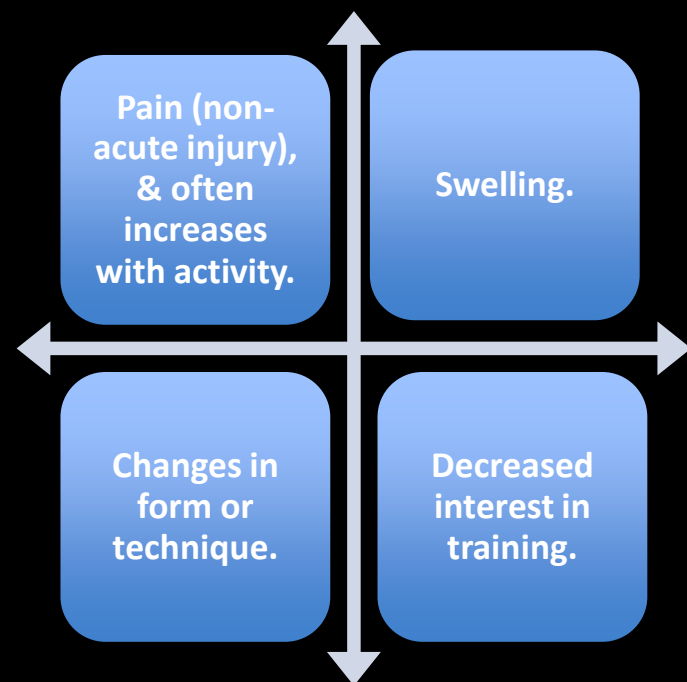
CATEGORISATION OF RISK FACTORS FOR OVERUSE INJURY

Intrinsic Risk Factors

- Growth-related factors
- Previous injury
- Level of conditioning
- Biomechanics
- Psychological and developmental factors – player specific

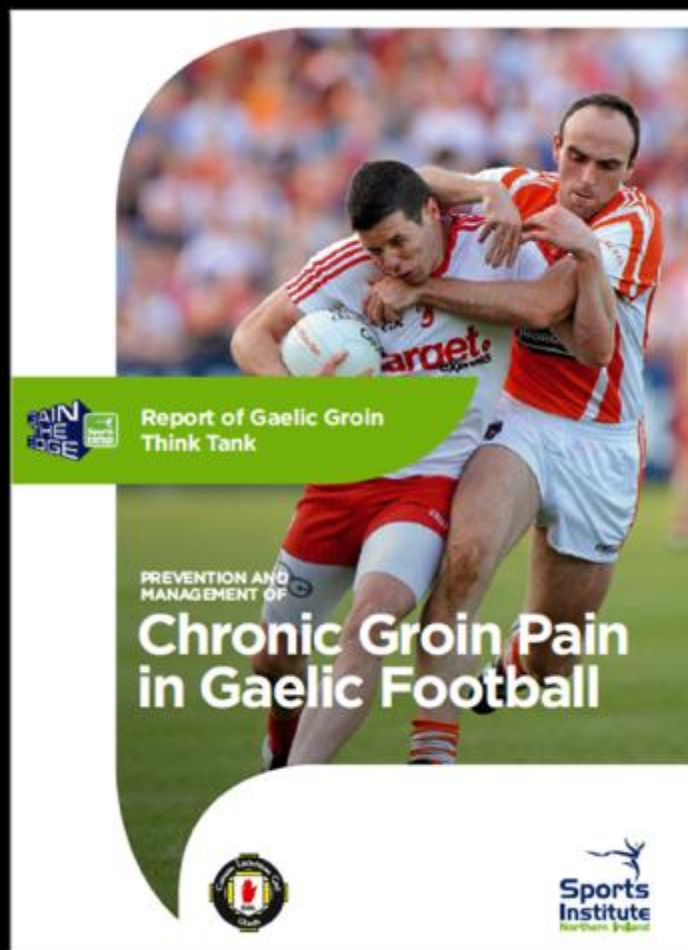
Extrinsic Risk Factors

- Training workload
- Training and competition schedules
- Equipment/footwear
- Environment
- Sport technique
- Psychological factors – adult and peer influences





Gaelic Groin



Report - Gaelic Groin



Recommendations

#1

Players should have no more than a total of four high intensity training sessions or matches in one week, with no more than two games per week. This should be complimented by strength and flexibility training sessions

#2

Players should play a maximum of 38 games per season

#3

Avoid high intensity training sessions or a high volume of kicking practice the day before games

#4

Players should avoid long range kicking before a proper warm-up has been completed

#5

Talented young athletes should have a nominated mentor to help decision making through the 17-21 age bracket. This individual should help decision making around game and training selection for appropriate squads

#6

All players should have a two month off-season period in the calendar year. (It is recommended that during this period players complete strength, flexibility and stability training in order to address any dysfunctions and appropriately prepare for the incoming season).



Recovery Days

Period:

From 2001/2002 till 2010/2011

Countries:

England
Holland
Germany
France
Spain
Portugal
Italy

Competitions:

League games
Champions League
Europa League

Total games:

27.002 games

Conclusion:

Only 2 recovery days between games is insufficient: unfair play!

All teams win less games after only 2 recovery days: fatigue?

After only 2 recovery days: 70% less goals scored in 60-90min

After only 2 recovery days: 75% more goals against in 60-90min

FIFA >2 d





Why are we so injury prone?

- Previous injury, decreased flexibility, strength and control can cause future injury
- Fixture calendar
- Decreased recovery / Overtraining / Dearth of sports science
- Early specialisation
- Developing S&C culture



Strength & Conditioning

- KISS
- Train movements not muscles





Qualifications

- UKSCA, CSCS, BSc, MSc, EXOS

If you think
it's expensive
to hire a
professional,
wait until
you hire
an amateur.



Summary

- High Injury Rate
- High Re-Injury Rate
- Many of these preventable
- Good evidence for group and individual injury prevention strategies
- Fixture calendar as it stands makes it difficult to prevent overuse injuries and overtraining



Key Recommendations

- Activate (www.activategaa.sini.co.uk)
- Group mobility, stability and prehab sessions
- Individual interventions for identified at risk players
- Train smarter, optimal recovery
- Adoption of Gaelic Groin Recommendations

Major overhaul of fixture calendar
required



“Being against GAA player burnout is like being against racism or for free speech. It offers us all the chance to deliver a few pious platitudes while doing absolutely nothing to mitigate the actual problems involved.”

Eamonn Sweeney,
Sunday Independent
18/1/15



Q9. Player over use, over training, burn out and abuse





Responsibilities





What are we going to do?





Joe is right, Enough words, now it's time for action

