

# Progress in individual components of physical fitness of primary education students with respect to nutritional status / Napredak u pojedinim sastavnicama tjelesnoga fitnesa učenika primarnog



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## **Abstract**

The benefits of monitoring physical fitness are multifaceted. It provides information that can be directed for prevention and improvement of health, indicates an individual's progress, and provides the ability of targeting on individual sports. The purpose of the paper is to assess the progress in individual components of physical fitness of students during the school year, and to assess the significance of differences in the progress of certain components of physical fitness with regard to nutritional status.

**Methods:** The study was conducted on a sample of 39 third graders of primary school (9 years  $\pm$  6 months). The motor component of physical fitness was evaluated based on hand tapping tests, standing long jump, polygon backwards, sit up test, and sit and reach test. The cardiorespiratory component was evaluated using 3-minute running tests, and the morphological component based on body mass index. Basic descriptive indicators were calculated, and univariate analysis of variance was used to assess progress in individual components of physical fitness between the first and second measurements according to nutritional status.

**Results:** Of the total sample, 74.36% had a normal nutritional status, 20.51% were overweight, and 5.13% were obese. In the first measurement, regarding the nutritional status, a significant difference was obtained in the hand tapping test, and in the second measurement in all motor tests. Respondents with normal weight achieved the best results in tests for speed, explosive power, coordination, and repetitive power. Also, respondents with a normal nutritional status achieved the best results in tests for assessing cardiorespiratory fitness.

**Conclusion:** Nutritional status can be reflected on progress in certain components of physical fitness.

## **Key words**

*body mass index, functional ability, health, motor skills*

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Sažetak

Praćenje tjelesnoga fitnesa višestruko je korisno jer pruža informacije koje se mogu usmjeriti za očuvanje i poboljšanje zdravlja, ukazuje na napredak pojedinca i pruža mogućnost usmjeravanja u pojedine sportove. Svrha je rada procijeniti napredak u pojedinim sastavnicama tjelesnoga fitnesa učenika tijekom školske godine te procijeniti značajnost razlika u napretku pojedinih sastavnica tjelesnoga fitnesa s obzirom na status uhranjenosti.

Metode: Istraživanje je provedeno na uzorku 39 učenika trećih razreda osnovne škole (9 godina  $\pm$  6 mjeseci). Motorička sastavnica tjelesnoga fitnesa procijenjena je temeljem testova taping rukom, skok u dalj s mjesta, poligon natraške, podizanje trupa i pretklon raznožno, kardiorespiratorna sastavnica procijenjena je testovima trčanje 3 minute, a morfološka sastavnica temeljem indeksa tjelesne mase. Izračunati su osnovni deskriptivni pokazatelji, a za procjenu napretka u pojedinim sastavnicama tjelesnoga fitnesa između prvoga i drugoga mjerenja prema statusu uhranjenosti primijenjena je univarijatna analiza varijance.

Rezultati: Od ukupnoga uzorka ispitanika 74,36 % normalno je uhranjeno, 20,51 % je prekomjerno uhranjeno, a 5,13 % pretilo. U prvom mjerenju je s obzirom na status uhranjenosti dobivena značajna razlika u testu taping rukom, a u drugom mjerenju u svim motoričkim testovima. Normalno uhranjeni ispitanici postigli su najbolje rezultate u testovima za procjenu brzine, eksplozivne snage odraza, koordinacije i repetitivne snage. Također učenici s procijenjenim normalnim statusom uhranjenosti postigli su najbolje rezultate u testovima za procjenu kardiorespiratornoga fitnesa.

Zaključak: Status uhranjenosti može se odraziti na napredak u pojedinim sastavnicama tjelesnoga fitnesa.

Ključne riječi

funkcionalne sposobnosti; indeks tjelesne mase; motoričke sposobnosti; zdravlje