

Věda a sport

Vědecká práce ve Sports Sciences, struktura vědeckého článku

- **Ing. Tomáš Vodička, Ph.D.**
- Katedra kineziologie D33/339
- tvodicka@fsps.muni.cz

ČTK ČESKÉ NOVINY

KORONAVIRUS: Zprávy Události kolem zavírání obchodů a služeb Přehled rozvolňovacích balíčků Foto z ČR Foto ze světa Web Mzd

Lancet: Účinnost ruské vakcíny Sputnik V dosáhla 91,6 procenta

Aktualizace: 02.02.2021 16:04 Vydáno: 02.02.2021, 15:15



Ruská proticovidová vakcína Sputnik V - ilustrační foto. ČTK/AP/Pavel Golovkin [Koupit foto](#)

PRÁVĚ ZVEŘEJNĚNO

- Palíva v Česku v týdnu dál zdražila
- McDavid má 104 bodů, Colorado drží šanci na Prezidentský pohár
- Tesla přestane kvůli ekologii přijímat platby v bitcoinech
- Soud začne řešit nárok Rusa Nikulina na odškodnění za vydání do USA
- Bankovní asociace zveřejní nové odhady vývoje ekonomiky
- Sířeny zazněly i na severu Izraele, bombardování Dáma Gazu pokračuje

03. 06. 2018 | Zpět do přehledu novinek

Výsledky přelomové studie TAILORx, publikované v časopise The New England Journal of Medicine, ukázaly, že test Oncotype DX Breast Recurrence Score® jednoznačně identifikuje většinu žen s časným karcinomem prsu, které nemají prospěch z chemoterapie

deník.cz

PRÁVY PODNIKÁNÍ SPORT NÁZORY MAGAZÍN TIPY MIMINKA | O DENÍK

YDLENÍ CESTOVÁNÍ ZDRAVÍ SPOLEČNOST PRO ŽENY HOBBY VĚDA A TECHNIKA | AUT

PŘEHLEDNĚ: Klíčové události války na Ukrajině

Překvapivé zjištění: Dětem bohatých rodičů častěji hrozí zubní kaz, tvrdí studie

TN CZ

Q VÁLKA NA UKRAJINĚ ZPRAVODAJSTVÍ TN LIVE VIDEO SPORT AUTO POČASÍ

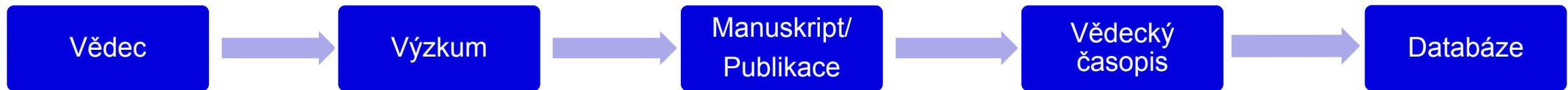
KORONAVIRUS

f SDÍLET

Studie zjistila, kdy začíná klesat účinnost třetí dávky. Výsledky nejsou povzbudivé

MUNI
SPORT

Struktura vědecké práce



Knee Surg Sport Traumatol Arthrosc (2015) 25:2734–2741
DOI 10.1007/s00141-014-3071-9

KNEE

Biomechanical evaluation of knee kinematics after anatomic single- and anatomic double-bundle ACL reconstructions with medial meniscal repair

Olaf Lorbach · Matthias Kieb · Christoph Donnick · Mirco Herbst · Inke Weyers · Michael Raschke · Martin Engelhardt

Received: 8 December 2013 / Accepted: 6 May 2014 / Published online: 22 May 2014
© Springer-Verlag Berlin Heidelberg 2014

Abstract
Purpose To evaluate knee laxity after anatomic ACL reconstruction with additional suture repair of a medial meniscus tear.
Methods Kinematics of the intact knee were determined in 12 human cadaver specimens in response to a 134-N anterior tibial load (aTT) and a combined rotary load of 10 Nm valgus and 4 Nm internal tibial rotation (aTTPS) using a robotic/universal force moment sensor testing system. Subsequently, the ACL was resected following the creation of a standardized tear of the medial meniscus, a standard meniscus repair and an ACL reconstruction using an anatomic single-bundle (SB) or an anatomic double-bundle technique (DB). Knee kinematics were determined following every sub-step.
Results Significant increase of aTT in the ACL-deficient knee was found ($p < 0.001$) with a further increase in the ACL-deficient knee with additional medial meniscal

rupture ($p < 0.001$). ACL reconstructions significantly decreased aTT compared with the ACL and meniscus-ruptured knee. No significant differences were seen between the intact knee and the ACL-reconstructed knee with additional meniscal repair ($p < 0.05$). In response to a simulated pivot shift, aTTPS in the intact knee significantly increased in the ACL-deficient knee and meniscus-ruptured knee ($p = 0.025$). No significant differences in knee kinematics were found between SB as well as DB ACL reconstruction with additional medial meniscal repair compared with the intact knee. Comparison of SB versus DB ACL reconstruction did not reveal any significant differences in a simulated Lachman test or simulated pivot shift test (i.e.).
Conclusions aTT as well as aTTPS significantly increased with ACL deficiency compared with the intact knee; additional medial meniscal repair further increased aTT. Anatomic ACL reconstruction with medial meniscal repair did not reveal significant differences in knee kinematics compared with the intact knee. Comparison of anatomic SB versus DB ACL reconstruction with additional repair of the medial meniscus did not show significant differences neither in a simulated Lachman test in a simulated pivot shift test.

Keywords ACL · Meniscus · Knee laxity · Meniscus repair · ACL reconstruction

Introduction
The clinical and biomechanical results after ACL reconstruction using single-bundle versus double-bundle techniques remain controversial. Superior results were described in several papers for the double-bundle technique

O. Lorbach (✉)
Department of Orthopaedic Surgery, Saarland University,
Kirbergstr., Homburg (Saar), 66211 Homburg, Germany
e-mail: olaf.lorbach@uni-saarland.de

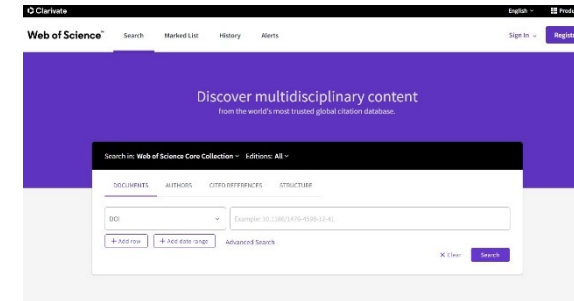
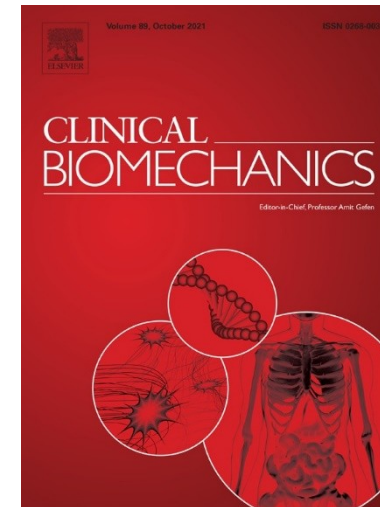
M. Kieb
Department of Orthopaedic Surgery, Rostock University,
Rostock, Germany

C. Donnick · M. Herbst · M. Raschke
Department of Trauma, Hand- and Reconstructive Surgery,
Münster University, Münster, Germany

I. Weyers
Institute of Anatomy, Leibniz University, Lüneburg, Germany

M. Engelhardt
Department of Orthopaedic and Trauma Surgery, Klinikum
Osnabrück, Osnabrück, Germany

Springer



Vědec



**Sportovní
výživa**

Biomechanika

Fyziologie

**Sportovní
medicína**

Příprava vědecké práce

Supervisor: Where is the novelty?

Me:

ILOVEPHD.COM



- Studium současného stavu poznání v dané oblasti (literární rešerše)
- Definování problému
- **Definování přínosu, inovativnosti výzkumu**
- Výstupy (vědecký článek, patent..)
- Podání projektu do projektové výzvy = **financování**
- Tvorba vědeckých otázek a hypotéz výzkumu

**Efektivní vyhledávání a evaluace
kvality dříve uveřejněných
vědeckých publikací**

Výzkum



Metodologie výzkumu

Her: He's probably thinking about other women...

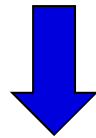
Him: Is my research methodology is correct? Am I on the right path?



- Zopakovat již použitou metodiku testování
- Kalibrace přístrojů
- Detailní popis metodiky měření / experimentu
- **Inclusion/exclusion** kritéria
- **Náhodný/cílený** výběr (reprezentativnost souboru)
- Homogenita souboru (antropometrické charakteristiky)
- Kontrolní soubor (intervence)
- Schválení etickou komisí
- Pilotní měření

Výzkum

- Výzkum, **sběr dat** (měření, pozorování, dotazníkové šetření)
- Statistické zpracování - **výsledky**
- Zodpovězení **výzkumné otázky**



**Tvorba výstupu – manuskriptu
(vědeckého článku) = transfer**

informací k (odborné) veřejnosti



Struktura vědeckého manuskriptu

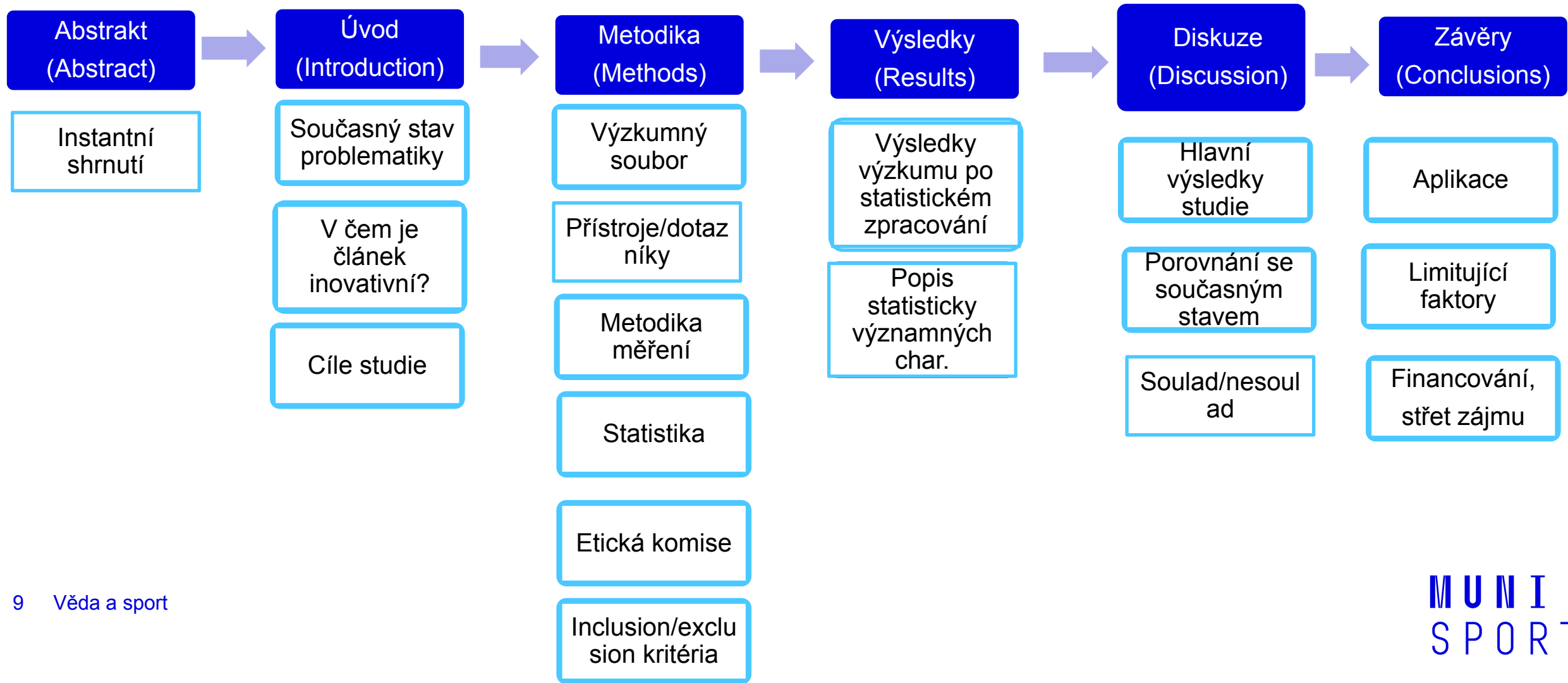


Figure 1 shows the development of government debt and debt interest payments in the Czech Republic. During the 2000-2012 period, Czech government debt exhibited an obvious upward trend, accompanied by rising debt interest payments. After 2012, ~~the~~ government debt ~~dynamics~~ growth was significantly reduced due to a concomitant rise of the economy and wealth of economic agents. Debt interest payments peaked in 2014 and thereafter ~~were declining~~ due to ~~an~~ the “escape from risk” effect, ~~where at which~~ investors buy bonds of ~~the~~ relatively “safe” countries with stable currency, ~~such as was~~ the Czech Republic. This effect was intensified by the existence of ~~CNB's~~ one-sided foreign exchange commitment ~~of the CNB and investor speculation by investors~~ on future appreciation of the koruna. This environment led to negative bond yields of bonds. The Czech Ministry of Finance, which controls the largest part of the government debt ~~state debt~~ as the debt manager, used the environment of negative yields ~~of on the~~ medium- and long-term government bonds ~~and to, in December 2015, executed the auction of the~~ government bonds with maturing in 2017 ~~in December 2015 with at the an~~ all-time low yield of -0.35% p.a. The total state-public budget revenue from this investment activity, lending facilities with government bonds, and from the negative yields of government bonds amounted to CZK 524.9 million in 2015 (Ministry of Finance, 2016) and a similar trend continued in the following year.

However, this type of operations significantly reduced the average maturity of state-government debt, down close to about 5 years. The largest changes occurred in the segment with a residual maturity of up to 3 years. Between 2010 and 2016, the shares in the debt portfolio changed as follows: T-bills dropped from 8.9% to 0.3%, the shares of government bonds with residual time to maturity ies of up to 1 year increased from 8% to 14.4%, and bonds with RTTM between 1 and 3 years increased from 17% to 29.6% (**Figure 2**). The value of the share of net foreign-currency exposure to state-government debt with the impact on the level of interest expenditure on state-government debt reached 11.5% at the end of 2016 and remained under the strategic limit of the Czech Ministry of Finance (15% +2 p.p.). The net foreign-currency exposure of the-state-government debt with the impact on state-government debt service was denominated solely in EUR at the end of 2016. Further details about the debt composition are available in Ministry of Finance (2017).

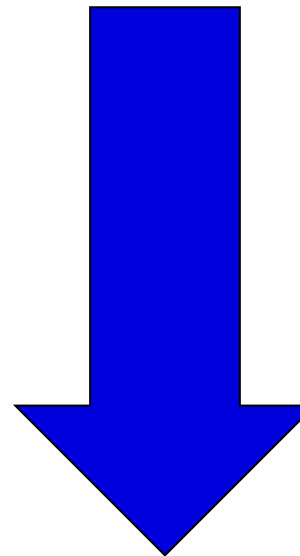
Libich et al. (2015) highlight the importance of strategic interaction between monetary and fiscal policies, which is expected to grow over time because of increased budget financing pressures coming resulting from ageing population ageing (see also Komarkova et al., 2013 and Ambrisko et al., 2017). This could be a serious issue for the Czech Republic, as the government spending on pensions jumped from CZK 222 bn in 2008 to CZK 315 bn in 2015, i.e., it-an increased by-of more than 40% over in an 8-year timeperiod.

Comment [M1]: V AJ se „state“ téměř nikdy nepoužívá tak, jako u nás „stát“. Místo toho se používá „government“.

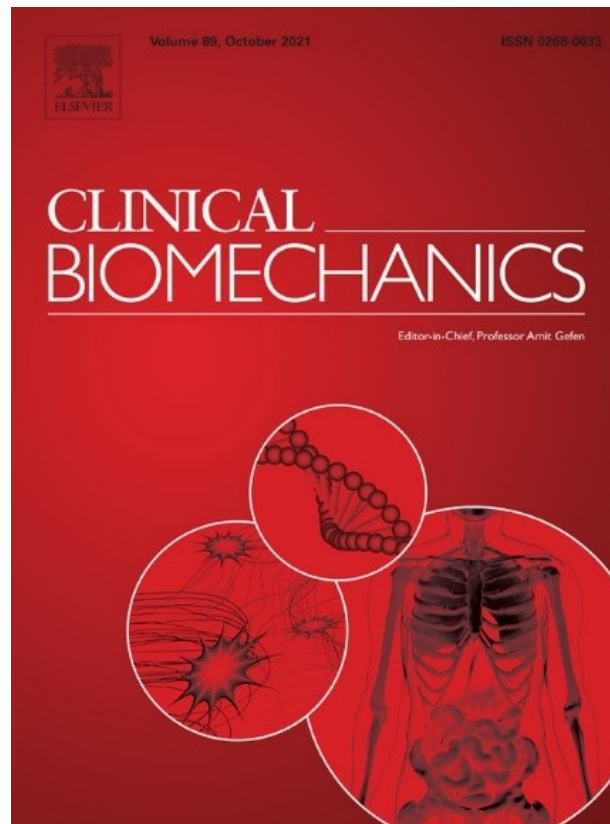
Částečně to vychází z politické tradice a částečně je to proto, že v USA „state“ znamená vždy jejich členská státy, tedy existuje mapy „state debt“ (jednotlivé státy) i „government debt“ (federální vláda) a ty je třeba rozlišit.

Comment [M2]: zde bych možná pro cizí čtenáře dal do závorky hodnotu v (stejných) dolarech, což by pro představu. Hodnotu koruny asi bude v cizině z hlavy znát málokdo, a bez představy o hodnotě měny jsou částky v ní denominované celkem niceňkající.

Manuskript vědeckého článku

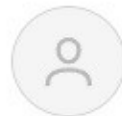


Vědecký časopis



Vědecký časopis

Editor > Editorial board



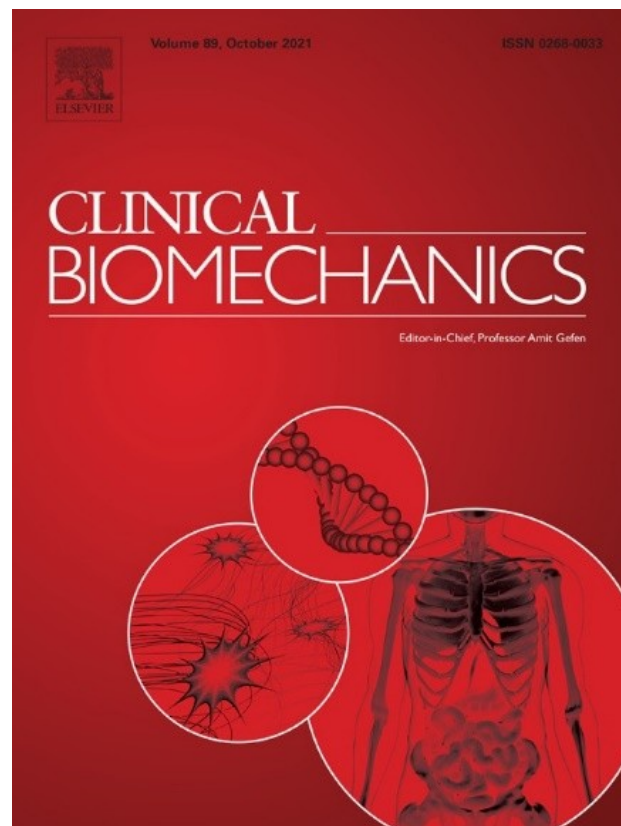
Amit Gefen, PhD

Clinical Biomechanics is an international multidisciplinary journal of **biomechanics** with a focus on medical and clinical applications of new knowledge in the field.

The science of **biomechanics** helps explain the causes of **cell, tissue, organ and body system disorders**, and supports clinicians in the diagnosis, prognosis and evaluation of treatment methods and technologies. *Clinical Biomechanics* aims to strengthen the links between laboratory and clinic by publishing cutting-edge biomechanics research which helps to explain the causes of injury and disease, and which provides evidence contributing to improved clinical management.

A rigorous peer review system is employed and every attempt is made to process and publish top-quality papers promptly.

Tematický a scientometrický výběr



Applied Physiology

- Journal of Physiology
- American Journal of Physiology
- Medicine and Science in Sports and Exercise
- Exercise and Sport Sciences Reviews
- Scandinavian Journal of Medicine & Science in Sports
- European Journal of Applied Physiology
- Journal of Science and Medicine in Sport
- Human Movement Science
- Journal of Aging and Physical Activity
- Journal of Athletic Training
- Journal of Sports Sciences
- Research Quarterly for Exercise and Sport
- Pediatric Exercise Science
- European Journal of Sport Science
- Journal of Strength and Conditioning Research
- Journal of Sports Science and Medicine
- Australian Journal of Science and Medicine in Sport
- Biology of Sport

Sports Medicine Journals

- American Journal of Sports Medicine
- Exercise and Immunology Reviews
- Journal of Epidemiology and Community Health
- Sports Medicine
- Archives of Physical Medicine and Rehabilitation
- Physical Therapy
- British Journal of Sports Medicine
- Journal of Occupational & Environmental Medicine
- Australian Journal of Physiotherapy
- Journal of Orthopaedic & Sports Physical Therapy
- American Journal of Physical Medicine & Rehabilitation
- High Altitude Medicine and Biology
- Clinical Journal of Sport Medicine
- International Journal of Sports Medicine

Sports Biomechanics Journals

- Journal of Biomechanics
- Gait and Posture
- Clinical Biomechanics
- Journal of Electromyography and Kinesiology
- Ergonomics
- Motor Control
- Applied Ergonomics
- Journal of Applied Biomechanics
- Journal of Motor Behavior
- Sports Biomechanics.
- Journal of Human Kinetics

Sports Psychology Journals

- Journal of Applied Psychology
- Journal of Sport and Exercise Psychology
- Behavior Research Methods
- Psychology of Sport and Exercise
- Journal of Clinical Psychology
- Journal of Social and Clinical Psychology
- Applied Psychology-International Review
- Journal of Applied Sport Psychology
- (The) Sport Psychologist
- Sociology of Sport Journal
- International Journal of Sport Psychology

Sports Nutrition Journals

- Journal of Nutrition
- Clinical Nutrition
- European Journal of Clinical Nutrition
- Applied Physiology Nutrition & Metabolism
- International J of Sport Nutrition & Exercise Metabolism
- Nutrition and Dietetics

Významná vydavatelství časopisů / knih



ELSEVIER



Springer

nature



Taylor & Francis
Taylor & Francis Group

Biomechanical evaluation of knee kinematics after anatomic single- and anatomic double-bundle ACL reconstructions with medial meniscal repair

Olaf Lorbach · Matthias Kieb · Christoph Domnick · Mirco Herbert · Inke Weyers · Michael Raschke · Martin Engelhardt

Received: 8 December 2013 / Accepted: 6 May 2014 / Published online: 22 May 2014
© Springer-Verlag Berlin Heidelberg 2014

Abstract

Purpose To evaluate knee laxity after anatomic ACL reconstruction with additional suture repair of a medial meniscus tear.

Methods Kinematics of the intact knee were determined in 12 human cadaver specimens in response to a 134-N anterior tibial load (aTT) and a combined rotatory load of 10 Nm valgus and 4 Nm internal tibial rotation (aTTPS) using a robotic/universal force moment sensor testing system. Subsequently, the ACL was resected following the creation of a standardized tear of the medial meniscus, a standard meniscus repair and an ACL reconstruction using an anatomic single-bundle (6) or an anatomic double-bundle technique (6). Knee kinematics were determined following every sub-step.

Results Significant increase of aTT in the ACL-deficient knee was found ($p \leq 0.001$) with a further increase in the ACL-deficient knee with additional medial meniscal

rupture ($p \leq 0.001$). ACL reconstructions significantly decreased aTT compared with the ACL and meniscus-ruptured knee. No significant differences were seen between the intact knee and the ACL-reconstructed knee with additional meniscal repair ($p < 0.05$). In response to a simulated pivot shift, aTTPS in the intact knee significantly increased in the ACL-deficient knee and meniscus-ruptured knee ($p = 0.005$). No significant differences in knee kinematics were found between SB as well as DB ACL reconstruction with additional medial meniscal repair compared with the intact knee. Comparison of SB versus DB ACL reconstruction did not reveal any significant differences in a simulated Lachman test or simulated pivot shift test (n.s.).

Conclusions aTT as well as aTTPS significantly increased with ACL deficiency compared with the intact knee; additional medial meniscal rupture further increased aTT. Anatomic ACL reconstruction with medial meniscal repair did not reveal significant differences in knee kinematics compared with the intact knee. Comparison of anatomic SB versus DB ACL reconstruction with additional repair of the medial meniscus did not show significant differences neither in a simulated Lachman nor in a simulated pivot shift test.

Keywords ACL · Meniscus · Knee laxity · Meniscus repair · ACL reconstruction

Introduction

The clinical and biomechanical results after ACL reconstruction using single-bundle versus double-bundle techniques remain controversial. Superior results were described in several papers for the double-bundle technique

Transfer informací k veřejnosti

FAKULTNÍ
NEMOCNICE
U SV. ANNY
V BRNĚ 

Zpracované překlady vybraných zahraničních vědeckých prací a článků

JAMA

Účinnost vakcíny Pfizer/BioNTech v závislosti na věku očkovaného

23.8.2021

O tom, jak se mění účinnost vakcíny Pfizer/BioNTech proti nemoci COVID-19 v závislosti na věku očkovaného, publikoval studii časopis The Journal of the American Medical Association.

JAMA

Trpí děti dlouhodobými příznaky COVIDu-19?

29.7.2021

Jak často děti po nákaze nemocí COVID-19 trpí dlouhodobými příznaky? To se rozhodli zjistit vědci ve Švýcarsku. Výsledky studie publikoval časopis The Journal of the American Medical Association.

O. Lorbach (✉)
Department of Orthopaedic Surgery, Saarland University,
Kirnberger Str., Homburg (Saar), 66421 Homburg, Germany
e-mail: olaf.lorbach@gsm.de

M. Kieb
Department of Orthopaedic Surgery, Rostock University,
Rostock, Germany

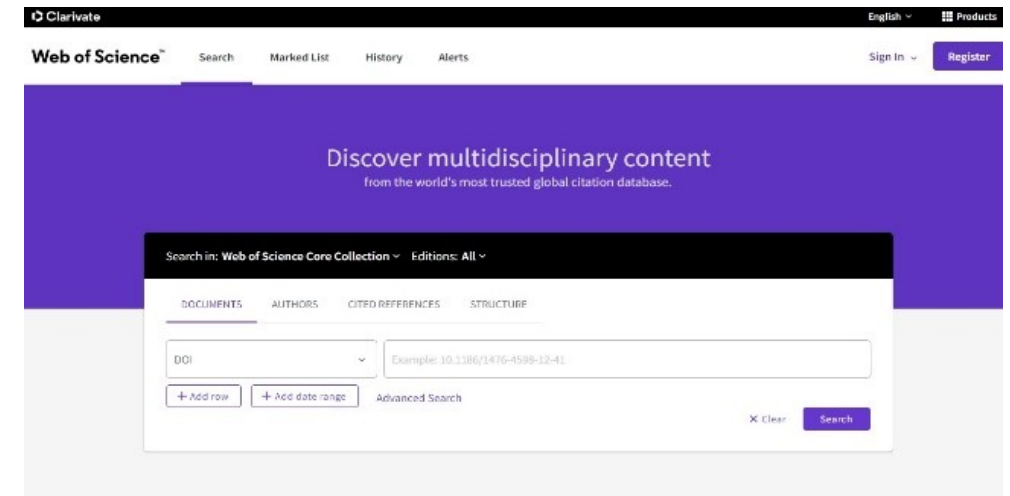
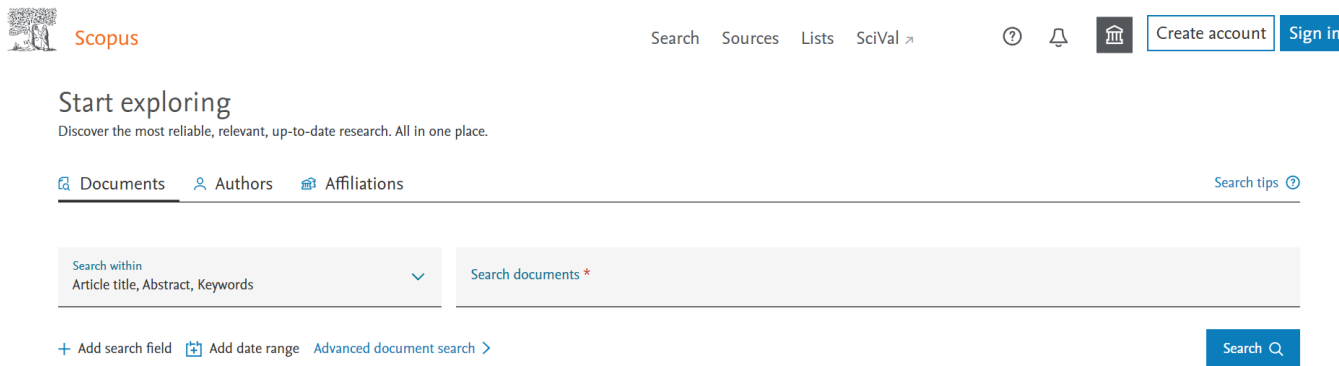
C. Domnick · M. Herbert · M. Raschke
Department of Trauma, Hand- and Reconstructive Surgery,
Münster University, Münster, Germany

I. Weyers
Institute of Anatomy, Lübeck University, Lübeck, Germany

M. Engelhardt
Department of Orthopaedic and Trauma Surgery, Klinikum
Osnabrück, Osnabrück, Germany

Databáze časopisů, vědeckých publikací, scientometrie

Scientometrie: hodnocení vědeckých výstupů na základě citačních ohlasů



www.webofscience.com

www.scopus.com

Jak vyhledávat vědecké publikace?

Typy vědeckých publikací

- Research Report
- Systematic Review
- Meta Analysis
- Vlastní měření
- Sběr a shrnutí empirických důkazů v dané oblasti
- Používá statistických metod k shrnutí výsledků těchto studií

Vědecká publikace

Whip Kick



ELSEVIER

Disponible en ligne sur
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM consulte
www.em-consulte.com



ORIGINAL ARTICLE

The effects of taekwondo shoes on anterior cruciate ligament injury risk factors during jump whip kicks



Les effets des chaussures de taekwondo sur les facteurs de risque de blessure au ligament croisé antérieur lors des coups de fouet sautés

B.-O. Lim^a, J. Kim^a, S.-H. Kim^a, J.-H. Cho^b, S. Lim^{c,d},
S.-T. Lim^{e,f,g,h,*}

^a Department of Physical Education, Chungang University, Seoul, Republic of Korea
^b Department of Sport and Leisure Studies, Shingyeong University, Hwaseong, Republic of Korea
^c Department of Physical Education, Seoul National University, Seoul, Republic of Korea
^d Korea National University of Arts, Seoul, Republic of Korea
^e Olympic Studies Center, Kangwon National University, Gangwon-do, Republic of Korea
^f Waseda Institute for Sport Sciences, Waseda University, Saitama, Japan
^g Nasaret International Hospital, Incheon, Republic of Korea

Received 22 October 2020; accepted 23 April 2021
Available online 20 January 2022

KEYWORDS

Taekwondo shoes;
Anterior cruciate
ligament;
Injury risk factors;
Jump whip kick

Summary

Objectives. – This study aimed to investigate the effect of taekwondo shoes on anterior cruciate ligament injury risk factors in taekwondo athletes performing jump whip kicks.
Equipment and methods. – The participants comprised 10 taekwondo athletes with no history of anterior cruciate ligament or lower extremity injuries within the past 12 months. The maximum hip flexion angle, maximum knee valgus angle, maximum knee extension moment, maximum knee lateral rotation moment, and quadriceps and hamstring muscle activity ratios were analyzed using video, ground reaction force, and electromyography analysis systems.
Results. – The maximum knee valgus angle was significantly lower when wearing taekwondo shoes while performing taekwondo jump whip kicks ($p = 0.04$), and the activity ratio of the quadriceps and hamstring muscles was low ($p = 0.10$).

* Corresponding author at: 1, Kangwondaehak-gil, Chuncheon-si, 24341 Gangwon-do, Republic of Korea.
E-mail address: limdotor@gmail.com (S.-T. Lim).

Systematic Review a metaanalýza



Journal of Sports Sciences



ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/rjsp20>

Effects of high-intensity interval training in men soccer player's physical fitness: A systematic review with meta-analysis of randomized-controlled and non-controlled trials

Filipe Manuel Clemente , Rodrigo Ramirez-Campillo , Fábio Yuzo Nakamura & Hugo Sarmiento

To cite this article: Filipe Manuel Clemente , Rodrigo Ramirez-Campillo , Fábio Yuzo Nakamura & Hugo Sarmiento (2021): Effects of high-intensity interval training in men soccer player's physical fitness: A systematic review with meta-analysis of randomized-controlled and non-controlled trials, Journal of Sports Sciences

To link to this article: <https://doi.org/10.1080/02640414.2020.1863644>

 View supplementary material [↗](#)

 Published online: 11 Jan 2021.

 Submit your article to this journal [↗](#)

 View related articles [↗](#)

 View Crossmark data [↗](#)

Full Terms & Conditions of access and use can be found at
<https://www.tandfonline.com/action/journalInformation?journalCode=rjsp20>

Nástroje pro vyhledávání vědeckých publikací

MUNI
DISCOVERY

Vyhledávání v informačních zdrojích [Masarykovy univerzity](#)

Klíčové slovo [?](#)

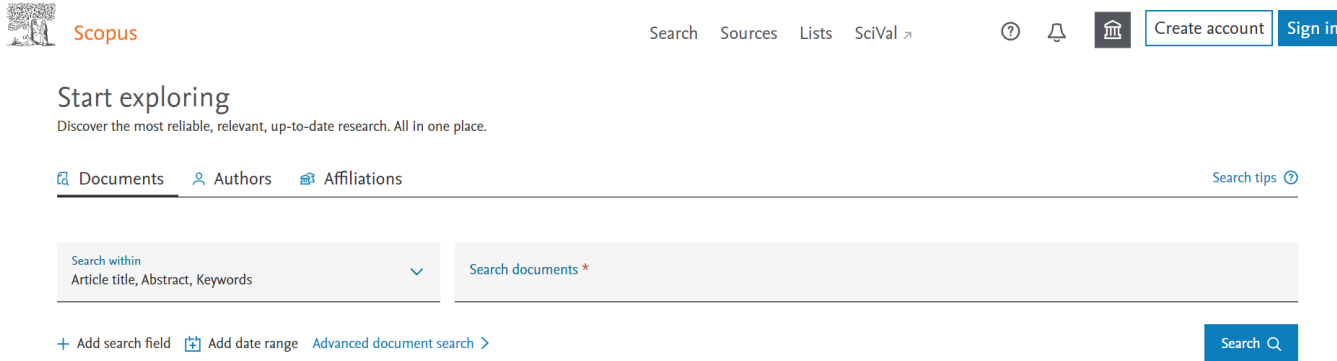
[Možnosti hledání](#) [Základní vyhledávání](#) [Rozšířené vyhledávání](#) [Historie hledání](#)

- Discovery Muni
- Google Scholar




Google Scholar

Stůjíte na ramenou obrů

Vyhledávání informací v databázích



Scopus


Search Sources Lists SciVal    Create account Sign in


Start exploring
Discover the most reliable, relevant, up-to-date research. All in one place.

Documents Authors Affiliations [Search tips](#)

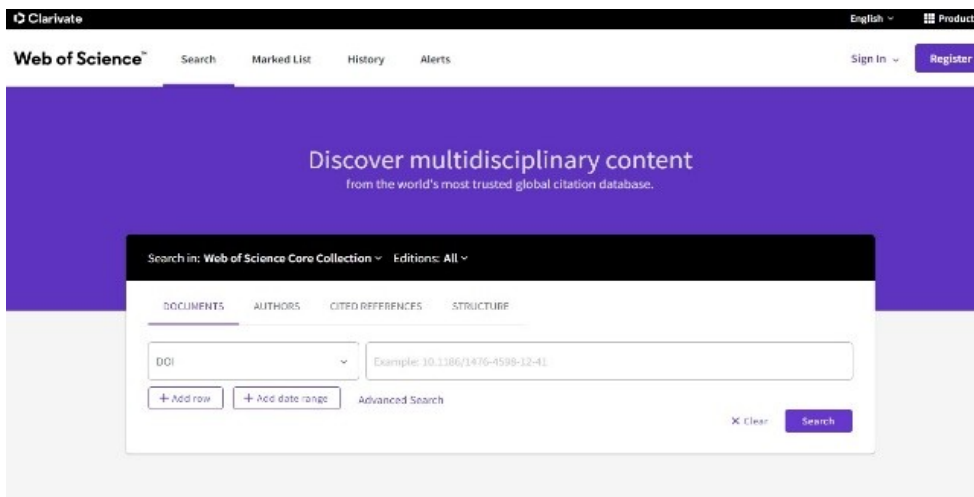
Search within
Article title, Abstract, Keywords

Search documents *

+ Add search field  Add date range [Advanced document search](#)

Search 

www.webofscience.com
www.scopus.com



Clarivate English Products

Web of Science™ Search Marked List History Alerts Sign In Register

Discover multidisciplinary content
from the world's most trusted global citation database.

Search in: Web of Science Core Collection Editions: All

DOCUMENTS AUTHORS CITED REFERENCES STRUCTURE

DOI Example: 10.1186/1476-4598-12-41

+ Add row + Add date range Advanced Search

X Clear Search

Děkuji za pozornost
Prostor pro vaše dotazy

Struktura vědeckého článku

- **Abstrakt** – shrnutí
- **Úvod** – současný stav - posun
- **Metodika** – metodika měření
- **Výsledky** – statistická analýza
- **Diskuze a závěr** – porovnání se studiiemi v dané oblasti, přenositelnost výsledků do praxe
- **Použitá literatura**



Vědec

Výzkum

Publikace/
článek

Časopis

Databáze



Knee Surg Sports Traumatol Arthrosc (2015) 23:2734–2741
DOI 10.1007/s00167-014-3070-9

KNEE

Biomechanical evaluation of knee kinematics after anatomic single- and anatomic double-bundle ACL reconstructions with medial meniscus repair

Olaf Lorbach · Matthias Kieb · Christoph Demmick · Mirco Herbert · Inke Weyers · Michael Raschke · Martin Engelhardt

Received: 8 December 2013 / Accepted: 6 May 2014 / Published online: 22 May 2014
© Springer-Verlag Berlin Heidelberg 2014

Abstract
Purpose To evaluate knee laxity after anatomic ACL reconstruction with additional suture repair of a medial meniscus tear.
Methods Kinematics of the intact knee were determined in 12 human cadaver specimens in response to a 134-N anterior tibial load (aTT) and a combined rotary load of 10 Nm valgus and 4 Nm internal tibial rotation (aTTPS) using a robot-driven force moment sensor testing system. Subsequently, the ACL was resected following the creation of a standardized tear of the medial meniscus, a standard meniscus repair and an ACL reconstruction using an anatomic single-bundle (SB) or an anatomic double-bundle technique (DB). Knee kinematics were determined following every sub-step.
Results Significant increase of aTT in the ACL-deficient knee was found ($p < 0.001$) with a further increase in the ACL-deficient knee with additional medial meniscus repair ($p < 0.001$). ACL reconstructions significantly decreased aTT compared with the ACL and meniscus-repaired knee. No significant differences were seen between the intact knee and the ACL-reconstructed knee with additional meniscus repair ($p < 0.05$). In response to a simulated pivot shift, aTTPS in the intact knee significantly increased in the ACL-deficient knee and meniscus-repaired knee ($p = 0.005$). No significant differences in knee kinematics were found between SB as well as DB ACL reconstruction with additional medial meniscus repair compared with the intact knee. Comparison of SB versus DB ACL reconstruction did not reveal any significant differences in a simulated Lachman test or simulated pivot shift test (n.s.).
Conclusions aTT as well as aTTPS significantly increased with ACL deficiency compared with the intact knee; additional medial meniscus repair further increased aTT. Anatomic ACL reconstruction with additional repair of the medial meniscus did not show significant differences in a simulated Lachman test or simulated pivot shift test.

Keywords ACL · Meniscus · Knee laxity · Meniscus repair · ACL reconstruction

Introduction
The clinical and biomechanical results after ACL reconstruction using single-bundle versus double-bundle techniques remain controversial. Superior results were described in several papers for the double-bundle technique

O. Lorbach (✉)
Department of Orthopaedic Surgery, Saarland University, Kirbergstr. 10, Homburg (Saar), 6621 Homburg, Germany
e-mail: olaf.lorbach@psl.uni-saarland.de

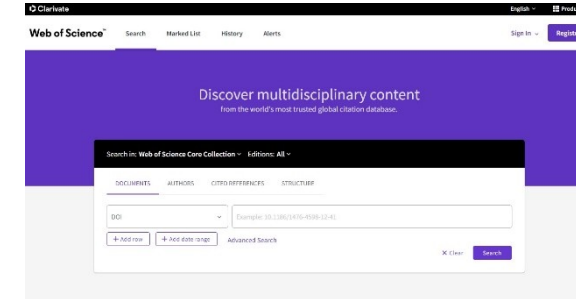
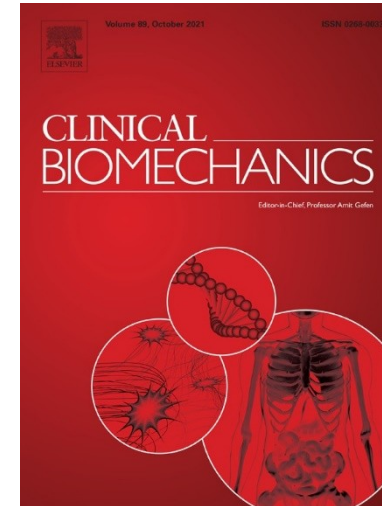
M. Kieb
Department of Orthopaedic Surgery, Rostock University, Erbsenb. 1, Rostock, Germany

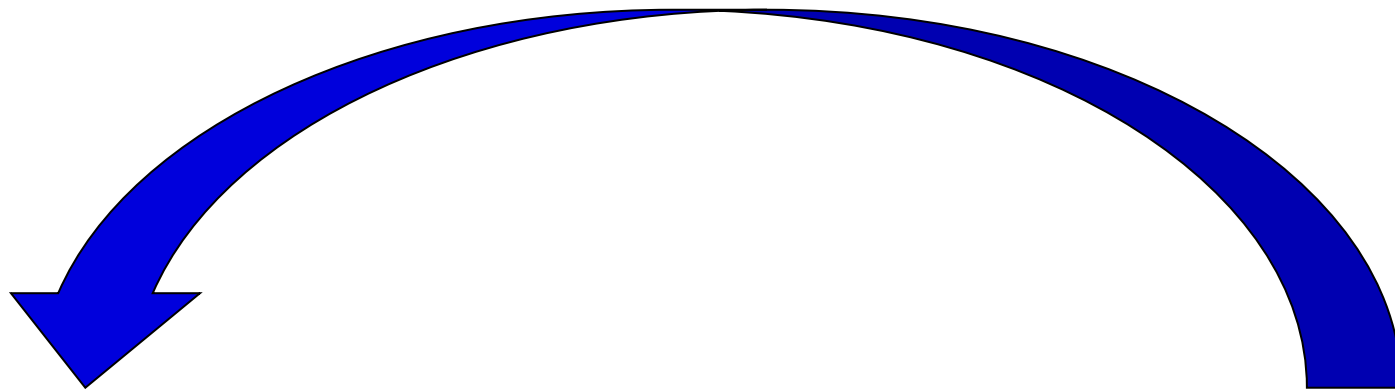
C. Demmick · M. Herbert · M. Raschke
Department of Trauma, Hand- and Reconstructive Surgery, Maastricht University, Maastricht, Germany

I. Weyers
Institute of Anatomy, Leibniz University, Leibniz, Germany

M. Engelhardt
Department of Orthopaedic and Trauma Surgery, Klinikum Ostwestfalen, Ostwestfalen, Germany

Springer





Publikace/
článek

Časopis

Databáze

Knee Surg Sport Traumatol Arthrosc (2015) 25:2734–2741
DOI 10.1007/s00141-014-3071-9

Biomechanical evaluation of knee kinematics after anatomic single- and anatomic double-bundle ACL reconstructions with medial meniscal repair

Olaf Lorbach · Matthias Kleb · Christoph Demmick · Mirco Herbst · Inke Weyers · Michael Raschke · Martin Engelhardt

Received: 8 December 2013 / Accepted: 6 May 2014 / Published online: 22 May 2014
© Springer-Verlag Berlin Heidelberg 2014

Abstract Purpose To evaluate knee laxity after anatomic ACL reconstruction with additional suture repair of a medial meniscus tear. **Methods** Kinematics of the intact knee were determined in 12 human cadaver specimens in response to a 134-N anterior tibial load (aTT) and a combined rotatory load of 10 Nm valgus and 4 Nm internal tibial rotation (aTTPS) using a robotic/universal force moment sensor testing system. Subsequently, the ACL was resected following the creation of a standardized tear of the medial meniscus, a standard meniscus repair and an ACL reconstruction using an anatomic single-bundle (S) or an anatomic double-bundle technique (DB). Knee kinematics were determined following every sub-step. **Results** Significant increase of aTT in the ACL-deficient knee was found ($p < 0.001$) with a further increase in the ACL-deficient knee with additional medial meniscal rupture ($p < 0.001$). ACL reconstructions significantly decreased aTT compared with the ACL and meniscus-ruptured knee. No significant differences were seen between the intact knee and the ACL-reconstructed knee with additional meniscal repair ($p < 0.05$). In response to a simulated pivot shift, aTTPS in the intact knee significantly increased in the ACL-deficient knee and meniscus-ruptured knee ($p = 0.005$). No significant differences in knee kinematics were found between SB as well as DB ACL reconstruction with additional medial meniscal repair compared with the intact knee. Comparison of SB versus DB ACL reconstruction did not reveal any significant differences in a simulated Lachman test or simulated pivot shift test (i.e.). **Conclusions** aTT as well as aTTPS significantly increased with ACL deficiency compared with the intact knee; additional medial meniscal rupture further increased aTT. Anatomic ACL reconstruction with medial meniscal repair did not reveal significant differences in knee kinematics compared with the intact knee. Comparison of anatomic SB versus DB ACL reconstruction with additional repair of the medial meniscus did not show significant differences neither in a simulated Lachman test nor in a simulated pivot shift test. **Keywords** ACL · Meniscus · Knee laxity · Meniscus repair · ACL reconstruction

Introduction The clinical and biomechanical results after ACL reconstruction using single-bundle versus double-bundle techniques remain controversial. Superior results were described in several papers for the double-bundle technique

O. Lorbach (✉)
Department of Orthopaedic Surgery, Saarland University,
Kirbergstr., Homburg (Saar), 66211 Homburg, Germany
e-mail: olaf.lorbach@uni-saarland.de

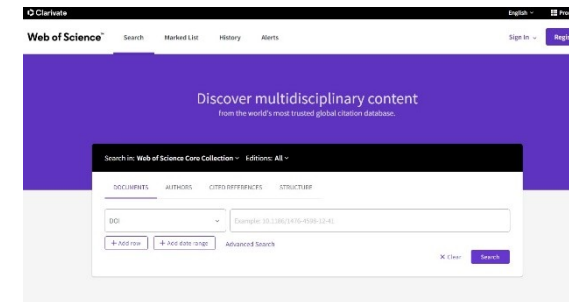
M. Kleb
Department of Orthopaedic Surgery, Rostock University,
Rostock, Germany

C. Demmick · M. Herbst · M. Raschke
Department of Trauma, Hand- and Reconstructive Surgery,
Münster University, Münster, Germany

I. Weyers
Institute of Anatomy, Leibniz University, Lüneburg, Germany

M. Engelhardt
Department of Orthopaedic and Trauma Surgery, Klinikum
Osnabrück, Osnabrück, Germany

Springer



Ledová koupel ihned po tréninku může negativně ovlivnit adaptaci na proběhlý trénink a následný růst svalové síly.

