

Treadmill exercise with moderate intensity graded increased inclination vs speed regulates the circulating miR-150 and miR-26a in healthy young males related to type of exercises specifically

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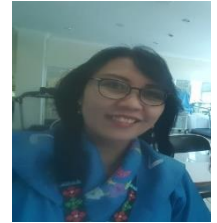
Abstract

Regenerative rehabilitation integrates regenerative technologies with rehabilitation clinical practices to reconstitute function and quality of life in individuals with disabilities from disease or trauma. Tissue repair and regenerative rely on the function of microRNA (miRNA), molecular silencers that enact posttranscriptional gene silencing of coding genes. Sources of cell pool for tissue repair and regeneration are diverse and provided by processes including cellular dedifferentiation, transdifferentiation and reprogramming, regulated by miRNA. In health prevention, there is an increasing attention to know more markedly the processes involved in stimulation and inhibition of miRNAs expression. Several miRNAs are essential as mediators of processes associated with exercise training adaptation.

This research revealed that specific dose of therapeutic exercise giving the impact on expression of miR-150 and miR26a. Twenty eight serum samples were taken from a healthy young males (25-35 yo) before and after underwent specific Treadmill exercise with **Moderate Intensity** (65-75% of maximal heart rate) **Graded increased Inclination** (for **Active** life style (A-MIGI) group (n=6) and **Sedentary** life style (S-MIGI) group (n=8)) versus **Moderate Intensity Graded increased Speed** (for **Active** life style (A-MIGS) group (n=6) and **Sedentary** life style (S-MIGS) group (n=8)) for 2 weeks. The result showed that miR-150 was upregulated only in A-MIGS group (p=0.026), but miR-26a was upregulated only in S-MIGI group (p=0.001). Previous researches showed that miR-150 upregulated the cardiovascular regeneration, CXCR4, but downregulated MMP14 and VEGF; in the other hand miR-26a have important effect in regulating osteogenic differentiation of bone marrow- and adipose derived-mesenchymal stem cells.

Biography:

Damayanti Tinduh has completed her PhD at the age of 40 years from Universitas Airlangga and postdoctoral studies from Faculty of Medicine Universitas Airlangga. She is the head and senior lecturer of Sport Injury Rehabilitation division of Physical Medicine and Rehabilitation Department Faculty of Medicine Universitas Airlangga/Dr. Soetomo General Academic Hospital. She has published 10 papers in reputed journals and has been serving as an editorial board member of Indonesian Journal of Physical Medicine and Rehabilitation. Her focus researches are in therapeutic exercise, sport injury, regenerative rehabilitation.



Speaker Publications:

1. Brain Derived Neurotropic Factors in Speed vs. Inclined Treadmill in Young Adult Healthy Male With Occult Balance Disorder; Front. Integr. Neurosci., 06 August 2019
2. Postural Balance Differences in Athletes Post Anterior Ligament Cruciate Reconstruction; Researchgate- January 2017
3. Proceedings of the 11th National Congress and the 18th Annual Scientific Meeting of Indonesian Physical Medicine and Rehabilitation Association, ISBN: 978-989-758-409-1
4. Meningkatkan Performance Atlet Pasca Cedera Lutut; Sinta Indonesia

[11th Tissue Science and Regeneration Congress](#); April 20-21, 2020- Webinar.

Abstract Citation:

Damayanti Tinduh, Treadmill exercise with moderate intensity graded increased inclination vs speed regulates the circulating miR-150 and miR-26a in healthy young males related to type of exercises specifically, [11th Tissue Science and Regeneration Congress](#); April 20-21, 2020- Webinar

