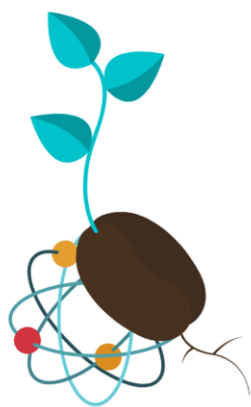


**DELIVERABLE 3.2. SUMMARY
REPORT ON THE SEEDS
INTERVENTION IMPLEMENTED
IN EACH COUNTRY**



SEEDS

VERSION 3

VERSION CONTROL SHEET

• Project summary

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DISCLAIMER

This publication is the sole responsibility of the SEEDS Consortium and reflects only the authors' view. Thus, the European Commission (EC) is not responsible for any use that may be made of the information it contains.

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ABBREVIATIONS

CA	Consortium Agreement
CoR	Gemeente Rotterdam
D&C	Dissemination and Communication
DMP	Data Management Plan
DPO	Data Protection Officer
EB	Executive Board
EC	European Commission
ECSA	Verein Der Europaeischen Burgerwissenschaften - ECSA E.V.
EU	European Union
EMC	Erasmus Universitair Medisch Centrum Rotterdam
GDPR	General Data Protection Regulation
H	Humans
HUA	Charokopeio Panepistimio
IISPV	Fundació Institut d'Investigació Sanitària Pere Virgili
IM	Innovation Manager
NDA	Non-Disclosure Agreement
PA	Physical activity
PC	Project Coordinator
PE	Physical Exercise
Q&E	Quality & Ethics
SEEDS	Science Engagement to Empower Disadvantaged Adolescents
STEM	Science, Technology, Engineering and Mathematics
SWAFS	Science With And For Society
TL	Tasks Leaders
UOE	University of Exeter
WP	Work Package

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EXECUTIVE SUMMARY

Science Engagement to Empower Disadvantaged Adolescents (SEEDS) aims at fostering science interest, literacy and STEM (Science, Technology, Engineering and Mathematics) education, by raising the health understanding, also pursuing the empowerment of youth in an extreme citizen science based on the participation of leader' adolescents in all the research process: analysis of adolescents barriers and necessities for having a healthy lifestyle, designing a community-based public intervention for adolescents of low-socioeconomic areas and with potential stakeholders participation, analysis of data and dissemination to community.

The present document provides the details of the 4 final SEEDS interventions implemented in each pilot country (Greece, Spain, The Netherlands and The United Kingdom). The 4 interventions resulted were focused on the primary outcomes, healthy snacks, physical activity (PA) and sedentary behaviour, and also on the secondary outcomes which were chosen by ambassadors during the focus groups (described in deliverables D2.1 and D2.2). This document also describes the modifications/adaptation of some parts of the interventions, due to the COVID situation, the engagement of adolescents or the challenges some teachers / high schools faced in implementing some activities.

1. INTRODUCTION

The overweight during childhood and adolescence is one of the most important issues in global health¹. In the last decades, the prevalence of obesity in children has increased dramatically¹. Recent estimates suggest that 330 million children and adolescents aged 5-19 years were overweight or obese in 2016¹. Moreover, in 2018, evidence shows that almost one in five (19%) 15-year-old children was either overweight or obese on average across European Union (EU) countries, whereas in 2010 this was one in six (16%)².

It is recognized that overweight is caused by a wide variety of factors³. One of these factors is elevated energy intake, which often includes a disproportionate amount of refined carbohydrates or processed food usually eaten as snacks³. Other causes are physical exercise deficiency and sedentary behavior. Longitudinal studies demonstrate an average decline in PA from adolescence to young adulthood⁴. Weight gain is also promoted by environmental, behavioral, biological, and genetic factors whose interactions have driven the current levels of worldwide obesity. An example of environmental behavior is the expansion of the “obesogenic” environment that increases the propensity of children to consume energy-dense foods and promotes sedentary lifestyles through reductions in opportunities for active mobility in daily lives.

Moreover, socioeconomic inequalities are another factor related to the worldwide obesity epidemic. A higher prevalence of obesity is observed in disadvantaged and marginalized communities than in groups with higher socioeconomic status.⁵

With the SEEDS project we aim to provide the details of the 4 final interventions of SEEDS project that were implemented from January to July 2022. These interventions were designed by the adolescents in the Makeathons to encourage and empower them in creating change to promote a healthy lifestyle focusing on healthy snacks, PA increase and reducing sedentary behaviour inside and outside the high schools located in neighbourhoods with a low socioeconomic status. Because of the pandemic situation, availability of teachers or high schools and the engagement of adolescents for example some activities of the intervention underwent some changes, which are reported in the present document.

¹ Development Initiatives. 2018 Global Nutrition Report: Shining a Light to Spur Action on Nutrition. Bristol: Development Initiatives Poverty Research Ltd; 2018. <https://globalnutritionreport.org/>. Accessed 2 Apr 2019

² OECD/European Union (2020), "Overweight and obesity among children and adolescents", in Health at a Glance: Europe 2020: State of Health in the EU Cycle. OECD Publishing, Paris. <https://doi.org/10.1787/7402dbb2-en>

³ Swinburn B, Egger G. Preventive strategies against weight gain and obesity. *Obes Rev.* 2002;3:289–301.

⁴ order K, Winpenny E, Love R, Brown HE, White M, van Sluijs E. Change in physical activity from adolescence to early adulthood: a systematic review and meta-analysis of longitudinal cohort studies. *Br J Sports Med.* 2019 53(8):496–503

⁵ Perkins C, DeSousa E. Trends in childhood height and weight, and socioeconomic inequalities. *Lancet Public Health.* 2018;3:e160–1

2. INTERVENTIONS OF CHAROKOPEIO PANEPISTIMIO (HUA) (Greece)

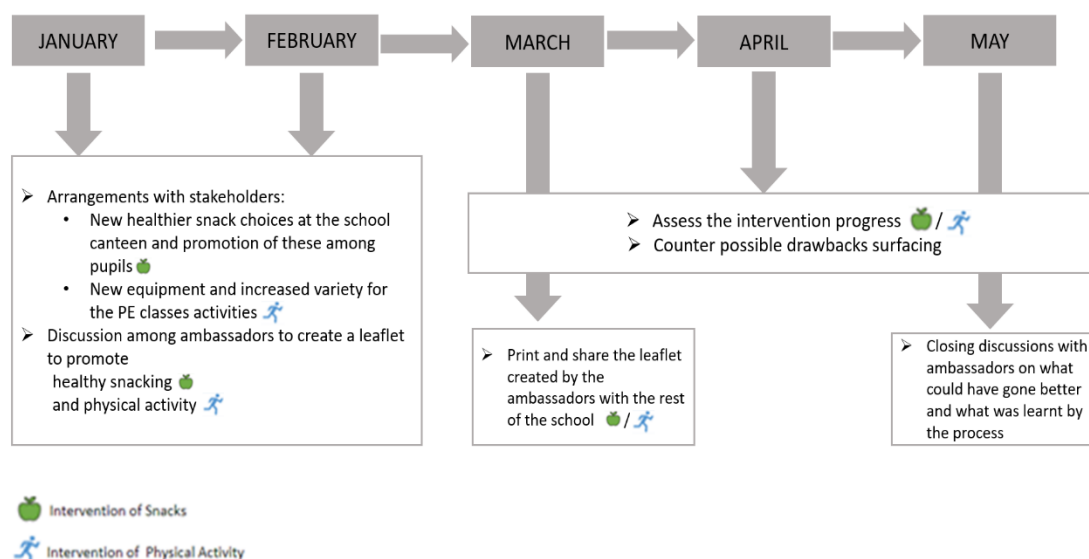


Figure 1. Outline of Greek final interventions.

2.1. Month 1 - Month 5: Healthier food choices in the school canteen & Larger variety of activities in PE classes with better equipment

The final intervention of Greece (Figure 1) was developed from January to the end of May and was based on two components: healthy snacking at school and increased physical activity at school.

Based on the focus groups conducted by HUA team in summer 2021, there was a first estimation about the possible problems to be countered at the intervention highschools by the first ambassadors of the project. By these, it was clear that the intervention should focus on promoting healthier snack choices among pupils (since the schools offered little healthy snack choices) and on increasing physical activity at school (since not all pupils participated in the PE class events).

At the start of autumn, the summer school was conducted. All the ambassadors went through training modules to better understand the methodology of the project and to be taught information about the scientific way of planning an intervention and of course what a healthier lifestyle consists of.

In November, the first questionnaires for the pre-assessment of the intervention schools baseline characteristics were distributed among schools.

In December, the Makeathons took place, which were a creative event formed by the ambassadors of each school. The ambassadors shared many ideas and suggestions about how their school environment should become more supportive on the matter of snacking and physical

activity during school hours. The ambassadors shared, evaluated, voted, organized and shaped their unique intervention plans for their schools.

In January, preparations with stakeholders of the schools took place to get the pupils interventions running as soon as possible.

For the healthy snacking component, ambassadors suggested that the school canteen should bring healthier choices available for the pupils. By popular demand of the ambassadors, the school canteens owners per school were asked to bring foods like fruits and juices, whole-grain cereal bars, whole grain bagels and custom-made toasts. The new choices were posted on the school canteen catalog poster outside the canteen. In addition, the ambassadors decided to make a leaflet about healthy snacking at school to share with their fellow peers to boost the overall change in snacking lifestyle of the school. The leaflet was created exclusively by the ambassadors and the support of one HUA researcher. The printed leaflet was distributed in every pupil at the intervention schools and was posted at every classroom of the schools.

For the physical activity component, pupils suggested that the PE lessons should be improved to include a wider variety of alternative non-competitive activities for the pupils in order to increase engagement in classes. The PE teachers agreed on allowing a free section after the basic typical program they were obliged by the ministry curriculum at each lesson so that the pupils would use to their favor and try different activities such as body training exercises, team activities with circulating exercises and more free games with balls. In addition, unused equipment by the school was utilized such as mattresses, hoola hoop rings and balls. Moreover, a supportive leaflet promoting an active lifestyle and giving useful tips to the pupils was created by the ambassadors in similar style to that of the snacking component. The leaflet was distributed to all pupils and posted on all classes of the intervention schools.

In March, after the intervention activities were well established, frequent meetings with the ambassadors and the stakeholders were arranged at set 10-15 day intervals to assess the intervention progress. Small discussions and interviews were conducted to the ambassadors and the stakeholders to see how the activities were being developed. This constructive feedback helped pinpoint weaknesses and was useful to re-evaluated strategies in possible problems rising. In March, there was also a virtual exchange meeting where all the ambassadors from all the participating countries in the project shared their experiences with each other.

As the project went on, the researcher stayed in close communication with the ambassadors and the schools to assess the project well-being.







The physical activity part of the intervention did not seem to have encountered any significant problems and the ambassadors' feedback was positive. The only problem was during the last month of the intervention where the hot sun discouraged some pupils to engage in the lesson, but that was a school facilities problem that could not be tackled practically.

The snacking component suffered some drawbacks. The pupils were excited to try the new healthy choices at the start of the intervention, but as the months went by, pupils seemed to lose interest in them compared to the tastier less healthy choices. The canteen owner was starting to get financially damaged by this. In order to counter this, an informative poster about healthier canteen choices was pinned at the school billboards and oral repromoting was done by the researcher to the classes of the schools and by the ambassadors to their peers. That strategy helped a bit the situation, but once again did not lasted long. The conclusion both the ambassadors and the researcher came to was that it's not so the importance of the promotion of the healthier choices as it is the banishing of the unhealthy choices that should be wiser for the school policies to focus on, as the unhealthy choices will always be more tempting and attractive than the healthy ones in the long term.

In May, the last conclusive discussions with the ambassadors about their experience with the project were done and the whole intervention was wrapped up in order for the second wave of the assessment questionnaires to be delivered to pupils of the intervention schools.

It should be noted that the control schools did not receive any information about the intervention of the ambassadors till the interventions were concluded. The control schools were only given questionnaires at set periods of the project aligning with the same period that questionnaires were distributed among the intervention schools.

Table 1. Frequency and methodology of the activities in Greece

Frequency and methodology of the activities			
Intervention activities	High school 1	High school 2	High school 3
Get active	 During school hours For 3 months/ twice a week	 During school hours For 3 months/ twice a week	 During school hours For 3 months/ twice a week
Make water as main drink	 During school hours For 3 months/ twice a week	 During school hours For 3 months/ twice a week	 During school hours For 3 months/ twice a week
Notes			

This final intervention was carried out in three intervention high schools, and the attendance per activity was 148 adolescents (Table 2).

Table 2. Attendance of SEEDS intervention activities in Greece.

Attendance of SEEDS intervention activities				
Activity	High School	N° of participants		
		Girls	Boys	Total per high school
Healthier food choices in the school canteen	1	27	28	56
	2	38	31	69
	3	15	8	23
Total per activity	Total	80	67	148
Larger variety of activities in PE classes with better equipment	1	27	28	56
	2	38	31	69
	3	15	8	23
Total per activity	Total	80	67	148

NR = not reported;.

*In high school 1 there was an adolescent that did not mention itself as girl or boy but chose the answer: other.

3. INTERVENTION PLAN OF FUNDACIÓ INSTITUT D'INVESTIGACIÓ SANITÀRIA PERE VIRGILI (IISPV) (Spain)

The final intervention of Spain (Figure 2) was developed from the middle of January to the end of May. Although all activities were carried out, the frequency and the methodology of the activities carried out differed between intervention high schools (Table 3).

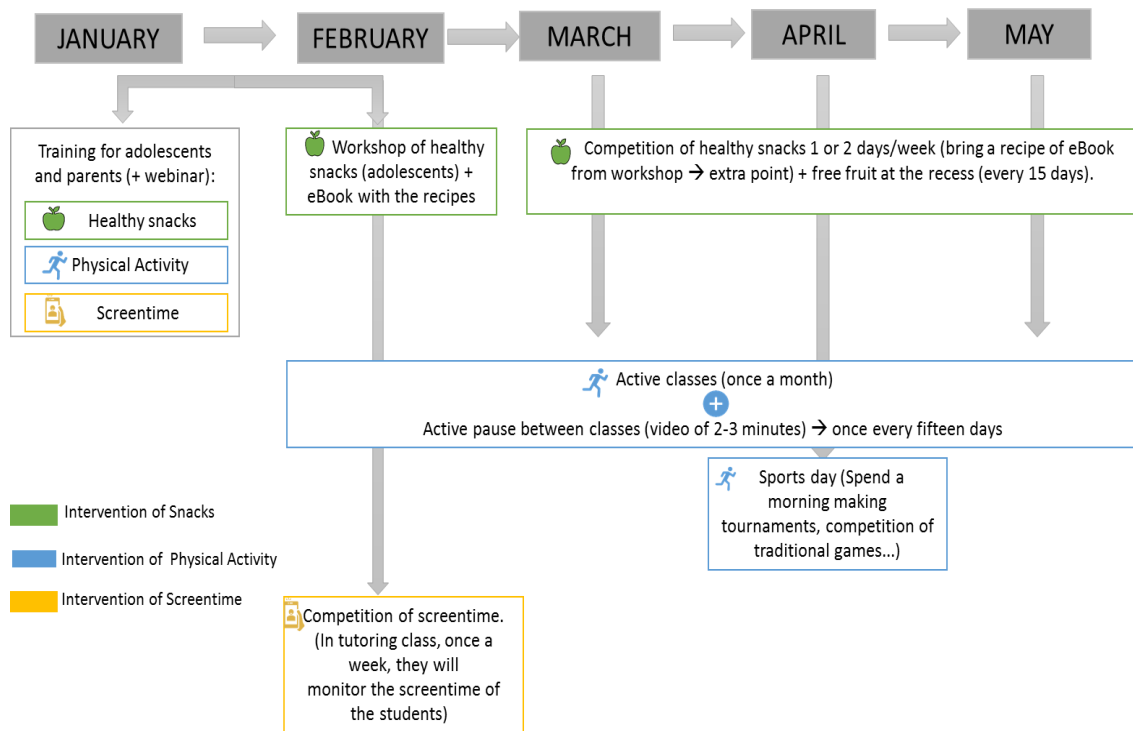


Figure 2. Outline of final Spanish interventions.

Table 3. Frequency and methodology of the activities in Spain.

Frequency and methodology of the activities				
Intervention activities	High school 1	High school 2	High school 3	High school 4
Training for adolescents	✓ During school hours	✓ During school hours	✓ During school hours	✓ Outside school hours
Training for parents	✓ 1 training in total	✓ 1 training in total	✓ 1 training in total	✓ 1 training in total
Workshop on healthy snacks	✓ During school hours	✓ During school hours	✓ During school hours	✓ Outside school hours
Competition for screen time	✓ Once a week for 1 month	✓ Once a week for 1 month	✓ Once a week for 1 month	✓ Once a week for 1 month
Active class	✓ One active class per month from February to May	✓ One active class from February to May	✗ They did not do active class, but they did more active breaks to compensate	✓ One active class from February to May
Active breaks	✓ Once every 15 days from February to May	✓ Once every 15 days from February to May	✓ Once a week from February to May	✗ they explained that adolescents were already active during breaks because they up and down stairs to other classes every break time
Competition for healthy snacks	✓ Twice a week from March to May	✓ Twice a week from March to May	✓ Twice a week from March to May (but not all the weeks)	✓ Only once a week for one month
Sports day	✓	✓	✓	✗ They had already done a sports day in the high school the last month before the SEEDS intervention, and they did not have time to organise another
Notes				Due to this high school could not do any PA activity, we organized the Gymkhana

This final intervention was carried out in four intervention high schools, due to the difference in nature of the activities, the attendance per activity ranged from 25 to 272 adolescents (Table 4).

Table 4. Attendance of SEEDS intervention activities in Spain.

Attendance of SEEDS intervention activities					
Activity	High School	Nº of participants			Total per high school
		Girls	Boys	Nonbinary	
Training for adolescents (healthy snacks, PA and screentime)	1	23	24	2	49
	2	44	38		82
	3	13	21	3	37
	4	50	53		103
Total per activity		130	136	5	271
Training for parents (healthy snacks, PA and screentime)	1	3	2		5
	2	2	3		5
	3	3	7		10
	4	4	1		5
Total per activity	Total	12	13		25
Workshop on healthy snacks	1	34	27	2	52
	2	45	42		87
	3	14	19	3	36
	4	52	45		97
Total per activity		134	133	5	272
Competition for screentime	1	18	19	2	39
	2	30	32		62
	3	37	41	3	81
	4	41	52		93
Total per activity		126	144	5	275
Active pauses between classes	1	27	26	2	55
	2	42	48		90
	3				
	4	53	56		109
Total per activity		122	130	2	254
Active classes	1	27	26	2	55
	2	42	48		90
	3	37	42	3	82

	4				
Total per activity		106	116	5	227
Competition for healthy snacks	1	25	23	2	50
	2	23	24		47
	3	35	39	3	77
	4	38	49		87
Total per activity		121	135	5	261
Sports day	1	18	19	2	39
	2	39	45		84
	3				
	4	51	54		105
Total per activity		108	118	2	228
MEAN OF ATTENDANCE		107.37	115.62	3.62	226.62

3.1. Months 1 and 2: Training on snacks, PA and screentime

The training on snacks, PA and screen time for adolescents was done face-to-face from the 21st of January to the 9th of February. The researchers of SEEDS prepared a training based on a presentation with PowerPoint with two short videos and including a final workshop to reflect on how and on what adolescents spend their time. The researchers also encouraged the adolescents to start a new extracurricular activity and showed them the options that they had near the high school like some sports centres and different sports clubs. This training lasted 1.5 hours. In addition, all participants received a tote bag with SEEDS' logo with a weekly and monthly planner (Annex 1) and a booklet with the final intervention designed by them with all the activities that they would carry out until June.

The participation in the training was high, even though some students were confined due to COVID-19 situation (Table 4). The adolescents enjoyed this activity a lot due to the accessibility to the researchers to ask whatever and the different things they learned, especially about processed food eaten as snacks and the time they spent in front of screens.

Another training was held for parents. This training was requested by the adolescents so that parents would have access to the same information that would be given to them. The three principal topics of the training were healthy snacks, PA and screentime. This training lasted 1 hour and was carried out online via Teams because COVID restrictions did not allow parents to enter high schools. Unfortunately, the parents' attendance at the online training was very low, in total 12 women and 13 men attended the training. However, the SEEDS researchers prepared a webinar for the parents who wanted to attend the training and were not able to come. The webinar lasted 20 minutes. Besides the webinar, the researchers of SEEDS prepared two infographics with some important information about different options of healthy snacks and how to read the

food labels correctly (Annex 2). On the high school web page and social media (Instagram) the event was promoted and also by the WhatsApp chats of parents (Annex 3).

3.2 Month 2 and 3: Workshop on snacks, active high school, and screen time competition

In February, IISPV team carried out the healthy snacks workshop, the active classes, the active breaks between classes and the screen time competition.

3.2.1. Healthy snacks workshop

This activity was carried out from the 7th of February to the 25th of February in the four intervention high schools. The workshop lasted 1 hour and took place face to face including with the whole class, during school hours in all schools unless one high school that did outside school hours. The workshop was held by a cooking and nutrition education company and supported by SEEDS project dietitians. The workshops were carried out in conditioned areas of the high school and the material and food were provided by the hired company.

The recipes made at the workshop were 5, these were hummus with basil; energy balls with nuts, carrots and dates; healthy sandwiches with whole wheat bread and without cold meat; healthy fruit and cocoa milkshakes; and toasts with peanut butter, fruit and dark chocolate. Moreover, the cooking and nutrition education company made an eBook with all the recipes for adolescents because they could make them at home (Annex 4).

Some of the COVID measures carried out in the workshops were to divide the students into bubble groups and each bubble group (each class) were divided into 5 groups, one group per recipe. All the students wore a mask and washed their hands before cooking. All the equipment and utensils were disinfected between workshops and the food cooked was tasted in the playground of the high school to maintain the safety distance without a mask.

Adolescents enjoyed a lot with this workshop and tasted some recipes and ingredients for the first time. The attendance at the workshops is specified in Table 4.

3.2.2. Active class

This activity was the most difficult to carry out for the high schools. Researchers proposed to do one active class per month from February to May. Despite that, teachers highlighted that accomplishing this duration was so difficult because they were overloaded due to the COVID situation, and the direction of the high school had already organized all the trips outside the schools.

One high school walked around the high school for 1 hour and during this time, the teacher gave their feedback about some activities or exams of the subject. In another high school, on the 3rd of February, teachers prepared an active class outside of high school based on Biology subject. Adolescents and teachers went to *Santa Llúcia Beach* on foot. They walked 15 km in total.

Moreover, another high school required the IISPV researchers to help to prepare an active class. For this purpose, researchers organized a gymkhana that lasted 1 hour about healthy lifestyles. The topics were nutrition, PA, and screen time. The gymkhana was divided into 5 different stages where they played different games. The first stage was about myths about science, adolescents had to get right if myths were true or false. If they did not right, they would do a squat. The second one was the “hot ball” game, in this game the students had to think of a strategy to reduce their screen time in a short period and pass the ball to the next classmate to not be eliminated. The third game was a version of the traditional game of musical chairs. It consisted of asking questions about nutrition while the adolescents were running around photography with different food and sitting on the photography with the correct answer. The fourth stage was a version of the spider game, which consisted of drawing a line on the floor where students stayed on this line and researchers had to ask students questions about sports. If they answered correctly they were saved, but the student who was eliminated in the last round had to catch the last student who answered well. The last stage was about the food composition. The IISPV researchers drew on the floor three circles that represented the three macronutrients (carbohydrates, proteins, and lipids). The IISPV researchers exposed some foods and the adolescents should move over within one of the circles with the macronutrient that they thought contained it to a greater extent. (Annex 5)

Finally, one high school did not do any active classes. There is more information about the frequency and methodology of this activity in Table 3.

In this activity participated all students of each class who did the active class (Table 4).

3.2.3. Active breaks

To promote active breaks in high school and reduce sedentarism IISPV researchers contracted a qualified professional in physical education (PE) to create short videos with different exercises to do in long-term classes (2h) or between those classes in which students stay in the same classroom between different subjects. The active pauses consisted of playing these videos once every 15 days by the teachers. In total 8 videos of 2-3 minutes were recorded by the PE professional. The videos were sent to the contact of every high school and distributed to the rest of the teachers of the high schools.

The frequency and methodology of this activity in each high school are specified above in table 3.

In this activity participated all students of each class did the active breaks (Table 4). The feedback from the teachers on this activity was good, they explained that adolescents enjoyed a lot this activity and they could disconnect between classes.

3.2.4. Screen time competition

The screen time competition consisted in monitoring the screen time of each student during tutor class. The score of this activity was calculated considering all the members of the class anonymously. The tutors of the class received a checklist (Annex 6) designed by the researchers where the score to give to each student was indicated according to the hours spent in front of the screen. The screen time was recorded by ambassadors of each class once a week in tutorial classes. The start of this activity differed in different high schools but the duration was the same in all of them, one month. In some high schools, we have found lower participation than in others (Table 4) but in general, all the high schools carried out this activity during the period indicated by the researchers.

The ambassadors' and teachers' feedback stated that adolescents felt frustrated because a lot of them did not achieve to reduce low than 3 hours per day the time in front of mobile phones. Despite that, at the same time, they were aware of the excessive time that they spend in front of screens.

3.3 Months 3 and 4: Healthy snacks competition and high school active

3.3.1. Healthy snacks competition

This activity aimed to improve the healthy snacks at high school through competition-driven environmental change. The snack competition lasted from March to May. The competition consisted of eating healthy snacks once or twice a week. The ambassadors registered through a checklist (Annex 7), the snacks eaten by their peers in high school, they did it during tutorial class. Nevertheless, the register differed between high schools, this is specified in Table 3.

In the begging, the researchers of SEEDS planned a challenge that consisted to provide a monthly recipe for adolescents and those who will bring this recipe to high school will obtain an extra point in the competition, despite that, this challenge did not carry out. Although, those adolescents who brought a recipe from the eBook given in the healthy snacks workshop, were given an extra point in the competition.

Once the SEEDS researchers got the checklist, scored the snacks according to if it was healthier or less healthy, to know the winning class to be awarded.

In addition, the researchers of IISPV contacted fruit providers to supply fruit to the high schools once every 15 days from March to May for all the adolescents so that regardless of their socioeconomic status of the teenagers, they could score points in the snack competition.

The feedback from the teachers was fantastic, they explained that adolescents would like to continue with the supply of fruit during the next academic course. Participation in this activity is specified in table 4.

3.4. Month 4: Healthy snacks competition, high school active and sports day

Healthy snack competition, active class and active breaks between classes continued throughout April. In addition, IISPV did a sports day that lasted one morning (from 9:00 to 13:00).

3.4.1. Sports day

In May, the adolescents voted at their high schools on the sports they wanted to practice on the SEEDS sports day. IISPV hired sports instructors and organized the sports day with the PE teachers of each high school. The event was shared by a poster on social media of every high school (Web page and Instagram) and by the SEEDS Twitter and website to ensure the maximum number of participants and promote the activity (Annex 8). Some high schools voted for lesser-known sports to encourage the participation of all students regardless of their gender or physical condition. The sports chosen by adolescents were: *trapela*, ultimate, colpbol, basketball, hockey, handball, badminton, volley and dance.

In one intervention school, the sports day did not take place. For this reason, Gymkhana was implemented (Table 3).

The sports day was very well received by the teachers and adolescents expressed that they would like to continue with this activity next academic course and they would like to do it more than one time per year. For this reason, there was good participation (Table 4).

3.5. Month 5: Healthy snacks competition and high school active

This activity was maintained during the month 5. It is explained previously.

3.6. Total score of the competition

At the end of May, all interventions finished. The researchers of SEEDS collected the checklists of screen time and the checklists of the snacks competitions to calculate the scores and share the winning classes of each high school (Table 5). Every winning class received a set of vegetable beverages (oat milk, rice milk, rice and chocolate milk, vegetable creams for cooking) and vegetable broth. The rest of the participants received a small pack with two products (oat milk and rice milk) (Figure 3).



Figure 3. Set of vegetable beverages for the winning class in the screen time and snacks competition

Table 5. Total score competition screen time and healthy snacks

High schools		Mean score out of 6 points
High school 1	3r A	1.5
	3R B	0.8
	3R C	0.75
High school 2	2n A	2.03
	2n B	2.19
	3r A	1.85
	3r B	1.88
High school 3	3R A	1.78
	3R B	0.88
	3R C	1.02
	3R D	2.36
High school 4	3R A	2.95
	3R B	2.97
	3r C	2.59

In both competitions, the maximum punctuation was 3 points per participant. Results highlighted in yellow are the winners.

4. INTERVENTIONS OF EMC and City of Rotterdam (CoR) (The Netherlands)

4.1. Development of intervention

During January and February 2022 the final intervention of the Netherlands was developed from the ideas of 1 Makeathon with ambassadors from two intervention schools and various stakeholders. First of all, the Dutch SEEDS researchers collected all ideas and drafted a first overview of possible interventions. They discussed this first draft in 4 meetings with stakeholders from both healthy nutrition (Onwijs Gezond!⁶, Voedingscentrum⁷, policymaker healthy environment, city of Rotterdam⁸) and PA (Rotterdam SportSupport⁹, Sportbedrijf Rotterdam¹⁰) as well as with teachers from both schools. After this meeting the Dutch SEEDS team further developed the intervention. They discussed the next version of the intervention with ambassadors (high school students) in one meeting per school. With their feedback the Dutch team developed the last version of the intervention. This version we discussed in one meeting per school with the teachers. The main stakeholder involved in the nutrition components (Onwijs Gezond!) agreed on supporting the student ambassadors group on nutrition.

4.2. Overview of the intervention

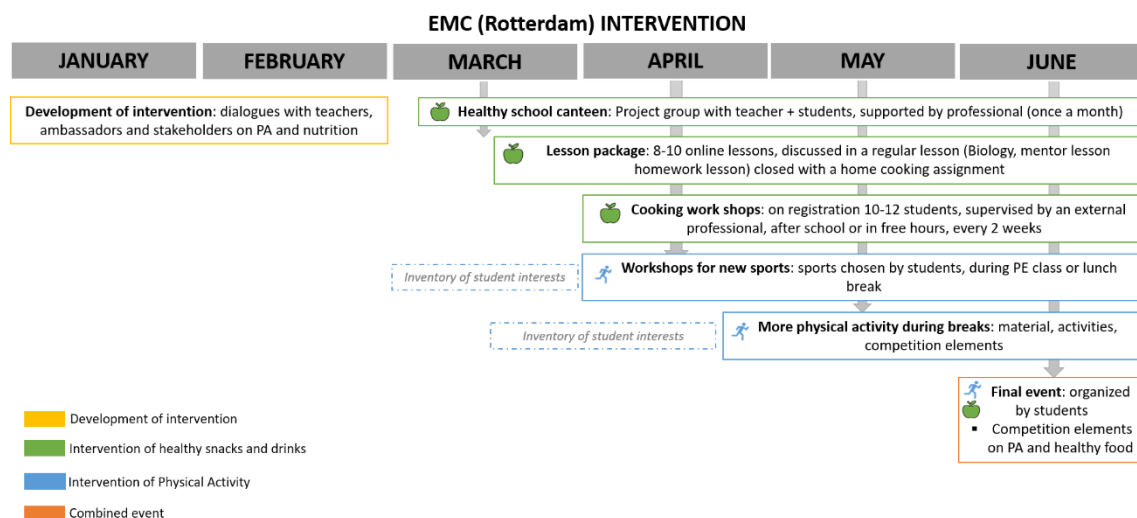


Figure 4. Outline of final Dutch interventions.

Not all activities were carried out and the frequency and the methodology of the activities carried out differed between intervention high schools (Table 6).

⁶ <http://www.onwijsgezond.nl/>

⁷ <https://www.voedingscentrum.nl/nl/service/english.aspx>

⁸ <https://www.lekkerfit010.nl/>

⁹ <https://www.rotterdamssportsupport.nl/>

¹⁰ <https://www.sportbedrijfrotterdam.nl/>

Table 6. Frequency and methodology of the activities in the Netherlands.

Frequency and methodology of the activities		
Intervention activities	High school 1	High school 2
Development of intervention with ambassadors	✓ During school hours	✓ During school hours
Creating a healthy school canteen with ambassadors	✓ 3 meetings	✓ 3 meetings
Lesson package	✗ Due to a lack of time the school was not able to implement the lesson package	✗ Due to a lack of time the school was not able to implement the lesson package
Cooking workshops	✓ 3 workshops (1,5 hours per workshop)	✓ 4 workshops (1,5 hours per workshop)
Workshops for new sports	✓ One workshop flag-football for all PE classes (year 1 – 3)	✓ One workshop baseball for students who registered
More physical activity during breaks	✓ Brainstorm about how to be more active during breaks	✓ Brainstorm about how to be more active during breaks and start to implement tournaments
Final event	✗ Due to lack of time	✗ Due to lack of time

This final intervention was carried out in two intervention high schools, due to the difference in nature of the activities, the attendance per activity ranged from 3 to 234 adolescents (Table 7).

Table 7. Attendance of SEEDS intervention activities in the Netherlands.

Attendance of SEEDS intervention activities				
Activity	High School	Nº of participants		
		Girls	Boys	Total per high school
Development of intervention with ambassadors	1	11	1	12
	2	6	2	8
Total per activity		17	3	20
Creating a healthy school canteen with ambassadors	1	11	1	12
	2	5	0	5

Total per activity	Total	16	1	17
Cooking workshops*	1	NR	NR	~45
	2	NR	NR	~60
Total per activity				~105
Workshops for new sports*	1	NR	NR	~234
	2	5	10	15
Total per activity				~249
More physical activity during breaks	1	5	0	5
	2	1	2	3
Total per activity		6	2	8

NR = not reported; * We aim to obtain information on participation after the summer break.

4.3. Activity 1: Students creating a healthy school canteen

A project group was formed within each school consisting of 3-6 ambassadors and a teacher and/or canteen representative. During some meeting we invited all ambassadors to think along in case to consult more adolescents. They had a kick-off meeting in March followed up by... meetings at school with an expert on healthy school canteens from Onwijs Gezond. Onwijs Gezond is a company, formerly started in Rotterdam, providing tailor-made advice and solutions to make schools healthier. The city of Rotterdam is considered an essential partner for the long-term implementation of the healthy school canteen. Therefore, they are included as a partner in this project group to ensure that important lessons will be implemented at future schools that want to improve their canteen. The number of meetings with the project group and Onwijs Gezond differed per school and lasted 45 minutes – 90 minutes each time. During those meetings the project group discussed various topics, like which food and drinks to provide in the healthy school canteen and how it should look like.

Based on an existing roadmap developed by the Dutch Nutrition Center and tailor-made by Onwijs Gezond, they have been working towards a healthy school canteen^{11 12}. In the Netherlands, there are national guidelines for school eating environments and schools can earn different scales for their own canteen based on how healthy it is. To date, this road map does not include participation of students. It is a new concept that students will work on getting to a healthy canteen themselves. At baseline, they have completed a canteen scan to gain insight into the healthiness of their school canteen. After that, together with Onwijs Gezond and the project group, they have decided the different steps that have to be taken to earn a scale for their own school canteen. This includes adjusting products in the canteen, adjusting school policies and paying attention to healthy

¹¹ Nutrition Centre. *Steps to a healthy school canteen*. Available from:

<https://www.disdh.nl/Portals/0/gezonde%20school.pdf>

¹² Evenhuis IJ, Vyth EL, Nassau Fv, Veldhuis L, Westerman MJ, Seidell JC and Renders CM (2021) *What Do Secondary Schools Need to Create Healthier Canteens? The Development of an Implementation Plan*. Front. Public Health 9:683556. doi: 10.3389/fpubh.2021.683556

nutrition in lessons. The teachers also had a role in this, as they were in close contact with the canteen employee and were in charge of actually changing the products in the canteen.

This is an ongoing process as it is not always possible, based on the baseline state of the canteen and the number of meetings that could be held during the first half of 2022, to create a healthy canteen and earn a scale for this during a couple of months. Schools will be guided in the following academic year (2022-2023) by the professionals from Onwijs Gezond to reach the goals for the healthy school canteen.

4.4. Activity 2: Lesson package about nutrition

“Weet wat je eet” is an existing lesson package developed by the Dutch nutrition institute, and consisted of 10 online lessons about healthy eating for students aged 12 to 15 years¹³. It is a free package and can also be given remotely as they are online lessons. A lesson takes about 30 minutes and consists of information, videos, interactive assignments and tests. This lesson package was offered to all students in grade 1, 2 and 3. During a regular class (Biology, mentor class, homework class) the lesson made could be discussed by teachers from school. They could follow the progress of students in an online teacher environment. However, due to lack of time and a full curriculum which was already formed at the beginning of the academic year, it was not possible for both intervention schools to implement those lessons.

For next year, they reduced the number of lessons in this lesson package to 5-6 lessons. School 1 is planning to implement this lesson package into the curriculum of grade 1 and 2 for the 2022-2023 academic year.

4.5. Activity 3: Cooking workshops (extracurricular)

The cooking workshops took place in May and June at both intervention schools. Those workshops were after regular classes and will last 90 minutes. The workshops were given by an external professional from Voedseleeducatie010¹⁴. Students could register for those extracurricular workshops, and approximately 15 students could participate each time. We have organized 3-4 workshops in each school.

The cooking workshops focused on how to make tasty food also healthy! Detailed content of the workshop was determined by the professional in combination with the wishes of the students, for example healthy lunches to be offered to students at their canteens were part of the activity.

The cooking workshops were a great success in both intervention schools and school 1 also asked the professional from Voedseleeducatie010 to organize some workshops in the 2022-2023 academic year as well.

¹³ <https://wwje.nl/>

¹⁴ <https://voedseleeducatie010.nl/>

4.6. Activity 4: Workshops to meet new sports

A project group was created consisting of ambassadors (3-6 students) who were supported by a PE teacher. The PE teacher from school 1 took the ideas from the ambassadors into account and choose to organize a flag-football workshop for grades 1 -3 during PE classes. This was organized in April-May. The ambassadors from school 2 did create a survey for an inventory of students interests within their school. After the replies on this survey, the PE teacher noted that baseball was mostly named and a sport did do not already perform in the regular PE classes. The SEEDS researcher contacted Sportbedrijf Rotterdam in order to arrange a baseball workshop for this school. This workshop was given in June and lasted 90 minutes. It was after school hours and students could register for this workshop.

4.7. Activity 5: More PA opportunities during breaks

More PA opportunities during breaks can vary from new material, new activities/games and/or competition elements. The adolescent project group on PA did a brainstorm with local policymakers working at the city of Rotterdam who focus on active school days and smart breaks to gain insight in the opportunities for their own school. The project group was created in March and the one brainstorm per school was held. They used the Now-How-Wow-matrix to select and organize ideas. Ideas were shared with the PE teachers at both schools. Within both schools, the main idea was to organize small tournaments during the breaks. In school 1 it was hard to start the actual activities. Ambassadors did not want to lead activities themselves, but youth-workers were identified as potential facilitators to organize new activities. The youth-worker was very enthusiastic about this idea, but due to the expiry of his contract, the activities no longer took place. In school 2 the youth-workers were also very enthusiastic about this idea. They came together with the ambassadors from the project group to develop those tournaments, create a poster and recruit participants. Due to lack of time at the end of the school year and not many students present at school in the last weeks, they were not able to actually do the tournaments. However, the youth-workers want to continue with it in the following academic year (2022-2023).

4.8. Activity 6: Final event

To close the SEEDS project at school, the Dutch team wanted to organize a final event for and together with students. Possible activities could be a celebration of the healthy school canteen and competition elements in both exercise and nutrition. Due to lack of time and students not regularly attending in the last weeks of the academic year, the final event did not take place in both schools.

5. INTERVENTIONS OF UNIVERSITY OF EXETER (UoE) (The UK)

The UK intervention provided each of the participants with an 'Intervention Pack' that consisted of a cotton 'SEEDS' tote bag, a skipping rope, a water bottle, and an instruction booklet (which is detailed below) for the four-month intervention. After the intervention finished these 'Intervention Packs' were also given to control school participants who were recruited into the program and completed the questionnaires. Control participants were given an overview of the research process and what had happened since the baseline measurements were taken.

A major philosophy behind the UK intervention was focusing on starting off simple and to progressively add more once habits had, hopefully, been established. Not only did this happen week-by-week, but it also happened month-by-month. This meant the intention focused on one particular behaviour, or skill, each month and built on it throughout each week. The aim here was to hopefully make the new skills or behaviours more familiar to the participant over time so they would then incorporate these into their daily routine. The goal being, by the end of the intervention participants would still be working on what they had implemented at the very start of the intervention alongside what they had also incorporated during the final stage as well. Some of these modifications were specifically designed to be very simple indeed – such as making water your only drink for one school day a week.

Dr. Christopher Michael Elphick met with every participant in the project to give them the 'Intervention Pack' and to remind students about the goals of this research. He also spent time speaking to the pupils about the core messages behind healthy lifestyle behaviours. For example, the differences between healthy and unhealthy snacking choices (including drinks) were discussed, as were the needs for people to engage in physical activity and to drink enough water. These discussions took the form of informal 'lesson style sessions' during times when it was possible to speak to all of the participants in one setting. These events would often be a short ten-minute period at the start or the end of a time-tabled lesson during their school day.

These sessions were often very well received and there were high levels of engagement from the participants. They seemed to like a change in their regular scheduled lessons and enjoyed the opportunity for university engagement. These levels of engagement were also seen when Dr. Elphick would visit the schools to see how participants were doing with the intervention, as well as getting involved with the interventions himself through attending some of the exercise sessions some schools had planned for the project.

When speaking to teaching staff in the schools about the intervention they commented on the fact that pupils really enjoyed being given the 'Intervention Packs' and their contents being seen in the school setting made other pupils want to participate too. The blue water bottles were especially popular. Several students commented on the fact that they did not own a bottle for water and that they needed one, so the gift came at a good time for them.

After pupils has spoken to Dr. Elphick about healthy eating and healthy lifestyles they were taken through the intervention guide, participants were reminded of the fact that they have a significant amount of autonomy when engaging in the SEEDS program. This means they can engage with the intervention in a way that works for them – the intention would be to have more autonomy than they normally have as a student. Therefore, they could choose to do whatever they wanted given the parameters that are established. For example, rather than eating a chocolate bar as a snack – pick an apple instead. Rather than drinking a sugary drink – decide to drink water.

The intervention was designed to be something participants could do, for the most part, anywhere regardless of the Covid-19 situation. Apart from month 3, where the participants were required to actively engage in P.E. lessons, everything could be accomplished away from the school setting. However, participants were also encouraged to help one another whenever possible, ranging from exercising together or supporting one another with help regarding their healthy eating decisions.

In terms of monitoring compliance with the intervention, the intention was to contact the participants twice a month and ask them questions about what was happening. This did not prove to be very successful as the replies offered by the students were very low on the ground. However, there was a distinct difference observed when Dr. Elphick went into the schools to visit the SEEDS participants. When speaking to pupils often they mentioned that they had indeed been using the water bottles, thinking about healthy eating decisions and had been using their skipping ropes. When the research team went into schools to conduct the follow up measurements Dr. Elphick spoke to the SEEDS participants and asked them how much engagement there was in each section of the intervention. This was accomplished in a very simple way – the group of students were asked to raise one of their hands for each of the following questions:

- 1) Raise your hands if since starting the SEEDS intervention you have been using your water bottle to drink water.
- 2) Raise your hands if since starting the SEEDS intervention you have been making efforts to get more active during your week.
- 3) Raise you hands if since starting the SEEDS intervention you have been making healthy snacking choices.
- 4) Raise your hands if since starting the SEEDS intervention you have been actively participating in your P.E. classes.
- 5) Raise your hands if since starting the SEEDS intervention you have been using your skipping rope.

With the exception of question four, over 70 percent of participants asked in each of the intervention schools raised their hands to these questions. Although this is not a perfect way to determine compliance in the intervention it does indicate there was a degree of observance in the project.

There were some issues encountered when trying to implement the intervention that should be documented. In terms of the ethical application that was made in this project all of the communication with the pupils was made via an appointed member of the school staff. Essentially

there was no direct communication with pupils at all. This added an additional step in the process when needing to contact them to send the compliance measures twice a month. As the appointed staff member from each school was the head of the science department and the project was being conducted during the exam period sometimes it was difficult to electronically contact the SEEDS participants because of the workload of the teachers. However, it must be said that when times were organised to visit the schools the pupils were always engaged and happy to spend time with the SEEDS research team.

Covid-19 was another issue that did cause some issues when trying to visit schools. There were isolated instances where the Covid-19 burden in each school became too much and they would not allow the research team to visit the site because of the risk. The most important thing to remember in these situations, is that there was very little that could be accomplished.

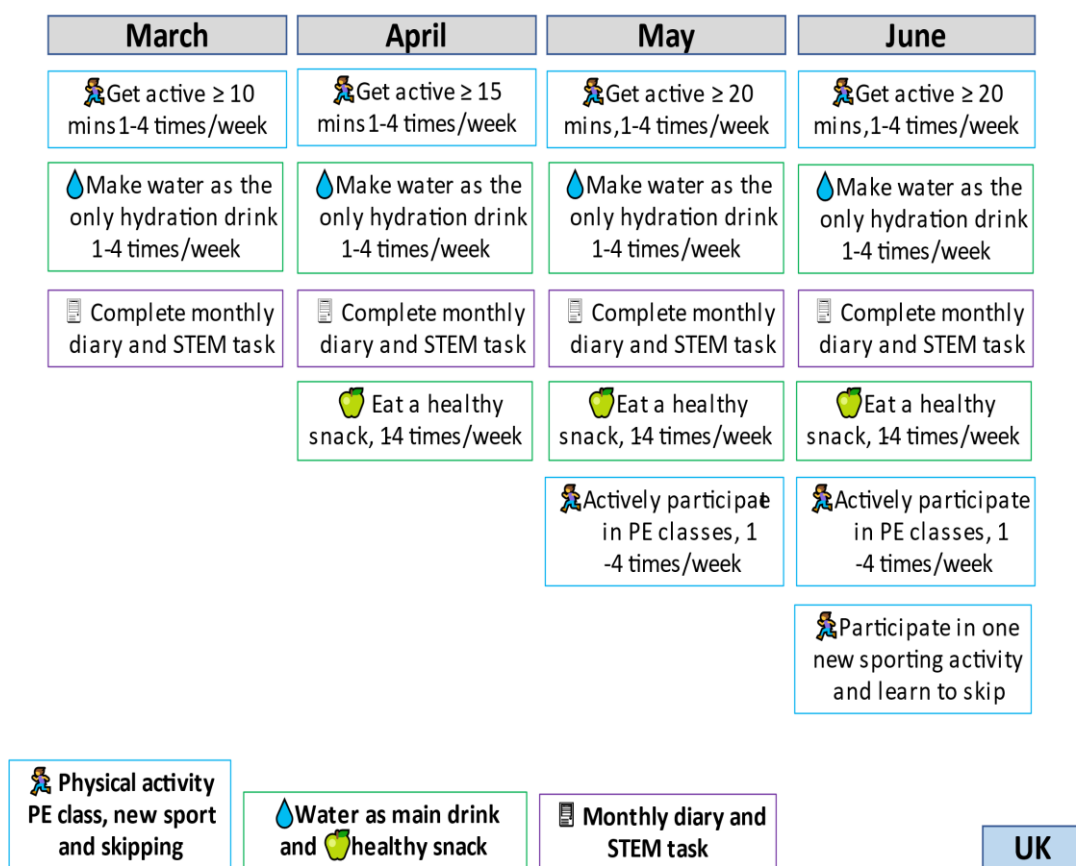


Figure 5. Outline of the UK intervention.

Table 8. Frequency and methodology of the activities in the UK

Frequency and methodology of the activities			
Intervention activities	High school 1	High school 2	High school 3

Get active	✓ During school hours Increasing from one day a week to four days a week.	✓ During school hours Increasing from one day a week to four days a week.	✓ During school hours Increasing from one day a week to four days a week.
Make water as main drink	✓ During school hours Ranging from one day a week to four days a week.	✓ During school hours Ranging from one day a week to four days a week.	✓ During school hours Ranging from one day a week to four days a week.
Monthly diary and STEM task	✓ Participants asked to do this in their own time Participants were asked to complete this four times.	✓ Participants asked to do this in their own time Participants were asked to complete this four times.	✗ Participants from this school did not engage in this aspect of the intervention Participants were asked to complete this four times.
Healthy snack	✓ During school hours Ranging from one day a week to four days a week.	✓ During school hours Ranging from one day a week to four days a week.	✓ During school hours Ranging from one day a week to four days a week.
Physical activity class	✓ During school hours Asked to do this in any of their curriculum based PE lessons.	✓ During school hours Asked to do this in any of their curriculum based PE lessons.	✓ During school hours Asked to do this in any of their curriculum based PE lessons.
New sport and skipping	✓ During school hours or at home	✓ During school hours or at home	✓ During school hours or at home
Notes	All activities were designed to build up each day of the week, each week of the month. For example in the first week participants were tasked with getting more active one day a week, and on the second week, two days a week.	This is the same for the healthy snacking goals – participants were asked to introduce this slowly over the course of the intervention.	According to the goal in the intervention the plan was to skip for two minutes by the end of the intervention. I am unsure if many participants would be able to do this, however, from visiting schools, many participants tried.

This final intervention was carried out in three intervention high schools, due to the difference in nature of the activities, the attendance per activity ranged from 19 to 168 adolescents (Table 9).

Table 9. Attendance of SEEDS intervention activities in the UK.

Attendance of SEEDS intervention activities					
Activity	High School	Nº of participants			
		Girls	Boys	Nonbinary	Total per high school
Get active	1	16	4	1	21
	2	43	34	8	85
	3	21	38	3	62
Total per activity	Total	80	76	12	168
Make water as main drink	1	16	4	1	21
	2	43	34	8	85
	3	21	38	3	62
Total per activity	Total	80	76	12	168
Monthly diary and STEM task	1	14	4	1	19
	2	0	0	0	0
	3	0	0	0	0
Total per activity	Total	14	4	1	19
Healthy snack	1	16	4	1	21
	2	43	34	8	85
	3	21	38	3	62
Total per activity	Total	80	76	12	168
Physical activity class	1	NR	NR	NR	NR
	2	NR	NR	NR	NR
	3	NR	NR	NR	NR
Total per activity	Total	NR	NR	NR	NR
New sport and skipping	1	16	4	1	21
	2	NR	NR	NR	NR
	3	21	38	3	62
Total per activity	Total	37	42	4	83

NR = not reported.

5.1. Month 1: Starting off simple

In this first month the aims were to start off simple and to lay the foundations for the next four months of the intervention. As soon as participants were given the 'Intervention Packs' they were instructed to start the intervention with the only goals of drinking more water and getting more active – how they 'got more active' was totally up to them. From visiting the schools throughout the intervention it was clear that the water bottles provided as part of the SEEDS intervention were a success as they were seen throughout the school. Teachers shared that students being

seen with these made other pupils interested in the project and they would often ask to join in on the intervention too.

5.1.1. Get more active!

Participants were instructed to have their own views on what represented getting more active for themselves. The intention here is to remember that the goal is to improve on what they currently do – this could be something as simple as walking more during the school day or if they were already active trying to push themselves a little harder during their day or whenever they can. Participants were reminded of the observation that this time should increase throughout the duration of the intervention.

5.1.2. Drink water during the day

Participants were given a water bottle that had a capacity of 1000 ml and were instructed to use it to drink more water, opting for water as a substitute for anything else they drank during the school day. This was provided to the participants for use throughout the whole of the intervention – and hopefully beyond too. The intention was for participants to continue to build up on the amount of times they opted for water as their drink during their school week. Sometimes participants mentioned they currently only ever drank water during the school day, however, this was only around two pupils in each school. If this ever did happen these pupils were simply reminded they now have an additional bottle to use if they wish.

5.2. Month 2: Adding a snack and increasing our activity

During this month the second major component of the intervention was introduced – choosing healthy eating options. However, aspects of the previous months' intervention were also maintained as participants were instructed to keep drinking water and to continue to keep being active.

5.2.1. Get more active!

Participants were encouraged to maintain this from the habits that were established during the previous month.

5.2.2. Healthy eating

Participants were encouraged to make healthy eating/snacking decisions for the duration of the SEEDS project. As described above – SEEDS participants were taken through some of the fundamental basics of healthy eating and they were invited to consider these when appropriate and make the necessary decisions to ensure the changes were implemented.

5.3. Month 3: Participating in Physical Education classes

Implementing this was difficult as the emphasis was on the participant to determine exactly how much, or how they would do this. In several respects this is a continuation of the 'get active' goals from earlier on in the intervention, albeit in a school-based P.E. setting. When speaking to the students about this component of the intervention there was some confusion over exactly what this meant. This was a sensible question because on reflection the goal is quite vague. However, as the purpose of the intervention was to build up over the four months and they had, by now, hopefully started to engage in the process they were instructed to make sure they tried their very best when in P.E. classes. This could have happened in the form of additional physical effort or even volunteering to do something if the opportunity arose.

5.3.1. Get more active!

This remained a continuation from what had been established earlier on in the intervention.

5.3.2. Actively participate in PE classes

Along with this active participation in PE classes participants were encouraged to maintain the other parts of the intervention that they had been doing for the last three months.

5.6. Month 4: Learn to skip

All of the participants were given a good quality skipping rope as part of the 'Intervention Pack' at the start of the intervention. Dr. Elphick would demonstrate using the rope to the pupils and would remind them that the intention here is to simply give it a try. Although the goal was to work up towards being able to skip for two minutes, there would be no negative consequences if they did not meet this mark. Participants were reminded that this is a skill that they have the opportunity to work on, and hopefully improve during this final month of the intervention


5.6.1. Practice skipping

Participants were given a demo of what skipping can look like from someone who has been doing it for 16 years and were reminded that this is a skill that they will need to develop and build on over this month of the intervention. Participants seemed capable of exploring this for themselves and would often comment on the fact that this was something they used to do when they were in primary school. During the last month of the intervention when visiting the schools Dr. Elphick attended several of the exercise classes that SEEDS participants were attending during the school sessions and some participants were exploring the use of the rope. However, some participants did not enjoy skipping or felt more comfortable doing other forms of exercise – such as a cardiovascular exercise session following an instructor via a YouTube video.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 101006251

Weekly planner



Monday

Saturday

Tuesday

Sunday

Wednesday

Thursday

Friday


PRIORITIES




TO DO

☐
☐
☐
☐
☐

NOTE





IISPV⁹

INSTITUT D'INVESTIGACIÓ SANITÀRIA PERE VIRGILI



UNIVERSITY OF EXETER



ecsa

European Citizen Science Association



City of Rotterdam



ΧΑΡΟΚΟΠΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ

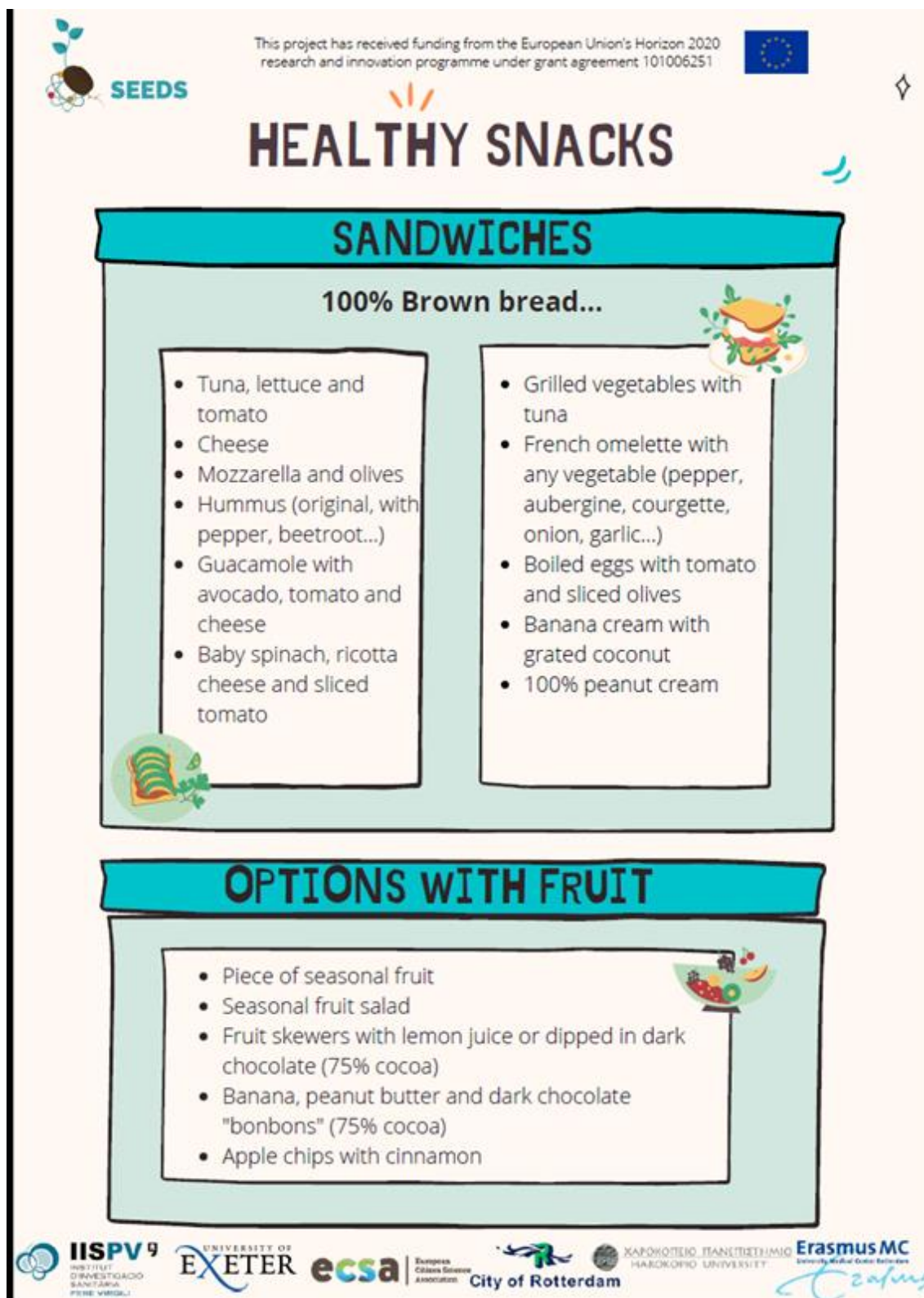
HAROKOPIO UNIVERSITY



ErasmusMC

University Medical Center Rotterdam

6.2. Annex 2: Infographic with options of healthy snacks and Infographic about how to read the food labels correctly (Spanish intervention)



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HEALTHY SNACKS

SANDWICHES


100% Brown bread...

- Tuna, lettuce and tomato
- Cheese
- Mozzarella and olives
- Hummus (original, with pepper, beetroot...)
- Guacamole with avocado, tomato and cheese
- Baby spinach, ricotta cheese and sliced tomato
- Grilled vegetables with tuna
- French omelette with any vegetable (pepper, aubergine, courgette, onion, garlic...)
- Boiled eggs with tomato and sliced olives
- Banana cream with grated coconut
- 100% peanut cream


OPTIONS WITH FRUIT

- Piece of seasonal fruit
- Seasonal fruit salad
- Fruit skewers with lemon juice or dipped in dark chocolate (75% cocoa)
- Banana, peanut butter and dark chocolate "bonbons" (75% cocoa)
- Apple chips with cinnamon

Logos at the bottom: IISPV, UNIVERSITY OF EXETER, eccsa, European Citizens Science Association, City of Rotterdam, KAPOTOTHEIO ITANETHEIMIO HAROKOPIO UNIVERSITY, Erasmus MC, Erasmus


SEEDS

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HEALTHY SNACKS

HEALTHY HOMEMADE RECIPES


Not all homemade recipes are healthy

- Avoid adding sugar
- Add naturally sweet foods to sweeten preparations such as apples, pears, dates.
- Use quality foods: wholemeal flours* of any kind, quality fats (extra virgin olive oil).
- *Gluten-free preparations: oatmeal, teff, rice, chickpeas, maize...



WE CAN ALSO INCLUDE...


NUTS




Not all nuts and dried fruits are healthy, so we must choose:


- Roasted or raw nuts
- In the format of creams containing nuts as the only ingredient (they can also be made at home).
- Almonds, hazelnuts, pistachios, walnuts, etc....
- **Avoid:** fried nuts with salt, sugar, honey or other extra additives.


MILK OR VEGETABLE-BASED BEVERAGES





- Individual milk or vegetable drink cartons with no added sugars
- Milk in reusable bottles
- Natural or vegetable yoghurts without added sugars
- *If we want to flavour the milk we can infuse it with lemon peel and a cinnamon stick or add cocoa powder...
- **Avoid:** Commercial milkshakes or chocolate milkshakes


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City of Rotterdam

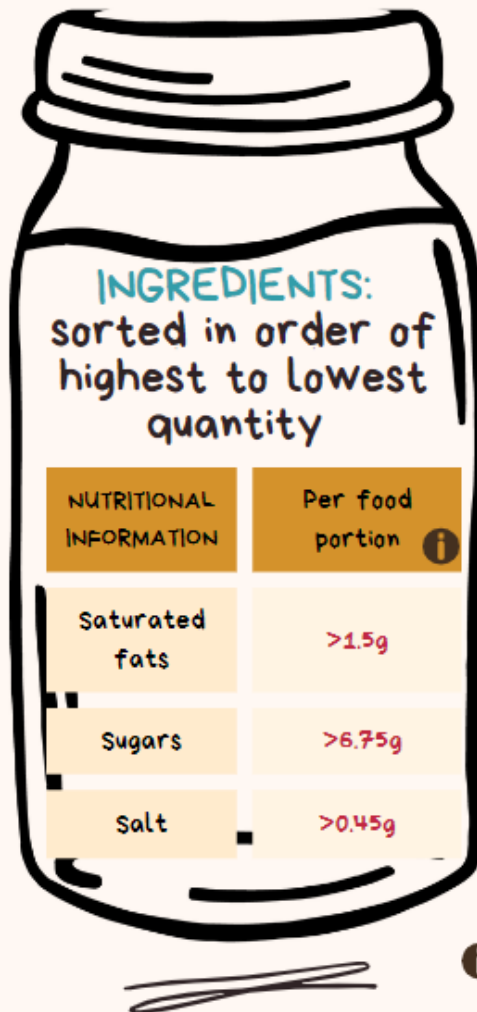

Erasmus MC
University Medical Center Rotterdam

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 101006251



HOW TO CORRECTLY INTERPRET THE LABELLING OF FOOD PRODUCTS?

WE HAVE TO PAY ATTENTION TO THE INGREDIENTS AND NUTRITIONAL INFORMATION!



!
Refined flours, low-quality vegetable oils (sunflower, palm, soya, coconut, rapeseed, etc...) and all kind of added sugars.

OTHER NAMES THAT MAY APPEAR ON INGREDIENTS:

Saturated fats, hydrolysed fats, partially hydrolysed fats, trans fats.

Cane sugar, molasses, sucrose, sucrose, fructose, honey, maple syrup, glucose, fruit concentrates, etc...

Sea salt, Himalayan salt, iodised salt, Maldorn salt, rock salt, etc.

i NOT TO EXCEED THESE AMOUNTS PER FOOD RATION

6.3. Annex 3: Poster to promote the training for parents (Spanish intervention)

Aquest projecte ha rebut finançament del programa de recerca i innovació Horizon 2020 de la Unió Europea en virtut del conveni de subvenció 101006251



XERRADA VIRTUAL SOBRE ESTILS DE VIDA SALUDABLES

**DIMECRES,
16 DE FEBRER
19:00-20:00H**

Sabies que l'aparició d'un gran nombre de malalties en l'edat adulta es poden prevenir mantenint un estil de vida saludable des de la infància i l'adolescència?

VINE I APRENDRÀS ELS PETITS CANVIS PER UNA VIDA SALUDABLE!

Impartida per dietistes-nutricionistes de la **Universitat Rovira i Virgili**

Dra. Lucía Tarro
Dietista-Nutricionista.
Doctora en promoció per la salut i estils de vida

Judit Queral
Dietista-Nutricionista i Doctoranda en Biomedicina: especialitzada en promoció per la salut

Nerea Vilanova
Dietista-Nutricionista especialitzada en nutrició infantil

El contingut de la xerrada també es trobarà disponible en format Webinar.



SEEDS








6.4. Annex 4: eBook of healthy snacks (Spanish intervention)

Aquest projecte ha rebut finançament del programa de recerca i innovació Horizon 2020 de la Unió Europea en virtut del conveni de subvenció 101006251



snacks saludables

con eSe de salud
educación nutricional



SEEDS



IISPV
INSTITUT D'INVESTIGACIÓ
SANITÀRIA
PERE VIRGILI

UNIVERSITY OF
EXETER



HAROKOPIO
UNIVERSITY



City of Rotterdam

ecsa

European
Citizen Science
Association



Erasmus MC

6.5. Annex 5: GYMKHANA (Spanish intervention)

GYMKHANA

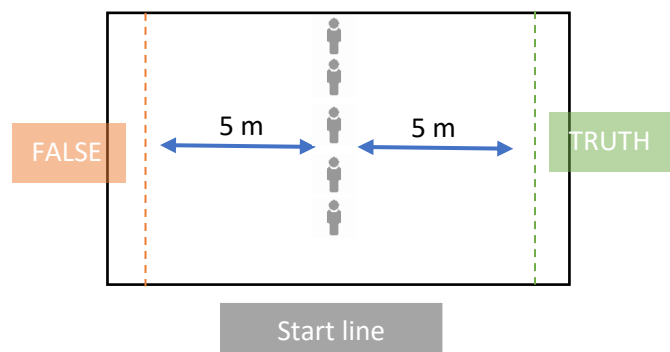
The active class consisted in a gymkhana that lasted 1h about healthy lifestyles, specifically about nutrition, physical activity and screen time (the three behaviours of SEEDS project).

The gymkhana was divided in 5 stages. So, the students were divided in 5 groups of 6 people each one.

The different five stages were about:

1. Science myths

The adolescents stood on the line drawn on the floor. There were five metres on each side of the line. Once the adolescents were on the line, the IISPV researchers exposed the different myths about science. Every participant had to run through to the left in case the fact exposed by the IISPV researcher was false or to the right in case the fact was true. Once all participants chose an answer, the IISPV researchers told them the correct answer. The ones who chose wrong had to do 5 squats. Finally, they came back to the middle line and did the same with the rest of the myths.



The myths used were:

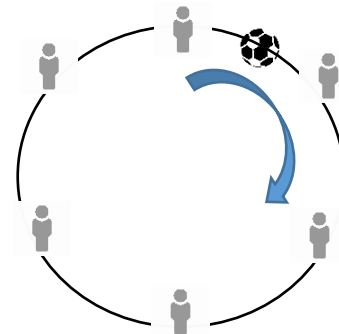
- 1) Fruit juice and a piece of fruit are the same nutritionally. (False)
- 2) The vitamins of fruit juice will be lost if you do not drink the fruit juice right after juicing it. (False)
- 3) Human have five senses. (True)
- 4) Nails and the hair continue growing after death. (False)
- 5) The maximum recommended intake of sugar is 25g per day. (True)
- 6) Humans are nourished by photosynthesis. (False)
- 7) The green peas are a legume. (True)

2. Hot potato

This stage came from the traditional game called hot potato. The adolescents were placed in a circle. The researchers of IISPV gave a ball to the adolescents and asked about some strategies to reduce the screen time. The adolescents have to answer in less than 45 seconds and pass the ball to the next classmate. Whoever did not give an answer was eliminated.

Some of the examples were:

- 1) Read a book before going to sleep instead of watching social media.
- 2) While they are doing homework or studying, leave the mobile phone in other room to avoid distractions.
- 3) Do more extracurricular activities after high school instead of using the mobile phone



3. Musical Chairs

This activity is based on the traditional game called Musical Chairs. The IISPV researchers adapted it to the project. The researchers put 5 different photos of foods in circle (like the photos) on the chairs. The adolescents had to run outside the circle meanwhile the researchers asked some questions. When the researcher asked a question, the adolescents had to stop in front of the photo that they considered that was correct to answer the question. All the students started with 5 points. When they answered a question wrong one point was deducted from their total. The winner was the person who finished with the most points.

The food photos were:

- Water, natural yogurt, cold meat, nuts, brown bread and bakery.

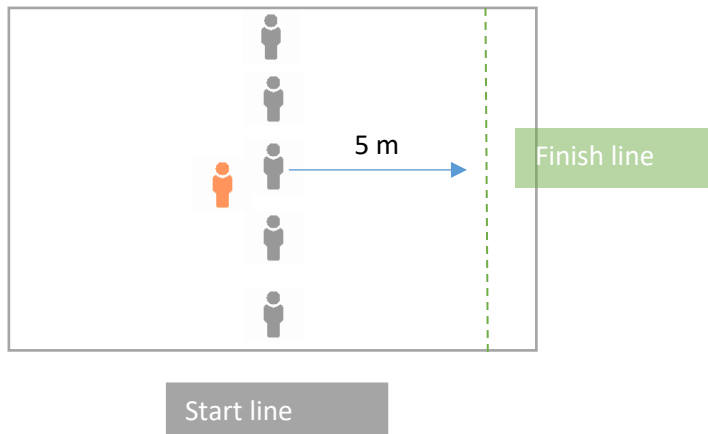
The questions were:

- 1) Which of these foods are the basis of a healthy diet?
- 2) Which of these foods have calories?
- 3) Which of these foods are rich in proteins?
- 4) Which of these foods contain healthy fats?
- 5) Which of these foods are rich in fibre?

4. Don't get caught!

The IISPV researchers drew a line of 5 metres. All participants except one stood on the starter line. The 6th participant will be the person who has to catch other people. The activity consists of making questions about physical activity and running to the finish line. Therefore, the last

participant had to be teased when he/she ran to the finish line. If the participant who run to the finish line was caught by the participant who had to caught the participants.



Examples of the questions

- 1) Give an example of sports played with ball
- 2) Give an example of female sports references
- 3) Give an example of endurance sports
- 4) Give an example of water sports
- 5) Give an example of strength sports

5. Let's know the food composition!

First of all, researchers of SEEDS explained what macronutrients are and what type of macronutrients there are (carbohydrates, proteins, and fats). Thereafter the researchers drew 3 circles on the floor where they wrote HP (carbohydrates), P (proteins) and F (fats). The participants started in the middle of the circles and thereafter the researchers exposed some foods to prepare healthy snacks and the participants had to move to the correct circle. Finally, the researchers asked them how to combine the different foods to create a healthy snack and specify the macronutrients.

The examples were:

- 1) Brown bread (HC)
- 2) Meat and fish: Tuna, salmon (P)
- 3) Fruit: Banana, strawberries...(HC)
- 4) Nuts: Almonds, hazelnuts, pistachios (L)
- 5) Vegetables: (lettuce, eggplant...) (HC)
- 6) Olive oil (F)
- 7) Eggs (P)
- 8) Legumes (P)
- 9) Dairy products: milk, yoghurt, cheese

6.6. Annex 6: Checklist screen time competition (Spanish intervention)

COMPETITION OF SCREEN TIME



STUDENTS	Week 1			Week 2			Week 3			Week 4		
	> / = 1h = 3pts	1h- 2h = 1 pt	<2h = 0 pts	> / = 1h = 3pts	1h- 2h = 1 pt	<2h = 0 pts	> / = 1h = 3pts	1h- 2h = 1 pt	<2h = 0 pts	> / = 1h = 3pts	1h- 2h = 1 pt	<2h = 0 pts
Student 1												
Student 2												
Student 3												
Student 4												
Student 5												
Student 6												
Student 7												
Student 8												
Student 9												
Student 10												
Student 11												
Student 12												
Student 13												
Student 14												
Student 15												
Student 16												
Student 17												
Student 18												
Student 19												
Student 20												
Student 21												
Student 22												
Student 23												
Student 24												
Student 25												
Student 26												
Student 27												
Student 28												
Student 29												
Student 30												
TOTAL	=SUMA(B8:B37)	=SUMA(C8:C37)	=SUMA(D8:D37)	=SUMA(E8:E37)	=SUMA(F8:F37)	=SUMA(G8:G37)	=SUMA(H8:H37)	=SUMA(I8:I37)	=SUMA(J8:J37)	=SUMA(K8:K37)	=SUMA(L8:L37)	=SUMA(M8:M37)

6.7. Annex 7: Checklist snacks competition (Spanish intervention)

COMPETITION OF HEALTHY SNACKS



STUDENTS	Week 1		Week 2		Week 3		Week 4	
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2
Student 1								
Student 2								
Student 3								
Student 4								
Student 5								
Student 6								
Student 7								
Student 8								
Student 9								
Student 10								
Student 11								
Student 12								
Student 13								
Student 14								
Student 15								
Student 16								
Student 17								
Student 18								
Student 19								
Student 20								
Student 21								
Student 22								
Student 23								
Student 24								
Student 25								

6.8. Annex 8: Poster to promote sport day (Spanish intervention)



Aquest projecte ha rebut finançament del programa de recerca i innovació Horizon 2020 de la Unió Europea en virtut del conveni de subvenció 101006251

SEEDS

JORNADES ESPORTIVES

Us presentem la tercera gran activitat del projecte SEEDS,
LA JORNADA ESPORTIVA!

**Divendres 8
d'abril
9:00 a 13:00h**

Les activitats esportives que es realitzaran i que han estat votades pels alumnes son...

- 1.**
Voleibol
- 2.**
Hockey
- 3.**
Handbol
- 4.**
Ball

Col·laboradors: .

CONSELL esportiu
BAIX CAMP

IISPV
INSTITUT D'INVESTIGACIÓ SANITÀRIA PERE VIRGILI

UNIVERSITY OF EXETER

ecsa | European Citizen Science Association

City of Rotterdam

ΧΑΡΟΚΟΠΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ
HAROKOPIO UNIVERSITY

Erasmus MC
University Medical Center Rotterdam