

# Physical Education on the Move in the Netherlands

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## Abstract

In the Netherlands, an active lifestyle, healthy food, and enough sleep is promoted for infants, toddlers, children, and youth and a sedentary lifestyle (media consumption) is discouraged. The need for physical education (PE) to change and for PE, physical activity (PA), and public health to be more integrated is strong. The obesity pandemic asks for a holistic and multicomponent solution, and community programs are promising. Health professionals, PE teachers, and PA trainers have a key role in developing strategies to combat problems related to sedentary lifestyle of children and youth. A paradigm shift from obesity treatment to inactivity treatment is necessary. As children develop overweight at an increasingly younger age, and as lifestyle and behavioral patterns concerning eating and sedentary behavior are already developing in infancy, prevention programs should target children as young as possible. If prevention programs are organized at schools, minorities will attend as well, which is important. Active transport to school (walking/biking), PE classes in school, and sports after school and during the weekends are the most important sources of health-enhancing PA. PE and PA is stimulated in the PE classes, between and after the classes, and in the neighborhood at sports clubs. The sense of urgency is high in the Netherlands on what new direction PE teachers should take to improve their profession to serve children around the globe in different local and cultural contexts. Dutch strategies are described. It is time for action!

## Keywords

*Physical activity, physical education, overweight, obesity, community-based program*

## Introduction

Dr. Petrus Bult (1994): *“There is an important biological reason to provide daily physical education for children. In evolution, mankind got the most versatile movement behavior of all species: going, running, sprinting, jumping, kicking, swimming, wrestling, climbing, swinging, throwing, catching, and carrying. Every part of our body is selected to perform this behavior, either combined, separate, slowly or intense. This is the basis for all sports and active lifestyles. We are genetically predisposed to move this way. But it needs to be developed.”*

In 1814, the Kingdom of the Netherlands first assembled a House of Parliament. With a change of constitutional amendment in 1848, democracy began to flourish and social issues began to gain attention in parliament. School physical education (PE) was not a state affair until legislation from 1857 to 1863. Influenced by the English, the Dutch established sports clubs and sports federations steadily after 1850, and participation in sports increased steadily as well.

The Netherlands, population 16 million, has a unique sports system with about 25,000 sports clubs. About 4.7 million people are members of a sports club, and many people participate in sports activities voluntarily. Sport is just one physical activity in which children and youth engage. In 2007, 91% of pupils of Class 8 (ages 11 to 12) participated in sports, and 89% of children in secondary schools played sports at least 1 hour per week (self-reported; Stegeman, 2011). More recent research reported an increase in children's and youth's overall physical activity (Stuij, Wisse, van Mossel, Lucassen, & van den Dool, 2011). Prevention of sedentary activity is becoming more important. Research should include all sports and physical activities of children and youth, such as active transportation to and from school, movement during school (PE classes/break activities), physical activity after school and in their free time, such as sports in clubs, playing outside, biking, and active gaming. Stuij et al. (2011) showed that among children in elementary schools ( $n = 4,661$ ), 41% walk to school, 72% bike to school, 97% participate in PE classes (2 hours per week), 85% are active during school breaks, 21% are physically active when school is finished, 71% participate in club sports, 90% play outside, 82% bike in their free time, and 50% play active games.

In secondary schools ( $n = 2,426$ ), 18% walk to school, 82% bike to school, 93% participate in PE classes in school (2 hours per week), 7% are active during school breaks, 14% move when school is finished, 66% participate in club sports, 66% are physically active outside, 82% bike in their free time, and 39% play active games (Stuij et al., 2011). All percentages refer to at least performing this behavior once per week. Despite a large participation rate in sports clubs, many parents are unable to pay for a sports club and/or the equipment. The Youth Sports Foundation gives grants so these children and youth can participate in sports clubs as well ([www.jeugdsportfonds.nl](http://www.jeugdsportfonds.nl)).

In the Netherlands, the proportion of overweight children and youth (aged 2 to 21) has more than doubled between 1980 and 1997 and continues to increase (van den Hurk, van Dommelen, van Buuren, Verkerk, & HiraSing, 2007). Overweight and obesity are more frequent among children and youth from low socioeconomic and/or ethnic minority backgrounds and among those living in cities. In the Netherlands, 13% of boys and 15% of girls are overweight, and 2% of boys and girls are obese. Of children and youth with a non-Western background in the Netherlands, approximately 30% of boys and girls are overweight, of which approximately 8% are obese. It is worrisome that children's and youth's physical ability, measured by fitness and motor skill tests, has decreased 15% to 25%, as well as in Germany, our cross-border country (Bös, 2003; Collard, 2010). Collard (2010) compared 2,000 children aged 9 to 12 on motor fitness with a comparable group measured in 1980 (MOTOR PERFORMANCE FITTEST). On all topics measuring speed, power, strength, flexibility, and coordination, the results were significantly

worse compared with 1980. There are several arguments in favor of preventing sedentary behavior. In the United States, \$160 billion is spent on overweight and obesity; in Europe, the assessment is 5 billion euro; and in the Netherlands, this comprises, only for health care, about 505.4 million euro per year (McKinsey, 2011). Furthermore, the increasing Alzheimer's prevalence creates a strong sense of urgency to promote physical activity nationwide (Alzheimer The Netherlands, 2012). The obesity pandemic calls for a holistic, multicomponent solution. Health professionals, PE teachers, and physical activity trainers have a key role in developing strategies to combat this problem. Today, policy focuses on encouraging people to become more active or stay active throughout their lives. A shift of attention from sports to physical activity is occurring. Obviously, this is underpinned by a society that places an increasing value on a healthy body and mind. Ensuring a healthy balance between body and mind, in turn, will lead to more collaboration between schools and sports organizations. In this chapter, physical health, PE, and physical activity is systematically described by age, starting with infants, toddlers, children in elementary schools aged 4 to 12, children in secondary schools aged 12 to 16, and finally young people older than 16.

## History of Physical Education Practices

The founding of the Dutch Association of Physical Education in 1862 was the beginning of PE in the Netherlands. In 1926, a plea was made for more PE next to general education and for the economically weaker. This was reinforced by Buijtendijk, who started a research program during the Olympic Games of 1928 (Rijpstra, 2009). Since 1942, PE has been obligatory in elementary and secondary schools. Since 1960, the development of sports and PE has become a serious subject in parliament and a focus in Dutch policy. From 1960 to 1980, the number of gymnasiums near schools and in districts has nearly doubled. In 1965, the government took the lead in investing in sports facilities to be used for PE and sports. From 1965 to 1968, sports facilities increased from 25 to 100. In 1971, 200 new facilities were built, and in 1980, we had 500 sports facilities (Rijpstra, 2009).

Several times, PE required organized protest actions, partly to prevent financial cuts. In the 1980s, regular teachers began to teach PE classes in elementary schools. Professional PE teachers lost their jobs. A change of law in 2000 ended this, and only teachers with extra training in PE could teach PE. Never before had the federal government offered so much money for sports and physical activity. Lottery profits also contributed much money to sports. Municipalities invested about 1.5 million euro in sports, the national government about 150 million, and the provinces about 15 million. In the Netherlands, the Youth Sports Foundation provides grants to parents unable to pay fees to sports clubs.

The Netherlands has 6,808 elementary schools with 1,498,095 pupils and 659 secondary schools with 948,949 pupils (Statistics Netherlands, 2012). The content of PE classes is described in a learning plan, and school boards are responsible for developing and implementing curriculum and the number of lessons. PE comprises the field of motor fitness, social and emotional development, and health. Research has shown that motor fitness and cognitive school results are highly correlated (Hartman, 2012). During the school year, children join sports offered at sports clubs after school. Elementary school children in Grades 1 to 2 (ages 4 to 5) receive an average of nine PE lessons per week, five in the morning and four in the afternoon. Children in Grades 3 to 8 (ages 6 to 12) receive two PE lessons per week of 45 minutes each, offered by a PE teacher or a class teacher with a special grade (since 2004), or a class teacher without a special grade who has been exempted. In secondary education, children on average have two 50-minute PE lessons per week offered by PE teachers. Since 2005, more research has been conducted

in PE, including participation of children in PE classes (Tiessen-Raaphorst, 2010); the physical fitness and health of pupils (Collard, 2010); research in overweight and obesity of children (The Netherlands Institute for Social Research, 2011; Schönbeck et al., 2011); and analyses on sports, activity, and education (Slingerland, Oomen, & Borghouts, 2010; Vries, Chorus, & Verheijden, 2010).

To combat sedentary lifestyles, the government noted the importance of regular physical activity and funded a national monitor into the prevalence of physical activity. Results showed that physical activity increased from 2000 to 2005, except in special groups, such as youth, elderly, the chronically ill, people with a non-Western background, people with specific occupations, and people with less education. This resulted in the National Action Plan Sports and Physical Activity ([www.nasb.nl](http://www.nasb.nl)). Several campaigns and interventions for children and youth have been developed, targeted to reach in 2012 a minimum 50% of those aged 4 to 17, which fulfills the combi-norm (as defined in Table 25.3). Also, in the Olympic Plan 2028, youth receive much attention (Dutch Olympic Committee\*Dutch Sports Federation [NOC\*NSF], 2009).

In 2012, the Royal Dutch Association of Physical Education (KVLO) representing 10,000 PE teachers presented their task force for the future. Their mission is to teach “children how to move well.”<sup>1</sup> PE teachers, regular teachers with extra PE training, and assistant teachers of sports and physical activity are increasingly working together to combat sedentary lifestyles and promote physical activity. In society, they cooperate with sports clubs, whose memberships have increased (Table 25.1).

**Table 25.1**

*Members of Sports Clubs*

Year	Population x 1000	Members sports federations x 1000
1900	5,104	30
1910	5,858	65
1920	6,754	150
1930	7,825	278
1940	8,834	490
1950	10,027	840
1960	11,417	1,370
1970	12,958	1,980
1980	14,091	3,767
1990	14,893	4,171
2000	15,863	4,790
2010	16,574	4,774

*Note.* Data from NOC\*NSF (1980–2011). Retrieved from [www.nocnsf.nl](http://www.nocnsf.nl).

## Current State of Well-Being of Children and Youth

The obesity epidemic is a challenging problem of public health (Table 25.2). In the Netherlands, prevention programs start during pregnancy and following birth at well-baby clinics ([www.BeeBoft.nl](http://www.BeeBoft.nl)). Results from the ABCD study into risk factors for overweight and obesity

in children with a non-Western background showed that prepregnancy body mass index of the mother and weight gain during the first six months of life are two independent determinants of body mass index of the child at age 2 (de Hoog, van Eijdsen, Stronks, Gemke, & Vrijotte, 2011).

**Table 25.2**

*Prevalence of Overweight and Obesity in Children Aged 2 to 21 in the Netherlands: Results of the Fifth Growth Study TNO (Dutch Organization for Applied Scientific Research)*

Overweight 1980–2010 (%)				
	1980	1997	2010	Increase 1997 to 2010
<b>Boys</b>				
NL	5.1	9.4	13.3	+ 41%
TU	–	23.4	32.5	+ 39%
MA	–	15.8	25.2	+ 60%
<b>Girls</b>				
NL	7.2	11.9	14.9	+ 25%
TU	–	30.2	31.7	+ 5%
MA	–	24.5	29.1	+ 19%
Obesity 1980–2010 (%)				
<b>Boys</b>				
NL	0.3	0.9	1.8	+ 100%
TU	–	5.2	8.4	+ 62%
MA	–	3.1	6.0	+ 94%
<b>Girls</b>				
NL	0.5	1.6	2.2	+ 38%
TU	–	7.2	8.0	+ 11%
MA	–	5.4	7.5	+ 39%

*Note.*  $n = 20,867$ . NL = Dutch; TU = Turkish background; MA = Moroccan background. From *Factsheet results: Fifth national growth study*, by Y. Schönbeck and S. van Buuren, 2010, Leiden: Toegepast Natuurwetenschappelijk Onderzoek.

Body size and growth in children aged 0 to 4 shows an association with body size at ages 5 to 13 (Stocks et al., 2011). Body size at 5 to 6 months and later and weight gain at 0 to 2 years are consistently positively associated with high subsequent body size. A recent Dutch longitudinal birth cohort study of 2,604 children born from 1977 to 1986 in Terneuzen, of southwest Netherlands, showed that the body mass index standard deviation score (SDS) change between 2 and 6 years has relatively the largest contribution to adult overweight. Because body size/weight gain in early childhood and subsequent body size are positively associated, primary prevention of overweight should start when children are young (De Kroon, 2011). Dutch mothers of children aged 0 to 4 who receive social benefit and mothers with a non-Western background most often mentioned a “lack of time,” traffic, and “harassment by older children or adults” as reasons to remain inside with their child (Boere-Boonekamp et al., 2008). Daily going outside is a Dutch habit and may shape active behavior later.

The prevalence of overweight and obesity increased in children of all ages (Figures 25.1 [boys] and 25.2 [girls]; Schönbeck & Van Buuren, 2010). In the Netherlands, 18-year-olds are

allowed to drink alcohol. Prior to 2013, this age was 16. Sixteen-year-olds may also ride a moped or scooter. This age group moves less during the breaks at school, moves less during free time after school, belongs less often to a sports club, and may not participate in PE classes. Only 55% of the children walk to school daily, and 75% cycle at least half the week. Less than half of the children (42%) meet the health-related 60-minute physical activity guideline (Lucassen, Wisse, Smits, Beth, & Werf, 2011; Table 25.3). Some subgroups participate less in sports and physical activities. These are children with technical and vocational training and lower general secondary education and children of non-Western background and/or low socioeconomic background. Young adults older than 18 demonstrate a high level of physical inactivity and, hence, a low energy expenditure level. The exact prevalence of sports and physical activity is unknown. Membership in a sports club for ages 18 to 24 is about 53% (ages 12 to 17, 38% meet the combi-norm; Lucassen et al., 2011). Among this group, 16% are inactive, that is, they do not meet the 60-minute movement norm on any weekday. Children and youth who visit schools for lower or intermediate vocational training less often travel by bicycle and play sports in their free time. Again, females and children and youth of parents with low socioeconomic status and/or a non-Western background show more sedentary behavior. Furthermore, children and youth with overweight and obesity often do not meet the health-related 60-minute physical activity guideline.

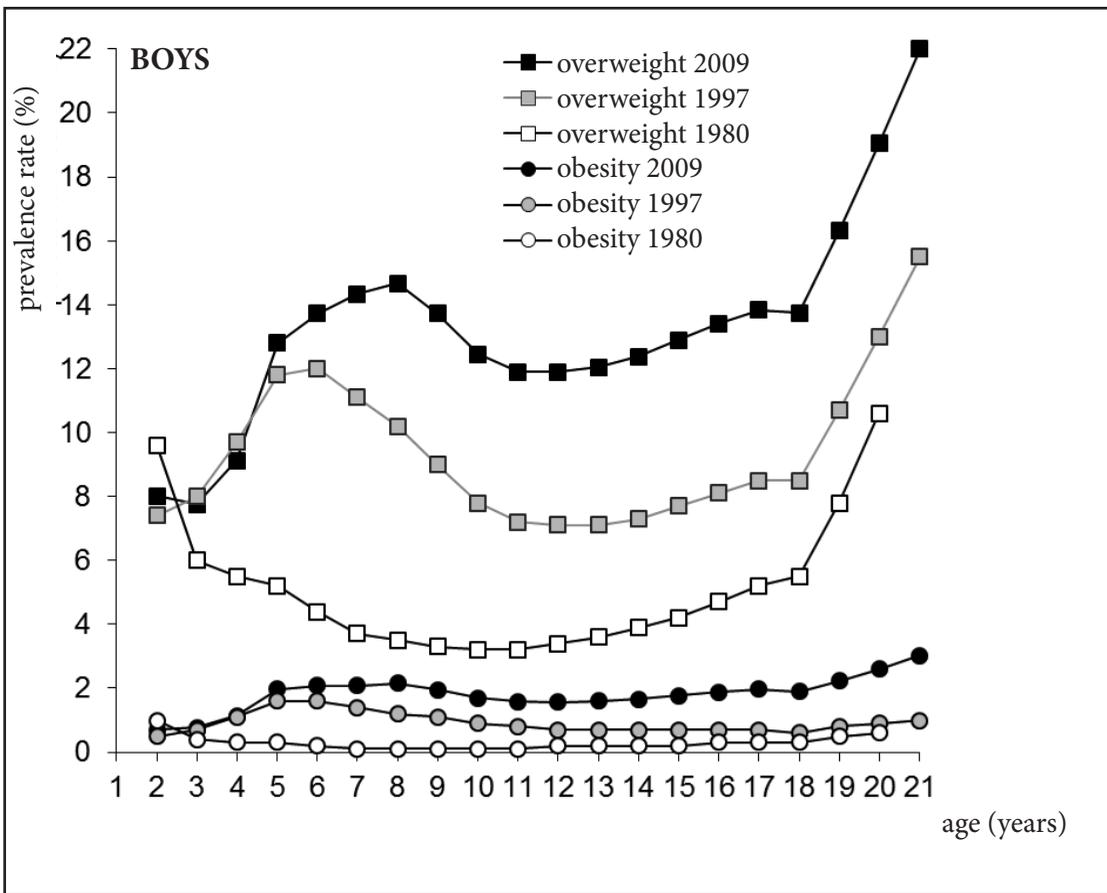
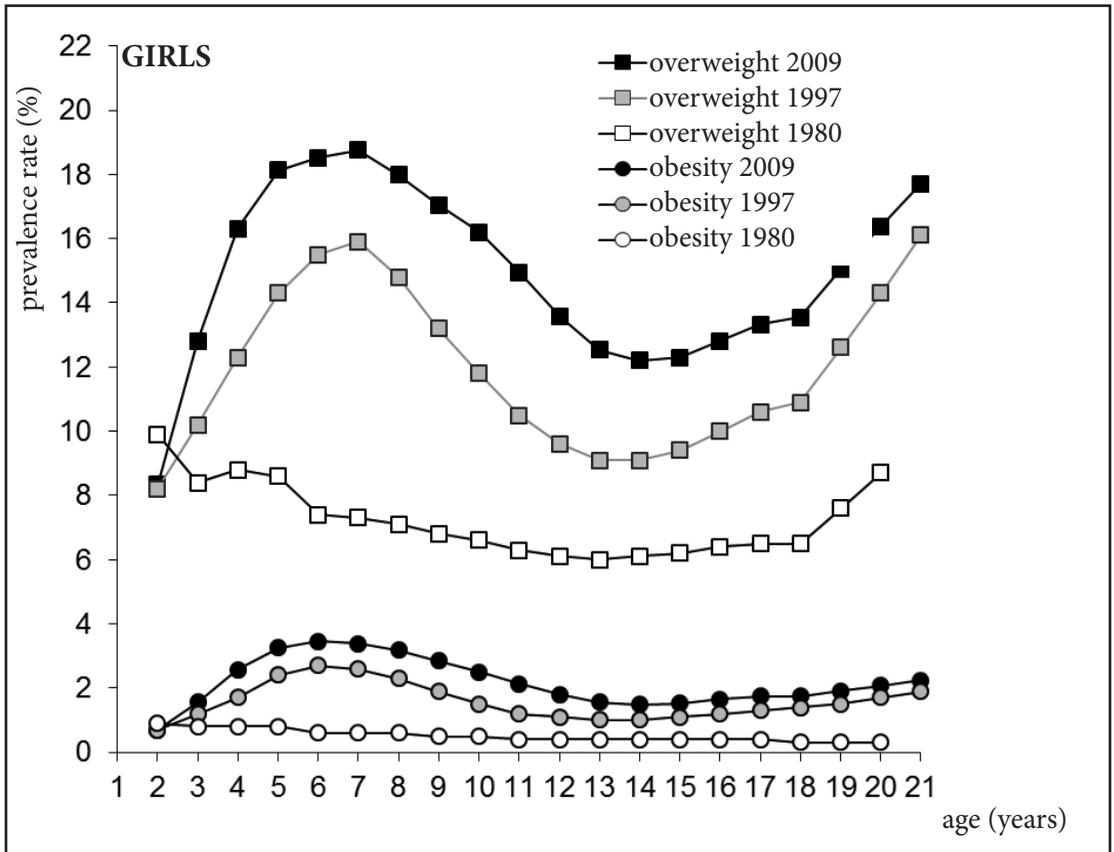


Figure 25.1. Prevalence of overweight and obesity in boys (2–21 years) in 1980, 1997, and 2009. From *Factsheet Results: Fifth National Growth Study*, by Y. Schönbeck & S. van Buuren, 2010, Leiden: Toegepast Natuurwetenschappelijk Onderzoek.



**Figure 25.2.** Prevalence of overweight and obesity in girls (2–21 years) in 1980, 1997, and 2009. From *Factsheet Results: Fifth National Growth Study*, by Y. Schönbeck & S. van Buuren, 2010, Leiden: Toegestap Naturowetenschappelijk Onderzoek.

**Table 25.3**

*Definitions of the Dutch Health-Related Physical Activity Norm Guideline, the Fit Norm and the Combi-Norm for Children Aged 4 to 17*

Dutch health-related physical activity norm guideline for children 4–17 years old:

Minimum seven times per week 60 minutes of moderate physical activity, 5 Metabolic Equivalent (1 MET = 1 kcal per kg bodyweight per hour; e.g., aerobics or skateboarding) to 8 MET (e.g., running 8 km per hour), of which twice a week their fitness (strength, coordination, and suppleness) will be improved or stabilized in order to meet the norm.

Fitnorm:

20 minutes or more vigorous physical activity at 3 or more days per week, such as soccer or basketball.

Combi-norm:

Either meeting the Dutch health-related physical activity norm or meeting the fit norm. This means daily minimum 1 hour of moderate physical activity (5 to 8 MET) and/or minimum three times per week minimum 20 minutes of vigorous intensive activity.

## Current Practices Associated With the Provision of Health and Physical Education Programs

Provision of health and promotion of physical activity should start early with tailored prevention offered at public health care centers. Ninety-five percent of children aged 0 to 4 visit the health care centers with their parents, in the first year eight to 11 times. Guidelines for children and youth with overweight or obesity have been developed (Kist-van Holthe et al., 2011). For overweight children and youth in the Netherlands, a feasible intervention plan exists, based on breast feeding, exercising, playing outside, having breakfast daily and few sweetened beverages or fast food, and energy-rich snacks, with less than 2 hours per day of screen time (television and computer). This 1999 “signal- and bridging plan” currently has effects measured in several randomized controlled trials. Obese children and youth are referred to a general practitioner or pediatrician and need more than primary prevention and monitoring in schools. They enroll in evidence-based programs ([www.CGL.nl](http://www.CGL.nl)). Without parental involvement in intervention programs, changing the behaviors of children and youth is extremely difficult or impossible. PE teachers help to motivate children and parents early on to prevent sedentary behavior and promote physical activity. *Early* means before the child or youth becomes overweight and also at an early age. High birth weight and large body size between ages 5 and 6 months and fast growth in various periods between birth and 2 years consistently associate with increased body size at ages 5 to 12. Thus, in the Netherlands, physical activity is promoted early. Beyond primary prevention at health care centers and schools, selective prevention is needed, especially for children and youth with low socioeconomic status and/or an ethnic background.

The Netherlands has about 4,000 day care centers, 5,000 after-school care centers, and more than 860 private care centers ([www.CBS.nl](http://www.CBS.nl)). About 150 “sport-after-school care centers” (BSOs) exist, and this number is increasing. In 11% of the BSOs, the sports clubs organize sports and activities; in 63%, the BSO organizes the sports and activities; and in 26%, the sports clubs and the BSOs organize them together. In Group 2 and Group 7 (ages 5 and 10), all children’s weight and height are measured, and the body mass index is calculated. Parents of at-risk children receive advice about their child’s health at health care centers.

In schools, the PE teacher, together with a “smart move team” (school director, teachers, parents), has a key function to promote healthy lifestyle ([www.Beweeegwijs.nl](http://www.Beweeegwijs.nl)). Follow-up systems, facilitated by technology, exist or are being developed. In elementary schools, time allocation for PE is 90 minutes (mean) per week. About 25% of schools offer an extra remedial class for less motor-developed children. Only 27% offer extra school sports once per week, and 27% offer extra sports during breaks. In the first class of secondary school, children aged 12 to 13 (and again at age 16) are checked by a health care worker. Children at secondary schools get 115 minutes per week of PE during school. Most schools offer clinics and tournaments. Only 16% offer activity after school for pupils on a weekly basis. Since 1996 in lower or intermediate vocational training schools, PE has not been obligatory. Currently, with financial stimulus from the Ministry of Health, Welfare, and Sports, schools are trying to offer a minimum of 5% PE and sports. About 29% of schools meet this norm. Pupils of these schools are less satisfied compared to those of high schools regarding time allowed for physical activity and sports during school and after. Also, 30% of parents and 40% to 60% of the school directors are dissatisfied with the time spent on physical activity and sports during and after school. The time for action and change is now.

## Unique Curricular Models and Community Programs

The Netherlands has a national databank with practice- and evidence-based interventions that promote activity and healthy behavior. Currently the effects of these interventions on sports and physical activity levels is being studied, interventions are being improved, and the use of the interventions is being stimulated in a program called Effectively Active, organized by the Netherlands Institute for Sport and Physical Activity (NISB). One of the examples is a randomized controlled trial, conducted at TNO, with 2,500 children aged 0 to 3, where advice such as limited use of the maxi-cosi, rocking chairs, and comfort pillows is given to parents. Play in the playpen and/or on the floor and going outside every day for a walk with the baby in a perambulator is suggested. Furthermore, the study advises a more or less structured household from birth, with regularity and predictability in infant care and good sleep rhythms and habits to promote sleep.

Because multicomponent interventions seem promising, the government decided to develop an intervention for infants, toddlers, and preschoolers, which includes training for teachers at day care centers. The Dutch Institute for Sports and Physical Activity, the Dutch Food Center, and TNO (Dutch Organization for Applied Scientific Research) have developed this intervention, which is named “a healthy start.” Three elements are included: (1) physical activity, (2) nutrition/food and drinking behavior, and (3) child rearing, including sleep promotion. If parents lack child-rearing capacities, they will have difficulty raising a healthy child. Furthermore, in every village and city, toddlers and preschoolers, together with their parents, are able to participate in gymnastics and baby and toddler swimming. In this age group, many children visit day care centers. Rules and regulations for day care centers about health and physical activity exist and will be adapted based on research findings.

The Netherlands is partly “below sea level,” and 20% of the surface is water. Children must learn to swim at an early age. Swimming lessons at school are no longer obligatory; however, parents are responsible to teach children to swim. In 2007, 90% of Dutch aged 6 to 15 had a swimming skills diploma, as did 70% of non-Western children (Wisse & Van den Dool, 2008). In larger cities, the local government partially pays for swimming lessons because some non-Western children are unable to swim.

In elementary schools, several community-based programs exist to counteract overweight and inactive lifestyles. In several municipalities, JOGG (Youth on a Healthy Body Weight) initiatives are implemented ([www.JOGG.nl](http://www.JOGG.nl)). In Eastern Holland, the German initiative Healthy Children in Sound Communities has begun. One-component approaches—for example, a physical activity promotion program offered by one stakeholder (the PE teacher) for a short time—are not effective. Only multicomponent strategies, including nutrition, physical inactivity, and sedentary lifestyle patterns, are promising—such as Healthy Children in Sound Communities. These should be implemented on a local level with many stakeholders, including parents (community-based intervention). In South Holland, a similar program is Heartbeat Limburg, and in the center of the country, an initiative has been developed for families with low socioeconomic status and/or other ethnic backgrounds. (The Netherlands is a small country—by car east–west only 2 hours, north–south 3 hours.) These projects all are successful because of their multicomponent strategy. The programs have the following items in common: sense of urgency, involvement of the community, availability of knowledge, administrative commitment, and systematic approach. These projects promote an active lifestyle and inhibit a sedentary lifestyle among children and youth, influence nutrition and eating behavior, promote sleep duration, reduce stress, and expand positive parenting capacities in parents as important stakeholders. Some of these community-based or multicomponent programs are campaigns that include communica-

tion and educational dimensions. Teachers, parents, children, and youth are actively educated about balanced nutrition, physical activity, sleep duration, and positive parenting. Next to the promotion of healthy nutrition, the health-related 60 minutes of physical activity guideline, and activity-friendly neighborhoods, these programs include education programs for teachers and parents about HOW to influence the behavior of children and youth by positive parenting. Knowledge of rest and regularity, stimulus control (structuring time and space), modeling, operant and classic learning, and response cost and time-out are part of the educational program. Local municipalities are involved and will continue the strategy with the help of provinces, public-private partnerships, and industries. These projects are flexible; if nutrition habits differ among regions or populations, the projects will be adapted to that population. The Dutch schools invest in Move-Wise, a program that activates children and youth during the breaks at school, before school starts, and after school at the playground. Furthermore, local evidence-based and practice-based programs to promote healthy nutrition will be used.

The municipalities and provinces support the scaling up of regional partnership initiatives and continue to promote balanced diets and active lifestyles among children and youth. Regions not involved yet or that are starting new strategies are invited to participate in these projects. Furthermore, some of these projects have a special focus on families with a non-Western background and/or a low socioeconomic status. Physical activity in secondary school is promoted, and in some schools, health and PE are integrated. In the Hague, schools have “weighty” PE teachers who monitor physical abilities and motor skills and advise children and parents in a positive way (van der Meer, van Itersen, & van Leeuwen, 2009). But also in these schools, a multicomponent approach is necessary to influence behavior. School canteens will serve healthier options, change food presentation, and organize tasting classes. Programs have been developed to integrate nutrition and food ([1] Extra Nice and Fit and [2] Simple Fit for parents and children with a Turkish background). To execute projects, new policies are needed and more people need to be educated to teach children and youth activities before, during, and after school on the playground, in the village, on the Cruijff courts and Kraijck courts, and so forth.

With the financial support of the Ministry of Health, Welfare, and Sports, 80 secondary schools in the last three years have started programs to stimulate youth physical activity, with qualified PE teachers. Several high schools have implemented the program All Pupils Active, which aims to stimulate inactive children and youth. A vocational school intervention will be developed for increased physical activity. Social media for the program is being developed.

Recently, the new government announced that PE classes in primary schools would increase to 3 hours per week. In cooperation with the government, the KVLO (Royal Association of Teachers of Physical Education), educational services, and schools are developing plans.

## Future Visions and Strategies

The Dutch Institute for Sports and Physical Activity started a campaign, 30 Minutes Physically Active, designed to maximize the number of people who are physically active at least 30 minutes per day. Combination-jobs have been implemented. Until 2012, 2,400 jobs have been created: 1,000 in education, 1,250 in organized sports, and 150 in the cultural sector. These combi-jobbers are to achieve a “natural” connection between (a) education and sports and (b) education and culture to bring children and youth in contact with sports and culture. Additionally, smoking was eliminated in sport facilities on July 1, 2008. Fourth, the existing obesity policy is under reconsideration. Additional funding has gone to 100 municipalities with the most disadvantaged population regarding public health standards. This is part of the Impuls Nationaal

Actieplan Sport en Beweging (Boost National Action Plan Sport and Physical Activity).

Also, child follow-up systems, using technology such as the “iGrow,” are being developed and implemented. iGrow is an app for parents of children aged 0 to 10. The app easily shows the child’s growth/height and whether the child has a healthy weight. Parents also receive advice about healthy food, active lifestyle, and a specified sleep duration, all aspects related to healthy weight. It shows parents neighborhood areas for playing, walking, and swimming. The iGrow Pro is being developed for professionals. Every child in the Netherlands has a digital health record. Results of screenings, growth charts, guidelines, and risk profiles will be sent to the software platform of TNO. On a safe website, the results become visible to professionals and shared with parents. When parents enter data about weight and height of their child, the information is plotted in a colored growth chart. The red zone means obese, orange overweight, and green normal weight. When parents enter the height of their child and of both parents, they see their child’s adult height. Via Google Maps, official playgrounds and unofficial playgrounds such as grass fields/squares will be shown. Since 1955, TNO has conducted a nationwide growth study approximately every 15 years. The results demonstrate trends that facilitate the Dutch governmental policies and actions to promote health. TNO uses these data for growth charts by which the Dutch Youth Health Care follows every child’s development individually. The last growth study in 2009 demonstrated that overweight has sharply increased since 1997. Today, 1 in 7 children is overweight.

The Dutch government recently published a document in which a 4-year strategy focuses on primary schools, secondary schools, and schools that offer lower, intermediate technical, and vocational training (van der Putten & van Oostrom, 2012). This document describes changes in PE teacher training to focus on the content and quality of PE classes. PE teachers will receive special training in which PE, health, and physical activity programs are integrated in schools with improved framework conditions that influence the lifestyle behavior of pupils. This strategy will stimulate schools to make policies to promote sports, physical activity, and a healthy lifestyle in and around schools. These policies will influence the well-being of children and youth and their scores and may prevent early dropout. These integral and effective policies will be implemented on three levels: the individual teacher, the school level, and the administrative level (Chin, de Boever, & Seghers, 2011; Rijkstra, 2009). The Dutch government will facilitate these policies, which is an important condition for a healthy change in society.

A concrete aim is to disseminate the vignette *Healthy School* in 850 schools in the Netherlands. A well-described continuous health strategy through all schools and school levels must be established by 2016. This should include a healthy lifestyle, supplemented with learning resources and pupil follow-up systems.

Historically, regular PE lessons were mainly focused on teaching children and youth a range of movements and how to play several sports. Today, however, teaching children and youth a healthy and physically active lifestyle has become the major role of PE teachers. In this way, the PE teacher influences health behavior inside and outside school by stimulating student and parent responsibility. A practical, innovative way to facilitate this process is by using technology, for example, an iPad. This device can analyze movements through pictures and videos, can analyze game situations, and can explain new sports. Children and youth can do this individually, in groups, and with or without support of the teacher. This is a promising idea because it integrates the historical aim of PE lessons with the current focus on self-management and uses devices that fit in the daily world of children and youth.

Finally, the KVLO developed a new policy: teaching children and youth how to move well (Klaassen & Rijkstra, 2012). This involves the stimulation of physical activity and PE and all-around development of Dutch children and youth. Elements of this policy are ensuring pedagogic and didactic quality; doing what is good for the child, who learns and experiences plea-

sure and success; ensuring physical and social safety; and working on a planned professional teaching curriculum, with regular measurements and a follow-up system. Also, with the assistance of the Dutch Institute for Curriculum Development, new methods will be written soon where learning motor skills is combined with a healthy lifestyle.

The newest policy of the Ministry of Education and the Ministry of Health, Welfare, and Sports involves promoting “sport, physical activity and a healthy, active lifestyle in and outside school.”<sup>2</sup> In this policy, all workers are encouraged to cooperate in all areas. The healthy school (activity, nutrition, pedagogical climate) is one focus. Using a “sport district coach” is an example of integrating PE, physical activity, and sports. Within and around schools, children and youth have a central position. Sport is stimulated in PE classes based on the core aims of PE; at school, PE and physical activity are encouraged between and after classes and in the neighborhood at sports clubs. Furthermore, because non-Western children and youth have a twofold to threefold higher risk for overweight at age 2, attention should shift to influence physical activity and eating behavior of children and youth and their parents. Move-friendly environments can be created, including no elevators, more stairs, more playgrounds at school, combining the inner and outer world around school with playgrounds built everywhere, and village/cities becoming greener including safe crossovers at streets (de Vries, 2009). Schools and/or school yards should be open in the weekends, for leisure and play, introducing problem-solving learning rather than problem-based learning, with parents empowered in child rearing. School should become the center of the community with more social services offered. Finally, arrangements will be made to daily integrate PE, physical activity, and sports in school.

Many Dutch people work globally, network widely, connect cultures, bridge gaps, and learn from others through exchange programs. More school disciplines with a different background should be combined and work together to share knowledge. A need for capacity building is everywhere. For example, we could lend Dutch teachers to other countries and educate children and youth and build a platform for action with interventions that are relatively easy to implement. The Global Forum for Physical Education Pedagogy results should be published. Every task force will start with a definition that has an identical set of elements. A flexible, worldwide PE standard combined with physical activity should be developed. Health should be brought into schools (healthy vending machines, health classes, etc.), and youth health care workers and PE teachers can reinforce each other by working together. Technical innovations need to be developed and transported around the world. A paradigm shift from obesity treatment to inactivity treatment is necessary. Professor R. Griffith concludes from a 5-year study by the Institute of Fiscal Studies that British people eat healthier at home, but outside the home they are eating and drinking more high-calorie food, from burgers to lunchtime sandwiches and coffeshop lattes. Furthermore, their sedentary lifestyle is an important factor ([www.dailymail.co.uk](http://www.dailymail.co.uk)).

Evidence of an independent effect of sedentary behavior on health is available. In community-based programs, sedentary behavior can be reduced if stakeholders of community-based programs should proclaim the same message and behave that way themselves, saying, “Let’s move, be active.”

Differences and similarities among cultures (within and between countries) about physical activities and sports they enjoy should be collected. Material promoting health needs should be simple and include graphs. In school, involving parents is easier. Following primary prevention, selective prevention is important. If prevention programs are organized at school, minorities will attend as well, and these groups need more specialized attention. Dieting and “weight-cycling” in children and youth needs to be discouraged; health, eating healthy food, and biking should be promoted. Community-based programs are promising, and PE teachers can make a difference!

## Conclusion

Attention should be paid to stimulate physical activity in children and youth aged 0 to 21. In 2010, only 50% of the youth met the Dutch physical activity norm, with 12% inactive. This 50% is an alarming statistic, the lowest since 2006. Groups of children and youth that are relatively inactive include females, those aged 12 to 17, children and youth who do not participate in any sports, and children and youth with a non-Western background. Active transport to school (walking, biking), PE classes in school, and sports after school and during the weekends are the most important sources of health-enhancing physical activity. During school days, Dutch children and youth spend about 55% of their awake time with sedentary behavior and on a nonschool day about 32%. The target is to encourage Dutch children and youth to reduce their sedentary behavior and to increase their physical activity level.

For many children and youth, sports and physical activity are fun and add to motor, social, and cognitive development (Singh et al., 2012). To combat overweight and obesity, which is a worldwide pandemic, PE teachers should actively participate in community-based programs, with PE teachers fulfilling a key role. Innovative educational practices to integrate health, PE, and physical activity programs can be developed in a smart and targeted way to support a continuous active and healthy lifestyle. Also, they need to implement technical innovations in PE classes such as Twinkle tiles, integrate physical activity into school-based programs and in informal community-based programs, and adapt the way PE teachers and physical activity trainers are educated and prepared for this integral task (Edginton, Chin, & Dobromir, 2011). Sports, physical activity, and healthy and active lifestyles in and outside of school are promoted in the Netherlands. Cooperation among workers in youth health care, sports clubs, PE teachers, and PE assistant teachers will be encouraged. The Ministry of Health, Welfare, and Sports focuses on a healthy, active lifestyle for children and youth in community-based programs. Prevention programs should start during pregnancy and shortly after birth! The healthy school (activity, nutrition, pedagogical climate) is one issue. This asks for a strong cooperation among the KVLO, NOC\*NSF, Dutch Institute for Sports and Physical Activity, TNO, and other partners. The new government, together with the KVLO, educational services, and schools, is planning to increase PE classes in primary schools to 3 hours per week. For children and youth to learn how to move well and to be aware of the importance of a healthy lifestyle, action is needed!

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