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Iliotibial band autograft is a suitable alternative graft for ACL reconstruction : a systematic review and meta-analysis of outcomes

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Faculty Disclosure Information

- Nothing to disclosure



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Introduction

- ITB = single, continuous, pedicled graft, intra/extra-articular technique
- First description Hey Groves – The Lancet 1917^[22] then D.L.MacIntosh – JBJS 1974^[36]
- Modified and improved^[2, 14, 26, 38]
- The biomechanical properties of the ITB allow its use for ACL reconstruction^[7, 8, 11, 43, 49, 53]
- MRI studies and histological analysis have shown that the ITB is viable when it replaces the ACL^[11, 29, 50]



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Introduction - aim and hypothesis

- Available data regarding
- ITB autograft outcomes
- Clinical studies comparing ITB autograft versus bone-patellar tendon-bone (BPTB) and hamstring (HT) autografts
- graft failure, stability, functional outcomes and complications
- The hypothesis was current literature supports the use of ITB as the graft of choice for ACL reconstruction because of its good outcomes.



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Methods

- Search of the published literature in the PubMed, MEDLINE, Cochrane, and Ovid databases (articles up to February 1, 2020)
- PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines
- Keywords:
 - “iliotibial band”, “fascia lata” and “MacIntosh” in combination with the terms “anterior cruciate ligament” or “ACL”.
- Inclusion :
 - clinical studies of ACL reconstruction using **ITB autograft**
 - studies directly comparing the outcomes of **ITB versus BPTB**
 - studies directly comparing the outcomes of **ITB versus HT**
- Exclusion :
 - < 12 months of follow-up,
 - reconstruction of other ligaments
 - lateral tenodesis with the ITB alone or in combination with intra-articular reconstruction using another graft

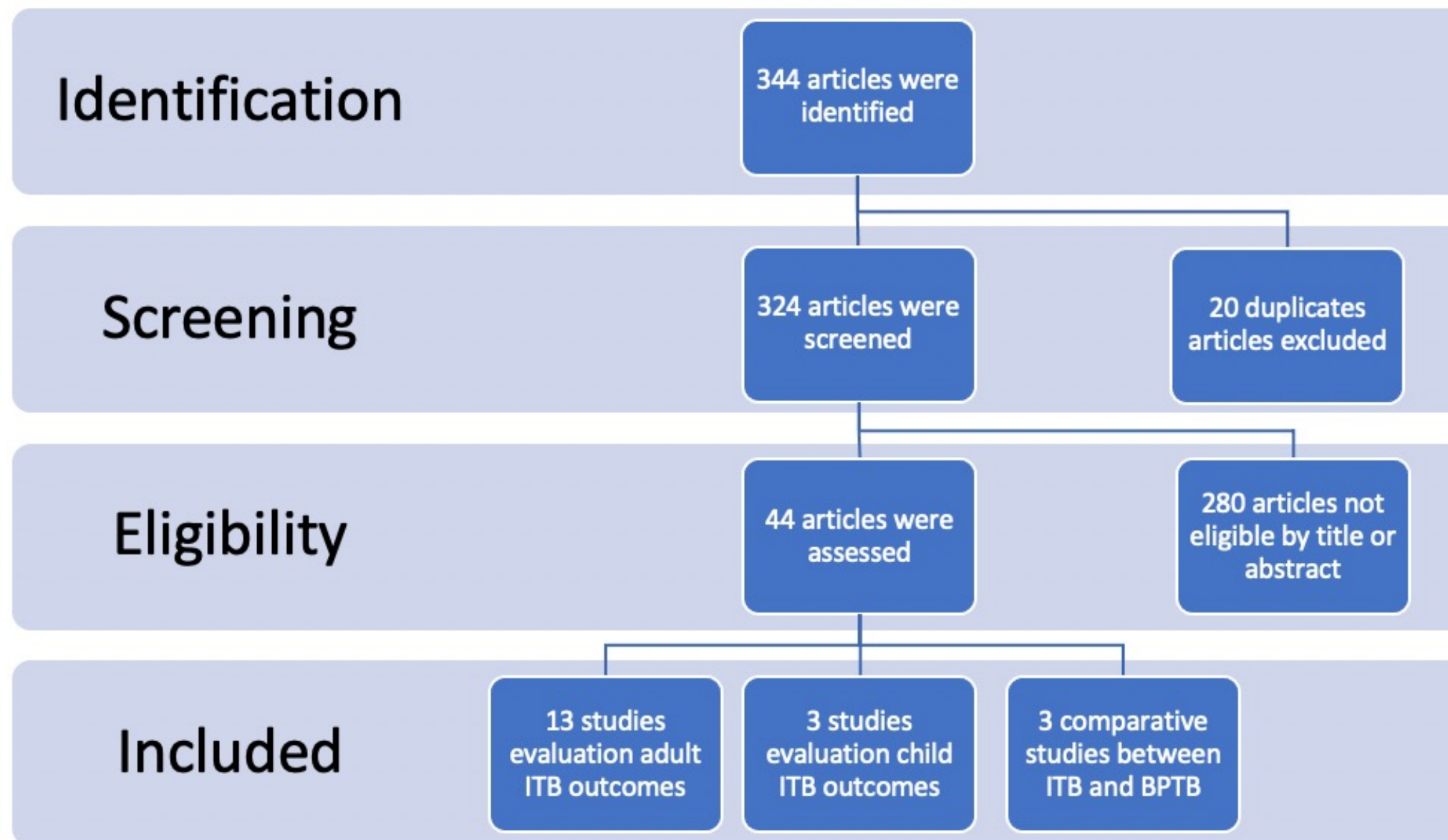


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Results – Flowchart



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Results – 1130 ITB autografts

- Graft failure

	n/N or N adults	% or weighted mean (95% CI)
Rerupture	26/625	4.2 (2.6–5.7)

- Knee stability

	n/N or N adults	% or weighted mean (95% CI)
Side-to-side difference, mm	495	1.41 (1.35-1.47)
Side-to-side difference >3mm	80/384	20.8 (16.8–24.9)
Lachman grade 0	308/540	57.0 (52.9–61.2)
Lachman grade 0 or 1	433/456	95.0 (93.0–97.0)
Pivot-shift grade 0	474/559	84.8 (81.8–87.8)
Pivot-shift grade 0 or 1	464/477	97.3 (95.8–98.7)



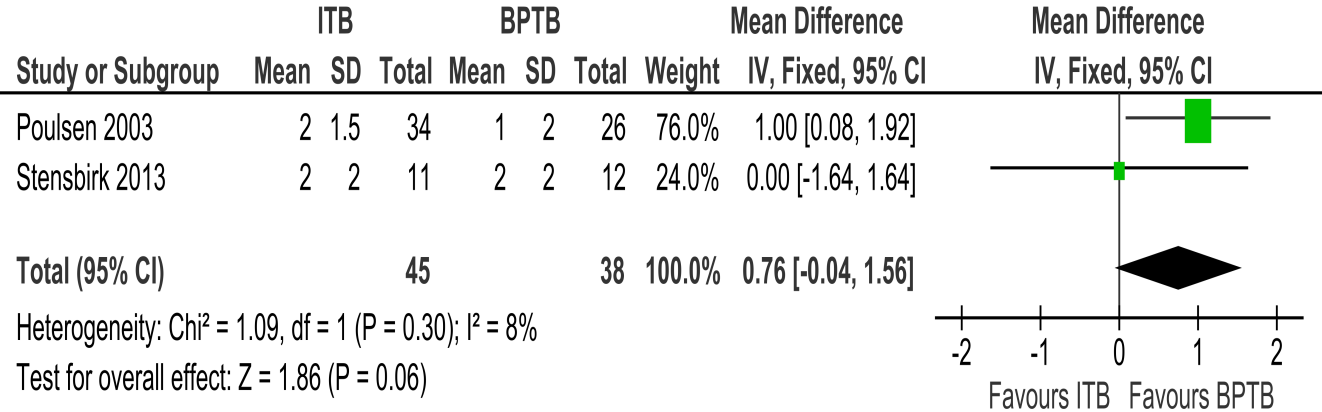
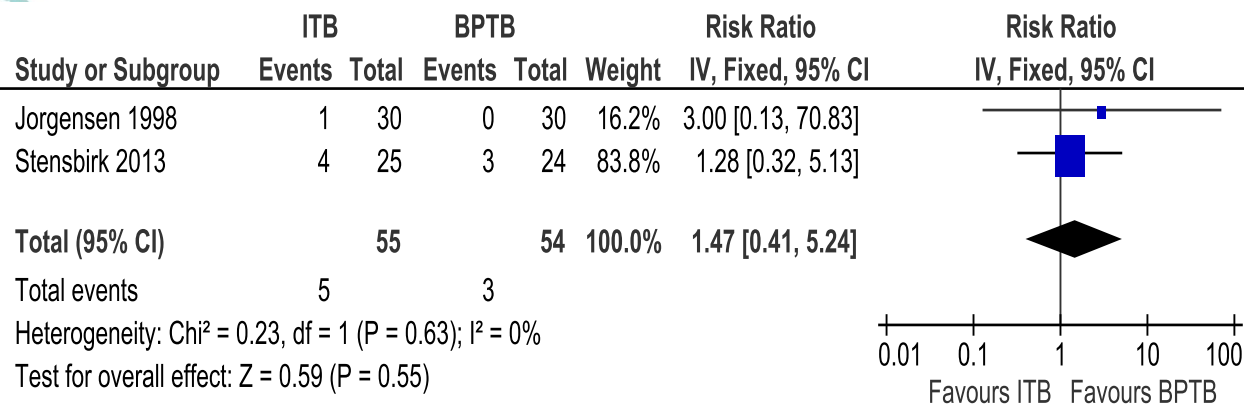
Results – 1130 ITB autografts

- Fonctionnal outcomes

	n/N or N adults	% or weighted mean (95% CI)
Lysholm score	413	93.3 (92.4–94.2)
Lysholm score > 84	485/575	84.4 (81.4–87.3)
Objective IKDC A or B	327/390	83.9 (80.2–87.5)
Subjective IKDC	0	
Tegner score	417	6.8 (6.6–6.9)
Return to sport activity	610/684	89.2 (86.9-91.5)
Return to sport activity at preoperative level	330/539	61.2 (57.1-65.3)

Results – 89 ITB vs 80 TP

	nITB / nBPTB	Mean difference (95% CI) ITB - BPTB	Risk ratio (95% CI) ITB:BPTB	P value
Graft failure	55 / 54		1.47 (0.41 to 5.24)	0.55
Side-to-side diff	45 / 38	0.76 (-0.04 to 1.56)		0.06
Tegner	52 / 46	-0.04 (-1.22 to 1.14)		0.95





Discussion - Meta-Analyses, [17, 41]

Graft	ITB (our study)	QT (Mouarbes)	BPTB (Freedman)	HT (Freedman)
Graft failure, % (95% CI)	4.2 (2.6–5.7)	2.1 (1.4-2.8)	1.9	4.9
Side-to-side difference, weighted mean, mm (95% CI)	1.41 (1.35-1.47)	1.72 (1.69-1.75)		
Side-to-side difference >3mm, %	20.8	23.7	21	26.2
Lachman grade 0, %	57.0	81.2		
Lachman grade 0 or 1, %	95.0	96.1		
Pivot-shift grade 0, %	84.8	84.8	82.2	81.8
Pivot-shift grade 0 or 1, %	97.3	97.7	96.7	95.5



Discussion - Meta-Analyses, [17, 41]

Graft	ITB (our study)	QT (Mouarbes)	BPTB (Freedman)	HT (Freedman)
Lysholm score, weighted mean	93.3	90.7		
Lysholm score > 84, %	84.4	87.9		
Objective IKDC A or B, %	83.9	87.1		
Tegner score, weighted mean	6.8			
Return to sport activity, %	89.2			
Return to sport activity at preoperative level, %	61.2		67.2	65.6



Conclusion

- ITB =
- satisfactory outcomes for ACL reconstruction
- stable and functional knee
- low graft failure rates



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