

ARTICULO	TITULO	PAIS
1	Quantification de la charge d'entraînement inposée au footballeur professionnel en phase de réhabilitation athlétique post-blessure (french).	Francia
2	Return to play following muscle injuries in professional footballers.	China
3	Effects of Massage Therapy on Physical Performance and Perceived Recovery following Acute Eccentric Exercise in Male Body Building Athletes. (English).	Irán

FORMULA DE BUSQUEDA: Recovery methods and Sport injuries

ARTICULO	TITULO	PAIS
1	Creatine kinase kinetics in professional soccer players during a competitive season	Brasil
2	Effect of differents methods of recovery on the lactate removal and anaerobic performance in soccer players	Brasil
3	Recovery media an interdisciplinary work in the coaches attending the south American Games Medellín 2010 (Colombia)	Colombia

4	Effect of cryotherapy on the ankle temperature in athletes: ice pack and cold water immersion	Brasil
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FORMULA DE BUSQUEDA: Recovery methods in soccer player (SCIELO)

ARTICULO	TITULO	PAIS
1	Clinical recovery of two hip adductor longus ruptures: a case-report of a soccer player.	Dinamarca
2	Return to Play After Lateral Meniscectomy Compared With Medial Meniscectomy in Elite Professional Soccer Players.	USA, Inglaterra

3	Recovery After High-Intensity Intermittent Exercise in Elite Soccer Players Using VEINOPUS Sport Technology for Blood-Flow Stimulation.	Francia
4	Monitoring stress and recovery: new insights for the prevention of injuries and illnesses in elite youth soccer players.	Holanda
5	Whole-body vibration as a method of recovery for soccer players.	España y USA

6	Changes in perceived stress and recovery in overreached young elite soccer players.	Holanda
7	Effect of whey protein- and carbohydrate-enriched diet on glycogen resynthesis during the first 48 h after a soccer game.	Dinamarca
8	Effect of post-match cold-water immersion on subsequent match running performance in junior soccer players during tournament play.	Sur de Australia
9	Soccer injuries: Sex-related differences.	USA

FORMULA DE BUSQUEDA: recovery on soccer player
(A. S. Complete)

ARTICULO	TITULO	PAIS
1	Case Study: Muscle Atrophy and Hypertrophy in a Premier League Soccer Player During Rehabilitation From ACL Injury.	Inglaterra
2	Role of Sport Medicine Professionals in Addressing Psychosocial Aspects of Sport-Injury Rehabilitation: Professional Athletes' Views.	Inglaterra

3	Beneficios percibidos de las lesiones deportivas: Estudio cualitativo en futbolistas profesionales y semiprofesionales. (Spanish).	Portugal y España
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FORMULA DE BUSQUEDA: Nutrition and injured and soccer (A. S. Complete)

FORMULA DE BUSQUEDA: Psychology and injured and soccer (A. S. Complete)

ARTICULO	TITULO	PAIS
1	Return to sport after anterior cruciate ligament reconstruction in professional soccer players	Italia
2	The impact of neuromuscular electrical stimulation on recovery after intense, muscle damaging, maximal speed training in professional team sports players	Inglaterra

3	The role of genetic research in sport	Polonia
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FORMULA DE BUSQUEDA: Recovery methods in
soccer player (SCIENCE DIRECT)

AUTORES	AÑO	REVISTA
Ben Belgith, A., Ahmaidi, S., Maille, P., Noirez, P., Desgorces, F.	2012	Science & Sports
Yajun Wang	2014	Journal of Chemical & Pharmaceutical Research
Teimouri Mohsen, Kargarfard Mehdi, Sharifi Gholam reza	2012	Journal Of Isfahan Medical School (I.U.M.S)

AUTORES	AÑO	REVISTA
Barbosa Coelho D., Figueiredo Morandi R., Anunciação de Melo M., Silami-Garcia E.	2011	Rev. Bras Cineantropom Desempenho Hum 2011
Ferrari H.;Oliveira R.;Vinicius Strapasson M.; Rodrigues Santa Cruz A.;Libardi C., Cavaglieri C.	2013	Revista Brasileira de Medicina do Esporte
Moreno Bolívar H.; Ramos Bermúdez S.; Alzate D.	2013	Revista Salud Uninorte

Costa Santos, V. B., dos Santos Cardoso, C., Figueiredo , C.P, Guerino Macedo, C. S.	2015	Fisioter.
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AUTORES	AÑO	REVISTA
Thorborg K.;Petersen J.; Nielsen M. B.; Hölmich P.	2013	BMC Research Notes (Vol. 6)
Nawabi D. H.; Cro S.; Hamid I. P.; Williams A.	2014	American Journal of Sports Medicine

Bieuzen F. ; Pournot H.; Roulland R.; Hauswirth C.	2012	Journal of Athletic Training (Allen Press)
Michel S Brink	2010	British Journal of Sports Medicine.
Marin P. J.; Zarzuela R.; Zarzosa F.; Herrero A. J.; Garatachea N.; Rhea M. R.; García-López D.	2012	European Journal of Sport Science.

Brink M. S.; Visscher C.; Coutts A. J.; Lemmink K. A. P. M.	2012	Scandinavian Journal of Medicine & Science in Sports
Gunnarsson, T. P.; Bendiksen, M.; Bischoff, R.; Christensen, P. M.; Lesivig, B.; Madsen, K.; Stephens, F.; Greenhaff, P.; Krstrup P.; Bangsbo J.	2013	Scandinavian Journal of Medicine & Science in Sports
Rowell G. J.; Coutts Aaron J.; Reaburn P.; Hill-Haas S.	2011	Journal of Sports Sciences
Hu, C. H., Conneely, S., Matzkin, E. G.	2015	AAOS Now.

AUTORES	AÑO	REVISTA
Milsom J.; Barreira P.; Burgess D. J.; Iqbal Z.; Morton J. P.	2014	International Journal of Sport Nutrition & Exercise Metabolism
Arvinen-Barrow, M.; Massey, W. V.; Hemmings B.	2014	Journal of Athletic Training (Allen Press).

Almeida P. L.; Luciano R.; Lameiras, J.; Buceta J.M.	2014	Revista de Psicología del Deporte
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AUTORES	AÑO	REVISTA
S. Zaffagnini, A. Grassi, G.M. Marcheggiani Muccioli, K. Tsapralis, M. Ricci, L. Bragonzoni, S. Della Villa, M. Marcacci	2014	the knee
Tom Taylor, d, Daniel J. West, Glyn Howatson, Chris Jonesa, Richard M. Bracken, Thomas D. Love, Christian J. Cook, Eamon Swift, Julien S. Baker, Liam P. Kilduff	2014	journal of science and medicine in sport

M. Sawczuk; A. Maciejewska; P. Ciężczyk; J. Eider	2011	Science & Sports
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TIPO DE ESTUDIO	POBLACION	METODO DE RECUPERACION
caso y control	Once jugadores de fútbol jóvenes lesionados	M. Morfo-fisiologico
caso y control	70 jugadores de futbol con lesion de rodilla desde junio de 2012 hasta junio de 2013 (43 jugadores masculinos y 27 jugadores femeninos) entre los 19 y 32 años	M. Morfo-fisiologico
caso y control	Se seleccionaron treinta atletas del edificio del cuerpo masculino y divididos aleatoriamente en dos grupos de experimental (n = 15) y control (n = 15).	M. Morfo-fisiologico (masaje)

TIPO DE ESTUDIO	POBLACION	METODO
caso y control	Diecisiete jugadores profesionales de fútbol (edad: 22 ± 31 años, altura: 179 ± 160 cm)	M. Morfo-fisiologico
caso y control	23 atletas de fútbol, entre 16 y 17 años, del sexo masculino, divididos en tres grupos: recuperación activa (RA), pasiva (RP) y con hielo (RH).	M. Morfo-fisiologico
descriptivo	No fue posible obtener el dato del total de técnicos participantes en los Juegos Suramericanos Medellín 2010 (JSA). Por lo tanto, fueron encuestados 93 técnicos (89 hombres y 4 mujeres), seleccionados por conveniencia, procedentes de 13 países y de 28 disciplinas deportivas.	M. Morfo-fisiologico y Nutricional

caso y control	Trece atletas (siete mujeres y seis hombres).	M. Morfo-fisiologico
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TIPO DE ESTUDIO	POBLACION	METODO
caso y control	Un futbolista de 22 años de sexo masculino	M. Morfo-fisiologica
caso y control	Una base de datos de un solo cirujano que contiene el historial de lesiones y los detalles operativos de los atletas de fútbol de elite 2005-2009 se utilizó para identificar los jugadores que se habían sometido a una meniscectomía lateral o medial parcial aislado	M. Morfo-fisiologica

caso y control	26 jugadores de fútbol masculinos profesionales saludables	M. Morfo-fisiologica
caso y control	53 jugadores de fútbol de elite de entre 15 y 18 años	M. Morfo-fisiologica y M. Psicologico
caso y control	16 jugadores de fútbol juvenil de alto nivel	M. Morfo-fisiologico

caso y control	94 jugadores participaron en el estudio	M. Psicologico
caso y control	16 jugadores de fútbol de elite	M. Nutricional
caso y control	20 jugadores de fútbol juvenil de sexo masculino	M. Morfo-fisiologico
caso y control	futbolistas masculinos y femeninos	M. Morfo-fisiologico

TIPO DE ESTUDIO	POBLACION	METODO
caso y control	un jugador profesional de fútbol de la Liga Premier Inglesa	M. Nutricional
caso y control	10 jugadores profesionales de fútbol masculino y rugby.	M. Psicologico

caso y control	16 futbolistas masculinos, con una edad media de 26.2 años (± 3.15). Siendo formada por futbolistas profesionales (« = 8) y semiprofesionales (n = 8) que competían en equipos entre la 1ª y la 3ª División Nacional Portuguesa de Fútbol.	M. Psicologico
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TIPO DE ESTUDIO	POBLACION	METODO
caso y control	21 jugadores de futbol masculino	M. Morfo-fisiologico
caso y control	28 jugadores profesionales de rugby y futbol	M. Morfo-fisiologico

exploratorio

No hay una poblacion
especifica, es un estudio para
una poblacion de deportistas
en general

M. Morfo-fisiologico

RESULTADOS

El contexto particular de acondicionamiento muscular, después de la lesión subraya los límites del método de cuantificación sesión CR10 utilizado durante la primera fase de un período de rehabilitación física. El método WER parece utilizable para todas las fases de la rehabilitación física. Nuestro estudio pone de manifiesto la viabilidad de la cuantificación carga de entrenamiento para ejercicios de rehabilitación física después de lesiones que podrían permitir mejorar este tipo de programas de ejercicios. [Copyright &y& Elsevier]

La eficiencia del tratamiento clínico para los pacientes en el grupo de control y grupo experimental fueron respectivamente 97,14% y 82,86%. La eficiencia de grupo experimental era obviamente mayor que la del grupo de control, con $P < 0,05$, por lo que la diferencia fue de significación estadística. La combinación de lesiones en el sistema de tratamiento de rehabilitación de jugador de fútbol puede mejorar significativamente el efecto terapéutico, mejorar la función de la rodilla se recomienda en la aplicación clínica.

Reducciones significativas en el rendimiento físico, así como incrementos significativos en el dolor muscular se observaron en ambos grupos después del ejercicio agudo. Sin embargo, los resultados mostraron mejoras significativas en el rendimiento físico y percibieron recuperación en el grupo experimental en comparación con el grupo control 24 horas después de la terapia de masaje ($P < 0,05$). Conclusión: Estos resultados sugieren que una sesión de terapia de masaje puede mejorar el rendimiento físico y la recuperación percibida siguiente ejercicio excéntrico aguda en los atletas del edificio del cuerpo masculino. Sin embargo, puede no ser beneficiosa en el tratamiento de la fuerza y disminuciones funcionales

RESULTADOS

la cinética de CK en suero fue influenciado por la rutina de entrenamiento de los jugadores de fútbol, con un pico entre los 12 y 20 h después del partido, volviendo a la normalidad dentro de 60 a 65 h. Este procedimiento puede ser usado para monitorear el estado de recuperación de los atletas y de juego y de entrenamiento intensidades.

No se verificó diferencia significativa entre T1 y T2 para la potencia máxima y media en cualquiera de los grupos estudiados ($p > 0,05$). Fue verificada más remoción del La- sanguíneo para la RA (47,62%), al ser comparada a la RH (16,9%; $p = 0,001$) y la RP (18,20%; $p = 0,02$). Se puede concluir que la RA, RP y RH son eficaces para el mantenimiento del desempeño anaeróbico de jugadores de fútbol sub-17. La recuperación activa se mostró más eficiente para la remoción del La- sanguíneo en comparación con la RP y la RH.

Los ejercicios de estiramientos y el masaje son los medios de recuperación más utilizados por los entrenadores, y el 50 % de estos utiliza ayudas ergo-nutricionales, siendo las vitaminas las de mayor preferencia. El 79,3 % de entrenadores cuenta con la ayuda de un equipo de trabajo interdisciplinario, siendo el médico y el psicólogo los de mayor presencia. Los ejercicios de estiramientos y el masaje son los medios de recuperación más utilizados por los entrenadores, y el 50 % de estos utiliza ayudas ergo-nutricionales, siendo las vitaminas las de mayor preferencia. El 79,3 % de entrenadores cuenta con la ayuda de un equipo de trabajo interdisciplinario, siendo el médico y el psicólogo los de mayor presencia.

Los dos tipos de aplicación en frío fueron eficaces en la reducción de la temperatura de superficie de la piel después del procedimiento de 30 minutos. No se observaron diferencias significativas entre las siguientes temperaturas: pre-aplicación (IP = 29.8 ± 2.4 °C y CIT = 27.5 ± 3 °C - P <0,05); después de 30 minutos (IP = 5 ± 2.4 °C y CIT = 7.8 ± 3 °C - P <0,01). Para el recalentamiento, después de 25 minutos (IP = 20.8 ± 3.3 °C y del CIT = 18.2 ± 2.7 °C - P <0,04); después de 45 minutos (IP = 24.5 ± 2.3 °C e IP = 22.1 ± 3.5 °C - P <0,05); después de 75 minutos (IP = 26.4 ± 2.2 °C y CIT = 24 ± 2.7 °C - P <0,02).

RESULTADOS

A partir de este caso podemos concluir que dos rupturas aductor largo de la cadera aparentemente similares, verificados por ecografía inicial (10 días después de la lesión), pueden tener muy diferentes aductores de la cadera los tiempos de recuperación de fuerza. Evaluación de la recuperación de la fuerza aductor puede, por lo tanto en el futuro como una medida adicional útil e importante para determinar cuando los jugadores de fútbol con rupturas aductor largo de la cadera pueden regresar con seguridad a jugar.

El tiempo para volver al nivel previo a la lesión de la competencia es significativamente más tiempo después de lateral que meniscectomía medial en atletas profesionales de fútbol de élite. Meniscectomía lateral tiene una mayor incidencia de eventos adversos en el período de recuperación temprana, como dolor / hinchazón y la necesidad de seguir la artroscopia. También se asocia con una tasa significativamente menor de volver a jugar. Estos resultados constituyen la base de una discusión importante que debe ser tenido con el jugador y el club antes de una meniscectomía lateral se realiza en atletas de fútbol de elite.

Resultados: El grupo eléctrico-estimulación tenían mejores 30 segundos todos los de salida actuaciones en 1 hora después del ejercicio ($P = 0,03$) en comparación con el grupo de recuperación pasiva. Sin embargo, no se observaron diferencias en los marcadores de daño muscular, máxima salto con contramovimiento verticales, o la contracción voluntaria máxima entre los grupos ($P > 0,05$). Conclusiones: En comparación con la recuperación pasiva, la estimulación eléctrica utilizando este estimulador flujo sanguíneo mejorado el rendimiento anaeróbico en la hora posterior a la intervención 1. No se detectaron cambios en los marcadores de daño muscular o contracción voluntaria máxima. Estas respuestas pueden ser considerados beneficiosos para los atletas que participan en deportes con rondas sucesivas intercalados con períodos de recuperación cortos, pasivos

RESULTADOS: Durante el período de estudio, se produjeron 320 heridos y 82 enfermedades. Regresión multinomial demostró que el estrés físico se relaciona tanto con lesiones y enfermedades (rango OR 1,01 a 2,59). El estrés psicosocial y la recuperación se relacionaron la aparición de la enfermedad (rango OR 0,56 a 2,27). CONCLUSIONES: Las lesiones están relacionadas con el estrés físico. El estrés físico y el estrés psicosocial y la recuperación son importantes en relación con la enfermedad. Seguimiento individual de la tensión y la recuperación puede proporcionar información útil para evitar que los jugadores de fútbol de lesiones y enfermedades.

Los resultados de este estudio demuestran que la vibración de todo el cuerpo en combinación con un enfriamiento tradicional puede reducir la percepción de dolor muscular y mejorar la recuperación después de un ejercicio específico de fútbol.

los jugadores de futbol mostraron un incremento en la F.C. de 9 ± 1 latidos/min. En comparacion a la linea base. El analisis de Bonferroni mostro una puntuacion de recuperacion mas favorable en el grupo sano en el inicio de temporada en comparacion con los dos meses antes del diagnostico.

la resíntesis de glucógeno 48 h después de un partido de fútbol no es elevada por la ingestión de una dieta HCP. Por otra parte, la resíntesis de glucógeno no parece verse afectada por los contactos corporales durante un partido.

La inmersión de agua fría media las percepciones de la fatiga y la recuperación y mejora de la restauración de algunas medidas de desempeño relacionados con partidos durante un torneo de 4 días.

Dado que las mujeres son más propensas a rasgan las ACL a una edad más temprana que los hombres, se enfrentan al secuelas potencial anterior también. Estas consecuencias son perjudiciales para el futuro de una investigación completa, Sin dolor y la vida activa de estos atletas, por lo que el diseño de programas de formación de prevención es un paso esencial para el futuro.

RESULTADOS

Desde la perspectiva de un practicante, es extremadamente difícil de conseguir el equilibrio entre la ingesta diaria de energía (y el desglose de macronutrientes) y reducido el gasto de energía a fin de lograr el doble objetivo de reducir la atrofia muscular y el aumento de grasa corporal durante periodos de inactividad. La intervención puesta en marcha también debe depender de la naturaleza específica de la situación (es decir, el grado de actividad diaria / carga que todavía se puede realizar), así como la duración y el alcance de la lesión y también la historia de la formación del atleta y enfoque personal a su lesión. Por ejemplo, ya que la aplicación de la presente enfoque, hemos observado otros atletas que han presentado con <pérdida de 2 kg en todo el cuerpo masa de tejido magro en el transcurso de 4 a 8 semanas de inactividad, pero se han presentado con 1 a 3 kg aumentos de la masa grasa. En tales situaciones, el atleta está, por tanto, ante la muy diferente tarea de tener que perder grasa corporal cuando se reanuden entrenamiento diario, un reto que a menudo es visto como psicológicamente y físicamente más exigente que tener que ganar masa de tejido magro. Claramente, hay muchas estrategias diferentes para aplicar durante la lesión y en última instancia, esperamos la participación pública de estos datos ayudará a informar a la práctica futura y mejorar el tratamiento ofrecido a los atletas durante los tiempos de la lesión prolongada. Por lo tanto, sugerimos la necesidad de un enfoque estratégico y holístico de la rehabilitación de lesiones a largo plazo que progresa no sólo parámetros físicos, sino también las estrategias nutricionales.

Los atletas en nuestro estudio vieron lesiones como " parte integrante " de sus deportes. A pesar de la normalización de las lesiones deportivas, los atletas reportaron sentimientos frecuentes de la frustración y la duda de todo el proceso de rehabilitación. Sin embargo, los atletas perciben el papel de las SMP en la rehabilitación de lesiones como abordar las preocupaciones físicas; cualquier intervención dirigida a los resultados psicosociales (por ejemplo, la motivación, la confianza) tenía que ser sutil e indirecta. Conclusiones: Los SMP que trabajan con atletas lesionados necesitan entender los principios que sustentan los procesos psicosociales deportiva de la lesión de los atletas y las reacciones psicosociales efecto puede tener en los atletas. Por otra parte, las SMP deben entender los procesos de autorregulación que puedan producirse a lo largo de la rehabilitación de lesiones y ser capaz de aplicar los principios psicológicos en formas naturales y sutiles para ayudar a las habilidades de autorregulación de los atletas.

Los participantes reportaron 31 beneficios percibidos en todo su proceso de lesión, siendo el apoyo social y la educación deportiva los más referidos. Las conclusiones apuntan para la importancia de incluir aspectos positivos para una comprensión más clara y completa del impacto global de las lesiones deportivas.

RESULTADOS

La reconstrucción del LCA con la técnica de la corva de doble haz no anatómica, combinado con una rehabilitación por objetivos adaptados al paciente, permitió 95% y el 62% de los jugadores profesionales de fútbol masculino para volver a la misma actividad deportiva profesional de 1 año y 4 años después de la cirugía respectivamente. Sin embargo, en general, el 71% eran todavía capaces de jugar al fútbol competitivo en cualquier nivel al final del seguimiento. Las puntuaciones clínicas fueron restaurados al estado previo a la lesión desde hace 6 meses, mientras que el retorno a jugar en partido oficial se informó de 186 ± 52 días después de la cirugía. El fallo de ACL reconstrucción y revisión posterior cirugía se informó en un paciente (5%).

Estimulación eléctrica neuromuscular mejora la recuperación de entrenamiento intensivo en jugadores profesionales de los deportes de equipo. Esta estrategia ofrece una estrategia de recuperación de fácil aplicación que puede tener una aplicación particular durante el sueño y los viajes.

La primera y la clave logro de la investigación genética en el deporte fue la determinación de los denominados índices de heredabilidad de los rasgos estructurales y funcionales individuales del cuerpo humano. El segundo logro fundamental en la genética del deporte es la determinación de marcadores genéticos que son importantes desde el punto de vista de la formación deportiva. Ayudó a observar las condiciones y las relaciones entre las reacciones fisiológicas individuales que ocurren en el cuerpo humano que también son clave para su potencial funcional. Se puede suponer que el papel y la importancia de la genética en el deporte pueden aumentar en el futuro. Es por eso que es importante ahora para señalar las amenazas y temores relacionados con estos acontecimientos. Uno de los mayores problemas es, sin duda, el uso no terapéutico de la terapia génica, es decir, el dopaje genético.

ABSTRAC

The purpose of this study is to compare training load quantification methods “Work-Endurance- Recovery”, “session-CR10” and “Training impulse” during a period of post-injury physical rehabilitation in professional soccer players. Methods: Eleven young soccer players injured participated in the study. This period of physical rehabilitation is composed of sessions of muscle conditioning, proprioception and individual work with ball. For all training sessions, Work-Endurance-Recovery training loads are not related to session-CR10 ($P=0.11$). These two types of training loads result in significant correlations for proprioception and ball sessions ($R^2=0.60$). In addition, significant correlation coefficients appear between TRIMPs and WER training loads ($R^2=0.62$), and between TRIMPs (only calculated for proprioception and ball sessions) and session-CR10 ($R^2=0.66$). Quantification of muscle conditioning sessions differs between Work-Endurance-Recovery and session-CR10 methods. These differences are due to the fact that the increase in exercise intensity associated with unchanged volume results in decreased effort perception. The particular context of muscular conditioning after injury underlines the limits of session-CR10 quantification method used during the first phase of a physical rehabilitation period. The WER method seems useable for all phases of physical rehabilitation. Our study underlines the feasibility of training load quantification for physical rehabilitation exercises after injuries that could allow to improve such exercises programs. [Copyright &y& Elsevier]

Objective: To analyze the causes of knee injuries football players to explore the effect of the system of rehabilitation measures applied in these patients functional recovery of the knee. Methods: June 2012 June 2013 knee injury 70 cases occurred football player, according to the principles of randomized into experimental group and control group, the control group received conventional treatment regimens, on the basis of conventional therapy group system rehabilitation, compared two groups of patients recover knee condition, knee function was. Results: The effective treatment of patients in the experimental group was 97.14%, significantly higher than 82.86%, knee functional status of patients in the experimental group than the control group, $P<0.05$, statistically significant results. Conclusion: The combination of injuries in football player's rehabilitation treatment system can significantly improve the therapeutic effect, enhance knee function is recommended in the clinical application.

Background: Massage therapy is one of the methods used to improve and prevent sports injuries. The purpose of this study was to examine the effects of an athletic massage after acute eccentric exercise on physical performance and perceived recovery in male body building athletes. Methods: Thirty male body building athletes were selected and randomly divided into two groups of experimental ($n=15$) and control ($n=15$). They performed 5 sets of ten maximal eccentric contractions at a level of $80 \pm 5\%$ of a one-repetition maximal contraction of the knee flexors and extensors at maximal angular velocity. The experimental group received athletic massage using massage techniques for 30 minutes immediately after exercise, whereas the control group was instructed to maintain their current lifestyle. Physical performance and perceived recovery were assessed using the Sargent jump test and perceived recovery questionnaire before and immediately after exercise, and at 2, 24, 48 and 72 hours after exercise. The obtained data was analyzed using repeated measures analysis of variance (ANOVA). Findings: Significant reductions in physical performance as well as significant increments in muscle soreness were observed in both groups after acute exercise. However, the results showed significant improvements in physical performance and perceived recovery in the experimental group compared with the control group 24 hours after massage therapy ($P<0.05$). Conclusion: These results suggest that a massage therapy session may improve the physical performance and perceived recovery following acute eccentric exercise in male body building athletes. However, it may not be beneficial in the treatment of strength and functional declines. [ABSTRACT FROM AUTHOR]

ABSTRAC

Serum creatine kinase (CK) concentration has been widely used as an indicator of skeletal muscle damage in sports. However, there are no longitudinal studies on post-game CK kinetics in Soccer during a competitive season. The aim of this study was to evaluate serum CK kinetics in professional Soccer players at different post-game times during a competitive season without training interruption. Seventeen professional Soccer players (age: 22.2 ± 3.1 years, height: 179 ± 6.0 cm, body fat percentage: 9.5 ± 1.1 , and 67.0 ± 3.5 mL O₂ /kg/min) were evaluated over a period of 3 months of the national championship. Serum CK concentration was measured before the beginning of the season (baseline) and at four different times after a Soccer game (post-1: 12-20 h, post-2: 36-48 h, post-3: 60-65 h, and post-4: 90-110 h). Plasma CK concentrations were higher at all times when compared to baseline ($p < 0.05$). Post-2 CK concentration was lower than post-1 and higher than post-3 and -4 ($p < 0.05$), with no significant differences between post-3 and post-4. In conclusion, serum CK kinetics was influenced by the training routine of the Soccer players, with a peak between 12 and 20 h after the game, returning to normal within 60-65 h. This procedure can be used to monitor the recovery state of athletes and game and training intensities.

INTRODUCTION: Soccer is characterized as a sport of high intensity, performed intermittently and with random sequences of periods of effort and recovery; thus, strategies that can somehow minimize muscle fatigue can provide an important competitive advantage. **OBJECTIVE:** This study aimed to compare different methods of recovery with the removal of blood lactate (La-) and anaerobic performance of soccer players. **METHODS:** Twenty-three male soccer players between 16 and 17 years were divided into three groups: active recovery (RA), passive recovery (RP) and ice recovery (RG). To assess the aerobic capacity the critical speed was used, and for the induction of hyperlactacidemia and anaerobic performance the RAST test was applied before (T1) and after (T2) the recovery intervals. The measurements of blood La- were made at 2, 4, 6, 8 and 10 minutes during the recovery period. The one-way ANOVA was used to compare the variables that characterize the groups. A two-way ANOVA was performed for comparison between the peak and minimum values of blood La- and anaerobic performance at T1 and T2 for the three recovery conditions. **RESULTS:** There was no significant difference between T1 and T2 for maximum and average power in the studied groups ($p > 0.05$). It was observed greater removal of blood La- (47.62%) for the RA when compared to RG (16.9%; $p = 0.001$) and RP (18.20%; $p = 0.02$). **CONCLUSION:** RA, RP and RG are effective to maintain the anaerobic performance of soccer players under 17. Active recovery was shown more efficient for removing the blood La- when compared to RP and RG.

Objective: To identify the means of recovery and ergo-nutritional used by coaches participants in Medellin 2010 South American Games with their athletes, how to recognize if they have the support of other interdisciplinary professionals. **Materials and methods:** quantitative and cross-sectional descriptive scope. The purposive sample consisted of 93 technicians from 13 countries in 28 different sports; the study took place in Medellin Colombia, during the month of March 2010. **Results:** Stretching exercises and massage are the means of recovery used by the coaches themselves as 50 % of them using ergonomic aids nutritional vitamins being the most preferred. 79.3 % of coaches with the help of an interdisciplinary team, with the physician and the psychologist the most presence. **Conclusions:** All South American coaches surveyed, various therapeutic methods commonly used for the physical recovery of his team. Similarly, one out of two ergonomic aids used nutritional supplement in the diet. These elements are used looking to improve athletic performance and decrease muscle injuries. Most coaches, has a team of interdisciplinary work that enhances their performance.

Introduction: Cryotherapy is often used for rehabilitation of injured athletes. Objective: To compare the effectiveness of ice pack (IP) and cold water immersion (CWI) on lowering the ankle skin surface temperature in athletes.

ABSTRACT

Background: Non-operative treatment of acute hip adductor longus ruptures in athletes has been described in the literature. However, very limited information concerning the recovery of this type of injury exists. This case represented a unique possibility to study the recovery of two acute adductor longus ruptures, using novel, reliable and validated assessment methods. Case presentation: A 22-year old male soccer player (Caucasian) sustained two subsequent acute adductor longus ruptures, one in each leg. The injuries occurred 10 months apart, and were treated non-surgically in both situations. He was evaluated using hip-strength assessments, self-report and ultrasonography until complete muscle-strength recovery of the hip adductors had occurred. The player was able to participate in a full soccer training session without experiencing pain 15 weeks after the first rupture, and 12 weeks after the second rupture. Full hip adductor muscle-strength recovery was obtained 52 weeks after the first rupture and 10 weeks after the second rupture. The adductor longus injuries, as verified by initial ultrasonography (10 days post-injury), showed evidence of a complete tendon rupture in both cases, with an almost identical imaging appearance. It was only at 6 and 10 weeks ultrasonographic follow-up that the first rupture was found to include a larger anatomical area than the second rupture. Conclusion: From this case we can conclude that two apparently similar hip adductor longus ruptures, verified by initial ultrasonography (10 days post-injury), can have very different hip adductor strength recovery times. Assessment of adductor strength recovery may therefore in the future be a useful and important additional measure for determining when soccer players with hip adductor longus ruptures can return safely to play. [ABSTRACT FROM AUTHOR]

Background: Meniscectomy is frequently performed in elite soccer athletes to allow return to a high level of performance as early as possible. Although lateral meniscectomy is known to have more serious long-term sequelae than medial meniscectomy, little is known about the effect of lateral meniscectomy on the time to return to play during the early recovery phase in professional soccer players. Hypothesis: Lateral meniscectomy results in longer times to return to preinjury level of competition and a higher incidence of adverse outcomes compared with medial meniscectomy in elite professional soccer players. Study Design: Cohort study; Level of evidence, 3. Methods: A single-surgeon database containing the injury history and operative details of elite soccer athletes from 2005 to 2009 was used to identify players who had undergone an isolated partial lateral or medial meniscectomy. The time to return to preinjury level of competition, the incidence of adverse events during early recovery, and the need for further arthroscopy were recorded. Time to return to play was analyzed by using the Kaplan-Meier method. A multivariate analysis was used to control for age, location of meniscectomy, percentage of meniscus excised, and type of tear. Results: Ninety soccer players were identified, of which 42 had a lateral meniscectomy and 48 had a medial meniscectomy. The median time to return to play, to the nearest week, was longer in the lateral group than the medial group (7 vs 5; $P < .001$). At all time points after surgery, the cumulative probability of returning to play was 5.99 times greater (95% confidence interval, 3.34- 10.74; $P < .001$) after medial meniscectomy. More lateral meniscectomy cases experienced adverse events related to pain/ swelling—29 (69%) vs 4 (8%) ($P < .001$)-and required a second arthroscopy: 3 (7%) vs 0 ($P = .098$). Conclusion: The time to return to preinjury level of competition is significantly longer after lateral than medial meniscectomy in elite professional soccer athletes. Lateral meniscectomy has a higher incidence of adverse events in the early recovery period, including pain/swelling and the need for further arthroscopy. It is also associated with a significantly lower rate of return to play. These findings form the basis of an important discussion that must be had with player and club before a lateral meniscectomy is performed in elite soccer athletes. [ABSTRACT FROM AUTHOR]

Context: Electric muscle stimulation has been suggested to enhance recovery after exhaustive exercise by inducing an increase in blood flow to the stimulated area. Previous studies have failed to support this hypothesis. We hypothesized that the lack of effect shown in previous studies could be attributed to the technique or device used. Objective: To investigate the effectiveness of a recovery intervention using an electric blood-flow stimulator on anaerobic performance and muscle damage in professional soccer players after intermittent, exhaustive exercise. Design: Randomized controlled clinical trial. Setting: National Institute of Sport, Expertise, and Performance (INSEP). Patients or Other Participants: Twenty-six healthy professional male soccer players. Intervention(s): The athletes performed an intermittent fatiguing exercise followed by a 1-hour recovery period, either passive or using an electric blood-flow stimulator (VEINOPUS). Participants were randomly assigned to a group before the experiment started. Main Outcome Measures(s): Performances during a 30-second all-out exercise test, maximal vertical countermovement jump, and maximal voluntary contraction of the knee extensor muscles were measured at rest, immediately after the exercise, and 1 hour and 24 hours later. Muscle enzymes indicating muscle damage (creatine kinase, lactate dehydrogenase) and hematologic profiles were analyzed before and 1 hour and 24 hours after the intermittent fatigue exercise. Results: The electric-stimulation group had better 30-second all-out performances at 1 hour after exercise ($P = .03$) in comparison with the passive-recovery group. However, no differences were observed in muscle damage markers, maximal vertical countermovement jump, or maximal voluntary contraction between groups ($P > .05$). Conclusions: Compared with passive recovery, electric stimulation using this blood-flow stimulator improved anaerobic performance at 1 hour postintervention. No changes in muscle damage markers or maximal voluntary contraction were detected. These responses may be considered beneficial for athletes engaged in sports with successive rounds interspersed with short, passive recovery periods. [ABSTRACT FROM AUTHOR]

OBJECTIVE: Elite youth soccer players have a relatively high risk for injuries and illnesses due to increased physical and psychosocial stress. The aim of this study is to investigate how measures to monitor stress and recovery, and its analysis, provide useful information for the prevention of injuries and illnesses in elite youth soccer players. METHODS: 53 elite soccer players between 15 and 18 years of age participated in this study. To determine physical stress, soccer players registered training and match duration and session rating of perceived exertion for two competitive seasons by means of daily training logs. The Dutch version of the Recovery Stress Questionnaire for athletes (RESTQ-Sport) was administered monthly to assess the psychosocial stress-recovery state of players. The medical staff collected injury and illness data using the standardised Fédération Internationale de Football Association registration system. ORs and 95% CIs were calculated for injuries and illnesses using multinomial regression analyses. The independent measures were stress and recovery. RESULTS: During the study period, 320 injuries and 82 illnesses occurred. Multinomial regression demonstrated that physical stress was related to both injury and illness (range OR 1.01 to 2.59). Psychosocial stress and recovery were related the occurrence of illness (range OR 0.56 to 2.27). CONCLUSIONS: Injuries are related to physical stress. Physical stress and psychosocial stress and recovery are important in relation to illness. Individual monitoring of stress and recovery may provide useful information to prevent soccer players from injuries and illnesses. [ABSTRACT FROM AUTHOR]

The aim of this study was to determine whether superimposed whole-body vibration could improve the recovery-related effects of a traditional cool-down in high-level soccer players. Sixteen high-level junior soccer players performed a repeated-sprint ability test, after which they performed a traditional cool-down, with (experimental group) or without (control group) superimposed whole-body vibration. Functional recovery was measured through vertical jump height and maximal voluntary isometric force in leg-extension. The repeated-sprint ability test induced increases (from 161 to 215%; $P < 0.05$) in muscle pain measured by visual analogue scale in the control group only. Vertical jump height was recovered earlier with than without whole-body vibration (24 h after the repeated-sprint ability test; $P < 0.05$). The results of this study demonstrate that whole-body vibration in combination with a traditional cool-down can reduce perceived muscle pain and enhance recovery after a soccer-specific exercise. [ABSTRACT FROM PUBLISHER]

The aim of this study was to prospectively monitor sport-specific performance and assess the stress–recovery balance in overreached (OR) soccer players and controls. During two competitive seasons, 94 players participated in the study. The stress–recovery balance (RESTQ-Sport) and sport-specific performance (Interval Shuttle Run Test) were assessed monthly. Seven players with performance decrement of at least a month were classified as OR. Stress and recovery measures were assessed between groups (OR vs healthy players) and at different times within the OR group. An unfavorable total recovery score appeared 2 months before diagnosis when compared with the reference values of the healthy group established at the start of the season ($P=0.009$) and also over the two seasons ($P=0.028$). The scales Emotional Stress ($P=0.044$), Physical Recovery ($P=0.009$), General Well-being ($P=0.001$) and Sleep Quality ($P=0.045$) were sensitive to OR compared with the average of the healthy group over the two seasons. Finally, Fatigue and Being in Shape demonstrated the largest changes in stress and recovery within the OR players (effect size=1.14 and 1.50). The longitudinal monitoring of performance and changes in stress and recovery may be useful for the detection of OR in its earliest stage. The information obtained from these tests can be used to optimize individual training and recovery programs.

The effect of a whey protein- and carbohydrate (CHO)-enriched diet on the rate of muscle glycogen resynthesis after a soccer match was examined. Sixteen elite soccer players were randomly assigned to a group ingesting a diet rich in carbohydrates and whey protein [HCP, protein, and fat content was 71, 21, and 8 E%, respectively; high content of carbohydrates and whey protein (HCP), $n = 9$] or a group ingesting a normal diet (55, 18, and 26 E%; control [CON], $n = 7$) during a 48-h recovery period after a soccer match. CON and three additional players carried out a 90- and 60-min simulated match without body contacts (SIM90 and SIM60). Muscle glycogen was lowered ($P < 0.05$) by 54, 48, 53, and 38% after the matches in CON, HCP, SIM90, and SIM60, respectively. Glycogen resynthesis during the first 48 h after the match was not different between CON and HCP, whereas glycogen resynthesis was slower ($P < 0.05$) during the first 24 h after SIM60 than SIM90 (2.88 ± 0.84 vs 4.32 ± 0.54 mmol/kg dw/h). In HCP, glycogen content in type II muscle fibers was still lowered 48 h after the match. In conclusion, glycogen resynthesis 48 h after a soccer match is not elevated by ingestion of a HCP diet. Furthermore, glycogen resynthesis does not appear to be impaired by body contacts during a match. [ABSTRACT FROM AUTHOR]

In this study, we investigated the effects of two hydrotherapy interventions on match running performance and perceptual measures of fatigue and recovery during a 4-day soccer tournament. Twenty male junior soccer players were assigned to one of two treatment groups and undertook either cold-water immersion (5×1 min at 10°C) or thermoneutral water immersion (5×1 min at 34°C) after each match. High-intensity running distance ($>15 \text{ km} \cdot \text{h}^{-1}$) and total distance covered, time spent in low ($<80\%$ maximum heart rate), moderate (80-90% maximum heart rate), and high ($>90\%$ maximum heart rate) heart rate zones, and rating of perceived exertion (RPE) were recorded for each match. Perceptions of general fatigue and leg soreness were recorded approximately 22 h after each match. There were decreases in both groups across the 4-day tournament for high-intensity running distance ($P = 0.006$, Cohen's $d = 0.63$), total distance run ($P < 0.001$, $d = 0.90$), time in high heart rate zone ($P = 0.003$, $d = 0.90$), and match RPE ($P = 0.012$, $d = 0.52$). Cold-water immersion was more effective than thermoneutral immersion for reducing the perception of leg soreness ($P = 0.004$, $d = -0.92$) and general fatigue ($P = 0.007$, $d = -0.91$), ameliorating the decrement in total distance run ($P = 0.001$, $d = 0.55$), and maintaining time in the moderate heart rate zone ($P = 0.01$, $d = 1.06$). In conclusion, cold-water immersion mediates the perceptions of fatigue and recovery and enhances the restoration of some match-related performance measures during a 4-day tournament. [ABSTRACT FROM AUTHOR]

The article offers information on anterior cruciate ligament (ACL) injuries in females soccer players and importance of understanding sex-related differences in risk factors, injury prevention plans, and recovery. Topics discussed include refers a prospective study on injuries in female soccer players, presents a report on higher concussion rates in female soccer players than male and study on training and head-neck segment dynamic stabilization in male and female collegiate soccer players.

ABSTRACT

The onset of injury and subsequent period of immobilization and disuse present major challenges to maintenance of skeletal muscle mass and function. Although the characteristics of immobilization-induced muscle atrophy are well documented in laboratory studies, comparable data from elite athletes in free-living conditions are not readily available. We present a 6-month case-study account from a professional soccer player of the English Premier League characterizing rates of muscle atrophy and hypertrophy (as assessed by DXA) during immobilization and rehabilitation after ACL injury. During 8 weeks of inactivity and immobilization, where the athlete adhered to a low carbohydrate-high protein diet, total body mass decreased by 5 kg attributable to 5.8 kg loss and 0.8 kg gain in lean and fat mass, respectively. Changes in whole-body lean mass was attributable to comparable relative decreases in the trunk (12%, 3.8 kg) and immobilized limb (13%, 1.4 kg) whereas the nonimmobilized limb exhibited smaller declines (7%, 0.8 kg). In Weeks 8 to 24, the athlete adhered to a moderate carbohydrate-high protein diet combined with structured resistance and field based training for both the lower and upper-body that resulted in whole-body muscle hypertrophy (varying from 0.5 to 1 kg per week). Regional hypertrophy was particularly pronounced in the trunk and nonimmobilized limb during weeks 8 to 12 (2.6 kg) and 13 to 16 (1.3 kg), respectively, whereas the previously immobilized limb exhibited slower but progressive increases in lean mass from Week 12 to 24 (1.2 kg). The athlete presented after the totality of the injured period with an improved anthropometrical and physical profile. [ABSTRACT FROM AUTHOR]

The article focuses on research that explores the views of injured professional athletes on the role of sport medicine professional (SMPs) in the psychosocial aspects of sport-injury rehabilitation. Topics discussed include studying ten professional male football and rugby players, interview with athletes that reported feelings of frustration throughout the rehabilitation process, and the study concluding that SMPs working with injured athletes need to understand the psychology of athletes.

The aim of the study was to identify and analyze the perceived benefits associated with sports injury in 16 professional and semi-professional players who were injured during sports practice. For data collection semi-structured interviews were conducted, content analyses being performed through the QSR Nvivo 2.0 software. 31 participants reported perceived benefits throughout the injury process, with social support and sports education referrals. The findings point to the importance of including positive aspects for a clearer and more complete understanding of the overall impact of sports injuries.

ABSTRACT

To investigate time to return to sport and rate of professional sport activity in a homogenous group of competitive soccer players 4 years after anterior cruciate ligament (ACL) reconstruction and rehabilitation.

Objectives: During congested fixture periods in team sports, limited recovery time and increased travel hinder the implementation of many recovery strategies; thus alternative methods are required. We examined the impact of a neuromuscular electrical stimulation device on 24-h recovery from an intensive training session in professional players. **Design:** Twenty-eight professional rugby and football academy players completed this randomised and counter-balanced study, on 2 occasions, separated by 7 days. **Methods:** After baseline perceived soreness, blood (lactate and creatine kinase) and saliva (testosterone and cortisol) samples were collected, players completed a standardised warm-up and baseline countermovement jumps (jump height). Players then completed 60 m × 50 m maximal sprints, with 5 min recovery between efforts. After completing the sprint session, players wore a neuromuscular electrical stimulation device or remained in normal attire (CON) for 8 h. All measures were repeated immediately, 2 and 24-h post-sprint. **Results:** Player jump height was reduced from baseline at all time points under both conditions; however, at 24-h neuromuscular electrical stimulation was significantly more recovered (mean ± SD; neuromuscular electrical stimulation -3.2 ± 3.2 vs. CON $-7.2 \pm 3.7\%$; $P < 0.001$). Creatine kinase concentrations increased at all time points under both conditions, but at 24-h was lower under neuromuscular electrical stimulation ($P < 0.001$). At 24-h, perceived soreness was significantly lower under neuromuscular electrical stimulation, when compared to CON ($P = 0.02$). There was no effect of condition on blood lactate, or saliva testosterone and cortisol responses ($P > 0.05$). **Conclusions:** Neuromuscular electrical stimulation improves recovery from intensive training in professional team sports players. This strategy offers an easily applied recovery strategy which may have particular application during sleep and travel.

Object: Présenter le rôle et l'importance de la génétique dans le sport contemporain. Actualités: Les auteurs ont effectué une évaluation des tendances principales des recherches en génétique réalisées dans le sport : génétique des populations dans la seconde moitié du xxe siècle, basée sur une étude des caractéristiques des phénotypes sans identification des patterns du génotype; démarrages des recherches sur les caractéristiques du génotype avec reconnaissance des patterns du génotype ; et les récents progrès en biologie moléculaire après l'achèvement « The Human Genome Project » en 2003. La première partie du papier présente la signification, le rôle et les plus importants résultats des premiers travaux de génétique fondés sur la comparaison de jumeaux ainsi que les parents et leurs enfants. Les indicateurs d'hérédité élaborées sur cette base sont jusqu'à aujourd'hui une très précieuse source d'informations pour les personnes responsables des programmes d'entraînement. La partie suivante de l'article expose la progression dans le développement des recherches moléculaires dans le sport. Les analyses ont porté sur plusieurs dizaines de marqueurs génétiques (ACE, ACTN3, MSTN) ainsi que la prédétermination génétique des traits fonctionnels de l'organisme humain, l'accent étant mis sur les applications potentielles pour la connaissance. Nous avons aussi parlé des problèmes éthiques soulevés par l'utilisation des techniques moléculaires dans le sport et du risque lié éventuellement à un usage de dopage génétique. La dernière partie du papier essaie de déterminer le rôle de la génétique dans le sport à court et moyen termes, notamment dans les domaines de la traumatologie, la réadaptation et la médecine du sport.