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1: [Lasers Med Sci.](#) 2008 Jul;23(3):277-82. Epub 2007 Aug 23.



The effect of low level laser irradiation on adult human adipose derived stem cells.

[Mvula B](#), [Mathope T](#), [Moore T](#), [Abrahamse H](#).

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This study investigated the effect of low level laser irradiation on primary cultures of adult human adipose derived stem cells (ADSC) using a 635-nm diode laser, at 5 J/cm(2) with a power output of 50.2 mW and a power density of 5.5 mW/cm(2). Cellular morphology did not appear to change after irradiation. Using the trypan blue exclusion test, the cellular viability of irradiated cells increased by 1% at 24 h and 1.6% at 48 h but was not statistically significant. However, the increase of cellular viability as measured by ATP luminescence was statistically significant at 48 h (p < 0.05). Proliferation of irradiated cells, measured by optical density, resulted in statistically significant increases in values compared to nonirradiated cells (p < 0.05) at both time points. Western blot analysis and immunocytochemical labeling indicated an increase in the expression of stem cell marker beta1-integrin after irradiation. These results indicate that 5 J/cm(2) of laser irradiation can positively affect human adipose stem cells by increasing cellular viability, proliferation, and expression of beta1-integrin.

PMID: 17713825 [PubMed - indexed for MEDLINE]

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