

# Pengaruh zona ketinggian terhadap fungsi kognitif pada penerbang pria yang mengikuti indoktrinasi dan latihan aerofisiologi tahun 2019 = The effect of altitude zone to cognitive function for male pilot in indoctrination and aerophysiology training on 2019

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## Abstrak

Latar belakang: Seorang pilot yang bertugas di ketinggian dapat terpapar hipoksia, baik ringan maupun berat. Kejadian hipoksia di penerbangan dapat menjadi fatal, terutama jika hipoksia dialami seorang pilot saat bertugas. Salah satu manifestasi hipoksia adalah penurunan fungsi kognitif. Pilot dituntut untuk melakukan operasi multitasking dengan menggunakan fungsi kognitif, terutama saat darurat. Sehingga penurunan fungsi kognitif akibat hipoksia pada seorang pilot saat bertugas dapat menyebabkan kecelakaan dalam penerbangan. Tujuan dari penelitian ini adalah untuk mengetahui perubahan fungsi kognitif pada paparan hipoksia di beberapa zona ketinggian.

Metode: Penelitian ini menggunakan uji eksperimental one group pretest-post test . Subjek penelitian adalah pilot militer yang mengikuti Indoktrinasi Latihan Aerofisiologi di Lakespra Saryanto, Jakarta. Subjek mengisi kuesioner 6 CIT pada ground level, physiological efficient zone (10.000 feet) dan physiological defficient zone (25.000feet) dalam hipobarik chamber.

Hasil: Terdapat perubahan score 6 CIT di 10.000ft dibandingkan dengan ground level (Friedman post hoc Wilcoxon,  $P = 0.001$ ). Terdapat juga perubahan score 6 CIT di 25.000ft dibandingkan dengan ground level (Friedman post hoc Wilcoxon,  $P < 0.001$ ).

Kesimpulan: Terdapat perubahan fungsi kognitif di physiological efficient zone dan physiological defficient zone jika dibandingkan dengan di ground level.

.....Background: A pilot on duty at altitude can be exposed to hypoxia, both mild and severe hypoxia. The incidence of hypoxia on flight can be fatal, especially if hypoxia is experienced by pilot on duty. One manifestation of hypoxia is decreased cognitive function. Pilot is required to carry out multitasking operations using cognitive functions, especially at emergency. Therefore, decreased cognitive function due to hypoxia on pilot can cause accidents in flight. The aim of this study was to determine changes in cognitive function in hypoxia exposure at several altitude zones.

Methods: This study used an experimental one group pretest-post test design. The subjects were 31 military pilots who participated in Indoctrination and Aerophysiology Training. Subjects filled 6 CIT questionnaire at ground level, physiological efficient zone (10,000 feet) and physiological defficient zone (25,000 feet) in a hypobaric chamber.

Result: There was change of 6 CIT score at 10.000ft compared to ground level (Friedman post hoc Wilcoxon,  $P = 0.001$ ). There was also change of 6 CIT score at 25,000 ft compared to ground level (Friedman post hoc Wilcoxon  $P < 0.001$ ).

Conclusion: There was change in cognitive function in physiological efficient zone and physiological defficient zone, compared to ground level.