



**11<sup>th</sup> Cyprus Dietetic & Nutrition Association International Conference**  
19-21 November, 2021

Co-funded by the  
Erasmus+ Programme  
of the European Union



***Promoting Healthy Behaviour through a serious game.  
The SUGAPAS project- from the Physical Activity perspective  
by Dr. Andreas Avgerinos, EUC***

***Promoting Healthy Behaviour through a serious game.  
The SUGAPAS project- from the Nutrition Education perspective  
by Dr. Christiana Philippou, ΥΠΠΑΝ, EUC***

***SUGAPAS educational material presentation:  
by Nikolaos Politopoulos & Lampros Karavidas, AUTh***



# Introduction

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Eating behaviour (EB), physical activity (PA) and generally the lifestyle of children and adolescents must be of high priority concern  quality of life, long life, and economy

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Health-related behaviour is shaped and developed in early years of life.

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A large percentage of young people internationally do not follow an active and healthy lifestyle.

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High percentage of overweight and obesity among young people.

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These findings support the need to assist young people through interventions to enjoy all the benefits of a healthy lifestyle (Stierlin et al, 2015)

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# Purpose...

To present the goals of the Erasmus Plus “Supporting Gamified Physical Activities in & out of Schools (SUGAPAS)” project that aims to develop a European-wide strategic partnership

To present a serious game and the online activities of the “SUGAPAS”, which are new educational ‘tools’ for better promoting a healthy and active lifestyle.



To educate participants about the serious game and how to assist students to use these important supplies and educational tools, so that through a self-regulated learning process they can adopt a healthier lifestyle

# The concept of Lifestyle



**Definition:**  
**"A way of life or living of a person or group".**



## Sedentary lifestyle in the general population



- Physical inactivity has been recognized by the World Health Organization (WHO) as **the fourth major risk factor for global mortality.**
- According to the WHO, 60 to 85% of the general population worldwide follows a sedentary lifestyle (Walid, 2017).
- The sedentary lifestyle is now considered **a global pandemic** (Nader, Bradley, Houts, McRitchie & O'Brien, 2008)

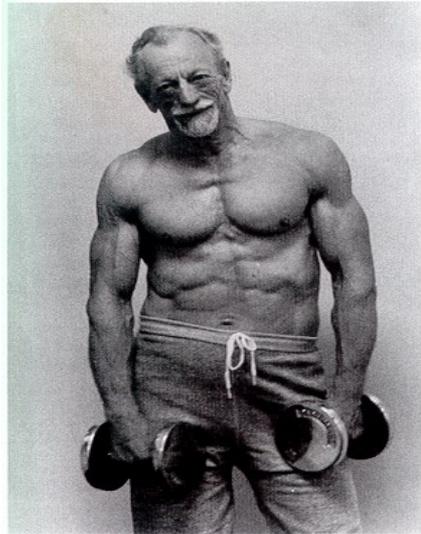
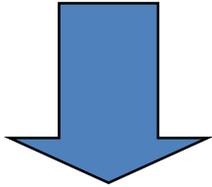
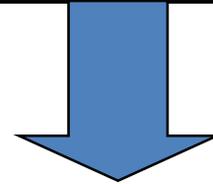


FIGURE 3-6 As illustrated by John Turner, 67, the normal movement regression through



VS



.....χωρίς λόγια!

Finally, it is a matter of personal choice?

# Physical Activity:

## Why Physical Activity Is Necessary For Children and teenagers?

Age is  
mind over matter.  
If you don't mind,  
it doesn't matter.

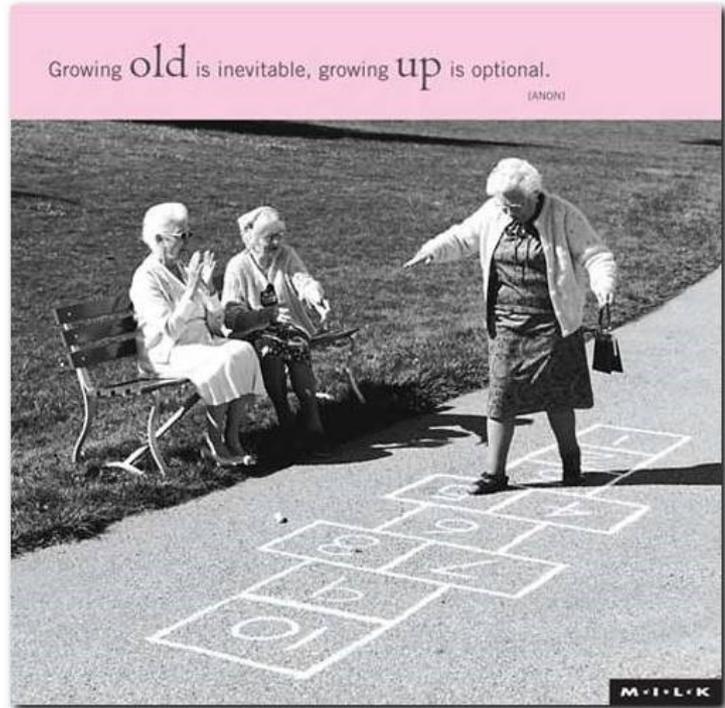
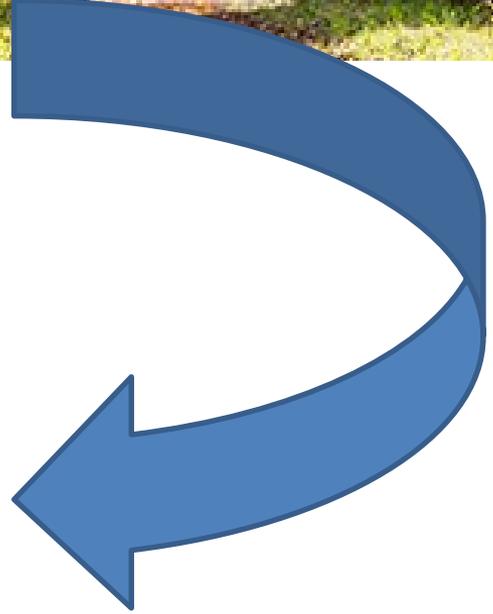
(MARK TWAIN)



You can't help  
getting older,  
but you don't have  
to get old.

(GEORGE BURNS)





# How many steps a day are required for good health youth (5-17 years old)?

- Boys: **12,000 - 16,000 steps/day** &
- Girls: **10,000 - 13,000 steps/day**

[Int J Behav Nutr Phys Act.](#) 2011; 8: 78. Published online 2011 Jul 28. doi: [10.1186/1479-5868-8-78](https://doi.org/10.1186/1479-5868-8-78)



# Based on the pedometer activity, young people (5-17 years old) are categorized as follows:

## BOYS

- **Sedentary Lifestyle.** Under <6,000 steps/day.
- **Low Active.** 6,000 to 8,499 steps/day.
- **Somewhat Active.** 8,500 to 10,999 steps/day.
- **Active.** 11,000-13499 steps/day.
- **Highly Active.** >13,500 steps/day

## GIRLS

- **Sedentary Lifestyle.** Under <6,000 steps/day.
- **Low Active.** 6,000 to 8,499 steps/day.
- **Somewhat Active.** 8,500 to 9,999 steps/day.
- **Active.** 10,000-12499 steps/day.
- **Highly Active.** >12,500 steps/day.

# International guidelines for 'Sedentary Behaviour', for young people (5-17 years old)

- Sedentary behavior is time when teens are doing very little physical movement. This includes sitting for long periods of time in a car or on a bus, watching television or playing on tablets, computers or phones. Help teenagers sit less and stand up for better health.
- The 24-hour movement guidelines for teenagers recommend ***no more than 2 hours per day of recreational screen time and limited sitting for extended periods.***



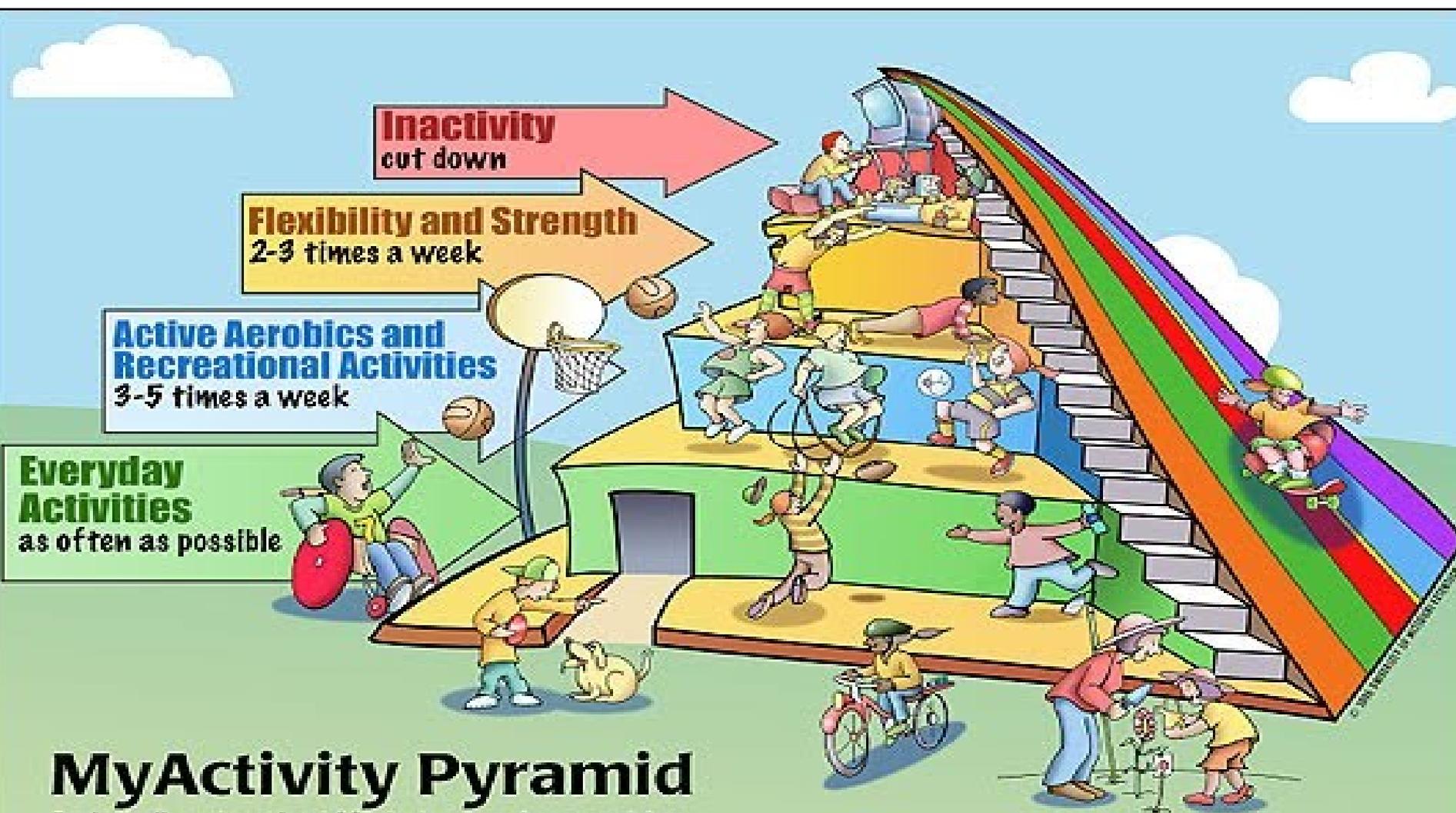
# High levels of Screen Time...



**Reduce physical activity!!!**



# What do children need to do to comply with international guidelines for good health? The **Physical Activity Pyramid.**



**Everyday Activities**  
as often as possible

**Active Aerobics and Recreational Activities**  
3-5 times a week

**Flexibility and Strength**  
2-3 times a week

**Inactivity**  
cut down

## MyActivity Pyramid

Be physically active at least 60 minutes every day, or most days.  
Use these suggestions to help meet your goal.

# What happens in our 'home';



(5) Leonard Cohen - So Long, M... x Facebook x SF Η Ελλάδα Νο1 σε ποσοστό αγύμ... x Το Τρέξιμο μου Κατέστρεψε τη Ζ... x

Not secure | sportsfeed.gr/i-ellada-no1-se-pososto-agymnaston-sthn-evropi/?fbclid=IwAR0aV-IsLrBl\_nbLXsBmveb5qE-4SZgXucidSqr5wK8hQ\_Tjx26rMrYa... | Other bookmarks

Apps European Universit... Car.gr - Μεταχειρισ... Skyscanner - Comp... Βασικές κινητικές δ... F20 ΣΥΝΟΠΤΙΚΟΣ ΠΙΝΑ... (2) Facebook

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**ΥΠΟΥΡΓΕΙΟ-ΓΓΑ**

# Η Ελλάδα Νο1 σε ποσοστό αγύμναστων στην Ευρώπη!

Published 12 ώρες πριν on 13 Δεκεμβρίου 2019  
By [Pinelopi Gioni](#)



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**ΜΑΖΙ**  
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Together for Children

Ερευνα της κομισιόν που διεξήχθη κατά τη διάρκεια του ετήσιου φόρουμ αθλητισμού που πραγματοποιήθηκε στη Σόφια έδειξε πως οι μισοί Ευρωπαίοι (των 28 χωρών-μέλη της ΕΕ) δεν γυμνάζονται ή ασχολούνται με κάποιο άθλημα. Μέσα σε αυτούς συμπεριλαμβάνονται, φυσικά, και οι Έλληνες.

[http://sportsfeed.gr/i-ellada-no1-se-pososto-agymnaston-sthn-evropi/?fbclid=IwAR0aV-IsLrBl\\_nbLXsBmveb5qE-4SZgXucidSqr5wK8hQ\\_Tjx26rMrYaZL8](http://sportsfeed.gr/i-ellada-no1-se-pososto-agymnaston-sthn-evropi/?fbclid=IwAR0aV-IsLrBl_nbLXsBmveb5qE-4SZgXucidSqr5wK8hQ_Tjx26rMrYaZL8)

14-12-2019 – πηγή: EUC

OneLogin | European University Cyprus | Ανεπαρκής σωματική άσκηση | Ραδιόφωνο live από Αθήνα σ... | (5) SPEARFISHING DOCUMENT

kathimerini.gr/1052932/article/ygeia/ygeia-epikairothta/aneparkhs-swmatikh-askhsh-gia-to-85-twn-efhwn-sthn-ellada?fbclid=IwAR325d7T6IF7ke03Eda2RYCX...

ΥΓΕΙΑ-ΕΠΙΚΑΙΡΟΤΗΤΑ 22.11.2019 : 08:55

## Ανεπαρκής σωματική άσκηση για το 85% των εφήβων στην Ελλάδα



- ΕΚΤΥΠΩΣΗ
- ΑΠΟΘΗΚΕΥΣΗ
- COMMENTS
- MAIL
- TWITTER
- FACEBOOK
- INSHARE

**ΔΙΑΒΑΣΤΕ ΕΠΙΣΗΣ**

Η συνεχής υπνηλία μπορεί να είναι σύμπτωμα πάθησης και όχι «τεμπελιά»

Κίνδυνος για εγκύους οι διατροφικές διαταραχές

A.P.

Πώς λειτουργεί ο εγκέφαλος μετά την αφαίρεση του ενός από τα δύο ημισφαίρια

Η μεγάλη πλειονότητα των εφήβων δεν ασκείται σωματικά όσο πρέπει. Το 81% των μαθητών 11 έως 17 ετών στον κόσμο δεν φθάνουν τη συνιστώμενη τουλάχιστον μία ώρα άσκησης μέτριας έως μεγάλης έντασης κάθε μέρα, σύμφωνα με μια νέα παγκόσμια μελέτη επιστημόνων του Παγκόσμιου Οργανισμού Υγείας (ΠΟΥ), την πρώτη του είδους της σε τέτοια διεθνή κλίμακα.

Η κατάσταση στην Ελλάδα, όσον αφορά το επίπεδο σωματικής

Published in : **ΥΓΕΙΑ-ΕΠΙΚΑΙΡΟΤΗΤΑ** Date of publication: **22.11.2019**

[https://www.kathimerini.gr/1052932/article/ygeia/ygeia-epikairothta/aneparkhs-swmatikh-askhsh-gia-to-85-twn-efhwn-sthn-ellada?fbclid=IwAR325d7T6IF7ke03Eda2RYCXaf\\_QJEBx659LW\\_XDFFPggZijReBqU70Joyg](https://www.kathimerini.gr/1052932/article/ygeia/ygeia-epikairothta/aneparkhs-swmatikh-askhsh-gia-to-85-twn-efhwn-sthn-ellada?fbclid=IwAR325d7T6IF7ke03Eda2RYCXaf_QJEBx659LW_XDFFPggZijReBqU70Joyg)

(5) ENTEKNO - YouTube | MSN Greece | Ειδήσεις και Νέα, | in.gr Ερευνα : Ολο και πιο τεμπέληδες οι Έλληνες μαθητές – Προβληματίζουν τα νέα στοιχεία του ΠΟΥ

ΕΙΔΗΣΕΙΣ | ΕΛΛΑΔΑ | ΚΟΣΜΟΣ | ΠΟΛΙΤΙΚΗ | ΟΙΚΟΝΟΜΙΑ | ΣΠΟΡ | ΑΠΟΨΗ | ΠΟΛΙΤΙΣΜΟΣ | ΨΥΧΑΓΩΓΙΑ | ΕΠΙΣ

Ερευνα : Ολο και πιο τεμπέληδες οι Έλληνες μαθητές – Προβληματίζουν τα νέα στοιχεία του ΠΟΥ

Ακόμη χειρότερη θέση παίρνει η Ελλάδα σε σχέση με διεθνής συγκριτική έρευνα για το πόσο επαρκώς ασκούνται οι έφηβοι.



Πηγή: in.gr  
Date of Publication:  
22.11.2019





TA NEA  
ΤΗΣ ΗΜΕΡΑΣ  
ΚΑΙ ΟΤΙ  
ΣΟΥ ΚΑΝΕΙ ΚΛΙΚ



NEWSFEED / ΕΙΔΗΣΕΙΣ / ΕΛΛΑΔΑ

## Παγκόσμιος Οργανισμός Υγείας: Κύπρος και Ελλάδα είναι χώρες με κατοίκους που δεν γυμνάζονται



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  - + Original Videos
- και πολλά πρωτότυπα
- + Quiz

ΜΠΕΙΤΕ ΣΤΟ SITE

# Ερευνητικά δεδομένα

Researchers in the UK studied how has changed in recent years the muscle strength of 10-year-olds children. They concluded that school-age children are becoming increasingly more physically weak.

Overall, in ten-year-olds children, in the last 16 years, muscle strength decreased by 20% and aerobic endurance decreased by 30%.

## Causes:

- 1. The reduction of physical activity.***
- 2. Children do not play enough outside the home, so they do not practice.***

Source: Theguardian.com-2018

E-Radio.gr | Ακούστε live Αθήνα. X | (1) Facebook X | Inf Σημαντική πτώση στη μυϊκή δύναμη των 10χρονων παιδιών δείχνει νέα έρευνα X +

https://www.infokids.gr/simantiki-ptosi-sti-myki-dynami-ton-10x/?fbclid=IwAR0v1XQuSmZJzut4eChVyAYtqyQuR-Sr

Danonino

InfoKids InfoMommy InfoDad InfoSchool InfoTeens

InfoBaby Προετοιμασία Εγκομοσύνης Εγκομοσύνη Τοκετός

### Σημαντική πτώση στη μυϊκή δύναμη των 10χρονων παιδιών δείχνει νέα έρευνα

Ο ιστοτόπος χρησιμοποιεί cookies για την καλύτερη δυνατή εμπειρία πλοήγησης σου.

Windows taskbar icons: File Explorer, Edge, Word, PowerPoint, Chrome, Mail, Photos, Music, Store, Settings, Search, Start.



# Nutrition Education Program

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# NUTRITION EDUCATION

## **Benefits of Nutrition Education**

**Students:** Improved physical health and academic achievement

**Parents:** Kids more interested in healthy foods at home

**School:** Improved standardized test scores

# 1<sup>st</sup> of December 2018

The screenshot shows a web browser window displaying the e-radio website. The browser's address bar shows the URL: [www.e-radio.gr/post/120806/ereyna-ta-ellhnopoula-apo-ta-pio-paxysarka-paidia-sthn-eyrwhp?utm\\_source=eradio\\_player&utm\\_medium=eradio...](http://www.e-radio.gr/post/120806/ereyna-ta-ellhnopoula-apo-ta-pio-paxysarka-paidia-sthn-eyrwhp?utm_source=eradio_player&utm_medium=eradio...). The website header includes the e-radio logo and a search bar. The main content area features a news article with the headline "Ερευνα: Τα ελληνόπουλα, από τα πιο παχύσαρκα παιδιά στην Ευρώπη" (Research: Greek children, among the most obese children in Europe). The article includes a photograph of a child holding a chocolate-glazed donut. A blue text box is overlaid on the image with the text "Greek children are among the most obese children in Europe". Below the image are social media sharing buttons for Facebook, Twitter, Email, and Pinterest. The article text states: "Σχεδόν το ένα τρίτο (30%) των παιδιών σχολικής ηλικίας δεν τρώει ούτε ένα φρούτο καθημερινά" (Almost one-third (30%) of school-aged children do not eat even one fruit daily). The article is attributed to NEWSROOM and dated 1/12/2018. On the left side of the page, there is a vertical banner for "e-agenda" with the text "ΙΣΩΣ Ο ΠΛΗΡΕΣΤΕΡΟΣ ΟΔΗΓΟΣ ΕΚΔΗΛΩΣΕΩΝ". On the right side, there is a sidebar with a search bar and a list of categories: ΜΟΥΣΙΚΗ, ΝΑΪΤ ΛΑΙΦ, ΦΕΣΤΙΒΑΛ, ΘΕΑΤΡΟ, ΕΙΚΑΣΤΙΚΑ, ΣΙΝΕΜΑ, ΧΟΡΟΣ, ΘΕΑΜΑΤΑ, ΠΟΛΗ, ΠΑΙΔΙΚΑ. A button labeled "ΜΠΕΙΤΕ ΣΤΟ SITE" is also present. The Windows taskbar at the bottom shows the time as 8:07 PM on 01/12/2018.

Greece

# «Άθλιο» το επίπεδο παγκόσμιας διατροφής: Τα Ελληνόπουλα από τα πιο παχύσαρκα παιδιά στην Ευρώπη

www.cnn.gr 1 μέρα πριν

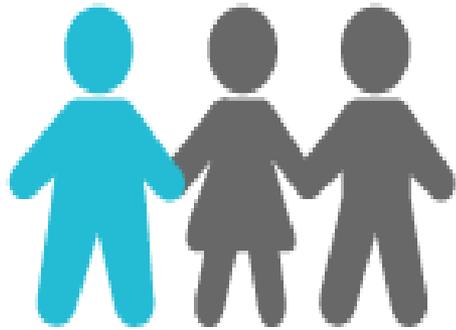


Greek children among the first worldwide in obesity

Αυτά τα Χριστούγεννα χαρίζουμε όλοι ένα αστέρι!

In the WHO European Region

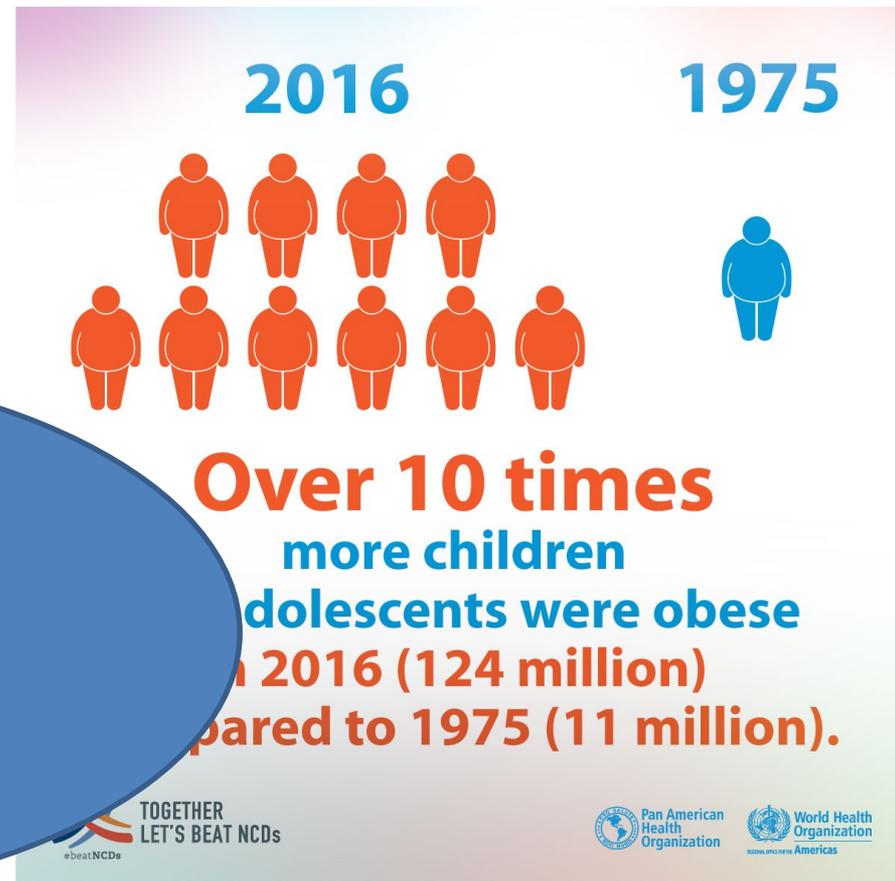
1 in 3  
11-year-olds is



overweight

or

Environmental factors  
Lifestyle preferences  
Cultural environment



[http://www.kathimerini.gr/994848/article/ygeia/ygeia-epikairothta/h-paxysarkia-ay3anei-ton-kindyno-kata8liyh-s-diws-stis-gynaikes?fbclid=IwAR0e9qSjX0dspAnglMODhM-fpNNS5zOJoJOr7X\\_BX8WhZQHv-oUQnDEtmo](http://www.kathimerini.gr/994848/article/ygeia/ygeia-epikairothta/h-paxysarkia-ay3anei-ton-kindyno-kata8liyh-s-diws-stis-gynaikes?fbclid=IwAR0e9qSjX0dspAnglMODhM-fpNNS5zOJoJOr7X_BX8WhZQHv-oUQnDEtmo)

13.11.2018

ΥΓΕΙΑ-ΕΠΙΚΑΙΡΟΤΗΤΑ 13.11.2018 : 09:07

## Η παχυσαρκία αυξάνει τον κίνδυνο κατάθλιψης ιδίως στις γυναίκες



ΕΚΤΥΠΩΣΗ  
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ΔΙΑΒΑΣΤΕ ΕΠΙΣΗΣ

Ανακύκλωση: Χωριστή συλλογή... μηδέν ΠΙΩΡΟΣ ΛΙΑΛΙΟΣ

Γεννημάτα: Είστε αδιτάκτοι προκειμένου να πλήξετε τη δημοκρατική

Εντάξει!

Obesity increases the possibility of depression among women

Physical health, Social, Emotional well-being, Self-esteem, Poor academic performance, Lower quality of life

s.kathimerini.gr/resources/2018-11/paxysarkia-thumb-large.jpg

6:30 PM 14/11/2018

# Nutrition Studies among Cypriot children

- Cypriot children consumed less than the minimum of 45% energy from carbohydrate
- intakes of total fat - 42.4%-83.8%,
- saturated fatty acids - 90.4%-97.1% and protein -65.2%-82.7%,
- while nearly all - 94.7%-100%, failed to meet the recommended intake for fiber.
- 27.0%-59.0% of children consumed >300 mg/day cholesterol and surpassed the higher limit for sodium (47.5%-78.5%)
- consumed a low-quality diet.
- Public health policies need to be evaluated to improve dietary quality and reduce disease burden.
- 6.7% of the children were classified as high adherers to the Mediterranean diet
- 37% were characterised as low adherers
- About 20% of boys and 25% of girls reported "not having breakfast on most days of the week", and a large percentage of Cypriot school children have a diet of low quality and inadequate physical activity.

Lazarou et al, 2009

Tornaritis et al 2014

# Studies – Nutrition Education

- Nutrition education (NE) has been identified as a key factor to prevent children obesity.
- The acceptability and usability of a NE Internet platform and two "serious games" (SGs) among a sample of elementary school teachers, dietitians, and education students were evaluated.
- This platform proved to be an effective tool to increase children's nutritional knowledge.

Rodríguez et al, 2016



## Aim of the Project

Raising students' awareness of good eating habits and healthy lifestyles & Changing students' behaviour towards physical exercise.



# Target Groups

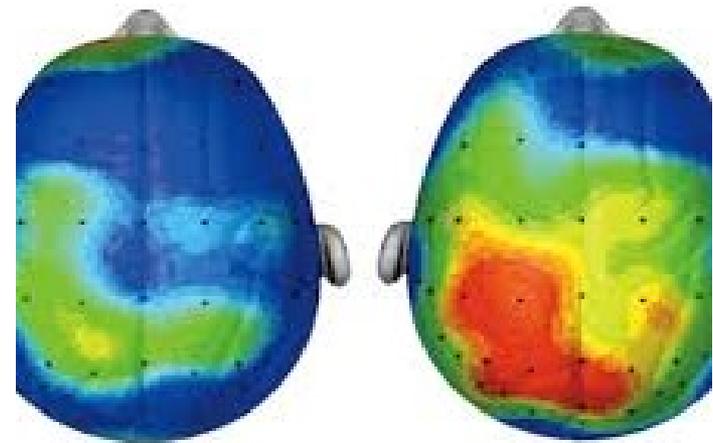


- The main target group of the project is teenagers across Europe. The interventions will be carried out in schools of the participating countries.
- The secondary target group included the Physical Education teachers and Home Economics-Health & Nutrition Education teachers

# The needs that are expected to be satisfied by this project

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- (a) to change sedentary behavior,
- (b) to change nutrition habits,
- (c) to promote a healthy lifestyle, and
- (d) to overcome barriers to PA.



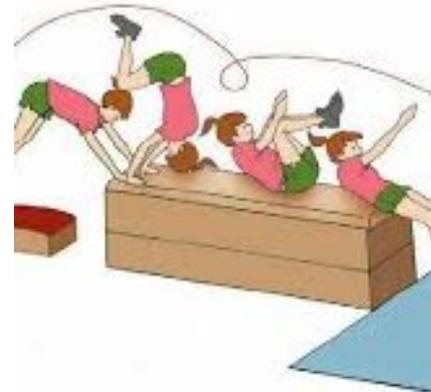
Εγκεφαλική δραστηριότητα πριν και μετά από άσκηση διάρκειας 20 λεπτών

# Goals of the project

Provide important supplies and educational tools to students, so that through a self-regulated learning process they can adopt a healthier lifestyle.

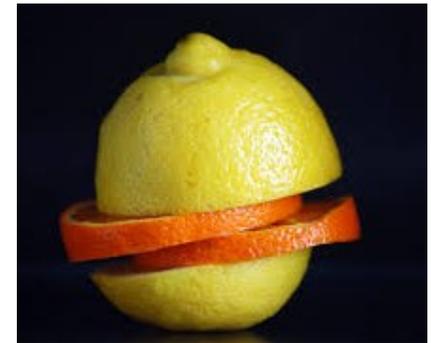
Research evidence showing that the adoption by youth of a healthy and active lifestyle help them:

- ✓ to keep their body strong
- ✓ improve mental health
- ✓ sleep
- ✓ school performance
- ✓ raise energy levels
- ✓ enjoy improved relationships and
- ✓ a more positive body image and self-esteem



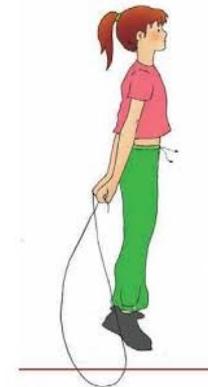
# The targeted strategy

- create a holistic solution to improve a healthy behaviour that will be:
- easy to implement at a low cost
- with minimum effort  
**through a friendly use,  
electronic environment**
- The above could be reflected in a pan-European strategy to be promoted by academic / educational institutions and organizations that promote a healthy lifestyle.



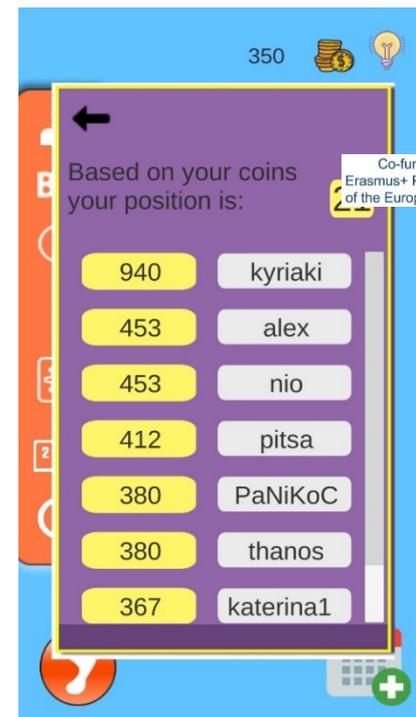
# To SUGAPAS aims to help students:

- to become more physically active in their daily lives improve their health-related fitness
- to achieve healthy eating habits to learn what nutrition means and what constitutes a healthy diet
- to develop the skills needed to become informed consumers about their dietary choices (reading food labels, eating and shopping choices, etc.) in order to achieve a healthy and active lifestyle.



# Tools to achieve the goals

- The education will be provided through an online environment (technology and digital games) in which students are already familiar and which will facilitate the acquisition of knowledge





## Nutrition minigame subsystem

- The nutrition minigame is designed to help teenagers figure out the correct amount of food items per food group they should eat in a day or a week.
- Then some of the most usually consumed food items are given to the user in certain quantities to imitate his/her meals or experiment and finally realize the right amounts that he/she should eat of each food group in a day

# MOOC topics...

**Physical Activity & Fitness Education Topics**

**Physical Activity & Exercise: Tips to stay active**

**How to Improve Your Fitness: ENDURANCE**

**How to Improve Your Fitness: STRENGTH**

**How to Improve Your Fitness: MOBILITY**

**Nutrition Education Topics**



**MY PLATE**



**BALANCED DIET**



**LIMIT FAT, SALT AND SUGAR**



**HEALTHY BODY WEIGHT AND IMAGE**

**Sleep & other health behavior Education Topics**

**Emotional health & Physical Activity**

**Hygiene & Physical Activity**

**Quality of Sleep & Physical Activity**

**The use of substances & Physical Activity**

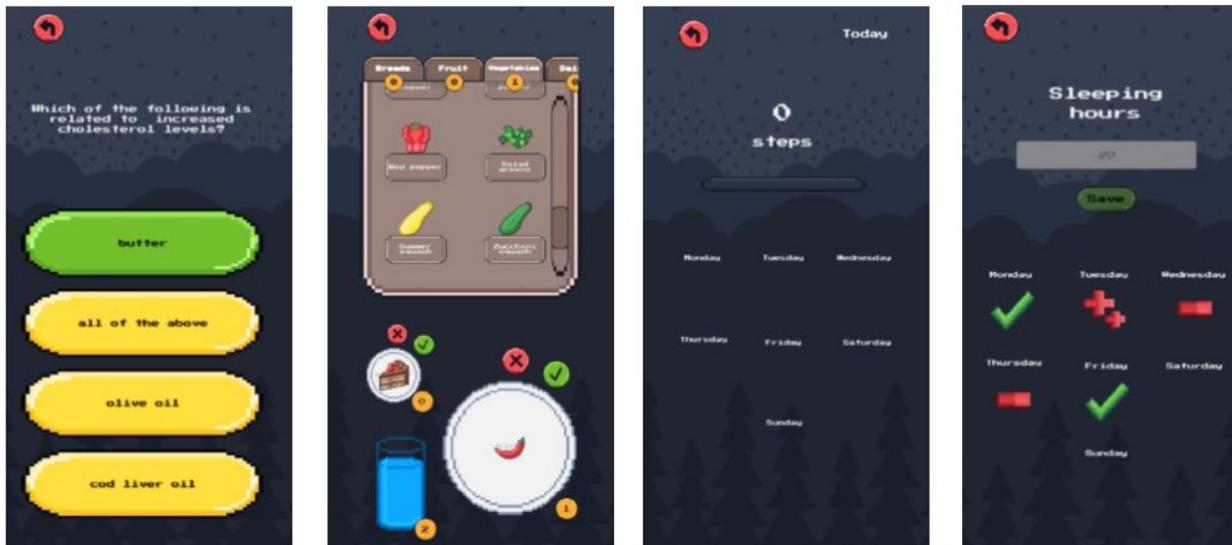
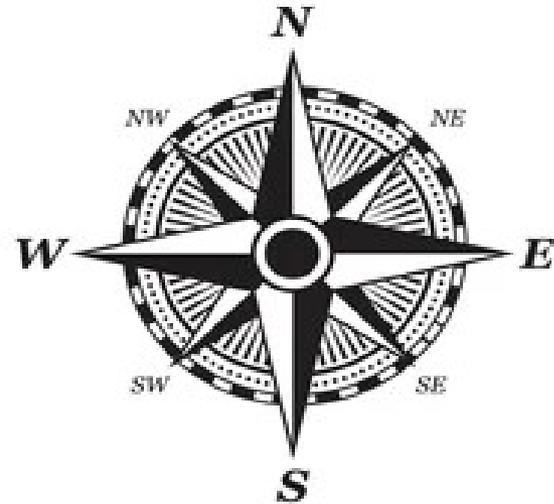


Fig. 2. Quiz, food, walk and sleep screens

# SUGAPAS EDUCATIONAL MATERIAL

## N. POLITOPOULOS & L. KARAVIDAS



Let's navigate....



**Project start:** 01/01/2020

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**Coordinator:** LIETUVOS SPORTO  
UNIVERSITETAS



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# Participants

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Participants			
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PAR	ARISTOTELIO PANEPISTIMIO THESSALONIKIS	THESSALONIKI	Greece
PAR	EUROPEAN PHYSICAL EDUCATION ASSOCIATION	GLARUS	Switzerland
PAR	EUROPEAN UNIVERSITY CYPRUS	NICOSIA	Cyprus
PAR	FUNDACION UNIVERSITARIA SAN ANTONIO	MURCIA	Spain
PAR	SCHOOLS FOR HEALTH IN EUROPE NETWORK FOUNDATION	HADERSLEV	Denmark
PAR	STICHTING GAMES FOR HEALTH EUROPE	HELMOND	Netherlands

# The SUGAPAS project



Thank you

