



LADIES GAA

ACL PREVENTION PROGRAM

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SSC

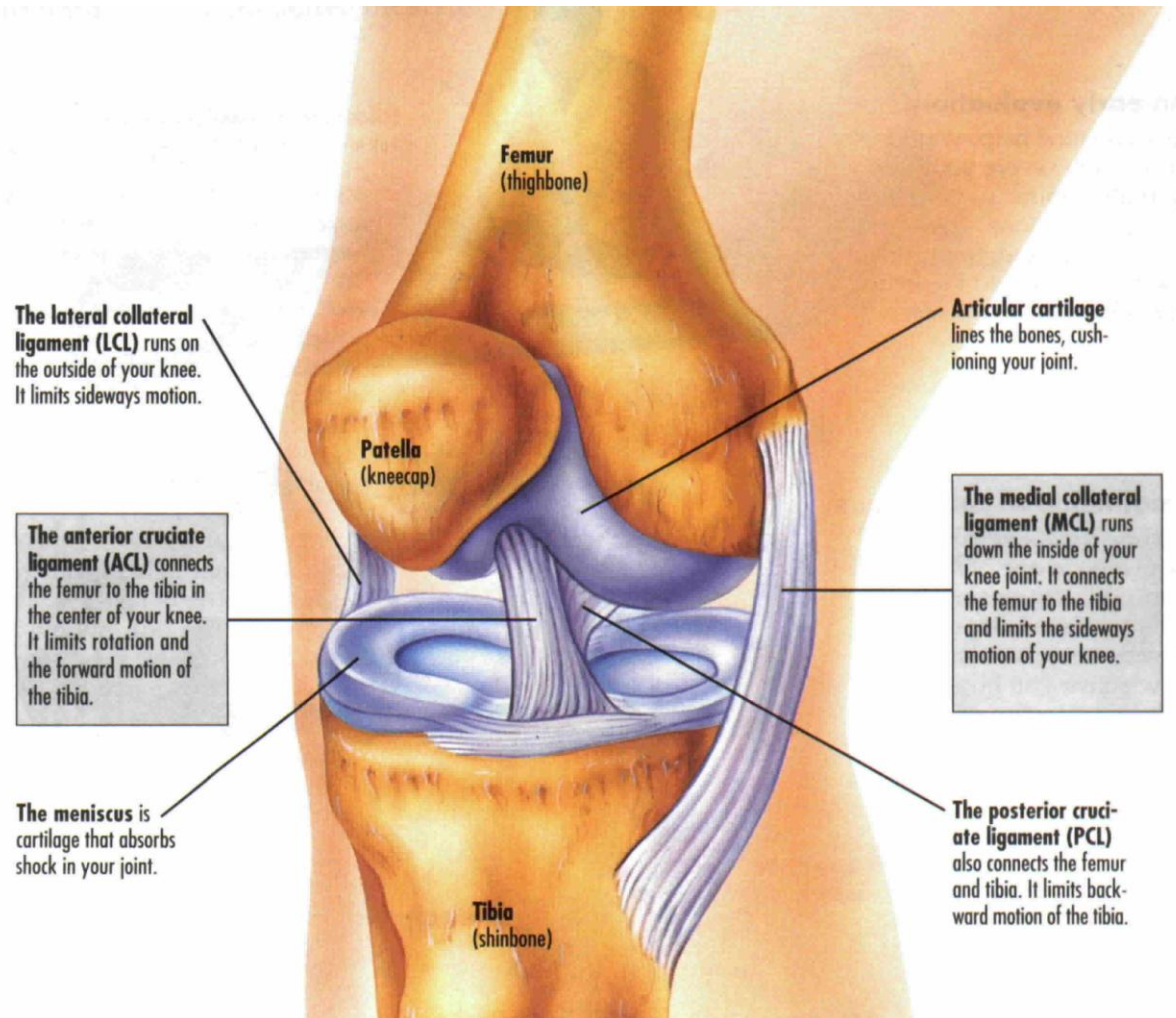
19th March 2012

TOPICS

- Anatomy
- ACL Injury Mechanism
- ACL Injury Risk Factors
- ACL Injury Consequences
- ACL Injury Prevention
- Q+A



THE KNEE



ACL INJURY MECHANISM



NON-CONTACT INJURY



NON-CONTACT INJURY



CONTACT INJURY



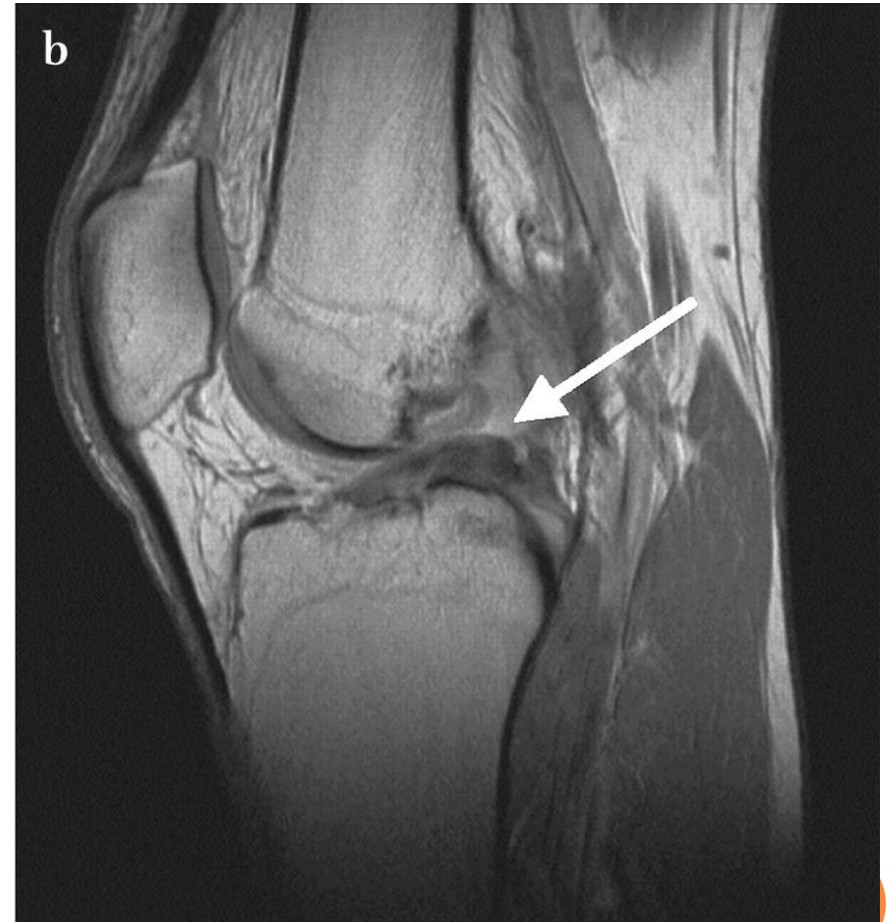
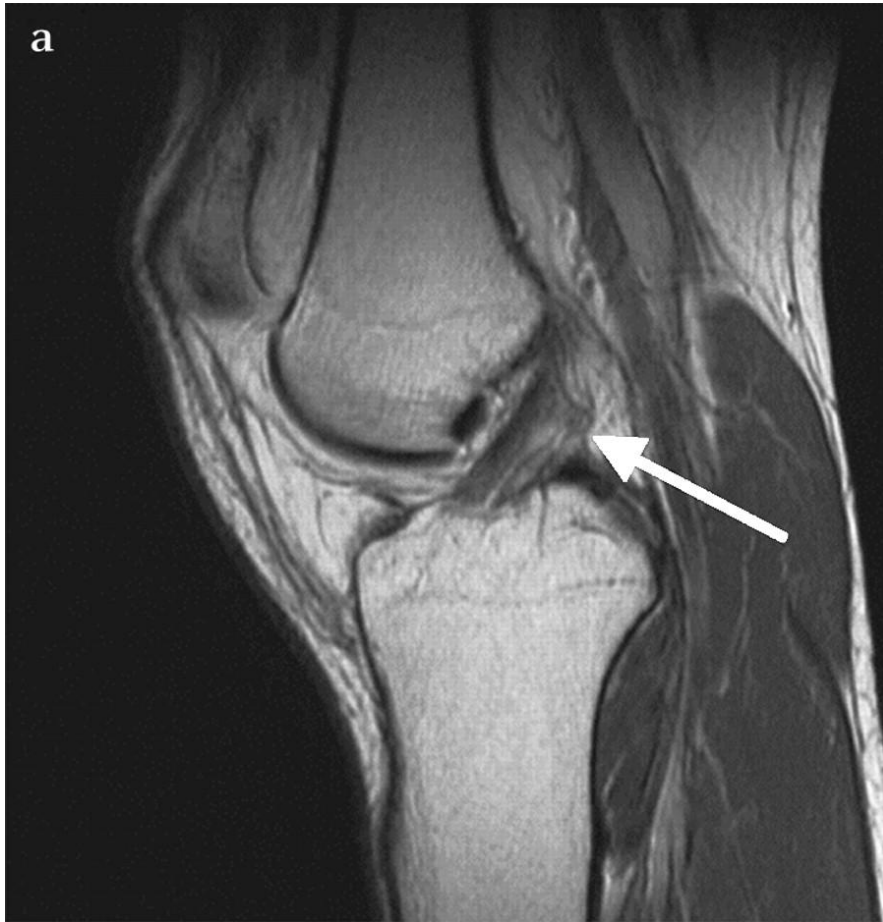
ACL INJURY MECHANISM



KNEE HYPEREXTENSION



ACL INJURY- DAMAGED STRUCTURES



ACL INJURY- DAMAGED STRUCTURES



FACTORS INFLUENCING ACL INJURY

Intrinsic	Extrinsic
Neuromuscular Control	Weather Conditions
ACL size	Shoe/Boot Type
Hormones	Playing surface
Anatomical Position	Type of Sport



FEMALES ACL INJURY – EPIDEMIC?

- Females 6-8 times more likely to suffer ACL injury than males
- 12 times more likely to suffer another ACL injury on the other leg after initial injury



WHY MORE ACLS IN FEMALES

Factors increasing ACL tears in females	
Anatomical	Wider Pelvis, Greater Ligament Laxity
Hormonal	Effect of Oestrogen and other hormones
Neuromuscular	Under use of Hamstrings to stabilize the knee



Watch the Knees.....



ACL TEAR – WHATS THE COST?

- 8 months
 - 6-8 weeks pre-op
 - 6 months post op
- Surgery & Orthopaedic Consultations
 - €6,000 - €7,000
- 12 treatment sessions
 - €600
- Time off work - ????

- Cost
 - 8 months playing
 - Around €7,500
 - Long Term Implications



LONG TERM IMPLICATIONS

- Loss of form – less than 50% return to pre-injury level of play at 3 years
- End of Career
- Osteoarthritis changes of the knee highly likely after ACL rupture
- High re-injury rate among female athletes
- Long term issues both physically and financially

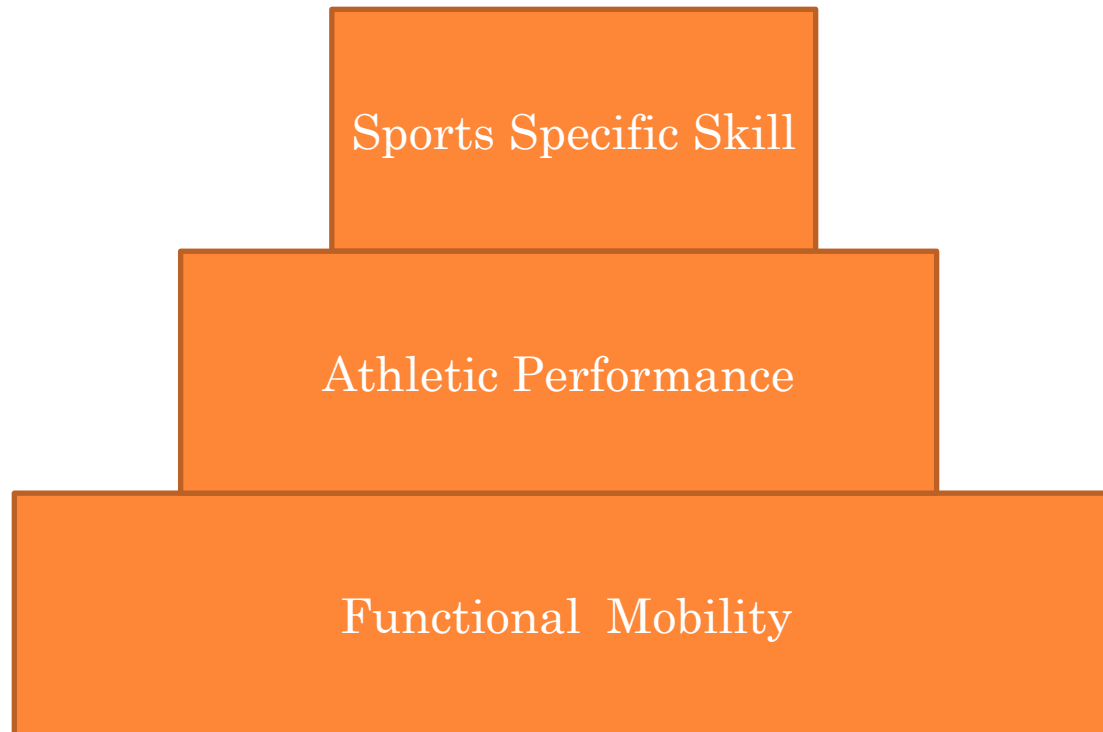


WHAT CAN WE DO?



IMPROVE ATHLETIC PERFORMANCE

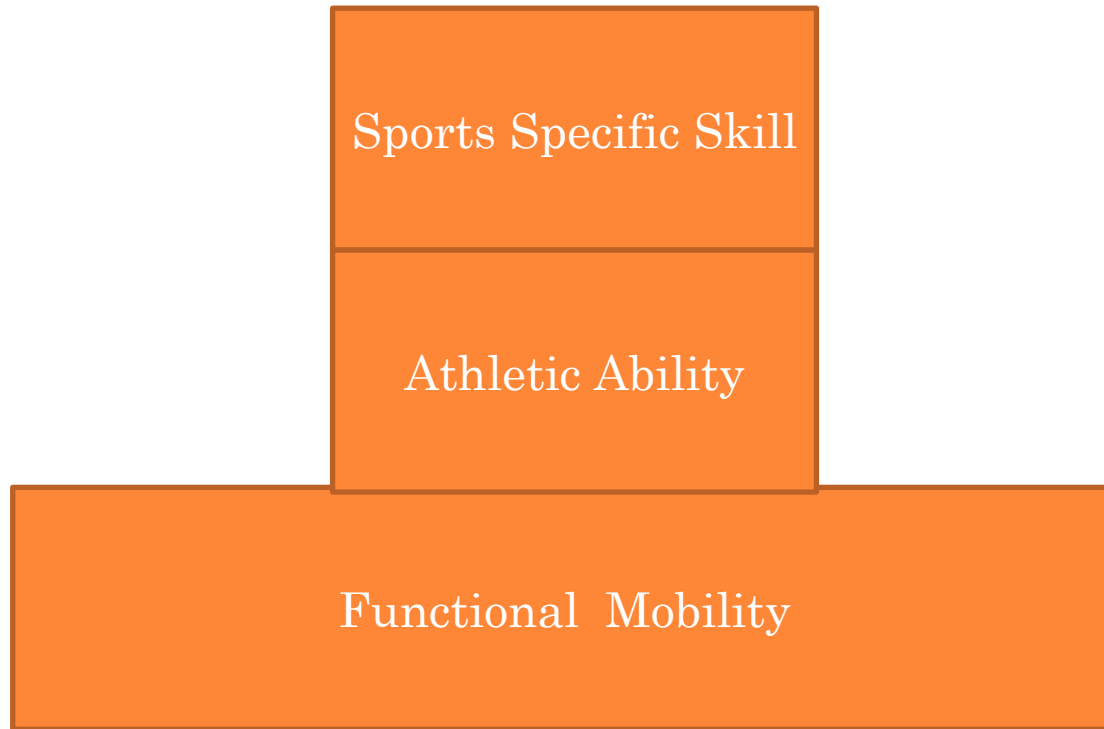
- Optimal Performance Pyramid



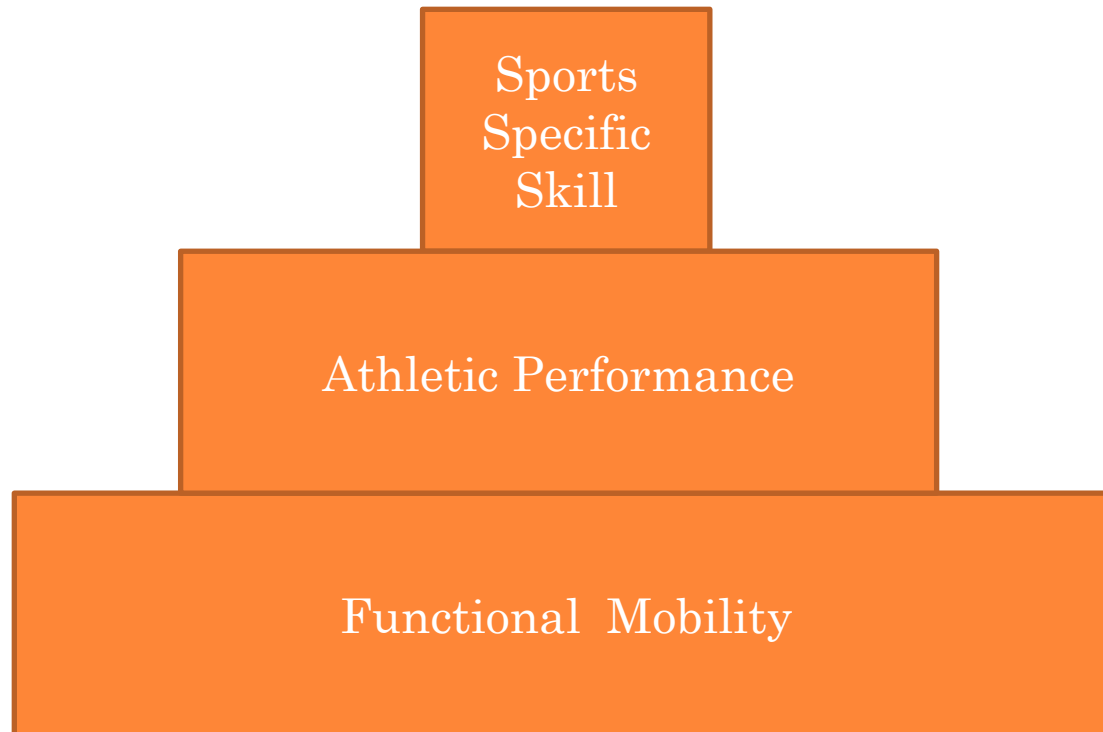
OVER POWERED ATHLETE



UNDER POWERED ATHLETE



UNDER SKILLED ATHLETE



MAXIMISE ATHLETIC PERFORMANCE

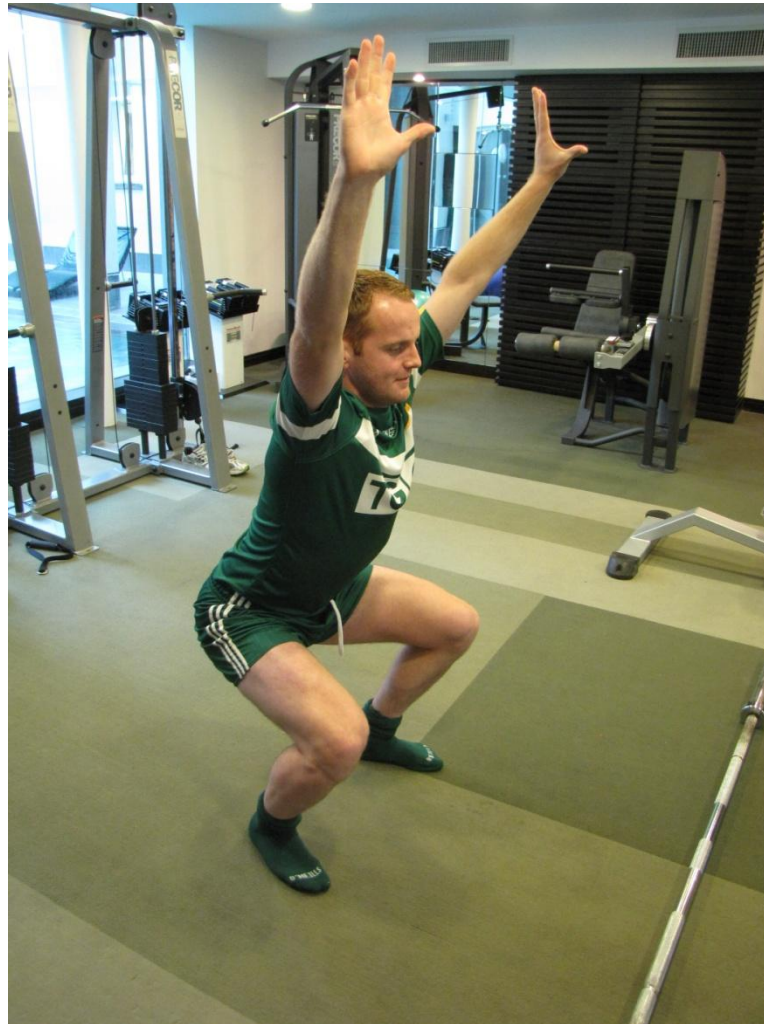


FUNCTIONAL MOVEMENT & INJURY RISK FACTOR ASSESSMENT (FMIR)

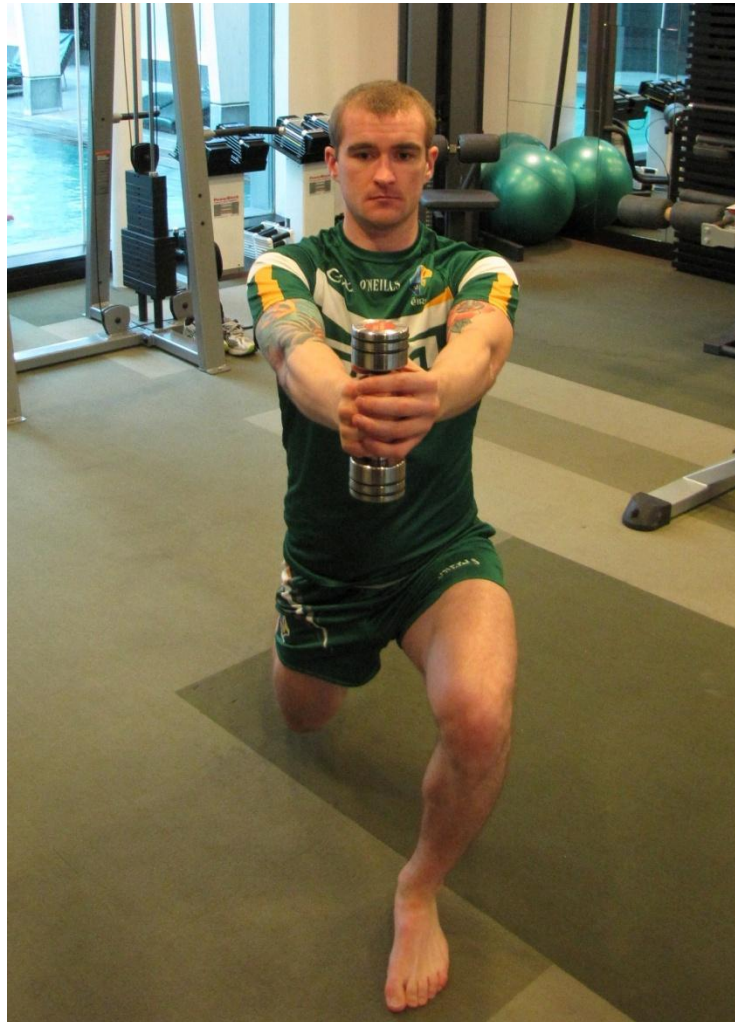
- To optimise functional movement as a base for athletic performance
 - Overhead Squat
 - Lunge
 - Active Straight Leg Raise
- To reduce incidence of most common/serious injuries
 - Hamstring Tears
 - ACL Tears



OVERHEAD SQUAT



LUNGE



ACTIVE STRAIGHT LEG RAISE



WHAT CAN WE DO? RESEARCH



BRITISH MEDICAL JOURNAL

- Neuromuscular training and the risk of leg injuries in female floorball players
 - Pasanen et al
- Neuromuscular Training Program
 - 20-25 minutes per training session
 - Running Drills
 - Strengthening Drills
 - Jumping/Landing Drills (plyometrics)
 - Balance Drills
- Pre-Season 2-3 times per week
- In-Season 1 per week



66% reduction in non-
contact lower limb injuries



AMERICAN JOURNAL OF SPORTS MEDICINE

- Effectiveness of a neuromuscular and proprioceptive training program in preventing ACL injuries in Female Athletes
 - Mandelbaum et al
 - Female Soccer Players
 - Program same as Pasanen

88% reduction in ACL injuries year 1

74% reduction in ACL injuries year 2



WHAT DOES THIS MEAN

- Reduced injury rates and greater availability of players during season
- Reduced risk of OA and other consequences later in life
- Reduced time lost to work
- Financial Implications



FINANCIAL IMPLICATIONS

- One County GAA 14-15 ACL tears over last 3 years
- Total Cost Approx €112,500
- 66% reduction in ACL injuries = €74,250
- Any reduction in ACL injuries will also see a reduction in all other lower limb injuries (ankle sprains, hamstring tears, groin/back pain)



WHAT CAN WE DO?

SSC/LGFA ACL INJURY PREVENTION
PROGRAMME



SOLUTION

- SSC Ladies Gaelic Football Association Injury Prevention Programme
- Organise coaching workshop to teach coaches and tutors the injury prevention program
- Provide on-line resources in form of videos, exercise programs and timetables
http://www.sportssurgeryclinicconference.com/_/Ladies_Home.html
- Use data available to compare injury rates and financial benefit



INJURY PREVENTION WARM-UP

- Warm Up
- Strength
- Plyometrics
- Agility
- Stretching



WARM UP

- Important to prepare the body for exercise
- Increases body temperature and muscle plasticity
- Awakens the neuromuscular system
- Can for part of simple ball drills



STRENGTH

- Lower body and core strength vital for improved performance and injury prevention
- Calf
- Quad
- Hamstrings
- Gluteals
- Abdominals
- Improvements need to be maintained throughout the season



PLYOMETRICS

- Jumping and Landing
- Essential Component of Performance
- Treat it as a skill
- Poor landing technique is a risk factor for injury



AGILITY

- Another skill to practice
- Component of elite performance
- Poor technique risk factor for injury



STRETCHING

- Should form part of every training session
- Dynamic vs Static Stretching?
- Important for injury prevention and recovery



Tea Time!

