

## 101 - EFFECT OF SPORTS MASSAGE IN SUBJECTIVE PERCEPTION OF MUSCULAR PAIN AND WIDESPREAD FATIGUE OF COMPETITIVE SWIMMING ATHLETES OF THE CITY OF PERSON JOHN - UM CASE STUDY

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### INTRODUCTION

Training with high loads of volume and intensity of neuromuscular additions impose difficulty to establish a physiological optimum control of wear and recovery, and the consequent overcoming these high adaptive stimuli can occur with the joint optimization of training and use of recuperative means (15).

The literature portrays be addressed to massage one of the most popular physical means, within the medical-biological preparation athletic, performing local and general action, stimulating the exchange process between cells and the activity of the circulatory, respiratory, and sedative effects of providing and relaxing, helping to decrease the perception of pain and feeling of general fatigue (2,3,4,7,11,12,14,21,22).

However, investigations on the interference of the use of sports massage after training, in competition athlete, as a way of providing a useful resource that focuses on the manifestation of a more effective means homeostatic constant as a way to optimize your recovery, and consequently their training within the aquatic environment are scarce (1).

The primary goal of training programs which include recuperative oriented activities in water sports is to provide athletes an increased physiological ability to adapt, offering them the lowest production of fatigue can therefore greater efficiency and effectiveness in training and sports performance (3,11,15).

Therefore, the objective of this case study is to identify the interference of the use of a protocol for sports massage after training, 10 sessions over a month, on the perception of pain and general tiredness, in adolescent athletes from competitive swimming, Esporte Clube Cabo Branco, João Pessoa.

### MATERIALS AND METHODS

Before collection of data subjects and their legal representatives were informed about the procedures they should undergo, its benefits and contraindications, and signed a consent form for the effective participation in research.

The research was characterized as a qualitative case study, almost experimental, evaluative nature, and as an analytical tool to apply a recuperative sports massage protocol, developed specifically for this study (5.18).

The sample was made using the statistical technique of purposive sampling, based on predetermined criteria, and composed of two healthy subjects, aged 15 years, 7 months and 4 days to 16 years and 4 months, duly registered in the Federation Paraibana Swimming and leading team members associated with the Sports Club in the city of Cabo Branco Joao Pessoa, the capital of Paraíba.

### INSTRUMENTS USED

As this selection, the subjects responded to an initial assessment form, constructed from the form of personal information by Clay & Pounds (2003) (4), which identified individual characteristics shown in Table 1.

**Tabela 1** - Identificação da Amostra

Indivíduos	Idade	Peso	Altura	Treinos/Anos
P.V.M.R.(Caso 1)	15,7	58,8	1.74,5	6
D.G.M.J.(Caso 2)	16,4	66,0	1.76,0	10
Média	16,05	62,4	1.75,2	8

It was used for data collection subjective responses obtained through the evaluation sheets for each service, in which he wondered about the self-perception of physical status throughout the day, immediately before and after application of massage protocol. After the implementation of the entire protocol, which occurred during the month of May 2006, a final evaluation was performed, where subjects answered a questionnaire goal with 12 items about physical and emotional aspects, which they had to signal with a cross (X) which parameter that corresponded to the felt, between the following parameters: increase, decrease and stay, and even below each question to quantify this parameter at levels 1, 2 or 3.

### MASSAGE PROTOCOL

For individuals who received the same kind of manipulation was developed from the analysis of other study protocols previously used (5.21) a prior script, so that there was an equal response to manipulations of both subjects.

After filling up the monitoring session, there is which regions of the body that are sore, then he asked to lie comfortably in pronation or supination, and from these regions, starts the manipulations of massage.

### MASSAGE TECHNIQUE

The massage technique was the so-called sport, which was applied immediately after training evening papers, divided into 10 sessions, no less than one (1) and a maximum of three (3) sessions in the same week with an interval of at least one day between sessions, for approximately thirty minutes, and without using any chemical drug-cream, using only a mineral oil suitable for massage.

The total time of massage has been divided between: 1) sliding surface (30 seconds), 2) deep slip (30 seconds), 3) crushing (1 minute), 4) Percussion (30 seconds) and vibration (30 seconds) in each member, beginning with the member mentioned in the accompanying statement was more dor.Ao end of the application of massage techniques, was conducted demonstrations of passive stretching limbs with greater pain.

## RESULTS

The qualitative results found on the perception of pain and the general tiredness before and after the completion of the massage techniques through the analysis of subjective responses obtained from chips to accompany the sessions.

It appears that out of ten (10) sessions for case 1, only five (5) were references to pain, and that on two (2) the reporting of these sessions was significantly reduced under *álgico*. Nas other five (5) sessions there was no reference to any pain before, nor after the applications of massage.

For the subjective analysis of the descriptive presentation of muscle fatigue in case 1, we became aware of its presence in nine (9) of ten (10) sessions, of which seven (7) was found to decrease total reference and two (2) complained of partial reduction, taking such a reference in a concomitant *permanência*. Apenas (1) session there was no reference to fatigue before and after the application of massage techniques.

According to the data shown in Table 3, related to the pain associated with the second case, we see the report of the presence of physical pain in eight (8) of ten (10) sessions, and that for these eight sessions, six (6) there were decreases in some partial members, three (3) there reference to the absence of pain and two (2) there persistence of pain after using the massage techniques.

The analysis done for the variable fatigue showed only one (1) total absence of reference in one of the ten (10) sessions in the other there was no clear reference to muscle fatigue or mental impairment, or in a certain specific region, but tension or contraction permanent muscle, which was not considered in the research as just fatigue or physical fatigue.

## DISCUSSION

The Muscle Soreness (DOMS) is characterized by feelings of discomfort and pain in the skeletal muscles that occurs several hours after doing a physical activity to which individuals are not *acostumados*. Essa pain does not manifest itself until about eight hours after exercise, but increases in intensity during the first 24 hours and reaches its peak between 48 and 72 hours and five to seven days returns to baseline (1).

It was found in this study a significant differentiation for the two *indivíduos*. No case there was a reference to muscle pain before the applications of massage in four (4) ten (10) sessions, and one (1) reference in pain concentrated in the head. The pains were reported more specified areas of the shoulders, arms, back, thighs and lombar. Enquanto for case 2, there was double (8) references to pain in the same areas reported by a case, plus references to pain in the neck, hand and Achilles tendons.

In the case 2, the eight (8) sessions that have references to aches before application of massage, three (3) total absence of pain occurred for certain members, six (6) there were partial reductions in two (2) stay there, and one (1) session does not change the pain referred to certain members.

According to recent studies on muscle fatigue (1,6,14), it is defined as the inability to maintain a desired force (2). Because of this, for the perception of general fatigue before application of massage techniques, where one of the nine (9) sessions that there was presence of generalized fatigue, and in three (3) in the whole body, three (3) in legs, three (3) in the shoulders, one (1) in the lungs and one (1) mental fatigue and psychological, in the nine (9) were partially reduced fatigue, and only one (1) of the nine there was a report of permanence, and in only a specific body part.

Now, for the same variable in the second case, the opposite happened, only one (1) of ten (10) sessions there was reference to fatigue prior to the application of massage techniques, in which there was total absence of reference later.

It is believed that the relationship for both subjective perception has been understood and expressed according to the individual cognitive development, and that the level of body awareness has been reported vastly different due to personal factors and non-instrumental, since both were treated, assessments and similar protocols.

We also observed the concomitant appearance of the story of the emergence or worsening of pain after the morning practice, with the potential worsening after training afternoons.

Calls attention to the fact of the existence of the mobilization of passive stretching, which when implemented in individuals during the sessions, encouraged the reporting of the disappearance of pain, but for this study was certainly not quantified or qualified, as it was not our target paramount, but that may be the subject of future studies on the association of this process with the massage techniques to relieve pain and possible means of physiological recovery of athletes.

## CONCLUSION

In research conducted by Cal Abad et al (1) there are no reports of studies showing the effect of massage on Muscle Soreness (DOMS). And also cites no dispute about this, because there is no reporting on the best authors time for the application of massage, and also because there is a specific protocol to be able to reproduce accurately and simultaneously in other sporting environments for the same purpose.

In this study it was concluded that in case 1, the results for the subjective perception of pain were positive and satisfactory, since the five (5) sessions that had pains before the applications of massage, there was a decrease of partial and total extinction pains to certain areas in the five (5) sessions, and only one (1) of these five (5) sessions of pain and stay there, only in the region Lombar. Para case 2, the results were positive and satisfactory, since of eight (8) sessions that presented pain before application of massage there were only two (2) permanence of pain, and just to the left shoulders, and one (1) the report had no perceptual changes, and the eight (8) sessions there were reports of three (3) total absences and six (6) partial absences.

So it appears that in most applications for both cases it was possible to observe significant improvements in reducing partial and total extinction of muscle pain resulting from damage or excessive training overload, but that the general account was for pain in specific regions, Typical swimmers, requiring further study for this particular purpose.

For general tiredness could conclude that the results were satisfactory for case 1, but contrasting with the case 2, which has resulted in a *insignificante*. No if we could observe a huge benefit for this variable, so that the nine (9) showed that fatigue sessions prior to the application of massage, only one (1) there were reports of persistence of fatigue, and only one member *específico*. No case 2, the exact opposite occurred, complained of tiredness earlier applications of massage techniques in only one (1) session, with subsequent reporting of zero, which gives us a stark disparity between the subjects who underwent further training and accurate application of the same manipulations of massage.

We can conclude that for the relief of muscle aches and general tiredness, sports massage, in this study, to be viable, but their results are much more dependent on the type of protocol being used, the level of subjective perception of the subjects underwent techniques of handling and manipulation of massage techniques, the type, technique, how long and in what time the massage is performed, and more scientific studies that aim more and detailed their findings.

However, we note that the number of subjects in this study was minimal, which resulted in low power *estatístico*. Sendo so, the present study, an experimental evaluation, does not support the practice of coaches and physical activity practitioners to use this practice as a way to speed recovery of muscle function and decreased pain.

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**EFFECT OF SPORTS MASSAGE IN SUBJECTIVE PERCEPTION OF MUSCULAR PAIN AND WIDESPREAD FATIGUE OF COMPETITIVE SWIMMING ATHLETES OF THE CITY OF PERSON JOHN \_UM CASE STUDY**  
**ABSTRACT**

This research aimed to identify the effects of a short program of sports massage in the subjective perception of muscle pain and fatigue in general, after the afternoon training of competitive swimmers, male, mean age of sixteen years, five months and 17, duly registered in the Federation Paraibana Aquatics randomly selected from among the members of the team's main swimming Esporte Clube Cabo Branco, João Pessoa, state of Paraíba. Caracterizado as a case study, the qualitative nature of longitudinal. Foram type chosen two (n = 2) healthy athletes, who met the criteria for minimum of six years of competitive training, being male, being aged out of 15 and 18, having frequency of at least six sessions training per week and participate in other rehabilitation programs after training within the club, to receive ten (10) sessions of sports massage after training, with a minimum of one and maximum of three times per week during the month of May 2006 with the aim of knowing the effects that implementation of a program of massage can bring to the organismo. Para data collection was necessary for the athletes answer an initial assessment, a follow-up interview in each session, answered before and after each application, and an evaluation final. The data analysis was performed by qualitative observation of the subjective responses of records of assessments applicable norms results for both cases were positive and satisfactory relationship with the Muscular Pain and Fatigue for Generalized, Contrasting results were, however satisfactory in case 1 and case 2 insignificante. Podemos to conclude that for the relief of muscle aches and general tiredness, sports massage, in this study, to be viable, but their results are much more dependent on the type of protocol being used, the level of subjective perception of the subjects undergoing the techniques of handling and manipulation of massage techniques used, their type, how long and in what time it is performed, thereby needing More scientific studies that aim and better specify its findings.

**KEYWORDS:** Massage, Swimming, Muscle Pain, Physical Healing.

**EFFET DE MASSAGE SPORTIF EN PERCEPTION SUBJECTIVE DE LA DOULEUR MUSCULAIRE ET FATIGUE GÉNÉRALISÉE DES ATHLÈTES NATATION DE COMPÉTITION DE LA VILLE DE JOHN PERSONNE AFFAIRE \_UM ÉTUDE**

**RÉSUMÉ**

Cette recherche visait à identifier les effets d'un programme court de massage sportif dans la perception subjective de la douleur musculaire et la fatigue en général, après la formation après-midi de nageurs de compétition, de sexe masculin, âge moyen de seize ans, cinq mois et 17, régulièrement enregistrée dans le aquatiques Fédération Paraibana choisis au hasard parmi les membres du principal de l'équipe de natation Esporte Clube Cabo Branco, João Pessoa, état de

Paraíba. Caracterizado como estudo de caso, a natureza qualitativa do tipo longitudinal. Foram escolhidos dois ( $n = 2$ ) atletas em boa saúde, que satisfizessem aos critérios mínimos de seis anos de formação competitiva, gênero masculino, idade entre 15 e 18 anos, com uma frequência de pelo menos seis sessões de formação por semana e participar de programas de reabilitação de outros após a formação no clube, de receber as dez (10) sessões de massagem esportiva após o treinamento, com um mínimo de uma e no máximo três vezes por semana durante o mês de maio 2006 com o objetivo de conhecer os efeitos que a aplicação de um programa de massagem pode trazer para o organismo. Para isso era necessário para os atletas responder a uma avaliação inicial, uma entrevista de acompanhamento em cada sessão, responder antes e depois de cada aplicação, assim como uma análise final. A avaliação dos dados foi realizada através da observação qualitativa das respostas subjetivas das fichas de avaliações aplicadas. Os resultados para ambos os casos foram positivos e satisfatórios, com relação à dor muscular, e para o cansaço generalizado, os resultados foram contrastantes, entretanto satisfatórios para o caso 1 e, para o caso 2 insignificante. Podemos concluir que para o alívio de dores musculares e do cansaço geral, a massagem esportiva, neste estudo, observou-se ser viável, mas que seus resultados dependem muito mais do tipo de protocolo a ser utilizado, do nível de percepção subjetiva dos sujeitos submetidos às técnicas, do manejo e manipulações das técnicas de massagem utilizadas, do seu tipo, por quanto tempo e em que momento ela é realizada, carecendo assim de mais estudos científicos que objetivem e especifiquem melhor os seus achados.

**MOTS-CLÉS:** massagem, piscina, dores musculares, a cura física.

#### **EFEITO DE MASAJE DEPORTIVO EN PERCEPCIÓN SUBJETIVA DE DOLOR MUSCULAR Y FATIGA GENERALIZADO DE LOS ATLETAS DE LA COMPETENCIA DE LA PISCINA MUNICIPAL DE ESTUDIO DE LA PERSONA DEL CASO JUAN \_UM**

##### **RESUMEN**

Esta investigación tuvo como objetivo identificar los efectos de un programa corto de masaje deportivo en la percepción subjetiva de dolor muscular y fatiga en general, por la tarde después del entrenamiento de los nadadores competitivos, masculino, con edad promedio de dieciséis años, cinco meses y 17, debidamente inscrita en el Acuático Federación Paraibana seleccionados al azar de entre los miembros de los principales del equipo de natación de Cabo Branco Esporte Clube, João Pessoa, estado de Paraíba. Caracterizado como estudio de caso, la naturaleza cualitativa de tipo longitudinal. Foram elegido dos ( $n = 2$ ) atletas sanos, que cumplieran los criterios para un mínimo de seis años de entrenamiento competitivo, ser hombre, estar entre los 15 y 18, con frecuencia de al menos seis sesiones de entrenamiento por semana y participar en otros programas de rehabilitación después del entrenamiento en el club, para recibir las diez (10) sesiones de masaje deportivo después del entrenamiento, con un mínimo de uno y un máximo de tres veces por semana durante el mes de mayo 2006 con el objetivo de conocer los efectos que la aplicación de un programa de masaje puede aportar a la recogida de datos organismo. Para era necesario para los atletas responder a una evaluación inicial, una entrevista de seguimiento en cada sesión, respondió antes y después cada aplicación, así como un análisis final. The evaluación de los datos se realizó mediante la observación cualitativa de las respuestas subjetivas de los registros de los resultados de las evaluaciones de las normas aplicables en ambos casos eran relación positiva y satisfactoria con el dolor muscular y fatiga generalizada para, Contrastando los resultados fueron, sin embargo satisfactoria en el caso 1 y caso 2 insignificante. Podemos a la conclusión de que para el alivio de dolores musculares y cansancio general, masaje deportivo, en este estudio, para ser viable, pero sus resultados son mucho más dependientes del tipo de protocolo que se utiliza, el nivel de la percepción subjetiva de los sujetos sometidos a las técnicas de manejo y manipulación de técnicas de masaje utilizados, su tipo, el tiempo y en qué tiempo se lleva a cabo, con lo que necesitan Más estudios científicos que buscan una mejor y especificar sus conclusiones.

**PALABRAS CLAVE:** Masaje, Piscina, dolor muscular, la curación física.

#### **EFEITO DA MASSAGEM DESPORTIVA NA PERCEPÇÃO SUBJETIVA DA DOR MUSCULAR E DO CANSAÇO GENERALIZADO DE ATLETAS DE NATAÇÃO COMPETITIVA NA CIDADE DE JOÃO PESSOA \_UM ESTUDO DE CASO**

##### **RESUMO**

Esta pesquisa teve como objetivo identificar os efeitos de um programa curto de massagem desportiva na percepção subjetiva da dor muscular e do cansaço em geral, após o treinamento vespertino de nadadores em nível competitivo, do sexo masculino, com idade média de dezesseis anos, cinco meses e 17, devidamente registrados na Federação Paraibana de Esportes Aquáticos, selecionados aleatoriamente entre os membros da equipe principal de natação do Esporte Clube Cabo Branco, na cidade de João Pessoa, Estado da Paraíba. Caracterizado como um estudo de caso, de natureza qualitativa, do tipo longitudinal. Foram escolhidos dois ( $n = 2$ ) atletas saudáveis, que obedecessem aos critérios de quantidade mínima de seis anos de treinamento competitivo, serem do sexo masculino, estarem na faixa etária entre 15 e 18 anos, terem frequência mínima de seis sessões de treinamentos por semana e não participarem de outros programas de recuperação após o treino dentro do clube, para receberem dez (10) sessões de massagem desportiva pós treino, sendo o mínimo de uma e o máximo de três vezes por semana, durante o mês de Maio de 2006, com o objetivo de conhecer os efeitos que a aplicação de um programa de massagem pode trazer para o organismo. Para a coleta de dados foi necessário que os atletas respondessem uma avaliação inicial, uma entrevista de acompanhamento em cada sessão, respondida antes e após cada aplicação, e uma avaliação final. A análise dos dados foi realizada através da observação qualitativa das respostas subjetivas das fichas de avaliações aplicadas. Os resultados para ambos os casos foram positivos e satisfatórios, com relação à Dor Muscular, e para o Cansaço Generalizado, os resultados foram contrastantes, entretanto satisfatórios para o caso 1 e, para o caso 2 insignificante. Podemos concluir que para o alívio de dores musculares e do cansaço geral, a massagem desportiva, neste estudo, observou-se ser viável, mas que seus resultados dependem muito mais do tipo de protocolo a ser utilizado, do nível de percepção subjetiva dos sujeitos submetidos às técnicas, do manejo e manipulações das técnicas de massagem utilizadas, do seu tipo, por quanto tempo e em que momento ela é realizada, carecendo assim de mais estudos científicos que objetivem e especifiquem melhor os seus achados.

**PALAVRAS-CHAVE:** Massagem; Natação; Dor Muscular; Recuperação Física.