

Pengaruh latihan fisik aerobik dan detrain terhadap jumlah sel saraf normal amigdala basolateral tikus = The effect of aerobic exercise and detraining on the number of normal neuron of basolateral amygdala rat

Avita Marthacagani, author

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Abstrak

Latihan fisik aerobik memiliki beberapa manfaat untuk struktur dan fungsi otak seperti meningkatkan jumlah sel saraf dan berefek positif pada pembelajaran serta memori. Namun beberapa manfaat latihan fisik tersebut pada struktur otak masih berupa dugaan. Manfaat tersebut juga akan menghilang apabila latihan dihentikan detrain.

Penelitian ini bertujuan untuk mengetahui pengaruh latihan fisik aerobik dan detrain terhadap jumlah sel saraf normal amigdala basolateral tikus. Amigdala adalah bagian dari sistem limbik yang berperan dalam menghasilkan respon perilaku yang berhubungan dengan rasa takut dan berperan juga pada pembelajaran emosional serta memodulasi memori.

Penelitian ini menggunakan desain eksperimental dengan mengamati dan menghitung jumlah sel saraf normal pada daerah amigdala basolateral Data dianalisis dengan uji one way ANOVA dan dilanjutkan uji Post Hoc.

Hasil menunjukkan persentase sel saraf normal pada kelompok kontrol 57 kelompok training 64 dan kelompok detraining 49. Hasil uji Post Hoc menunjukkan tidak terdapat perbedaan bermakna antara kelompok kontrol dan training $p > 0,05$ kelompok kontrol dan detraining $p > 0,05$. Namun terdapat perbedaan bermakna antara kelompok training dan detraining $p < 0,008$. Terjadi peningkatan persentase sel saraf normal pada kelompok training sebaliknya terjadi penurunan persentase sel saraf normal pada kelompok detraining dibandingkan kelompok kontrol.

Aerobic exercise has several benefits for brain structures and functions such as increasing the number of normal neuron and having positive effect on learning and memory. However some of the benefits are still conjecture These benefits will be lost if exercise stopped.

The aim of this study is to determine the effect of aerobic exercise and detraining on the number of normal neuron of basolateral amygdala. Amygdala is a part of the limbic system which plays a role in producing behavioral responses associated with fear and also plays a role in emotional learning as well as modulates memory.

This study was done experimentally by observing and counting the number of normal neuron in the basolateral amygdala region Data were analyzed by one way ANOVA test and continued by Post Hoc test. The results showed that percentage of normal neuron were 57 in control group 64 in training group and 49 in detraining group Post hoc test results showed no significant difference between control and training group $p > 0,05$ also between control and detraining group $p > 0,05$ However there are a significant difference between training and detraining group $p < 0,008$. In short there is an increase in the number of normal neuron in training otherwise there is a decline in the number of normal neuron in detraining compared with control.