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INSTITUTO WILSON MELLO FISIOTERAPIA



LUIZSCOLA
FISIOTERAPEUTA | MSC



CINETICS PHYSIO



**SANTA CASA
de São Paulo**

Avaliação e reabilitação do Ligamento Cruzado Anterior.

Ft. Luiz Scola
@luizscola
Mestre em fisioterapia- UNICID
Especialista em fisioterapia musculo
esquelética- ISCMSP

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THE NEW ENGLAND JOURNAL OF MEDICINE

ORIGINAL ARTICLE

A Randomized Trial of Treatment for Acute Anterior Cruciate Ligament Tears

Richard B. Frobell, Ph.D., Ewa M. Roos, P.T., Ph.D., Harald P. Roos, M.D., Ph.D., Jonas Ranstam, Ph.D., and L. Stefan Lohmander, M.D., Ph.D.

**Epidemiology and
Diagnosis of Anterior
Cruciate Ligament Injuries**

Christopher C. Kaeding, MD^{a,b,*}, Benjamin Léger-St-Jean, MD^c, Robert A. Magnussen, MPH, MD^d

- Entre um e três bilhões de dólares anuais



2

DOUGLAS ADAMS, PT, DPT, SCS, CSCS • DAVID LIGERSTEIN, PT, PhD, MPT, SCS • AIRELLE HUNTER-GERARDINO, PT, DPT, SCS, CCS, CSCS
MICHAEL J. AXE, MD • LYNN SWYDER-WACKLER, PT, ATC, SCS, FAPTR

Epidemiologia

Current Concepts for Anterior Cruciate Ligament Reconstruction: A Criterion-Based Rehabilitation Progression

200.000/ano



65%/cirúrgicos

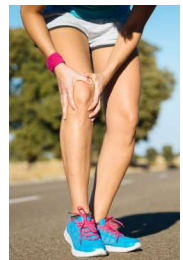


Evidence-based clinical practice update: practice guidelines for anterior cruciate ligament rehabilitation based on a systematic review and multidisciplinary consensus

Epidemiologia

Nicky van Melick,^{1,2} Robert E H van Cingel,^{3,4} Frans Brooijmans,⁵ Camille Neeter,⁶ Tony van Tienen,⁷ Wim Hulleger,⁸ Maria W G Nijhuis-van der Sanden¹

3%/ lesão de LCA



15%/ lesão de LCA



Epidemiologia

[Br J Sports Med](#), 2014 Nov;48(21):1543-52. doi: 10.1136/bjsports-2013-093398. Epub 2014 Aug 25.

Fifty-five per cent return to competitive sport following anterior cruciate ligament reconstruction surgery: an updated systematic review and meta-analysis including aspects of physical functioning and contextual factors.

[Ardern CL](#)¹, [Taylor NF](#)¹, [Feller JA](#)², [Webster KE](#)¹.

[Br J Sports Med](#), 2011 Jun;45(7):596-606. doi: 10.1136/bjsm.2010.076364. Epub 2011 Mar 11.

Return to sport following anterior cruciate ligament reconstruction surgery: a systematic review and meta-analysis of the state of play.

[Ardern CL](#)¹, [Webster KE](#), [Taylor NF](#), [Feller JA](#).

[Am J Sports Med](#), 2010 Nov;38(11):2233-9. doi: 10.1177/0363546510372798. Epub 2010 Jul 7.

Return to play after anterior cruciate ligament reconstruction in National Football League athletes.

[Shah VM](#)¹, [Andrews JR](#), [Fleisig GS](#), [McMichael CS](#), [Lemak LJ](#).

35%/ Ñ retornam ao nível pré lesão em 2 anos

5

Epidemiologia

[Am J Sports Med](#), 2012 Jan;40(1):41-8. doi: 10.1177/0363546511422999. Epub 2011 Sep 23.

Return-to-sport outcomes at 2 to 7 years after anterior cruciate ligament reconstruction surgery.

[Ardern CL](#)¹, [Taylor NF](#), [Feller JA](#), [Webster KE](#).

[Am J Sports Med](#), 2012 Nov;40(11):2517-22. doi: 10.1177/0363546512459476. Epub 2012 Sep 21.

Return to play and future ACL injury risk after ACL reconstruction in soccer athletes from the Multicenter Orthopaedic Outcomes Network (MOON) group.

[Brophy RH](#)¹, [Schmitz L](#), [Wright RW](#), [Dunn WR](#), [Parker RD](#), [Andrish JT](#), [McCarty EC](#), [Spindler KP](#).

[Am J Sports Med](#), 2012 Nov;40(11):2523-9. doi: 10.1177/0363546512456836. Epub 2012 Aug 24.

Return to high school- and college-level football after anterior cruciate ligament reconstruction: a Multicenter Orthopaedic Outcomes Network (MOON) cohort study.

[McCullough KA](#)¹, [Phelos KD](#), [Spindler KP](#), [Matava MJ](#), [Dunn WR](#), [Parker RD](#); MOON Group, [Reinke EK](#).

50%/ culpam a lesão de LCA

6

Epidemiologia

[Knee Surg Sports Traumatol Arthrosc.](#) 2005 Jul;13(5):393-7. Epub 2005 Feb 10.

Fear of re-injury: a hindrance for returning to sports after anterior cruciate ligament reconstruction.

[Kvist J¹](#), [Ek A](#), [Sporrstedt K](#), [Good L](#).

[J Orthop Sports Phys Ther.](#) 2008 Dec;38(12):746-53. doi: 10.2519/jospt.2008.2887.

The association of pain and fear of movement/reinjury with function during anterior cruciate ligament reconstruction rehabilitation.

[Chmielewski TL¹](#), [Jones D](#), [Day T](#), [Tillman SM](#), [Lentz TA](#), [George SZ](#).

Medo da re-lesão

7

Epidemiologia

[Knee Surg Sports Traumatol Arthrosc.](#) 2005 Jul;13(5):393-7. Epub 2005 Feb 10.

Fear of re-injury: a hindrance for returning to sports after anterior cruciate ligament reconstruction.

[Kvist J¹](#), [Ek A](#), [Sporrstedt K](#), [Good L](#).

[J Orthop Sports Phys Ther.](#) 2008 Dec;38(12):746-53. doi: 10.2519/jospt.2008.2887.

The association of pain and fear of movement/reinjury with function during anterior cruciate ligament reconstruction rehabilitation.

[Chmielewski TL¹](#), [Jones D](#), [Day T](#), [Tillman SM](#), [Lentz TA](#), [George SZ](#).

3-22% tem re-lesão ipsilateral
3-24% tem re-lesão contra lateral



5

8

Epidemiologia

Evidence-based clinical practice update: practice guidelines for anterior cruciate ligament rehabilitation based on a systematic review and multidisciplinary consensus

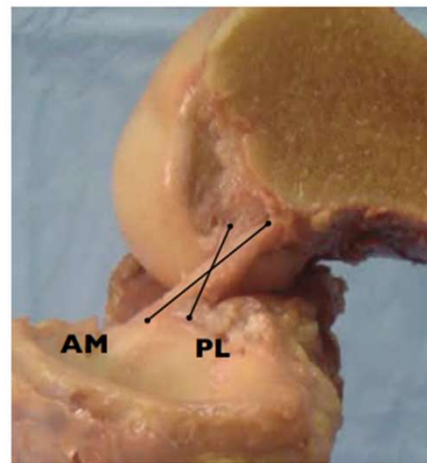
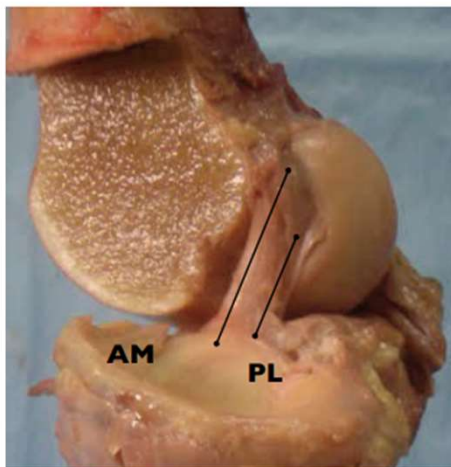
Nicky van Melick,^{1,2} Robert E H van Ginzel,^{3,4} Frans Brooijmans,⁵ Camille Neeter,⁶ Tony van Tienen,⁷ Wim Hullegie,⁸ Maria W G Nijhuis-van der Sanden¹



Mulheres tem 2-8 vezes mais chances de terem lesões de LCA. Quando comparadas a seus pares.

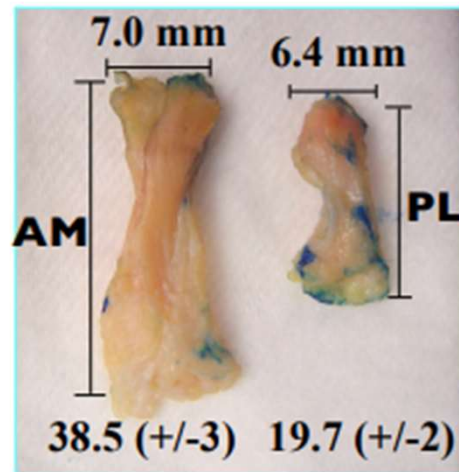
9

Anatomia



10

Anatomia



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Epidemiologia

Evidence-based clinical practice update: practice guidelines for anterior cruciate ligament rehabilitation based on a systematic review and multidisciplinary consensus

Nicky van Melick,^{1,2} Robert E H van Cingel,^{3,4} Frans Brooijmans,⁵ Camille Neeter,⁶ Tony van Tienen,⁷ Wim Hullegie,⁸ Maria W G Nijhuis-van der Sanden¹




- Mecanorreceptores
- Controle neuromuscular

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Original research

Systematic video analysis of ACL injuries in professional male football (soccer): injury mechanisms, situational patterns and biomechanics study on 134 consecutive cases

Francesco Della Villa ¹, Matthew Buckthorpe,¹ Alberto Grassi,² Alberto Nabiuzzi,¹ Filippo Tosarelli,¹ Stefano Zaffagnini,² Stefano Della Villa¹

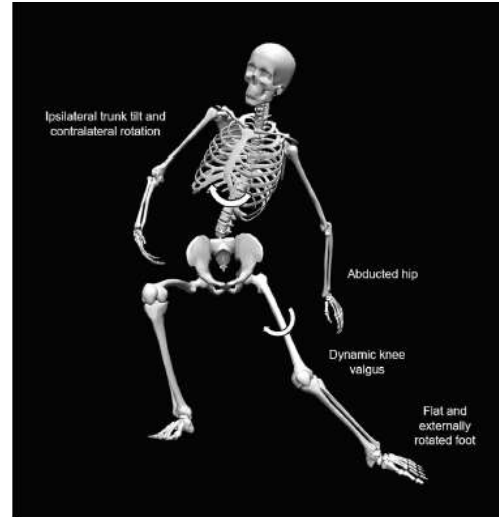


Figure 4 Frequently observed mechanism for non-contact ACL injuries during pressing situation.

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Original article

British Journal of
Sports Medicine

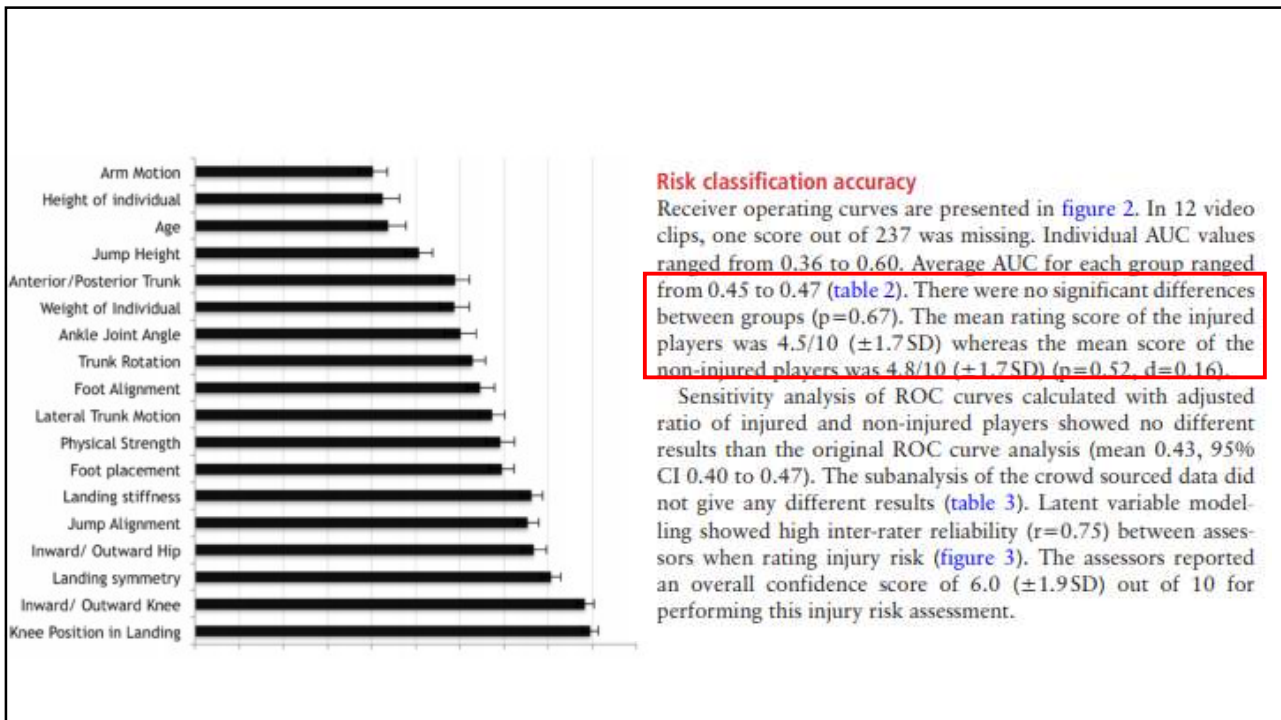
I spy with my little eye ... a knee about to go 'pop'? Can coaches and sports medicine professionals predict who is at greater risk of ACL rupture?

Anne Inger Mørtnvedt ¹, Tron Krosshaug,² Roald Bahr,² Erich Petushek^{3,4}



	Very Low 1	2	3	4	5	6	7	8	9	Very High 10
Risk for ACL Injury	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14



15

Avaliação



16

Clinical Diagnosis of an Anterior Cruciate Ligament Rupture: A Meta-analysis

Anne Benjamin, PT¹
 Allie Coakley, PT¹
 曹 P. van der Schans, PT, PhD²

TABLE 3A. Anterior drawer test, without anesthesia, whole group.

	Sensitivity (95% CI)	Specificity (95% CI)	LR+ (95% CI)	LR- (95% CI)	DOR (95% CI)
Anderson et al, 1989	27 (14-43)				
Boeree et al, 1991	56 (42-69)	92 (86-96)	6.7 (3.7-12.1)	0.5 (0.4-0.6)	14 (6-31)
Bombberg et al, 1990	41 (21-64)	100 (48-100)	5.0 (0.3-73.6)	0.6 (0.4-1.0)	8 (0-157)
Braunstein, 1982	91 (59-100)	100 (82-100)	33.3 (2.1-516.7)	0.1 (0.0-0.6)	259 (10-6945)
DeHaven, 1980	9 (2-23)				
Donaldson et al, 1985	70 (60-79)				
Hardaker et al, 1990	18 (11-27)				
Hughston et al, 1976	58 (37-78)	50 (30-70)	1.2 (0.7-1.9)	0.8 (0.5-1.5)	1 (0-4)
Jonsson et al, 1982	95 (87-99)				
Lee et al, 1988	78 (56-93)	100 (94-100)	87.9 (5.5-1399.9)	0.2 (0.1-0.5)	380 (20-7206)
Liu et al, 1995	61 (43-76)				
Mitsou et al, 1988	40 (28-54)				
Mitsou et al, 1988	95 (88-99)				
Noyes et al, 1980	25 (15-37)	96 (79-100)	5.9 (0.8-42.3)	0.8 (0.7-0.9)	8 (1-60)
Rubinstein et al, 1994 [†]	76 (38-96)	87 (69-96)	5.6 (2.1-14.6)	0.3 (0.1-0.9)	20 (3-124)
Sandberg et al, 1986	39 (30-48)	97 (88-100)	11.2 (2.8-44.6)	0.6 (0.5-0.7)	18 (4-76)
Steinbrück et al, 1988	92 (81-98)	91 (87-94)	10.4 (6.9-15.7)	0.1 (0.0-0.2)	121 (40-368)
Tonino et al, 1986	27 (12-46)	100 (85-100)	12.6 (0.8-207.6)	0.7 (0.6-0.9)	17 (1-313)
Torg et al, 1976	52 (44-61)	100 (95-100)	82.5 (5.2-1312.9)	0.5 (0.4-0.6)	171 (10-2821)
Warren et al, 1978	71 (61-80)	77 (56-91)	3.095 (1.5-6.3)	0.4 (0.3-0.5)	8 (3-23)
Pooled	55 (52-58)*	92 (90-94)*	7.3 (3.5-15.2)*	0.5 (0.4-0.6)*	21 (8-53)*
Sample size aggregate results	1809	1420	1420	1420	1420

* $P < .05$.

[†] Index test measured independently of all other clinical information.

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Clinical Diagnosis of an Anterior Cruciate Ligament Rupture: A Meta-analysis

Anne Benjamin, PT¹
 Ali Gökeler, PT²
 Cao P. van der Schans, PT, PhD³

TABLE 4A. Lachman test, without anesthesia, whole group.

	Sensitivity (95% CI)	Specificity (95% CI)	LR+ (95% CI)	LR- (95% CI)	DOR (95% CI)
Anderson et al, 1989	91 (79-98)				
Boeree et al, 1991	63 (49-75)	90 (84-95)	6.5 (3.8-11.0)	0.4 (0.3-0.6)	16 (7-33)
Bomberg et al, 1990	86 (65-97)	60 (15-95)	2.2 (0.7-6.4)	0.2 (0.1-0.8)	10 (1-83)
Cooperman et al, 1990 [†]	71 (40-92)	54 (30-77)	1.5 (0.8-2.8)	0.5 (0.2-1.4)	3 (1-13)
Dahlstedt et al, 1989	100 (82-100)				
Dahlstedt et al, 1989	100 (85-100)				
DeHaven, 1980	80 (52-96)				
Donaldson et al, 1985	99 (95-100)				
Harilainen, 1987	98 (94-100)	98 (94-99)	40.0 (16.8-95.0)	0.0 (0.0-0.1)	1897 (446-8067)
Hardaker et al, 1990	74 (65-82)				
Jonsson et al, 1982	97 (89-100)				
Learmonth, 1991	68 (55-79)	94 (89-97)	10.7 (5.7-20.0)	0.3 (0.2-0.5)	31 (13.514-71)
Lee et al, 1988	91 (72-99)	100 (94-100)	102.1 (6.4-1618.4)	0.1 (0.0-0.3)	972 (45-21076)
Liu et al, 1995	95 (82-99)				
Mitsou et al, 1988	99 (94-100)				
Rubinstein et al, 1994 [†]	96 (60-100)	100 (89-100)	58.2 (3.7-917.4)	0.1 (0.0-0.7)	637 (19-21843)
Sandberg et al, 1986	48 (39-57)	97 (88-100)	13.8 (3.5-54.5)	0.5 (0.5-0.6)	25 (6-109)
Schwarz et al, 1997	92 (80-98)	56 (25-85)	2.1 (1.1-4.1)	0.1 (0.0-0.4)	15 (3-72)
Steinbrück et al, 1988	86 (74-94)	92 (88-95)	10.7 (7.0-16.6)	0.1 (0.1-0.3)	72 (29-180)
Tonino et al, 1986	90 (74-98)	100 (85-100)	40.8 (2.6-634.8)	0.1 (0.0-0.3)	354 (17-7210)
Torp et al, 1976	96 (92-99)	100 (95-100)	151.7 (9.6-2403.9)	0.0 (0.0-0.1)	3754 (205-68805)
Pooled	85 (83-87)*	94 (92-95)*	10.2 (4.6-22.7)*	0.2 (0.1-0.3)*	70 (23-206)*
Sample size aggregate results	2276	1729	1729	1729	1729

* $P < .05$.

[†] Index test measured independently of all other clinical information.

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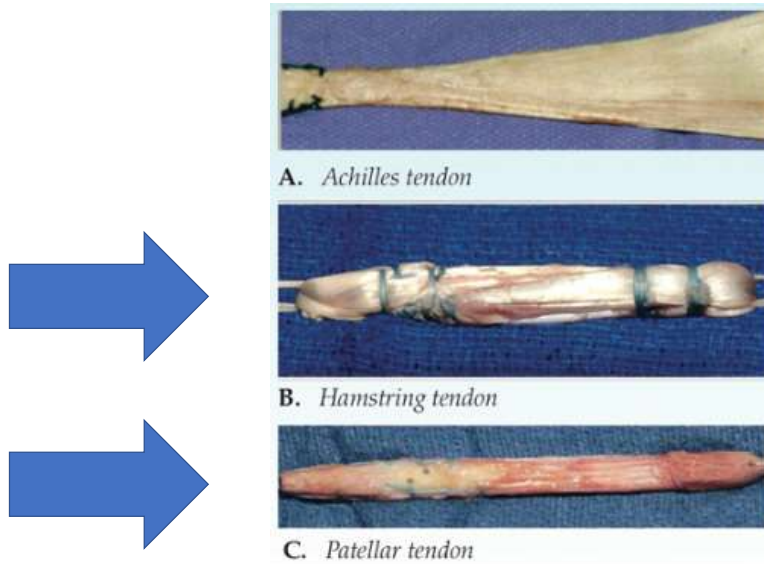
21

Cirurgia



22

Implicações do tipo de enxerto



23

Implicações do tipo de enxerto

1. Dor na região doadora do enxerto
2. Dor ao ajoelhar

1. Evitar FM de IQT 0-12 semanas
2. Não existe diferença de ganho de FM

C. *Patellar tendon*B. *Hamstring tendon*

Lacidão Crepitação Circunferência Força muscular

Hop tests Tempo de retorno ao esporte

24

Implicações do tipo de enxerto



25

Implicações
do tipo de
enxerto



26

J Orthop Res. 2003 Mar;21(2):291-7
Klein SS, Fulkerson DJ, Pearce P, Gearty AC
The relationship between knee strength and functional stability before and after anterior cruciate ligament reconstruction.

Bone Joint Surg Am. 2002 Sep;84(9):1553-7.
Kocera MS, Stachura JB, Riggs K, Zurakowski C, Sheeth W, Hawkins RJ
Determinants of patient satisfaction with outcome after anterior cruciate ligament reconstruction.

Reabilitação pré operatória

REABILITAÇÃO PRÉ OPERATÓRIA MELHORA OS DESEFECHOS FINAIS!

Arthroscopy. 2007 Jan;23(1):21-8. 28.e1-3.
Functional assessment and muscle strength before and after anterior cruciate ligament lesions.
de Jong SN¹, van Caspel DR, van Haeff MJ, Saris DB.

Br J Sports Med. 2009 May;43(5):371-6. doi: 10.1136/bjsm.2008.057001.
Preoperative quadriceps strength and functional outcome after anterior cruciate ligament reconstruction: a systematic review.
Eitzen I¹, Holm J, Risberg MA.

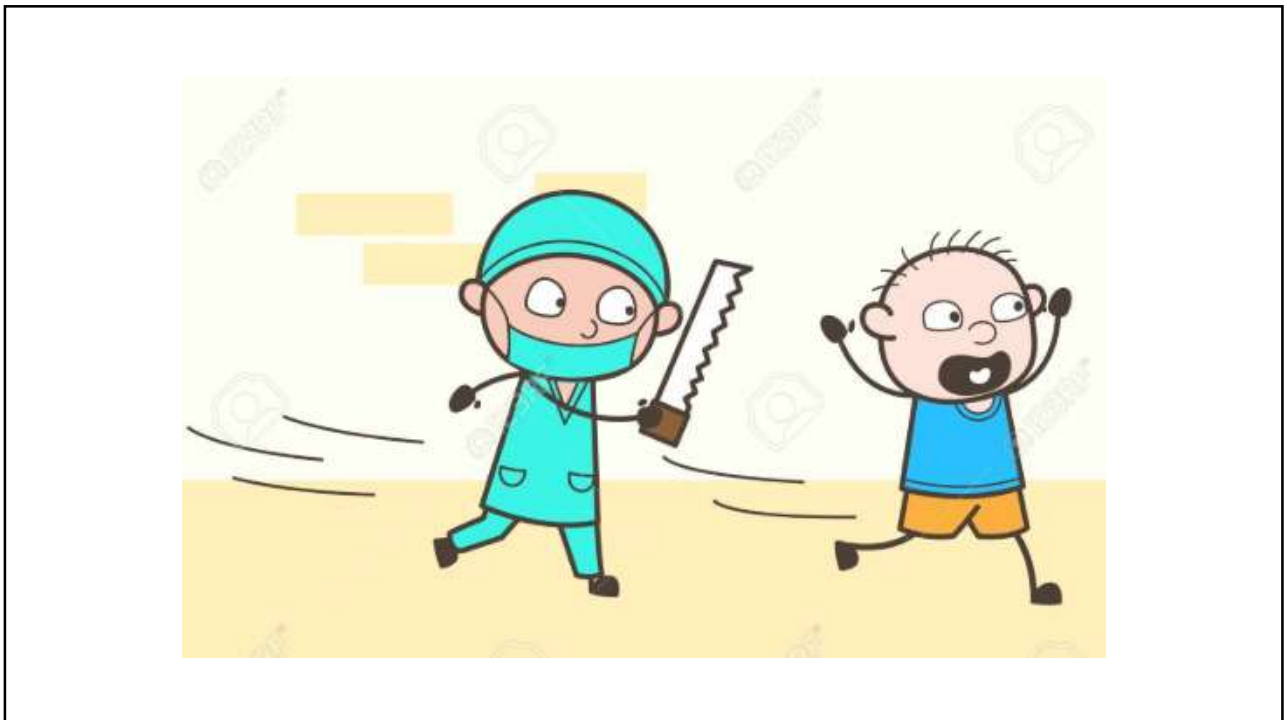
J Orthop Sports Phys Rehabil. 2009 Jun;39(6):334-9. doi: 10.1177/08980101083345.
Anterior cruciate ligament reconstruction with autologous cartilage grafts: a 2-year follow-up study.
Kocera MS, Stachura JB, Riggs K, Zurakowski C, Sheeth W, Hawkins RJ.

Evidence-based clinical practice update: practice guidelines for anterior cruciate ligament rehabilitation based on a systematic review and multidisciplinary consensus
Kocera MS, Stachura JB, Riggs K, Zurakowski C, Sheeth W, Hawkins RJ.

Arthroscopy. 2007 Jan;23(1):21-8. 28.e1-3.
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Br J Sports Med. 2009 May;43(5):371-6. doi: 10.1136/bjsm.2008.057001.
Preoperative quadriceps strength and functional outcome after anterior cruciate ligament reconstruction: a systematic review.
Eitzen I¹, Holm J, Risberg MA.

J Orthop Sports Phys Rehabil. 2009 Jun;39(6):334-9. doi: 10.1177/08980101083345.
Anterior cruciate ligament reconstruction with autologous cartilage grafts: a 2-year follow-up study.
Kocera MS, Stachura JB, Riggs K, Zurakowski C, Sheeth W, Hawkins RJ.



Review

How should clinicians rehabilitate patients after ACL reconstruction? A systematic review of clinical practice guidelines (CPGs) with a focus on quality appraisal (AGREE II)

Renato Andrade,^{1,2,3} Rogério Pereira,^{1,2,3,4} Robert van Cingel,^{5,6} J Bart Staal,^{6,7} João Espregueira-Mendes^{1,2,8,9}

Evidence-based clinical practice update: practice guidelines for anterior cruciate ligament rehabilitation based on a systematic review and multidisciplinary consensus

Nicky van Melick,^{1,2} Robert E H van Cingel,^{3,4} Frans Brooijmans,⁵ Camille Neeter,⁶ Tony van Tienen,⁷ Wim Hullegie,⁸ Maria W G Nijhuis-van der Sanden¹

Optimising the Early-Stage Rehabilitation Process Post-ACL Reconstruction

Matthew Buckthorpe^{1,2} · Alii Gokela³ · Lee Herrington⁴ · Mick Hughes⁵ · Alberto Grassi⁶ · Ross Wadley⁷ · Stephen Patterson⁸ · Alessandro Compagnin⁹ · Giovanni La Rosa² · Francesco Della Villa¹

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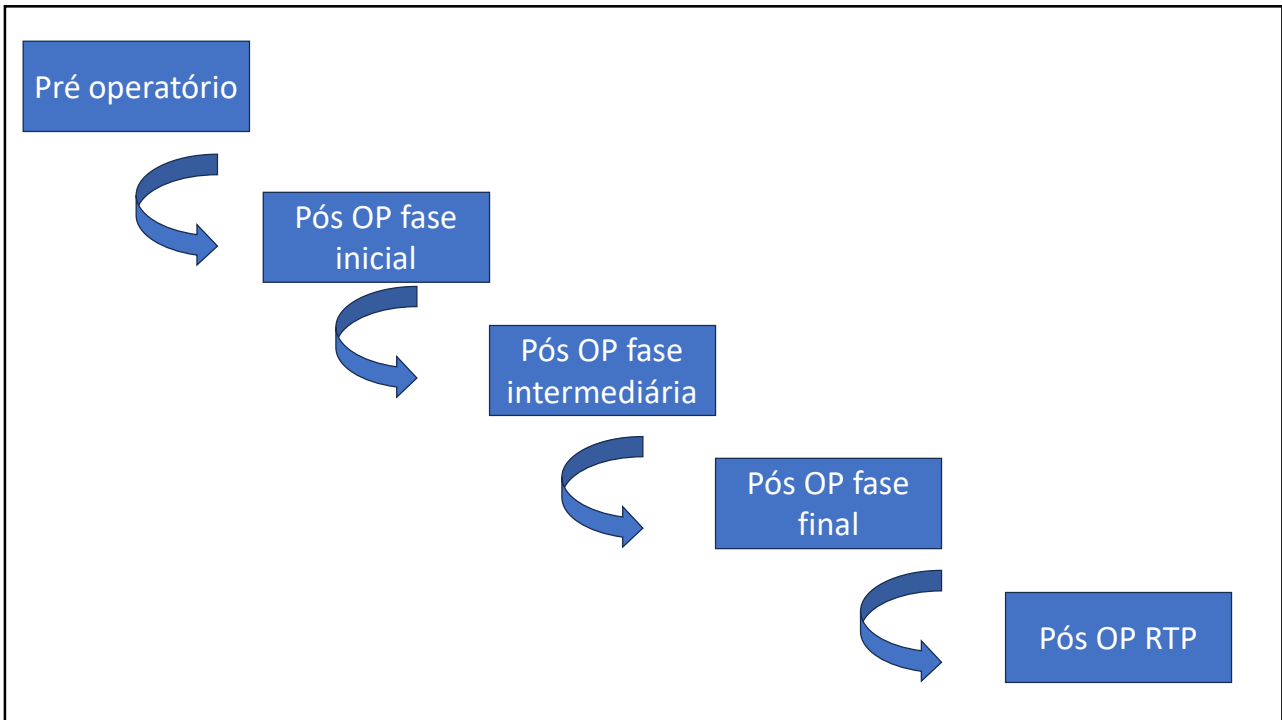
Optimising the 'Mid-Stage' Training and Testing Process After ACL Reconstruction

Matthew Buckthorpe^{1,2} · Francesco Della Villa¹

Optimising the Late-Stage Rehabilitation and Return-to-Sport Training and Testing Process After ACL Reconstruction

Matthew Buckthorpe^{1,2}

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Pós OP fase
inicial

Objetivos

1. Dor e edema
2. Amplitude de movimento da articulação do joelho (ADM)
3. Inibição muscular artrogênica e força muscular
4. Qualidade de movimento/controlado neuromuscular durante atividades da vida diária
5. Fatores psicossociais, culturais e ambientais
6. Preservação da aptidão física

31

Pós OP fase
inicial

Reabilitação pós operatória

- Fase imediata pós operatória (1ª semana)

- 25% dos pacientes apresentam 3- 5^o de déficits de ADM.



- Fraqueza de quadríceps.



32

Pós OP fase inicial

Reabilitação pós operatória



33

Pós OP fase inicial



34

Pós OP fase
inicial

Reabilitação pós operatória

[Clin Sports Med. 2008 Jul;27\(3\):383-404. vii. doi: 10.1016/j.csm.2008.03.004.](#)

Neuromuscular consequences of anterior cruciate ligament injury.

[Ingersoll CD¹](#), [Grindstaff TL](#), [Pietrosimone BG](#), [Hart JM](#).

⊕ [Author information](#)

Inibição muscular entre 6 meses e 15 anos P.O

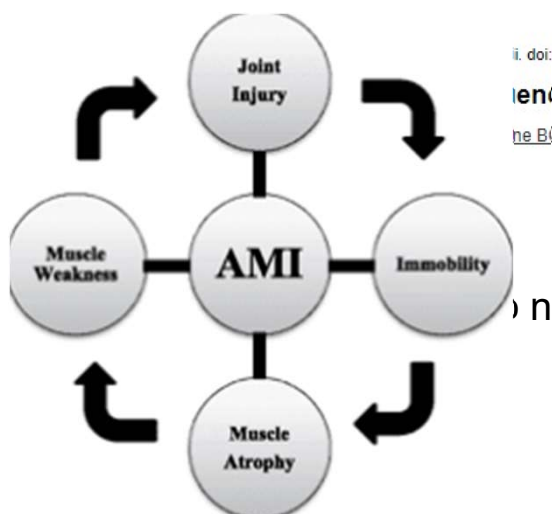
Por que esta inibição acontece?



35

Pós OP fase
inicial

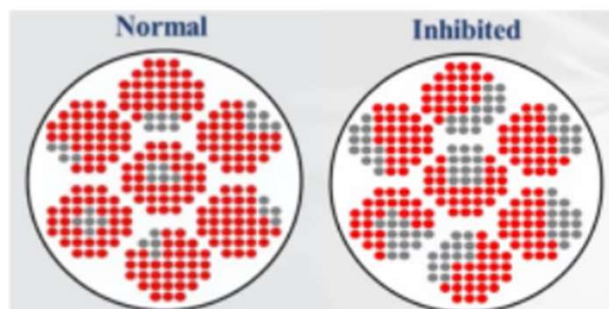
Reabilitação pós operatória



[doi: 10.1016/j.csm.2008.03.004.](#)

len
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36

Pós OP fase
inicial

Reabilitação pós operatória

- EENM.

J Bone Joint Surg Am. 1995 Aug;77(8):1166-73.

Strength of the quadriceps femoris muscle and functional recovery after reconstruction of the anterior cruciate ligament. A prospective, randomized clinical trial of electrical stimulation.

Snyder-Mackler L¹, Delitto A, Bailey SL, Stralka SW.

Phys Ther. 1994 Oct;74(10):901-7.

Use of electrical stimulation to enhance recovery of quadriceps femoris muscle force production in patients following anterior cruciate ligament reconstruction.

Snyder-Mackler L¹, Delitto A, Stralka SW, Bailey SL.

KNEE

Neuromuscular electrical stimulation is effective in strengthening the quadriceps muscle after anterior cruciate ligament surgery

Annette V. Hauger¹ · M. P. Reiman² · J. M. Bjordal^{3,4} · C. Sheets⁵ · L. Ledbetter⁶ · A. P. Goode^{2,7,8}

37

Pós OP fase
inicial

Reabilitação pós operatória



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Pós OP fase inicial

Reabilitação pós operatória



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Pós OP fase inicial

Reabilitação pós operatória



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Pós OP fase
inicial

Reabilitação pós operatória

- Fase pós operatória recente (2ª semana)
- Muletas: Critérios individuais
- Imobilizador: Ausência de sinal de lag + outras cirurgias

41

Pós OP fase
inicial

Retirada de muletas



42

Pós OP fase
inicial

Reabilitação pós operatória

- Fase pós operatória recente (2ª semana)
- Início de exercícios em CCF 0-45 graus.



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Pós OP fase
inicial

Anterior Cruciate Ligament Strain Behavior During Rehabilitation Exercises In Vivo*

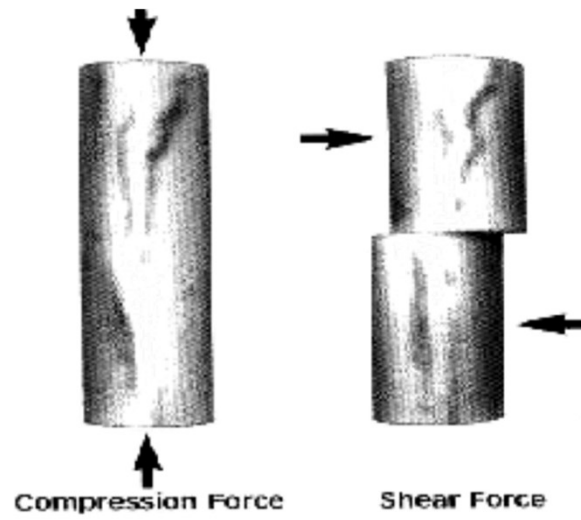
Bruce D. Beynon,† PhD, Braden C. Fleming, MS, Robert J. Johnson, MD, Claude E. Nichols, MD, Per A. Renström, MD, PhD, and Malcolm H. Pope, DrMedSc, PhD

TABLE 2
Rank comparison of activities based on peak strain measurements during the activity

Activity ^a	Peak strain %	Subjects (N)
Iso quads at 15° (to 30 N-m of extension torque)	4.4	8
Active ROM with a 45-N weight boot	3.8	9
Lachman test (150 N of anterior shear load at 30°) ^b	3.7	10
Active ROM ^b	2.8	18
Simultaneous quads and hams contraction at 15°	2.8	8
Iso quads at 30° (to 30 N-m of extension torque) ^b	2.7	18
Anterior drawer test (150 N of anterior shear load at 90°) ^b	1.8	10
Iso hams at 15° (to -10 N-m of flexion torque)	0.6	8
Simultaneous quads and hams contraction at 30°	0.4	8
Passive ROM ^b	0.1	10
Iso quads at 60° (to 30 N-m of extension torque)	0.0	8
Iso quads at 90° (to 30 N-m of extension torque) ^b	0.0	18
Simultaneous quads and hams contraction at 60°	0.0	8
Simultaneous quads and hams contraction at 90°	0.0	8
Iso hams at 30°, 60°, and 90° (to -10 N-m of flexion torque)	0.0	5

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Pós OP fase
inicial



45



NÃO REALIZAR

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Pós OP fase
inicial

Reabilitação pós operatória

- 3^a- 5^a semana

- Início dos exercícios em CCA: 90-45 graus
 - Inclusão de treino sensório motor.
 - Treino permitido pelo paciente.

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Pós OP fase
inicial



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Pós OP fase
inicial

Reabilitação pós operatória

- EENM.



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Pós OP fase
inicial

Reabilitação pós operatória

- Inclusão de treino sensório motor.
- Treino permitido pelo paciente.



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Pós OP fase
inicial

Reabilitação pós operatória



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Pós OP fase
intermediária

Progressão de fase

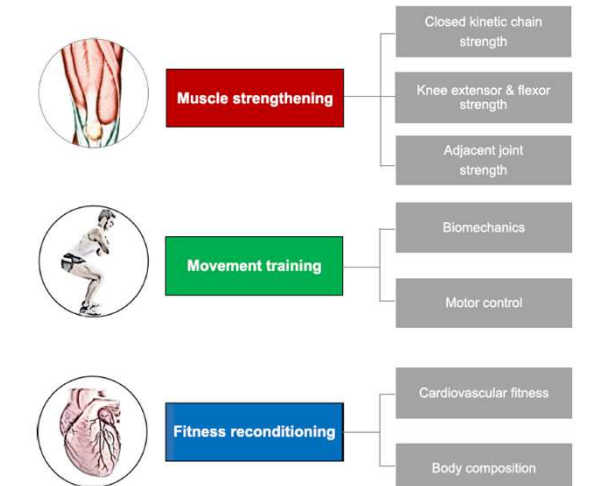


1. Dor: No máximo 2 (0-10)
2. Edema mínimo
3. Extensão total de joelho
4. Força muscular

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Pós OP fase intermediária

Objetivos



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Pós OP fase intermediária

Reabilitação pós operatória



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Pós OP fase intermediária



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Pós OP fase intermediária

Reabilitação pós operatória



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Pós OP fase intermediária



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Pós OP fase intermediária



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Pós OP fase
intermediária



59

Pós OP fase
Final

Progressão de fase 2 para 3

1. Dor: No máximo 2 (0-10)
2. Edema mínimo
3. Extensão total de joelho
4. Flexão de joelho
5. Força muscular de quadríceps
6. Marcha normal

60

Pós OP fase
Final

Reabilitação pós operatória

- Fase de transição
(9^a- 12^a semana)
- Todos os pacientes são
encorajados a correr .
- 3.2 km → Marcha/corrída.
- Encaminhar para a academia.

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Pós OP fase
Final

Review

Criteria for return to running after anterior cruciate ligament reconstruction: a scoping review

Alexandre J M Rambaud,^{1,2} Clare L Ardern,^{3,4} Patricia Thoreux,^{5,6}
Jean-Philippe Regnaud,^{7,8} Pascal Edouard^{1,9}

Voltar a correr, em média, com 12 semanas.



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Pós OP fase
Final

Reabilitação pós operatória

- Fase de transição
(9^a- 12^a semana)
- Exercícios unilaterais.
- Evolução do treino sensório motor (gesto esportivo e pliometria).

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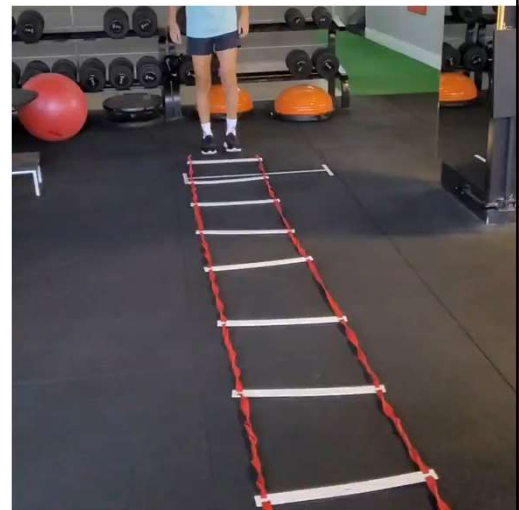
Pós OP fase
Final

Pós OP fase Final



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Pós OP fase
Final



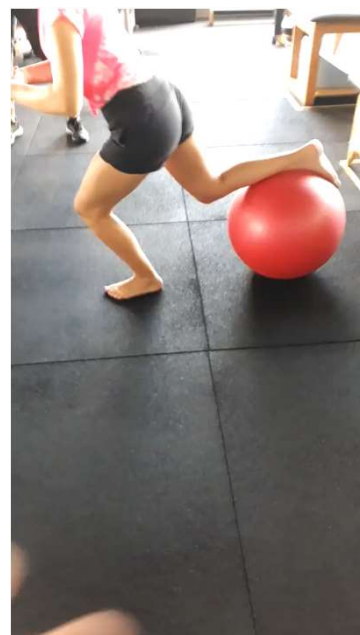
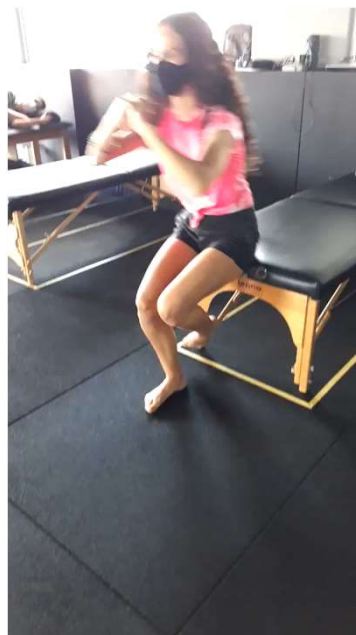
66

Pós OP fase
Final



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Pós OP fase
Final



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Pós OP fase
Final

Reabilitação pós operatória

- Fase de transição
(Entre 9^a- 12^a semana)
- Controle de valgo dinâmico.
- Força muscular



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Pós OP fase
Final

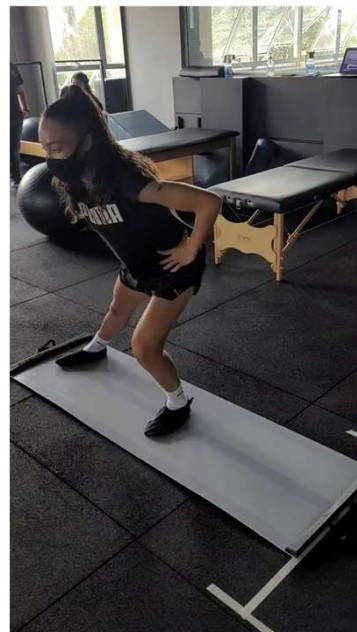
Reabilitação pós operatória

- Fase de transição
(12^a semana em diante)
- Controle de valgo dinâmico
- Progressão de força



70

Pós OP fase Final



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Pós OP fase Final



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Pós OP fase
Final



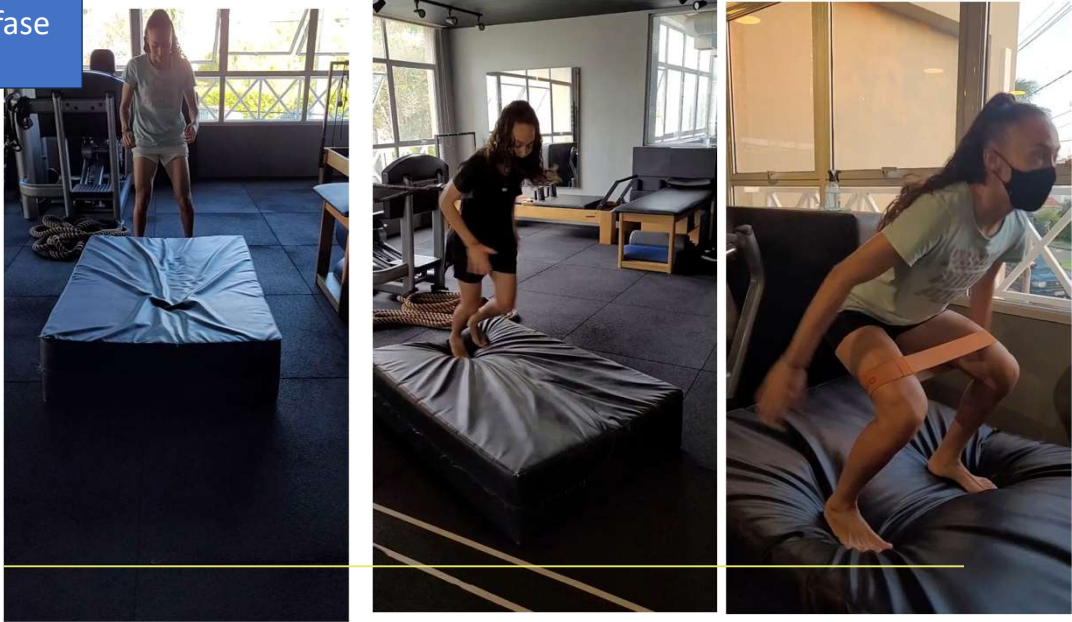
73

Pós OP fase
Final

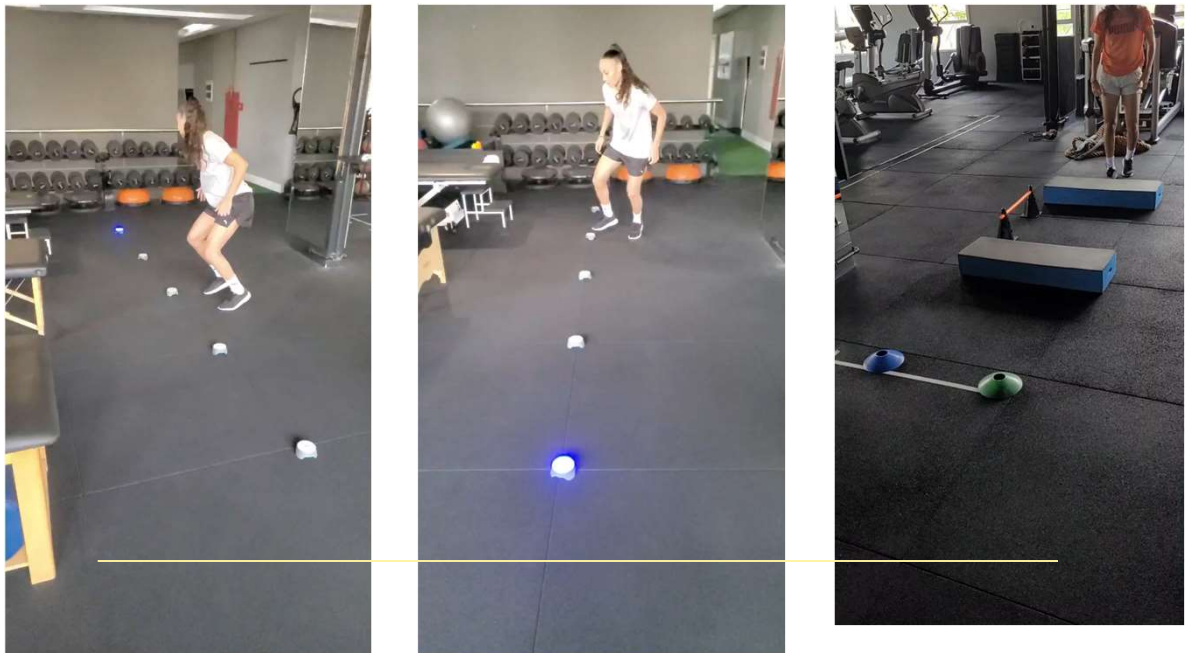


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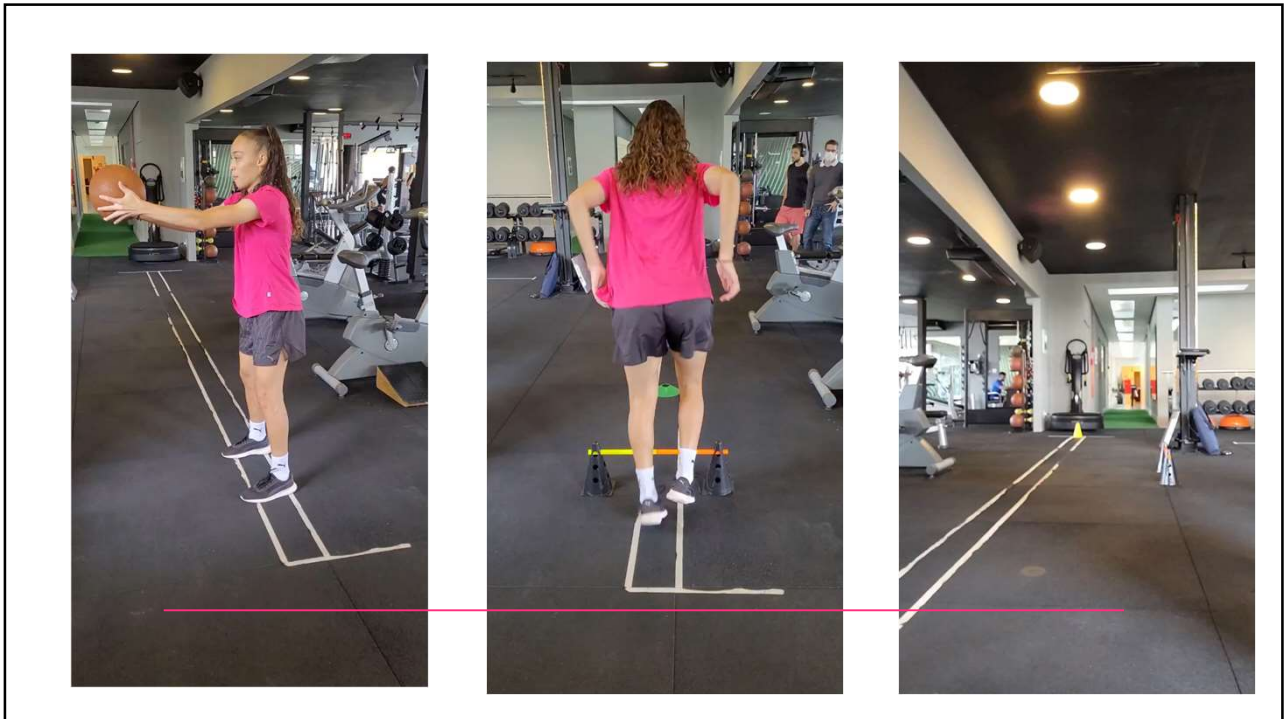
Pós OP fase
Final



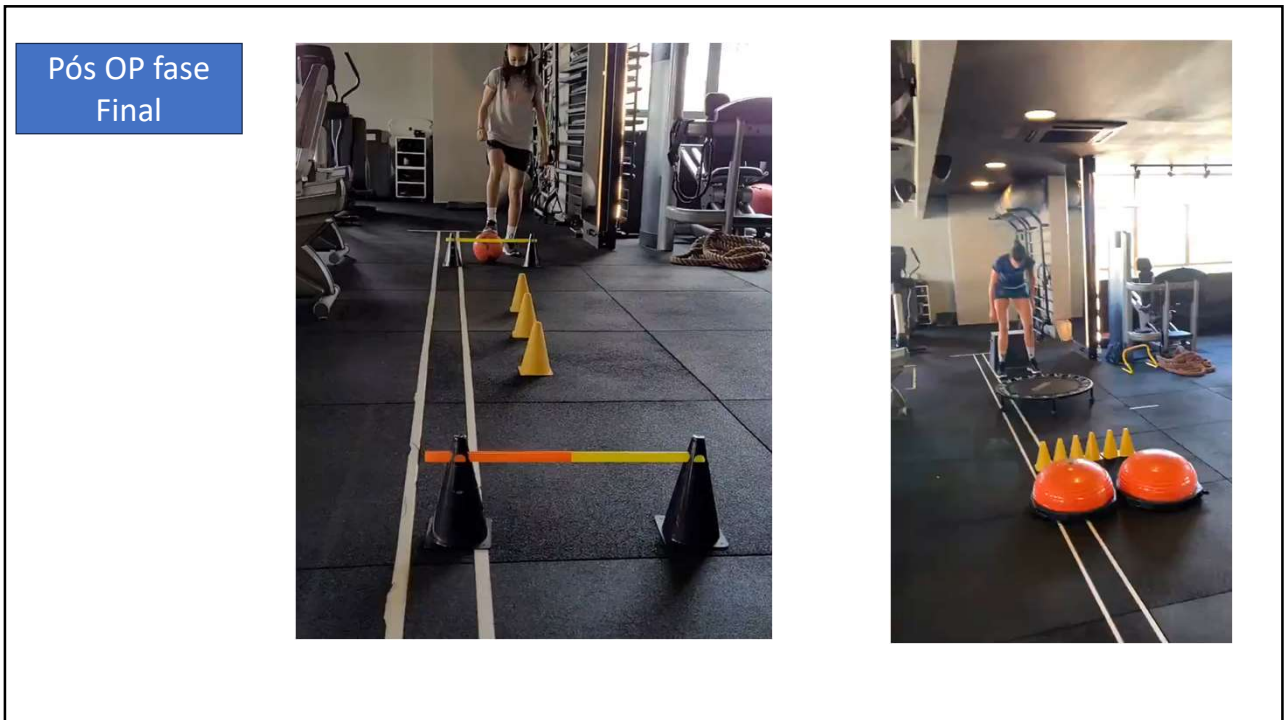
75



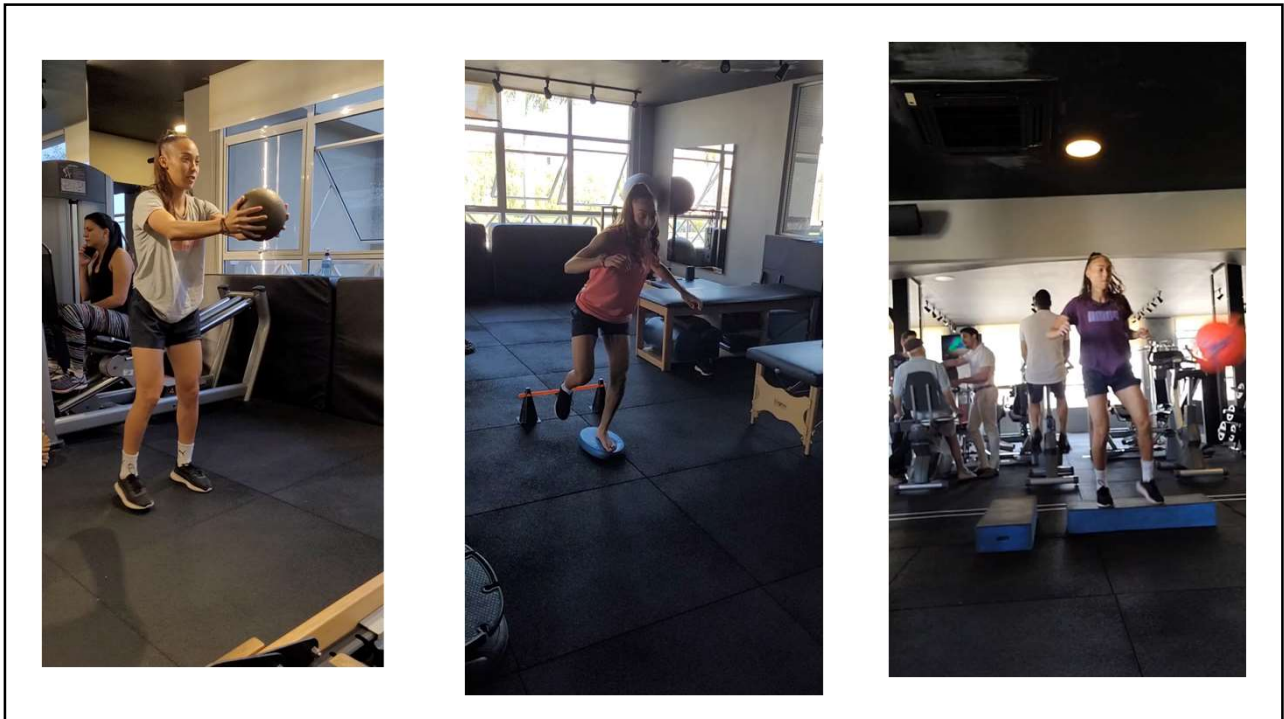
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Pós OP fase
Final



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Pós OP fase
Final

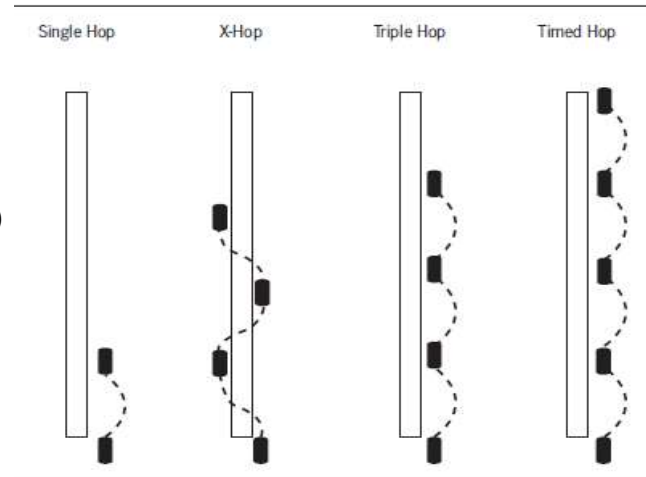


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Pós OP fase
Final

Reabilitação pós operatória

- Controle de valgo dinâmico
- Progressão de força
- Critérios de alta (progressão)



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Pós OP fase
Final

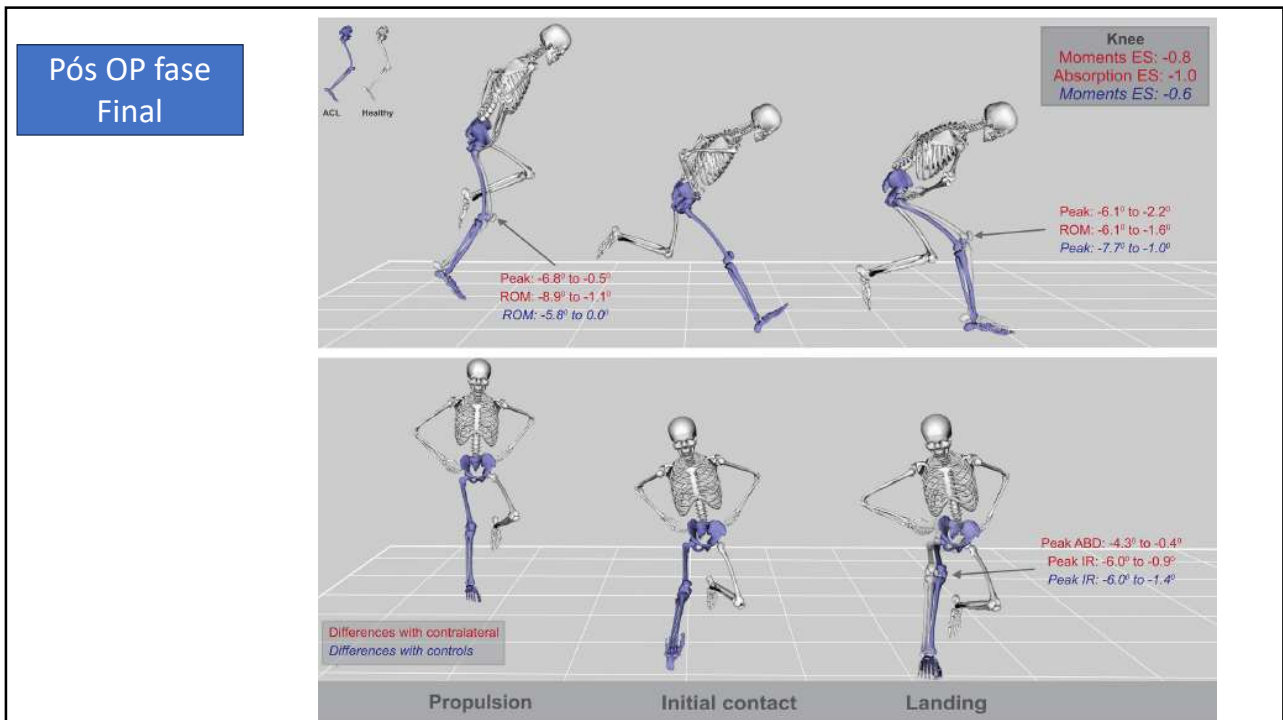
Reabilitação pós operatória

Review

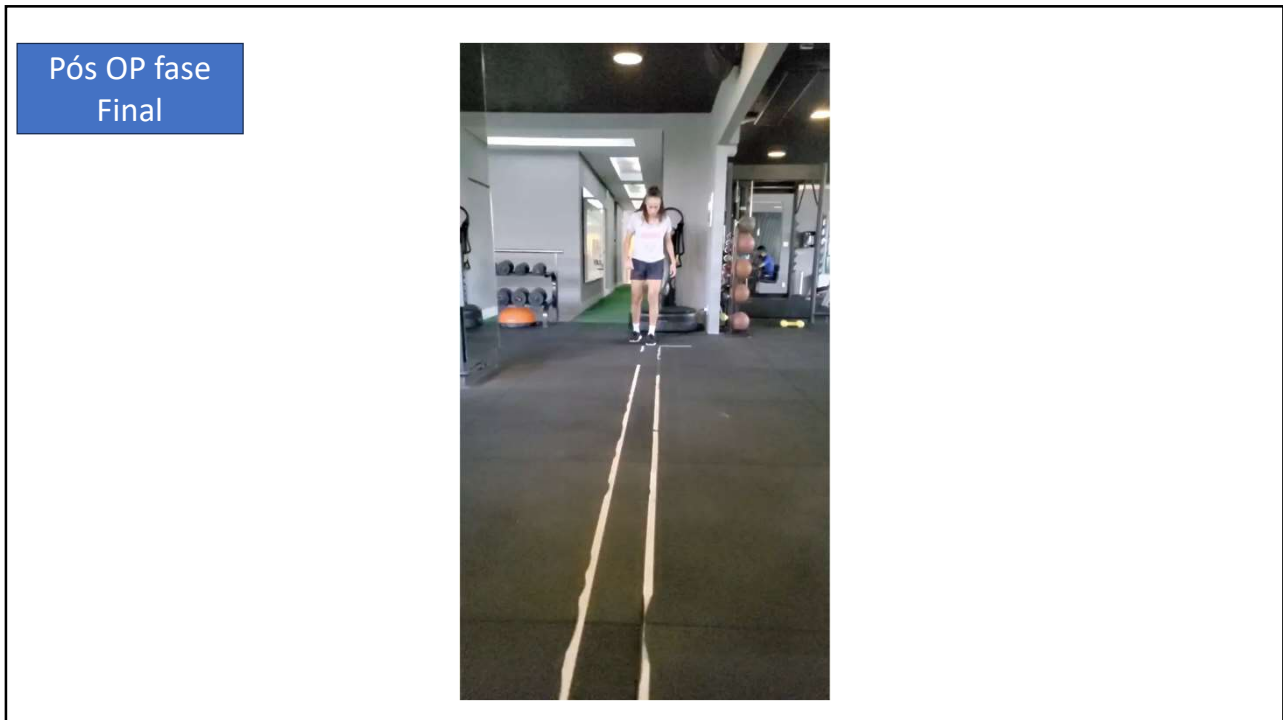
Measuring only hop distance during single leg hop testing is insufficient to detect deficits in knee function after ACL reconstruction: a systematic review and meta-analysis

Argyro Kotsifaki,^{1,2} Vasileios Korakakis,¹ Rod Whiteley,¹ Sam Van Rossum,² Ilse Jonkers²

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Pós OP fase
Final



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Pós OP RTP

Original article

Likelihood of ACL graft rupture: not meeting six clinical discharge criteria before return to sport is associated with a four times greater risk of rupture

Polyvios Kyritsis,¹ Roald Bahr,^{1,2} Philippe Landreau,¹ Riadh Miladi,¹ Erik Witvrouw^{1,3}

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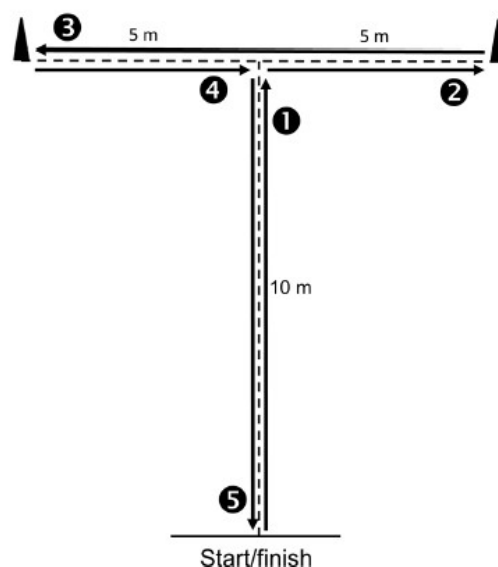
Pós OP RTP

Table 1 Discharge tests and criteria used during the study period

Six-part return to sport tests	Discharge permitted when each of these criteria was met
Isokinetic test at 60, 180 and 300°/s	Quadriceps deficit <10% at 60°/s
Single hop	Limb symmetry index >90%
Triple hop	Limb symmetry index >90%
Triple crossover hop	Limb symmetry index >90%
On-field sports-specific rehabilitation	Fully completed
Running t test	<11 s

Criteria were set according to the literature at the start of the study.

10,3% dos **liberados** sofreram re-lesões
33,3% dos **não liberados** sofreram re-lesões



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Pós OP RTP

Original article



Simple decision rules can reduce reinjury risk by 84% after ACL reconstruction: the Delaware-Oslo ACL cohort study

Hege Grindem,¹ Lynn Snyder-Mackler,² Håvard Moksnes,³ Lars Engebretsen,^{3,4} May Arna Risberg^{1,4}

Conclusions Returning to level I sports after ACL reconstruction leads to a more than 4-fold increase in reinjury rates over 2 years. RTS 9 months or later after surgery and more symmetrical quadriceps strength prior to return substantially reduce the reinjury rate.

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Pós OP RTP

Original research

Activity and functional readiness, not age, are the critical factors for second anterior cruciate ligament injury — the Delaware-Oslo ACL cohort study

Hege Grindem^{1,2}, Lars Engebretsen^{1,3}, Michael Axe^{4,5}, Lynn Snyder-Mackler⁴, May Arna Risberg^{3,6}

[RESEARCH REPORT]

SUSANNE BEISCHER, PT, PhD^{1,2} • LINNÉA GUSTAVSSON, PT⁷ • ERIC HAMRIN SENORSKI, PT, PhD^{1,2}
JÓN KARLSSON, MD, PhD¹ • CHRISTOFFER THOMÉÉ, BS⁷ • KRISTIAN SAMUELSSON, MD, PhD¹ • ROLAND THOMÉÉ, PT, PhD^{1,2}

Young Athletes Who Return to Sport Before 9 Months After Anterior Cruciate Ligament Reconstruction Have a Rate of New Injury 7 Times That of Those Who Delay Return

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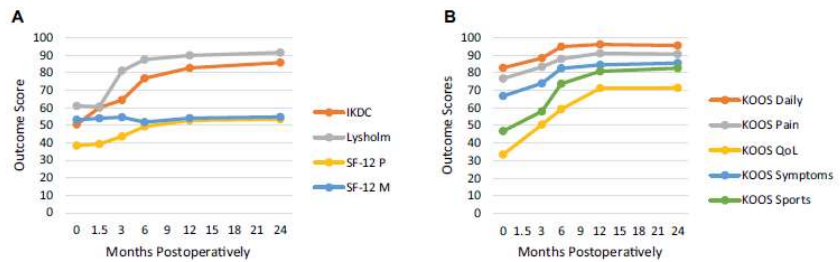
Pós OP RTP

Clinical Sports Medicine Update

Timeline for Maximal Subjective Outcome Improvement After Anterior Cruciate Ligament Reconstruction

Avinesh Agarwalla,* BS, Richard N. Puzzitiello,* BS, Joseph N. Liu,† MD, Gregory L. Cvetanovich,‡ MD, Anirudh K. Gowd,* BS, Nikhil N. Verma,* MD, Brian J. Cole,* MD, MBA, and Brian Forsythe,*§ MD
Investigation performed at Rush University Medical Center, Chicago, Illinois, USA

Pico de melhora em 1 ano!!!



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Pós OP RTP

abrapg · ft
Associação Brasileira de Pesquisa e Pós-Graduação em Fisioterapia

Brazilian Journal of Physical Therapy

<https://www.journals.elsevier.com/brazilian-journal-of-physical-therapy>



ORIGINAL RESEARCH

Current clinical practice and return-to-sport criteria after anterior cruciate ligament reconstruction: a survey of Brazilian physical therapists

Q1 Cecilia Ferreira Aquino^{a,b}, Juliana Melo Ocarino^a, Vanessa Aparecida Cardoso^a, Renan Alves Resende^a, Thales Resende Souza^a, Laís Menezes Rabelo^b, Sérgio Teixeira Fonseca^{a,*}

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Pós OP RTP

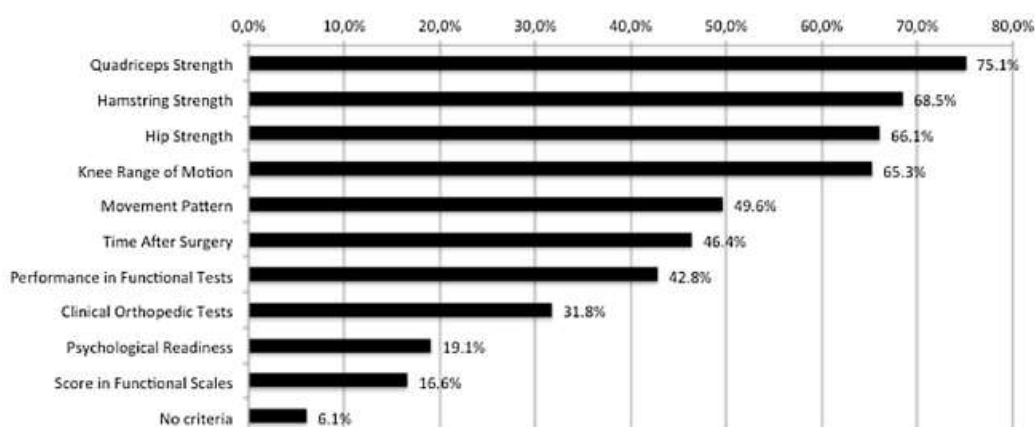


Figure 2 Criteria used by Brazilian physical therapists to determine readiness for return to sport.

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Pós OP RTP

Retorno ao esporte

Current Concepts for Anterior Cruciate Ligament Reconstruction: A Criterion-Based Rehabilitation Progression

Crítérios para retorno ao esporte

1. Por volta de 9 meses de P.O
2. $\geq 90\%$ de FM de quadríceps
3. $\geq 90\%$ em todos os hop tests
4. Escalas funcionais
5. Preparo psicológico



Original article



Simple decision rules can reduce reinjury risk by 84% after ACL reconstruction: the Delaware-Oslo ACL cohort study

Hege Grindem,¹ Lynn Snyder-Mackler,² Håvard Moksnes,³ Lars Engebretsen,^{3,4} May Arna Risberg^{1,4}

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Current Concepts for Anterior Cruciate Ligament Reconstruction: A Criterion-Based Rehabilitation Progression

Cirurgias concomitantes

Meniscectomia

Sem mudanças no protocolo

Sutura meniscal

1. Sem flexão com descarga de peso por 4 semanas.

2. Descarga de peso com extensão total é permitida

Revisão de LCA

1. 4 semanas a mais para: corrida, hop tests e retorno ao esporte

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Muito obrigado!!

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