

Effect of therapeutic exercise on muscle regeneration -Formation of myotubes and environment-

メタデータ	言語: jpn 出版者: 公開日: 2021-09-06 キーワード (Ja): キーワード (En): 作成者: Haida, Nobuhide メールアドレス: 所属:
URL	https://doi.org/10.24517/00064021

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 International License.



1999 Fiscal Year Final Research Report Summary

Effect of therapeutic exercise on muscle regeneration -Formation of myotubes and environment-

Research Project

Project/Area Number

10838012

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

リハビリテーション科学

Research Institution

KANAZAWA UNIVERSITY

Principal Investigator

HAIDA Nobuhide Kanazawa University, Faculty of Medicine, Professor, 医学部, 教授 (00135089)

Co-Investigator(Kenkyū-buntansha)

YAMAZAKI Toshiaki Kanazawa University, Faculty of Medicine, Assistant, 医学部, 助手 (00220319)

Project Period (FY)

1998 - 1999

Keywords

therapeutic exercise / muscle regeneration / myotube / fibroblast growth factor / collagen / fibronectin / laminin

Research Abstract

The therapeutic exercise from early phase after tissue degeneration does not give a disorder to the migration or infiltration capacity of a phagocyte. Inducing the activation and proliferation of a muscle satellite cell that are a precursor cell related to muscle trimming that the regeneration of the muscular tissue is accelerated was proved. What kind of role minute environment is playing to the regeneration of a myocyte in therapeutic exercise subsequently was examined. A sponge made of polyvinyl alcohol was buried to the rat gastrocnemius muscle and was crowded and carried out therapeutic exercise. A sponge examined the appearance of the myotube cell that approached into a sponge and do coating with a fibroblast growth factor, type IV collagen laminin and fibronectin. When type IV collagen and fibronectin exist it is thought that the migration and proliferatin of the myotube cell be important as the substance that gives a clue to the differentiation of a myoblast and become brisk. As for laminin the

strong proliferate action of fibroblast was recognized without the proliferation of a myoblast being stimulated. From over, therapeutic exercise induced the regeneration of a myocyte. When collagen and fibronectin exist in the case, a frequency of the onset of the myotube cell elevates more and more and muscle regeneration considered accelerating more.

Research Products (10 results)

All Other
All Publications

- [Publications] Toshiaki Yamazaki: "Effect of Weight Bearing intervals on disuse atrophy"Journal of the Japanese Physical Therapy. 1. 19-24 (1998) ▼
- [Publications] 山崎俊明: "運動負荷時間の違いがラット廃用性筋萎縮の回復過程に及ぼす影響"理学療法学. 25. 381-387 (1998) ▼
- [Publications] 庄田信英: "関節固定後の持続的伸張および超高波照射が筋組織に及ぼす影響"理学療法学. 25. 368-375 (1998) ▼
- [Publications] Nobuhide Haida: "Effect of immobilization on solubility of soleus and gastrocnemius muscle collagen"Journal of the Japanese Physical Therapy. 2. 25-30 (1999) ▼
- [Publications] Nobuhide Haida: "Preventive effect of passive range of motion exercise on denervation-induced muscle atrophy"金沢大学医学部保健学科紀要. 23. 55-58 (1999) ▼
- [Publications] Toshiaki Yamazaki: "Effect of weight bearing intervals on disuse atrophy"Journal of Japanese Physical Therapy. 1. 19-24 (1998) ▼
- [Publications] Toshiaki Yamazaki: "Effect of exercise duration on recovery from disuse atrophy in rat soleus muscle"Journal of Physical Therapy. 25. 381-387 (1998) ▼
- [Publications] Nobuhide Haida: "The effects of ultrasound irradiation and static stretching on immobilized muscle"Journal of Physical Therapy. 25. 368-375 (1998) ▼
- [Publications] Nobuhide Haida: "Effects of immobilization on solubility of soleus and gastrocnemius muscle collagen"Journal of Japanese Physical Therapy. 2. 25-30 (1999) ▼
- [Publications] Nobuhide Haida: "Preventive effect of passive range of motion exercise on denervation-induced muscle atrophy"Memoirs of Faculty of Medicine, Kanazawa University. 23. 55-58 (1999) ▼

URL: https://kaken.nii.ac.jp/report/KAKENHI-PROJECT-10838012/108380121999kenkyu_seika_hokoku

Published: 2001-10-22