

futuras investigaciones qué variables metodológicas pueden influir en el nivel de actividad física realizado por los escolares dentro de las clases de Educación Física.

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### Assessment of handgrip strength in preschool children aged 3 to 5 years

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**Aim.** To investigate whether there is an optimal grip span for determining the maximum handgrip strength in preschool children and if that grip span is influenced by gender, age, or children's hand size.

**Methods.** A total of 292 preschool children aged 3-5 years (59.2% boys) performed the handgrip strength test using an analog dynamometer (TKK model 5001, Grip-A, Takei, Tokyo, Japan) with different grip spans (4.0, 4.5, 5.0, 5.5 and 6.0 cm) in a randomized order with both hands. The hand size was measured from the tip of the thumb to the tip of the little finger with the hand opened widely. Thereafter, we also determined the reliability of the optimal grip span in another comparable group of children (n=56, 32 boys) aged 3-5 years who performed the handgrip strength at the obtained optimal grip span on two occasions with a 3 hours difference.

**Results.** The repeated measures analyses showed that there is an optimal grip span to determine the maximum handgrip strength in preschool children. The grip span at which children obtained the maximum handgrip strength was 4.0 cm. This result applied to boys and girls, all age groups (3, 4 and 5 years) and hand sizes (12, 13, 14, 15, and 16 cm). Paired t-test showed no significant differences between test and retest (mean difference: 0.20 kg, 95% confidence interval: -0.10 to 0.51, P=0.193). Intra class coefficient was 0.919.

**Conclusions.** This study shows that there is an optimal grip span (i.e. 4.0 cm) in preschool children aged 3-5 years, and that it is not influenced by gender, age, or children's hand size. We also observed that the optimal grip span was reliable in preschool children. The present study findings add valuable information to better standardize the procedure and increase the reliability.

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### Lifestyle related behaviours and body composition indicators in a sample of European children: a cluster analysis approach

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**Aim.** To examine the effect of obesity-related behaviours clustering on obesity-related indicators including body mass index (BMI) and waist circumference (WC) in a sample 2 to 10 years old children from eight European countries participating in the IDEFICS (Identification and prevention of Dietary- and lifestyle induced health Effects In Children and infants) study.

**Methods.** 12.311 children (51% of males) were included in the current study. Physical activity and sedentary behaviour were measured using parental reported questionnaires and dietary intake via dietary recalls (two 24 hour-recalls). Cluster analysis was performed by gender. Logistic regression was used to examine the association of identified cluster to BMI and WC.

**Results.** Six lifestyle clusters were identified (C1 to C6). Clusters characterized by high level of PA (C1 and C3) included a high proportion of older children (6 to 9 years old); clusters characterized by low beverage consumption (C5 and C6) included a high proportion of younger children (2 to 6 years old). High proportion of children with low socioeconomic status characterized the cluster with the highest SSB consumption (C4). Significant associations with body composition indicators were observed only in males; children in the cluster with the highest time spent in sedentary activities and low PA had increased odds of having a Body Mass Index z-score (OR 1.33; 95%CI 1.01,1.74) and a waist circumference z-score (OR 1.41; 95%CI=(1.06, 1.86)) greater than one.

**Conclusions.** Co-occurrence of healthy and unhealthy behaviours exists in this sample of young children, and sedentary behaviour identified as an important determinant of obesity-related indicators.

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### Consideraciones de los maestros de Educación Física de Soria sobre la influencia de la práctica de ejercicio físico en el desarrollo de los niños y prácticas escolares para su mejora

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**Palabras clave:** Maestros de Educación Física; Actividad físico-deportiva; Hábitos físico-deportivos; Desarrollo madurativo

**Objetivos.** Conocer la valoración de los maestros de Educación Física acerca de la influencia de la práctica de actividad físico-deportiva de los niños en su desarrollo madurativo. Indagar en las propuestas que los maestros de EF llevan a cabo para que los niños adquieran hábitos saludables de práctica físico-deportiva. Valorar