

Voorste kruisband blessures

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Orthopedisch chirurgen



Uit [Fins onderzoek](#) blijkt dat het aantal voorstekruisbandblessures bij kinderen onder de 18 jaar van 2004 tot 2014 is verdubbeld. **De grootste toename van dit letsel (143 procent) zagen onderzoekers bij meisjes in de leeftijd 13 tot 15 jaar.**



NOS Voetbal • Donderdag 23 februari, 08:54



Grote zorgen om puber-voetbalsters: 'Er komt een tsunami aan knieletsel aan'



Trouw

DUURZAAMHEID&ECONOMIE OPINIE RELIGIE&FILOSOFIE CULTUUR&MEDIA

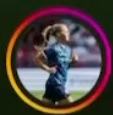
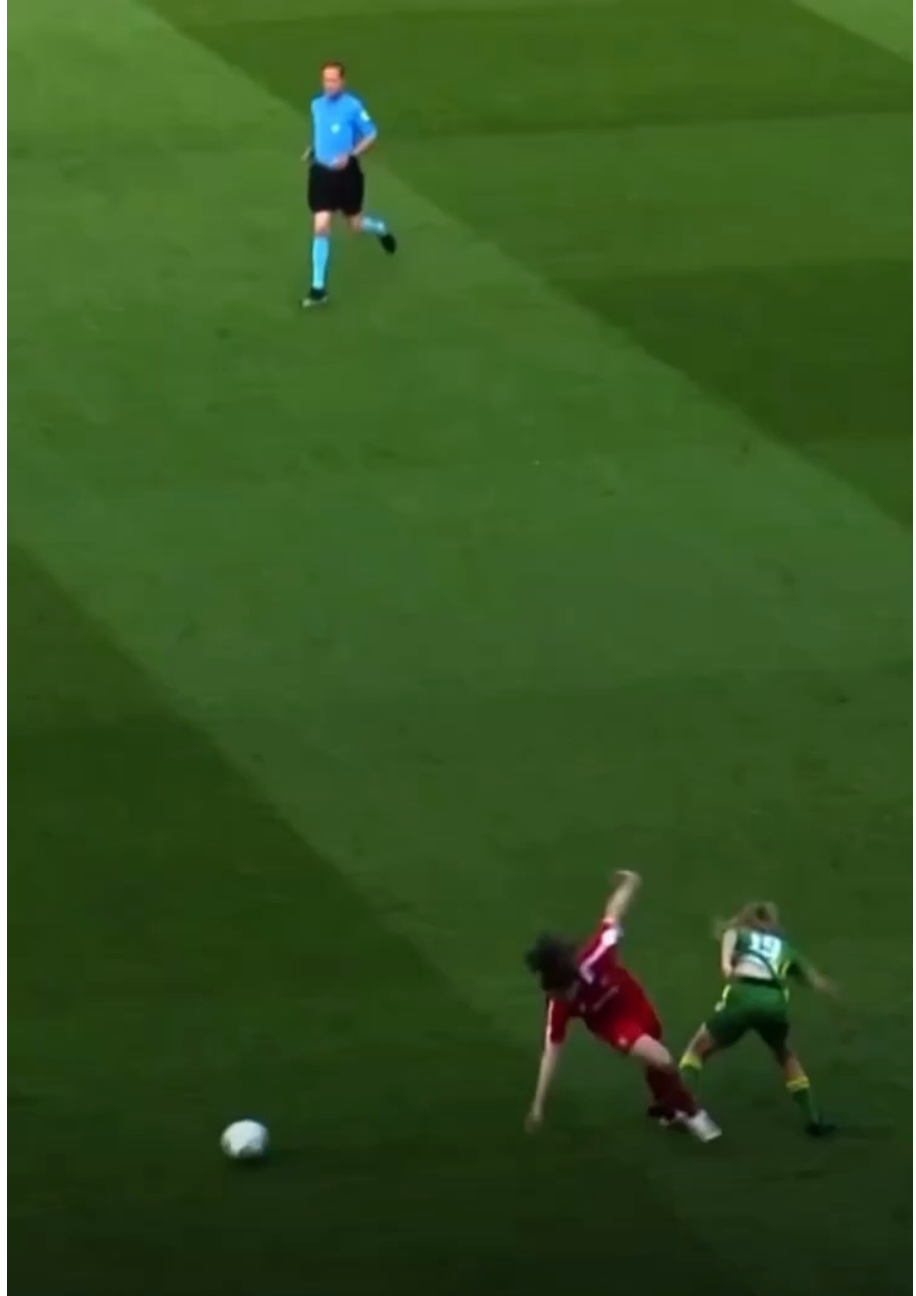
Blessure

Kruisbanden en carrières knappen in vrouwenvoetbal. ‘Vrouwen spelen een ander spel’



Vivianne Miedema zit op de grond en realiseert zich al snel dat ze een zware knieblessure heeft opgelopen, op 15 december tijdens Arsenal-Olympique Lyon in het Emirates Stadion in Londen. Beeld Action Images via Reuters





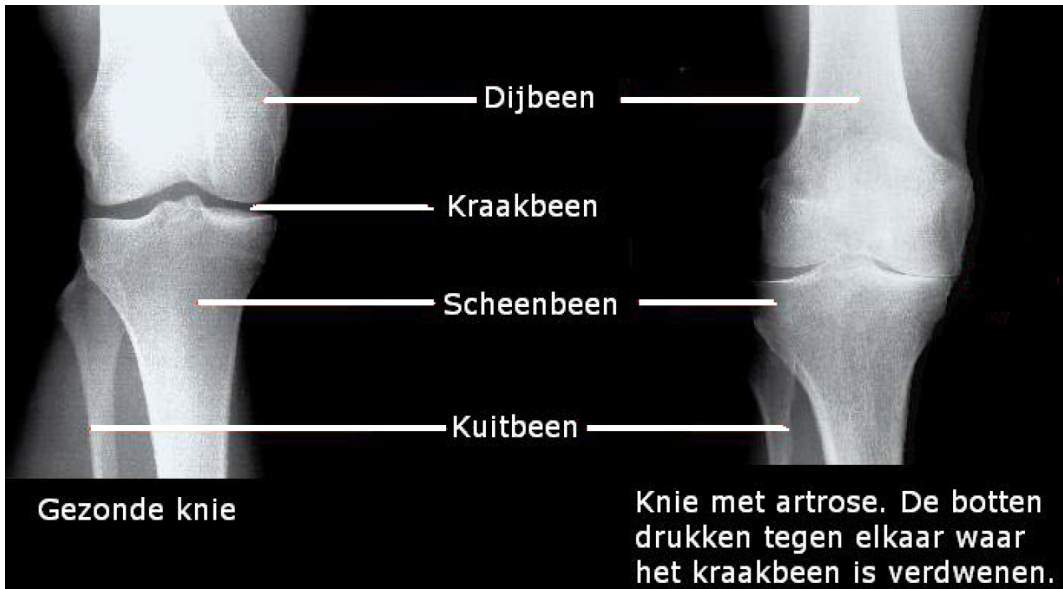
kirstenvdwesteringh

Volgen

Impact!

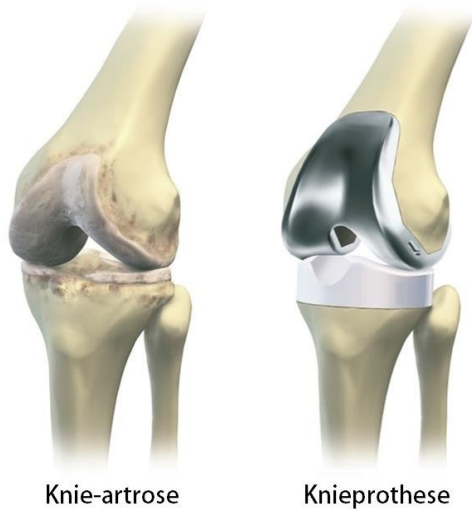
- Wel/niet operatie
- Revalidatie van een jaar
- Uit het team
- Geen uitlaatklep
- Angst
- "nooit meer de oude knie"





Kans op artrose 10 jaar na het letsel is 54%....

Als er ook meniscus letsel is 65%....



Toekomst?

30 jarige sporter

leeftijd

30	Voorste kruisband scheurt
40	Beginnende artrose
50	knieprothese?

Leven

30	gezin, carrière
40	Minder actief in teamsport
50	gesetteld

14 jarige sporter

leeftijd

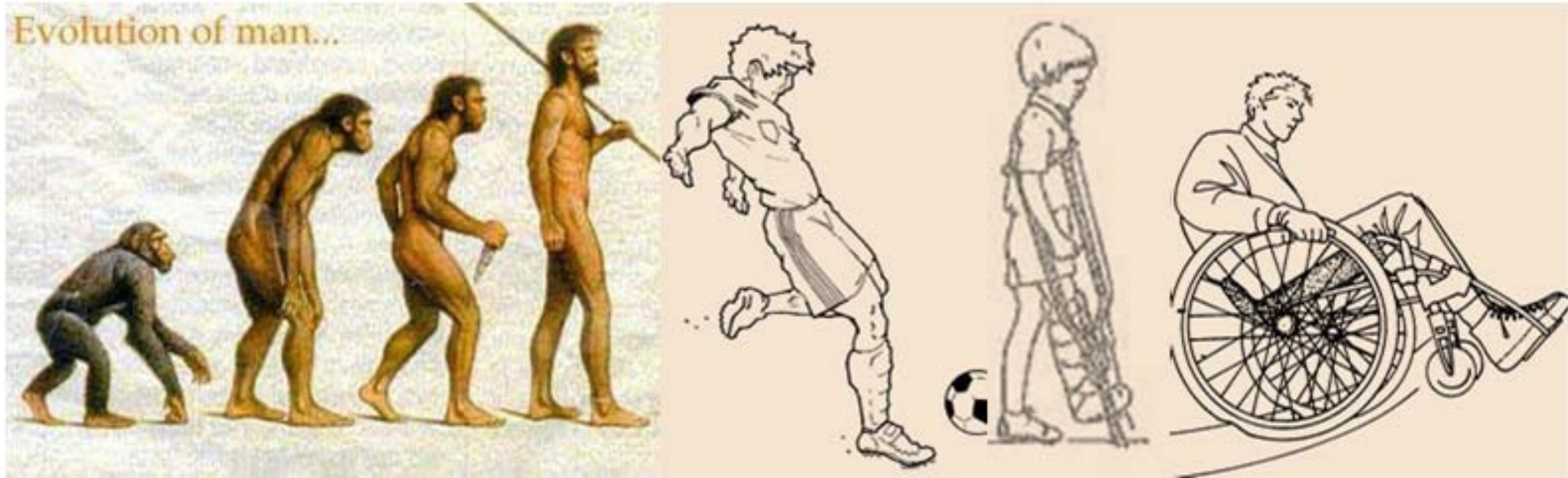
14	Voorste kruisband scheurt
24	Beginnende artrose
34	Kniprothese nog geen optie

Leven

14	Middelbare school
24	Vervolg onderwijs,
34	carrière, gezin



The acl is the most common cause of the ex-athlete





Wat is de voorste kruisband?

- Goed doorbloede band
- Pink dik
- In het centrum van de knie
- Voorkomt schuiven van onderbeen naar voren

Hoe scheurt de voorste kruisband?



Typisch verhaal

- "Knap/plop" en pijn
- Stoppen
- Zelfde dag zwelling knie







Wat weten we uit studies?

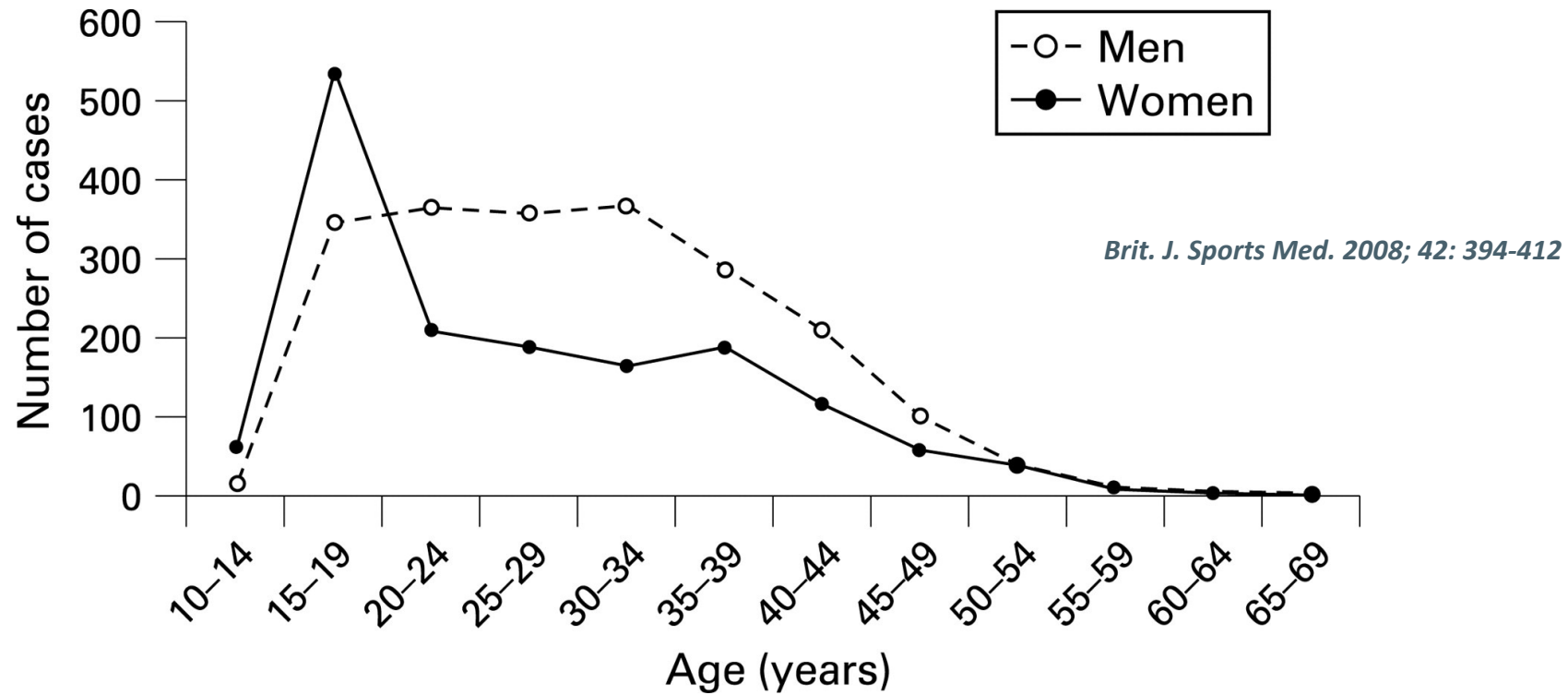
Na een kruisbandoperatie < 18 jaar **scheurt 1 op de 3 zijn of haar kruisband (weer)** binnen 15 jaar

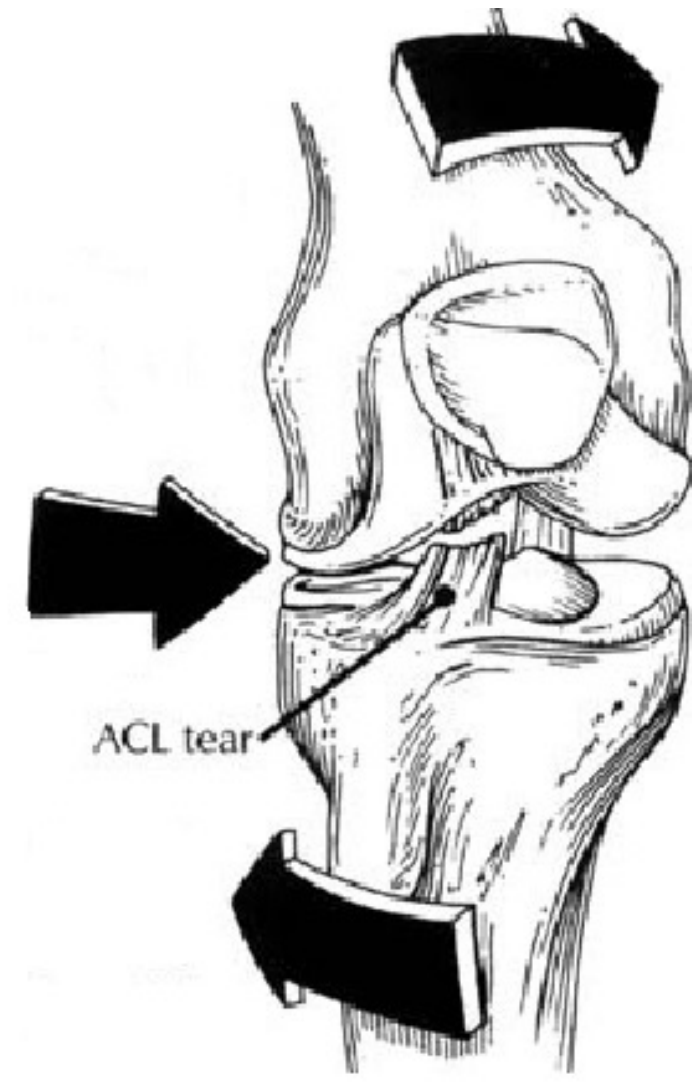
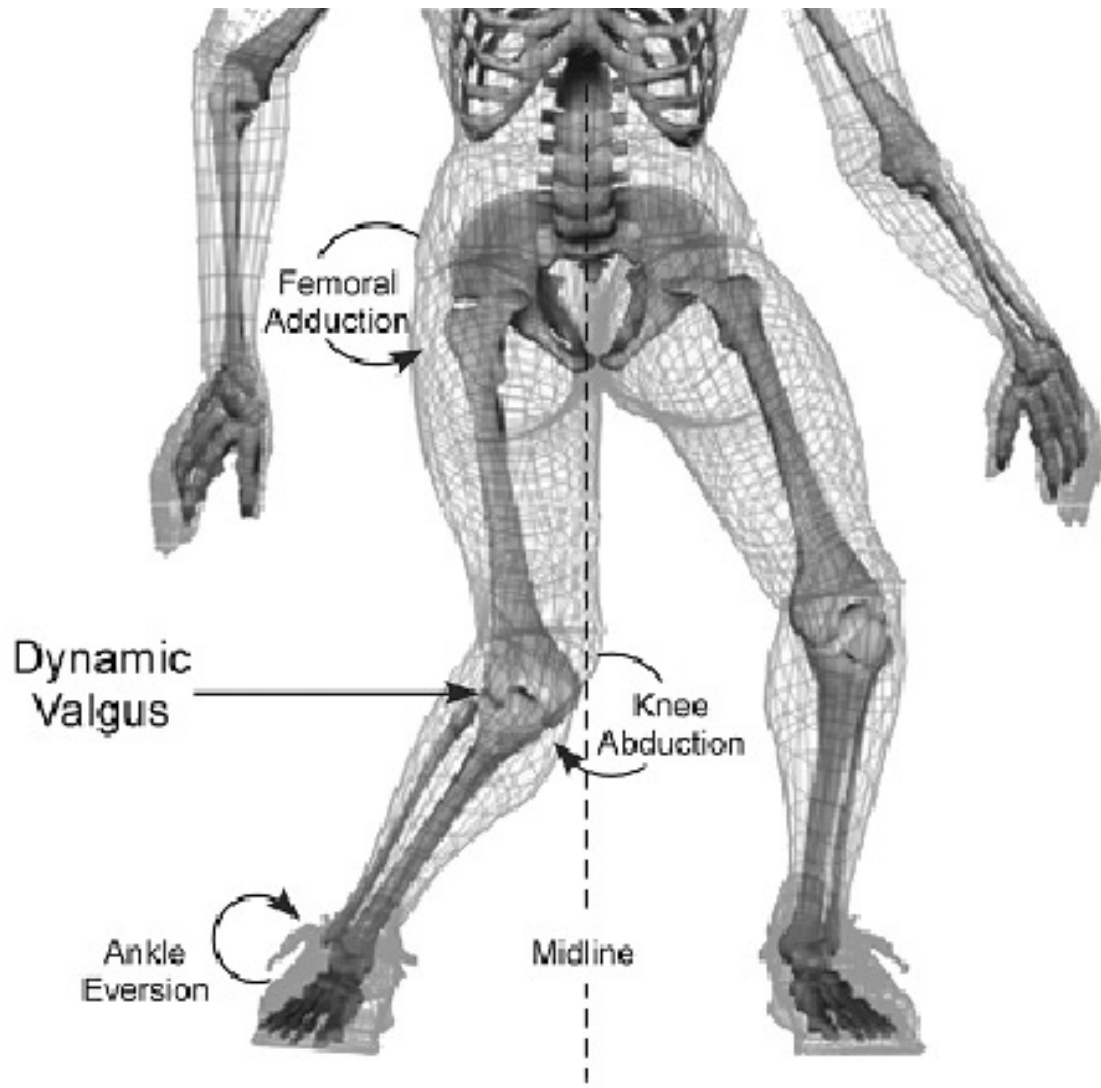
Met name bij terugkeer naar balsport

Als iemand in de familie een kruisband scheurt is het risico van familieleden hierop groter

Bij voetbal meisjes 6 tot 8x hogere kans dan jongens

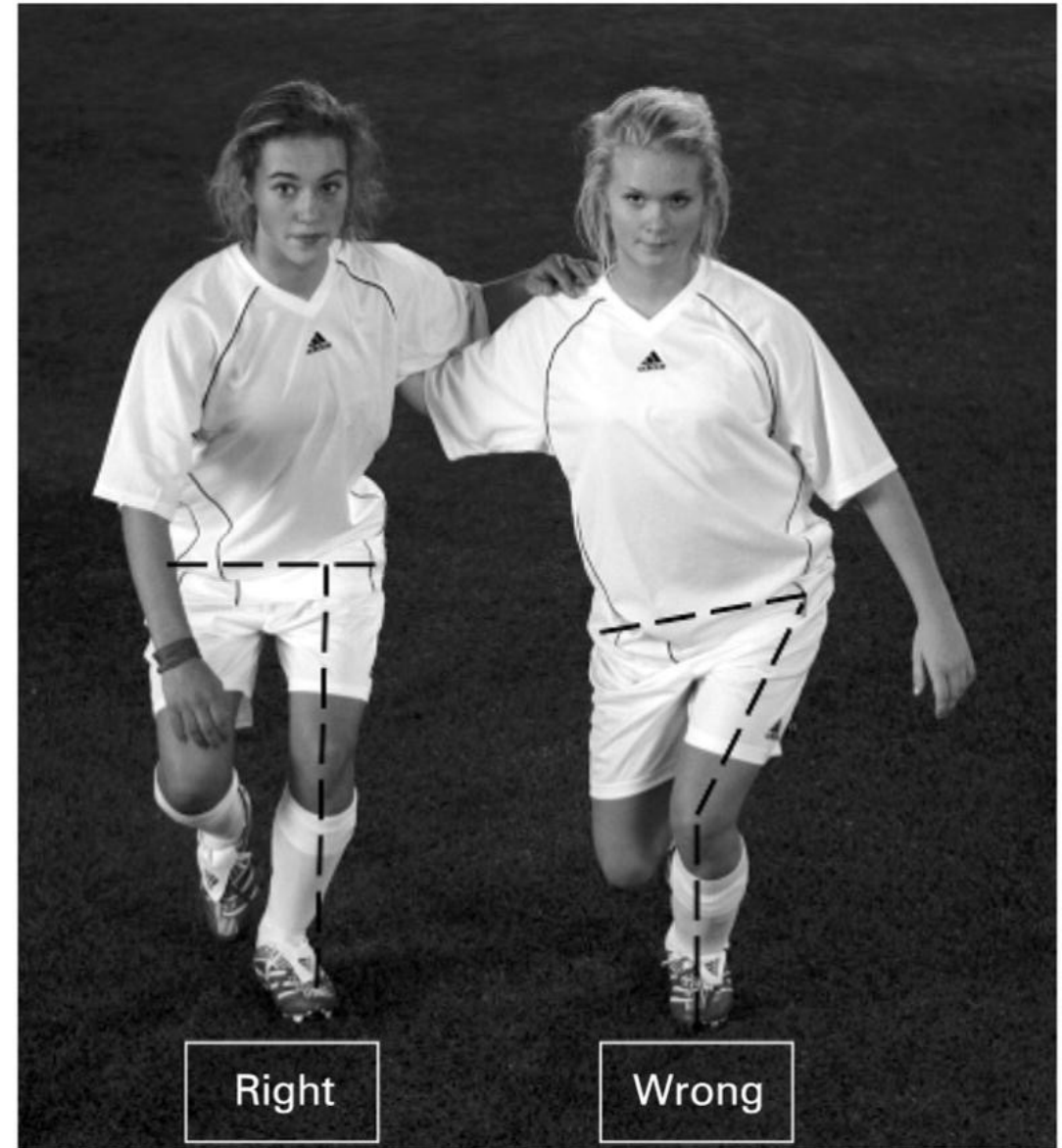
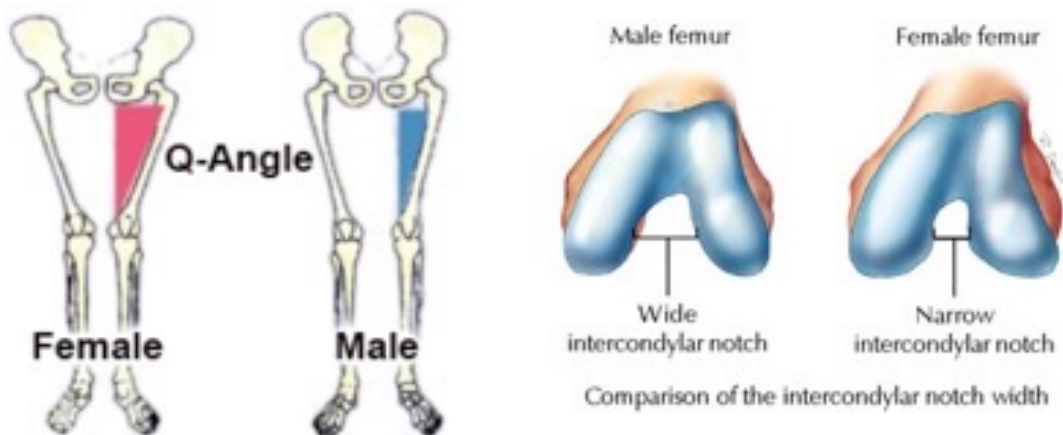
Gender en leeftijd





Waarom zijn meiden meer at risk?

- anatomie
- smallere ruimte voor de vkb
- hormonaal



Waarom deze toename?

- Meer schermtijd
- Minder bewegen
- Minder afwisseling in bewegen
- Minder actief nu is een voorspeller voor een inactieve leefstijl
- Meer meiden die voetballen





Hippocrates prevention is better than cure

*“ACL injuries in the prepubescent and adolescent years are increasing in frequency. Because the most physically active years of these children are in their future, the consequences of the injury, and the less than perfect treatment we can offer, can be **devastating**.*

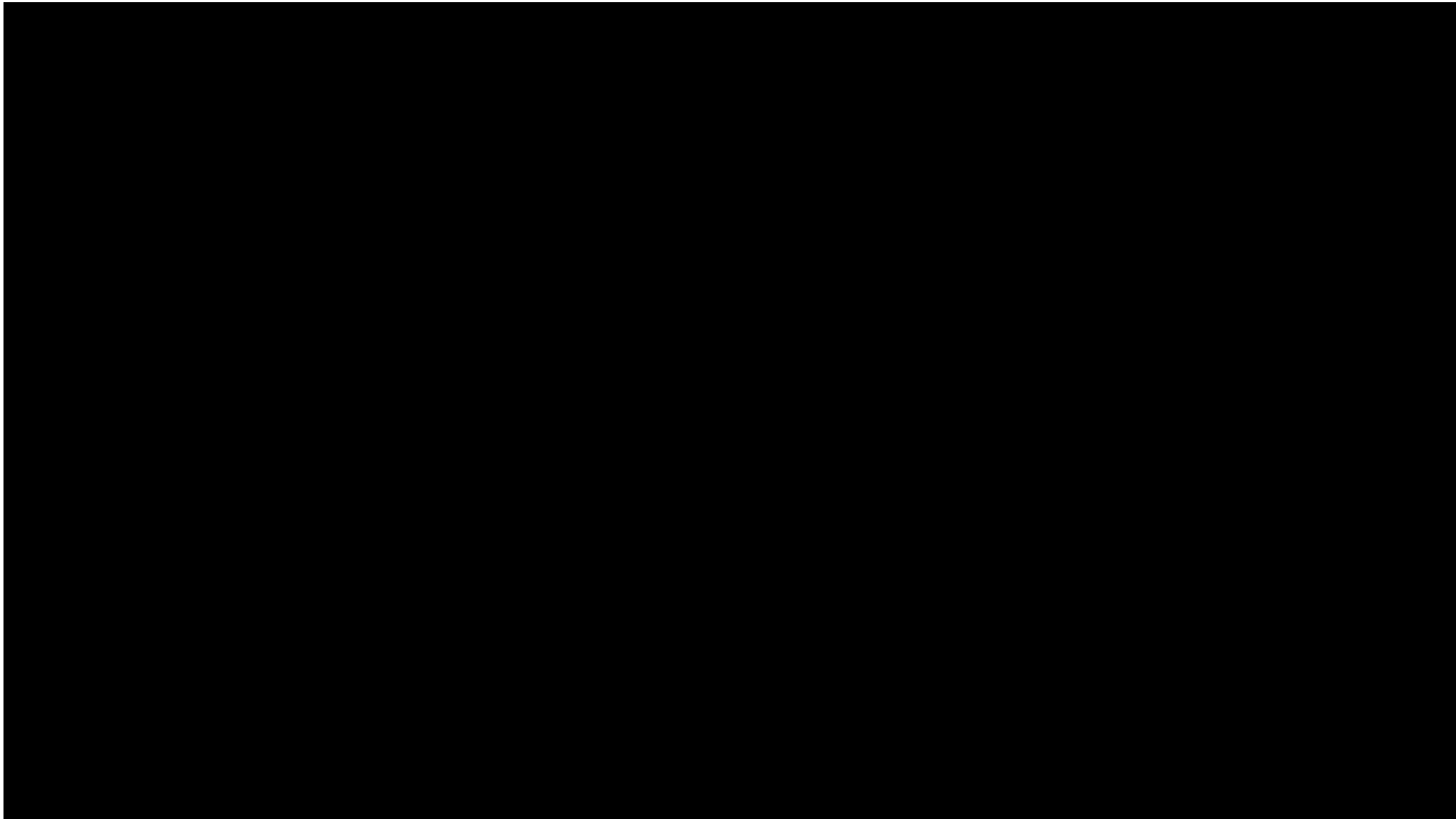
*These realities justify the most diligent efforts in **prevention** and the most beneficial treatment programs with outcome monitoring that will help identify the best course of clinical care.”*

Edward Wojtyś MD University of Michigan
ACL Research Retreat V, University of North
Carolina 2010

Wat kunnen we er aan doen?

- Meer variatie in bewegen
- Ontwikkelen basisvaardigheden
- Vaardige kinderen krijgen minder blessures
- Preventie!!





Preventie programma's

- 50% minder kans op voorste kruisband blessure bij atleten
- 67% minder voorste kruisband letsels bij vrouwelijke voetbalsters

PART 2 STRENGTH - PLYOMETRICS - BALANCE - 10 MINUTES

The grid contains 12 exercise cards:

- LEVEL 1**
 - 3 THE BENCH STATIC
 - 4 SIDEWAYS BENCH STATIC
 - 9 HAMSTRINGS BEGINNER
 - 10 SINGLE-LEG STANCE HOLD THE BALL
 - 11 SQUATS WITH TOE RAISE
 - 12 JUMPING VERTICAL JUMPS
- LEVEL 2**
 - 5 THE BENCH ALTERNATE LEGS
 - 6 SIDEWAYS BENCH RAISE & LOWER HIP
 - 10 HAMSTRINGS INTERMEDIATE
 - 10 SINGLE-LEG STANCE THROWING BALL WITH PARTNER
 - 11 SQUATS WALKING LUNGES
 - 12 JUMPING LATERAL JUMPS
- LEVEL 3**
 - 7 THE BENCH ONE LEG LIFT AND HOLD
 - 8 SIDEWAYS BENCH WITH LEG LIFT
 - 9 HAMSTRINGS ADVANCED
 - 10 SINGLE-LEG STANCE TEST YOUR PARTNER
 - 11 SQUATS ONE-LEG SQUATS
 - 12 JUMPING BOX JUMPS

ESMA
European Sports Medicine Associates
A section of ESSKA

PREVENTION for ALL!

Warm-up 1 overview, age group 12-14	Warm-up 2 overview, age group 15-17	Warm-up 3 overview, age group 18-30
01. Tripling & turn 2x	01. Tripling & turn 2x	01. Skipping for-, side- and backward 2x
02. Skipping & turn 2x	02. Skipping & turn 2x	02. Plant and cut athletic movement 2x
03. Bouncing 2x	03. Bouncing 2x	03. Squat Jump 2x4
04. Sprint Forward and Backward 2x	04. Sprint Forward and Backward 2x	04. Single leg stability 2x4
05. Buttkick 1x	05. Diagonal run and cut each leg 1x	05. 180° Jump stability 2x4
06. Zig zag shuffle 1x	06. Single leg squat wach leg 2x	06. TuckJumps 2x4
07. Squat 2x	07. Lunge walk 2x	07. Cross Jumps 2x4
08. Forward Lunge 2x	08. Forward Lunge 2x	08. One leg stability 1x4
09. Forward Lunge 2x	09. Forward Lunge 2x	09. One leg stability 1x4
10. Forward Lunge 2x	10. Kinesthetic Sprint 2x4	10. Squat Jump 2x4
11. Round Dribble 2x+ 1x	11. Squat Jump 2x4	11. Squat Jump 2x4
	12. Squat Jump 2x4	12. Squat Jump 2x4
	13. Squat Jump 2x4	13. Squat Jump 2x4
	14. Squat Jump 2x4	14. Squat Jump 2x4
	15. Squat Jump 2x4	15. Squat Jump 2x4
	16. Squat Jump 2x4	16. Squat Jump 2x4
	17. Squat Jump 2x4	17. Squat Jump 2x4
	18. Squat Jump 2x4	18. Squat Jump 2x4
	19. Squat Jump 2x4	19. Squat Jump 2x4
	20. Squat Jump 2x4	20. Squat Jump 2x4
	21. Squat Jump 2x4	21. Squat Jump 2x4
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	24. Squat Jump 2x4	24. Squat Jump 2x4
	25. Squat Jump 2x4	25. Squat Jump 2x4
	26. Squat Jump 2x4	26. Squat Jump 2x4
	27. Squat Jump 2x4	27. Squat Jump 2x4
	28. Squat Jump 2x4	28. Squat Jump 2x4
	29. Squat Jump 2x4	29. Squat Jump 2x4
	30. Squat Jump 2x4	30. Squat Jump 2x4
	31. Squat Jump 2x4	31. Squat Jump 2x4
	32. Squat Jump 2x4	32. Squat Jump 2x4
	33. Squat Jump 2x4	33. Squat Jump 2x4
	34. Squat Jump 2x4	34. Squat Jump 2x4
	35. Squat Jump 2x4	35. Squat Jump 2x4
	36. Squat Jump 2x4	36. Squat Jump 2x4
	37. Squat Jump 2x4	37. Squat Jump 2x4
	38. Squat Jump 2x4	38. Squat Jump 2x4
	39. Squat Jump 2x4	39. Squat Jump 2x4
	40. Squat Jump 2x4	40. Squat Jump 2x4
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	42. Squat Jump 2x4	42. Squat Jump 2x4
	43. Squat Jump 2x4	43. Squat Jump 2x4
	44. Squat Jump 2x4	44. Squat Jump 2x4
	45. Squat Jump 2x4	45. Squat Jump 2x4
	46. Squat Jump 2x4	46. Squat Jump 2x4
	47. Squat Jump 2x4	47. Squat Jump 2x4
	48. Squat Jump 2x4	48. Squat Jump 2x4
	49. Squat Jump 2x4	49. Squat Jump 2x4
	50. Squat Jump 2x4	50. Squat Jump 2x4

12-14 years

ACL Prevention for all Warm-up 1

1. Twisting & turn in, exercise
 Stand with feet shoulder-width apart, arms at sides. Twist torso to the right, then to the left. Repeat 10 times.

2. Wiggling & turn in, exercise
 Stand with feet shoulder-width apart, arms at sides. Wiggle knees, then turn torso to the right, then to the left. Repeat 10 times.

3. Bouncing in place in, exercise
 Stand with feet shoulder-width apart, arms at sides. Bounce in place, landing on the balls of the feet. Repeat 10 times.

4. Sprint Forward and Backward in, agility
 Stand with feet shoulder-width apart, arms at sides. Sprint forward, then backward. Repeat 10 times.

5. Shuttle in, agility
 Stand with feet shoulder-width apart, arms at sides. Shuttle between two lines, touching each line. Repeat 10 times.

6. Zig-zag shuffle in, agility
 Stand with feet shoulder-width apart, arms at sides. Shuffle in a zig-zag pattern. Repeat 10 times.

7. Lunge with in, strength
 Stand with feet shoulder-width apart, arms at sides. Lunge forward, then backward. Repeat 10 times.

8. Forward lunge in, strength
 Stand with feet shoulder-width apart, arms at sides. Lunge forward, then backward. Repeat 10 times.

9. Single leg balance - strength, in, each leg, balance
 Stand with feet shoulder-width apart, arms at sides. Balance on one leg. Repeat 10 times.

10. Knee lift in, exercise
 Stand with feet shoulder-width apart, arms at sides. Lift one knee. Repeat 10 times.

11. Squat jump in place and sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Squat, then jump. Repeat 10 times.

12. Sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Sprint forward. Repeat 10 times.

13. Sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Sprint forward. Repeat 10 times.

14. Sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Sprint forward. Repeat 10 times.

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15-17 years

ACL Prevention for all Warm-up 2

1. Twisting & turn in, exercise
 Stand with feet shoulder-width apart, arms at sides. Twist torso to the right, then to the left. Repeat 10 times.

2. Wiggling & turn in, exercise
 Stand with feet shoulder-width apart, arms at sides. Wiggle knees, then turn torso to the right, then to the left. Repeat 10 times.

3. Bouncing in place in, exercise
 Stand with feet shoulder-width apart, arms at sides. Bounce in place, landing on the balls of the feet. Repeat 10 times.

4. Sprint Forward and Backward in, agility
 Stand with feet shoulder-width apart, arms at sides. Sprint forward, then backward. Repeat 10 times.

5. Shuttle in, agility
 Stand with feet shoulder-width apart, arms at sides. Shuttle between two lines, touching each line. Repeat 10 times.

6. Zig-zag shuffle in, agility
 Stand with feet shoulder-width apart, arms at sides. Shuffle in a zig-zag pattern. Repeat 10 times.

7. Lunge with in, strength
 Stand with feet shoulder-width apart, arms at sides. Lunge forward, then backward. Repeat 10 times.

8. Forward lunge in, strength
 Stand with feet shoulder-width apart, arms at sides. Lunge forward, then backward. Repeat 10 times.

9. Single leg balance - strength, in, each leg, balance
 Stand with feet shoulder-width apart, arms at sides. Balance on one leg. Repeat 10 times.

10. Knee lift in, exercise
 Stand with feet shoulder-width apart, arms at sides. Lift one knee. Repeat 10 times.

11. Squat jump in place and sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Squat, then jump. Repeat 10 times.

12. Sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Sprint forward. Repeat 10 times.

13. Sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Sprint forward. Repeat 10 times.

14. Sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Sprint forward. Repeat 10 times.

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18-20 y

old ACL Prevention for all Warm-up 3

1. Twisting & turn in, exercise
 Stand with feet shoulder-width apart, arms at sides. Twist torso to the right, then to the left. Repeat 10 times.

2. Wiggling & turn in, exercise
 Stand with feet shoulder-width apart, arms at sides. Wiggle knees, then turn torso to the right, then to the left. Repeat 10 times.

3. Bouncing in place in, exercise
 Stand with feet shoulder-width apart, arms at sides. Bounce in place, landing on the balls of the feet. Repeat 10 times.

4. Sprint Forward and Backward in, agility
 Stand with feet shoulder-width apart, arms at sides. Sprint forward, then backward. Repeat 10 times.

5. Shuttle in, agility
 Stand with feet shoulder-width apart, arms at sides. Shuttle between two lines, touching each line. Repeat 10 times.

6. Zig-zag shuffle in, agility
 Stand with feet shoulder-width apart, arms at sides. Shuffle in a zig-zag pattern. Repeat 10 times.

7. Lunge with in, strength
 Stand with feet shoulder-width apart, arms at sides. Lunge forward, then backward. Repeat 10 times.

8. Forward lunge in, strength
 Stand with feet shoulder-width apart, arms at sides. Lunge forward, then backward. Repeat 10 times.

9. Single leg balance - strength, in, each leg, balance
 Stand with feet shoulder-width apart, arms at sides. Balance on one leg. Repeat 10 times.

10. Knee lift in, exercise
 Stand with feet shoulder-width apart, arms at sides. Lift one knee. Repeat 10 times.

11. Squat jump in place and sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Squat, then jump. Repeat 10 times.

12. Sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Sprint forward. Repeat 10 times.

13. Sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Sprint forward. Repeat 10 times.

14. Sprint in, plyometrics, jumping
 Stand with feet shoulder-width apart, arms at sides. Sprint forward. Repeat 10 times.

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