



SPECIAL COMMITTEE ON OBESITY

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NATIONAL PLAN ARUBA 2009-2018

For the fight against
overweight, obesity and related
health issues

Aruba, October 2008

Drawn up by *dr.* Richard W.M. Visser DC, PhD.

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1. INTRODUCTION

In the past thirty years, the prevalence of overweight and obesity has risen drastically in Aruban society, especially among children, with an estimated prevalence of overweight from 15% (2001) to 37% (2004) among our children, and from 52% (1993) to 73% (2001) to 77% (2006) among our adult population.

These figures are even higher than those of the United States and indicate a deteriorating trend of poor eating habits and little physical exercise, in consequence whereof some chronic diseases are expected to increase in the future, such as cardiovascular diseases and hypertension, diabetes mellitus type 2, strokes, certain types of cancer, musculoskeletal system disorders, and even some mental health disorders. In the long term, this trend will have a negative impact on life expectancy in Aruba and reduce the quality of life for many. It is disturbing that life expectancy has already decreased by 1 year, viz.: among men from 71.1 years (1991) to 70.1 years (2000), and among women from 77.12 years (1991) to 76.02 years (2000).

As a result of the health data, the Special Committee on Obesity of Aruban Parliament was established on May 9, 2008. The task of this Committee will be to prepare a national plan for the fight against overweight and obesity.

Several studies in Aruba showed alarming results, i.a. STEPS Aruba 2006 of the Department of Public Health, according to which the prevalence of overweight among adults was 77%, and the Childhood Obesity Study 2004 of *dr.* Richard Visser, according to which the prevalence of overweight among children ages 6-11 was 37%. This made Aruba one of the highest risk groups in the world and indicated that urgent attention had to be paid to the prevention and intervention of overweight and obesity and, thus, related health issues.

These alarming data have led to it that the problem of overweight and obesity was placed on the agenda of the Bipartite Parliamentary Consultations Kingdom Relations Netherlands Antilles and Aruba in Curacao from May 14 through 18, 2007 (*Appendix 1*). During the Tripartite Parliamentary Consultations Kingdom Relations the Netherlands, Netherlands Antilles and Aruba, from June 25 through 29, 2007, it was also requested to pay attention to the problem of overweight (*Appendix 2*). The outcome of these meetings led to it that, during the Bipartite Parliamentary Consultations Kingdom Relations Netherlands Antilles and Aruba in Oranjestad, from November 12 through 14, 2007, it was decided to establish a (special) committee that would be charged with preparing a national plan, as approved on page 2, footnote a, of the Final Declaration (*Appendix 3*). On the part of Aruban Parliament, the Special Committee on Obesity was established on May 9, 2008, consisting of the following members: *mr.* M.H.J. Kock, Member of Parliament, *mr.* J.E. Thijsen, Member of Parliament, and *dr.* R.W.M. Visser, expert (*Appendixes 4, 5, 6*).

The purpose of the National Plan Aruba 2009-2018 is to set out an integrated Aruban approach to contribute to the reduction of health problems caused by poor nutrition, overweight, and obesity. Internationally, it has been confirmed that education, intervention, and very specific prevention are the best methods to tackle this pandemic. The most important aspect of these methods is to promote health.

It is extremely important to develop information and activities related to the accomplishment of a balanced nutrition by stimulating healthy eating habits to promote a healthy body. At the same time, a lifestyle consisting of a healthy exercise pattern should be promoted.

Healthy physical activity and balanced nutrition contribute to a good development of young children and, when they are older, will be an important source for an active and independent life in our community. Furthermore, healthy physical activity and balanced nutrition enhance resistance to infections, limit sickness-related absenteeism, and are related to an increase in productivity and intellectual capacity. It has been proven that overweight and obesity [*part of the sentence in the original text is missing/transl.*]

chronic diseases, such as cancer, cardiovascular diseases, obesity, diabetes type 2, hypertension, (alcoholic) fatty liver disease, and osteoporosis, as well as falls (Alberti et al., 2007, U.S. Department of Health and Human Services, 2000). In addition to a biological function, eating and exercising also have a strong social and cultural function. The impact thereof on the development of people and society cannot be neglected (Meydani, 2001; Health Canada, 2002; Walters et al., 1999; Van der Bij et al., 2002; Shephard, 1997). Furthermore, an enormous increase of obesity is observed worldwide, caused by a disturbance in the energy balance. Further to the recommendations of the WHO and the European institutions, the National Plan Aruba 2009-2018 also pays special attention to the surveillance of a healthy weight (WHO, 2007; Commission of the European Communities, 2007).

The epidemiological data indicate that our current nutrition and physical activity pattern contains bottlenecks. The National Plan Aruba 2009-2018 and the strategies it contains should enable our country and the community to achieve the objective, i.e. the reduction of overweight and obesity among the Aruban population. The strategies and the concrete interventions within the strategies, proposed by the Special Committee on Obesity, should lead to the achievement of the health objective.

With the National Plan Aruba 2009-2018 Aruba follows the recommendations of the World Health Organization and recent European policy initiatives against obesity and promoting a lifestyle encompassing balanced nutrition and sufficient physical activity.

2. BACKGROUND

The purpose of the National Plan Aruba 2009-2018 is to set out an integrated Aruban approach to contribute to the reduction of health problems caused by poor nutrition, little exercise, overweight, and obesity. The National Plan Aruba 2009-2018 also builds on recent initiatives arising from the various studies, international guidelines, government information, and information from society's stakeholders.

2.1. Documentation examined by the Special Committee on Obesity

A. Studies:

1) STEPS Aruba 2006, Chronic Disease Risk Factor Surveillance Data Book, carried out in the period of October through December 2006, the main objective of which was to monitor behavioral risk factors for chronic non-transmittable diseases in Aruba among persons between the ages of 25-64. For the study, use was made of the '*WHO STEPwise approach to chronic disease risk factor surveillance*'. Result: 77% of the citizens between the ages of 25-64 are overweight, of whom 40.8% obese.

2) Summary study number of diabetics in 'AZV' [General Health Insurance] file 2005, (March 14, 2007, Executive Body AZV). The percentage of diabetics in Aruba amounts to 6.4%, i.e. 6,000 persons. They cause 20% of all AZV medical expenses. This amount has not been adjusted for possible exceptional medical expenses not related to diabetes; this requires a more thorough study. It is suspected that there is a large group of "undisclosed diabetics", amounting to 5 to 6% of the population.

3) Childhood Obesity Study 2004 of *dr.* Richard Visser, is a study among 3,952 children ages 6-11 as to the prevalence of overweight and obesity among the study population, the identification of health disorders, and the determination of factors related to this problem. Result: 37% of the children between the ages of 6 and 11 are overweight.

4) Health Study Aruba 2001 of the Department of Public Health. Prevalence of overweight among the population 20 years and up amounted to 73%. The prevalence of overweight among elementary schoolchildren amounted to 15%.

5) Aruba, One Heavy Island 1993 of the Department of Public Health. Prevalence of overweight among the population 20 years and up amounted to 52%, of which 28% obese.

B. Government budgets:

1) Budget of the Minister of Public Health for the financial year 2009 and 2008.

2) Budget of the Minister of Sports for the financial year 2009 and 2008.

3) Budget of the Minister of Education for the financial year 2009 and 2008.

C. Special documents:

1) Central Bureau of Statistics. Statistical Yearbook 2007, May 2008.

2) "Obesidad ta hiba nos na Mortalidad" [*Obesity will lead us to Mortality*], White Yellow Cross 2008.

- 3) "Verslag van de Resultaten van het Onderzoek naar BMI en Glucosegehalte bij Leerlingen van de EPI" [*Report on the Results of the Study on BMI and Glucose Content among Students of the 'EPI'*], Diabetic Center Aruba, March 2008.
- 4) Department of Public Health, Obesity Programs, November 2007.
- 5) Policy document: Diabetic Center Aruba, November 7, 2007.
- 6) Annual report of the AZV Executive Body 2007.
- 7) "Trabou y Salud 2007, Jaarverslag ziekteverzuim en arbeidsomstandigheden 2004-2007" [*Work and Health 2007, Annual report on sickness absenteeism and working conditions*], 'BGD' [Industrial Medical Service] Aruba.
- 8) Impact of Obesity on Mortality and Morbidity, Netherlands Interdisciplinary Demographic Institute, April 19, 2005
- 9) "From One Heavy Island to One Healthy Island", 'Commission Plataforma Alimentacion Nacional' [*National Committee Platform on Nutrition*].
- 10) "KABP-onderzoek Borstvoeding Aruba 2003" [*KABP Study Breastfeeding Aruba 2003*] of the Department of Public Health.
- 11) "Borstvoedingsonderzoek 2002" [*Breastfeeding Study 2002*] of the Department of Public Health.
- 12) "Aruba ban cana" [*Aruba, let's walk*], IDEFRE December 2001.

D. International documentation:

- 1) Dietary habits in the Caribbean and Central and South America, Richard Visser Institute, IASO Genève, May 14, 2008.
- 2) White Paper, A Strategy for Europe on nutrition, overweight and obesity related health issues, Commission of the European Communities, May 30, 2007.
- 3) Commission Staff Working Document of the White Paper, Commission of the European Communities, May 30, 2007
- 4) Draft Report on the White Paper on nutrition, overweight and obesity related health issues, European Parliament, December 19, 2007.
- 5) Workers' health: Global Action Plan 2008-2017 (WHO, 2007).
- 6) Second Action Plan 2007-2012 (WHO, 2007).
- 7) Obesity in children and young people: a crisis in public health. IASO International Obesity Taskforce.
- 8) "Preventie Overgewicht" [*Overweight Prevention*], 'RIVM' [*National Institute of Public Health and Environmental Protection*] V/260301/01/OG.

- 9) "Signaleringsprotocol overgewicht jeugdgezondheidszorg" [*Identification Protocol Overweight Youth Healthcare*], 'VUmc' [*Free University Medical Center*] Amsterdam.
- 10) "Het aanbod van levensmiddelen op middelbare scholen" [*The offer of food in secondary schools*], 'Voedsel en Waren Autoriteit' [*Dutch Food and Non-Food Authority*], January 2007.
- 11) "De kosteneffectiviteit en gezondheidswinst van behalen beleidsdoelen bewegen en overgewicht, Onderbouwing Nationaal Actieplan Sport en Bewegen" [*Cost effectiveness and health benefits of achieving policy objectives physical activity and overweight, Substantiation National Action Plan Sports and Physical Activity*], 'Rijksinstituut voor Volksgezondheid en Milieu' [*National Institute of Public Health and Environmental Protection*].
- 12) Nutrition Enhancement Program (NEP), Choices, Unilever.
- 13) "Werkdocument De Gezonde School Methode in Nederland" [*Working Document The Healthy School Method in the Netherlands*], October 2005.
- 14) "Op weg naar een gezonde schoolkantine" [*Towards a healthy school cafeteria*], 'Stichting Voedingscentrum Nederland' [*Netherlands Nutrition Center Foundation*].

2.2. Involvement European Parliament



EPHA



European Union

On June 23 and 24, 2008, the Special Committee on Obesity had meetings with several agencies, experts, and members of European Parliament on the problem of obesity in Brussels.

- A briefing with the Netherlands Permanent Representative to the European Union, Mr. Jos Draijer. Topics were i.a. the insurance system, advertising ban, medical impact studies, legislation, and health policy at school.
- Meeting with Euro MP Ms. Dorette Corbey, representing the 'PVDA' and spokesperson labeling and obesity. Topics were guidelines on labeling, labeling system of England, and research into the effects of labeling on purchasing behavior.
- Meeting with Ms. Stephanie Bodenbach, European Commission DG SANCO. Topics consisted of explanation of the White Paper, impact assessment, labeling, sports, and transportation.
- Meeting with Ms. Carolina Bollaers, EU policy manager at European Health Alliance (EPHA). Various projects supported and created by the agency were discussed in detail. The agency cooperates with the Bill Gates Foundation and provides support in the area of health. Documentation regarding the results of Aruban studies was also submitted. Since then, the Special Committee on Obesity and the

EPHA have had a working relationship in support of the National Plan Aruba 2009-2018.

- Meeting with assistant of Euro MP, Katalijne Buitenweg, 'Groen Links' and shadow report White Paper Obesity. Topics consisted of healthy products at a lower price, children and physical activity, stop light labeling system of England.
- Meeting with Euro MP Lambert van Nistelrooy, 'CDA' and spokesperson obesity. Topics of discussion were free school fruit, ban on the sponsoring of candy during sports, the healthy school. Furthermore, 10 amendments were submitted to the Commission.

2.3. Cooperation with the Ad Hoc Committee on Overweight and Obesity Netherlands Antilles



Meeting Curacao, September 4, 2008

During the meetings of the Bipartite Parliamentary Consultations Kingdom Relations Netherlands Antilles and Aruba in Oranjestad, on November 12-14, 2007, it was decided to establish a (special) committee that will be charged with the preparation of a national plan, as approved on page 2, footnote a, of the Final Declaration. In implementation of this decision, Aruban Parliament established the Special Committee on Obesity on May 9, 2008, and the Netherlands Antilles established the Ad Hoc Committee on Overweight and Obesity Netherlands Antilles.

The meeting between the Ad Hoc Committee on Overweight and Obesity Netherlands Antilles and the Special Committee on Obesity Aruba took place in Curacao, on September 4, 2008. Although, originally, both committees had to arrive at a joint prevention plan, the Special Committee on Obesity, established by Aruban Parliament, proposed to draw up a prevention plan for each island separately, as the healthcare structure and problems of each island differ. Taking into account the request of the President of Parliament of the Netherlands Antilles to submit to both Parliaments a joint document containing "guidelines" during the Bipartite Parliamentary Consultations Kingdom Relations, the committees decided to offer Parliament a document containing "guidelines" during the Bipartite Parliamentary Consultations Kingdom Relations in October 2008. The guidelines can be found in Chapter 4.

2.4. Involvement of society



*"Fundacion Pro Lechi Mama"
Breastfeeding Foundation*



SMOA



Youth Parliament

The Special Committee on Obesity counts on society's involvement. Several stakeholders have been selected, with which the problem has been discussed in order to arrive at a combined approach regarding the preparation of the National Plan 2009-2018. The stakeholders are mentioned in (*Appendix 7*).

The following topics and activities were discussed with the stakeholders:

- * Consumer education, advertising and marketing with special attention for children.
- * Offer of foodstuffs, physical activity, and health information at work.
- * Integration of the prevention and treatment of overweight and obesity into healthcare.
- * Fighting the "obese" society (lifestyle).
- * Socio-economic inequality.
- * An integrated and broad approach to promote healthy nutrition and physical activity.
- * Recommendations for the nutrition intake and for the preparation of nutrition guidelines.

During the consultations with the stakeholders regarding the National Plan to be prepared, there was very wide consensus on the opinion that the community should contribute by working with different types of stakeholders at a national level. The stakeholders underlined the necessity of consistency and coherence in the community policy and the importance of a multisectoral approach. They emphasized the usefulness of the Committee's task to prepare a national plan for the fight against overweight and obesity and the coordination of the actions, such as the collection of, and familiarization with good practices, and the necessity of an action plan and a strong unambiguous message to the persons concerned. It was considered important that the information is the same across the board.

Furthermore, the stakeholders concerned are of the opinion that one series of coordinated actions is preferable to a large number of individual actions. In Aruba, there are many separate projects, which mostly are non-recurring and, therefore, have less effective results in the long term. It is important to create a central unit that coordinates all preventative actions. This central unit should also dispose of all information regarding the actions and overweight problem. Thus, certain projects can be expanded to obtain better results for larger groups.

At present, most sports programs are fully, at any rate partially sponsored financially by means of donations from the private sector. The sports sector and the stakeholders have expressed their concern about the fact that, since the amendment to the law on taxes in respect of donations, the support by the private sector to the sports clubs has been influenced negatively. As a result of the amendment, the tax deduction for donations has been set at a maximum of Afl. 10,000.= per year. Furthermore, the donation can only be deducted, if it has been made to an agency designated by the Minister of Economic Affairs. This has led to a decrease in the financial support by the private sector to the sports clubs. The sports clubs argue that, at present, it is even more difficult to offer sports activities at a low rate. Due to this amendment, sports or physical activity are curbed instead of being stimulated.

In Aruba, there is a clear correlation between stopping breastfeeding and returning to work. A 2002 study shows that more than 54.2% of the new mothers do not begin breastfeeding. Many mothers worry that their child is receiving sufficient milk, so that the mothers start to give supplements of formula prematurely. Risk groups are mothers with low incomes, born in Aruba, who have given birth

via cesarean, or who are not supported by their partners. In order to promote continued breastfeeding during the first six months, despite returning to work, the right to breastfeed has become effective in Aruba, meanwhile, since May 2007. The Foundation indicated that too little information is available to the employers and employees about the new law in actual practice. The Foundation also indicated that only 17.1% of the new mothers breastfed within 48 hours after the delivery. According to the Foundation, the bottleneck is that the hospital does not sufficiently stimulate breastfeeding and rather promotes bottle-feeding. The policy in the hospital on the promotion of breastfeeding as of birth should be changed.

The summary study number of diabetics in AZV file 2005 shows that identified MED-DIAB insured persons amount to 6.4% of the insured persons, i.e. 6,000 persons. They are responsible for approximately 20% of all AZV medical expenses. The age group 50-80 incurs most expenses (medication, hospitalization, and amputations). Diabetes is a disease with enormous financial consequences for the AZV Fund. The demand for care will continue to increase in the years to come, given the prevalence of overweight in Aruba and the expected aging of the population. The demand for care will also increase because of necessarily catching up, as, apparently, a large number of insured persons with diabetes do not receive proper diabetes care at present. There also is reason to believe that there is a large group of “undisclosed diabetics”. The document is focused on primary prevention, mainly encompassing the fight against overweight and the promotion of physical activity. Specific information and prevention for the youth, ‘the healthy school’ project. Consultation with the business community and schools. Government plays a decisive role. Intensifying physical activity at schools, increasing the excise tax on sugar and alcohol in order to obtain funds for the purpose of prevention. Cooperation between the Government, AZV, schools, business community, and physicians is required and is a critical success factor in the fight against overweight.

It was understood that the possibility to undergo a gastric bypass exists in Aruba for persons with a BMI between 50-55. According to the specialist in charge of these treatments, it has turned out that, in certain cases, the costs of the treatment will be recovered within a period of approximately 3 years. At present, the AZV only reimburses 20 treatments per year, despite the fact that 100 persons are waiting. An integral treatment procedure should be developed, so that more of these extreme cases will receive the medically necessary intervention.

The topics most frequently brought forward by the stakeholders are the following:

- Prevention as part of health.
- Prevention through information about proper physical activity and balanced nutrition by means of television shows, brochures, newsletters, cooking shows, etc.
- An integral national plan with an unambiguous message is necessary.
- A central unit where all information and treatments against overweight are available.
- Amendment to the State Ordinance General Health Insurance, so that prevention is reimbursed.
- More sports at school and after school.
- More small recreational facilities in the districts. Reactivating the district centers.
- Reducing the price of vegetables and fruits and promoting the consumption of vegetables and fruits.
- Food labeling of the products.
- Banning the sale of soft drinks and “pastechis” [*pastries*] at school.
- Offering healthy food at school.
- More dieticians, notably for children.
- Closing roads for family bicycle and hiking activities during the weekend.
- Repeal of the state ordinance on donations.
- Great interest in the blood sample taking actions of the White Yellow Cross.
- Cooperation between education and sports.
- Increasing excise tax on candy.

3. VISION

When tackling the problem of overweight and obesity, three factors should be taken into account. First, the individual is ultimately responsible for his way of living and that of his children, although the importance of the environment and the effect hereof on his behavior are recognized. Secondly, only a well-informed consumer/individual is able to make well thought-out decisions. Finally, an optimal response in this area will be accomplished by promoting complementarity and integration of the Government in the different relevant policy areas (horizontal approach) and the different action levels (vertical approach).

4. GUIDELINES ON OVERWEIGHT AND OBESITY

4.1. Promoting healthy physical activity and balanced nutrition

To tackle the problem of overweight and obesity it is extremely important to promote healthy physical activity and balanced nutrition. These issues are decisive for a change in lifestyle and the promotion of a healthy body, which should lead to a decrease in the overweight and obesity figures in Aruba. The approach should be focused on several target groups or environments, viz.:

- A) the community;
- B) the living environment of infants and young children;
- C) school, and
- D) the workplace.

A: The community

Interventions should take place in *the community or the "bario" [district]* to promote a balanced nutrition and physical exercise among all residents. Targeted attention to interventions in the immediate living and residential environment does not exist in Aruba. Still, an important part of the eating and exercising habits takes place there: at home, during leisure time, in the district. To approach the community the stakeholders are of importance to have an effect on the behavior of people or on their environment. Health promotion in the local community will only be effective in the long term, if the various actors cooperate and/or spread the same message. It is necessary to create a central information center for the coordination of the projects and information. Special attention should be paid to *social risk groups and the elderly*.

One of the complaints of the sports clubs is that, since the entry into effect of the act on taxes in respect of donations, these clubs have seen a decrease in donations, which, of course, curbs the promotion of sports. It is necessary to initiate a study as regards the statutory amendment concerning donations, in order to assess whether it should be tackled or modified.

B: The living environment of infants and young children

Priority should be given to children ages 0-6 and their mothers. The first year of life is of crucial importance to a healthy life. Furthermore, the circumstances for the mother in these first years are heavy and expensive. Providing support to mother and child is important. One possibility is the program "Hallo Wereld" [*Hello World*], which is willing to broadcast this show in Aruba.

Stimulating mothers to *breastfeed*. Breastfeeding is the most natural way to feed a newborn. In the long term, breastfeeding offers protection against i.a. obesity. It turns out that most parents make their choice for the type of feeding before the pregnancy already. Therefore, it is important that women and their partners will already be informed before becoming pregnant about the importance of exclusively breastfeeding the child as of birth.

In addition, attention is paid to young children in *childcare*. The first years of life are important to familiarize oneself with a healthy lifestyle, consisting of balanced and varied eating habits and sufficient exercise. In Aruba, obesity already increases as of childhood. Therefore, it is important to watch over good eating habits and sufficient physical activity in this age group. As regards infants and toddlers, childcare is the main factor of influence in their immediate social environment, apart from the parents and grandparents. Therefore, additional attention is paid to the role these organizations can play in the promotion of balanced nutrition in young children.

C: School

The eating pattern of children, young people, and young adults, notably as regards *breakfast*, beverages, snacks, consumption of vegetables and fruits, simply is problematical. The *Childhood Obesity Study 2004* shows that 71.9% of the children between the ages of 6 and 11 do not eat breakfast on a regular basis.

This also applies to the extent to which schoolchildren and students *exercise*. The *Childhood Obesity Study* 2004 shows that 77.4% of the children between the ages of 6 and 11 do not arrive at the minimum quota of physical activity. Changing eating and exercising habits is of crucial importance to prevent overweight and obesity at a later age.

Of course, school is an important living environment for this target group. The impact thereof on the behavior of its pupils or students should not be underestimated. The prevention, promotion, and stimulation with regard to the children and youth should take place through education. Furthermore, the SER report of January 2005 has also shown that afterschool care is not adequate in Aruba, and that children are often alone, without supervision, after school. An integral approach entails that there should be a structural change, such as keeping the children at school longer to create the possibility that the children are looked after and are not lonely. In addition, these additional hours should be used to offer i.a. health classes, to promote sports up to three times per week, while also offering healthy food. There should also be possibilities to build up one's ability to do things independently and self-esteem. It is important that each school has a room for physical activity/gymnastics and promotes interscholastic games. In this way, a healthy school will be created. For this purpose, Aruba can enlist the help of the Netherlands Healthy School Institute. The project "healthy school cafeterias" of the Netherlands Nutrition Center is a concrete example of how healthy food can become a focus at school. An integral approach is used as a starting point, and not only the offer in the school cafeteria is looked at, but substantive support in the classes is also provided. The snack tents surrounding these schools play an important role.

D: The workplace

Promoting balanced nutrition and sufficient physical activity at the *workplace* refers to every effort of employers, employees, and of society to strengthen the patterns of living of working people. A person working fulltime eats $\frac{1}{2}$ to $\frac{1}{3}$ of his daily meals at work. However, the workplace often does not offer the possibility to apply healthy living habits. Programs should be prepared to educate and promote exercising at the companies.

4.2. Promoting breastfeeding

The promotion of breastfeeding requires a structural approach. The study "*KABP-onderzoek Borstvoeding Aruba 2003*" [*KABP Study Breastfeeding Aruba 2003*] of the Department of Public Health has shown that only 17% of the mothers exclusively breastfeed during the first 48 hours (*KAPB-Study 2003*). The approach should be focused on stimulating and facilitating breastfeeding. This can be done by having the hospital promote exclusive breastfeeding for 6 months after the birth of the child. The implementation of the National Breastfeeding Policy Plan Aruba ("NBBA") is desirable. Research has shown that there is a correlation between stopping breastfeeding and returning to work. The 2002 breastfeeding study of the Department of Public Health has shown that 66% of the new mothers stop breastfeeding when they return to work again. Recently, an act has also been adopted, which makes it legally possible to breastfeed and/or to pump in the workplace. It has turned out, however, that there is not sufficient information for the employer and employee as to how this should take place. Targeted information should be given to the employer and employee. An employee who breastfeeds is more productive. Besides, breastfeeding promotes the health of the mother/employee.

4.3. Promoting unambiguous information by the healthcare providers

General practitioners, dieticians, exercise experts, (homecare) registered nurses, general dentists, pharmacists, gynecologists, pediatricians, and other care providers are inevitably confronted in their practices with all sorts of questions about nutrition and physical activity. They have the important task to make the patient aware of the importance of a balanced eating pattern and healthy exercising.

In Aruba, care providers are one of the most important sources of information for people as regards balanced nutrition, as well as the most reliable one. It has turned out that the healthcare providers do not give unambiguous information as regards the approach of overweight and obesity. To properly inform and refer people, care providers should dispose of the appropriate knowledge and be able to make use of practical tools when giving advice. Therefore, it is necessary to draw up unambiguous information and to adopt guidelines for this group. As most of the prevention will depend on the first line, support to the general practitioners is necessary. This support has to consist of highly educated nurses, who can provide the information. Dieticians and exercise experts should be hired in the near future.

4.4. Good nutritional information

It has turned out that many groups are not aware of what balanced nutrition means, nor are they familiar with nutritional information. It is necessary that the consumer receives clear and non-contradictory information in a positive and attractive manner. Within this framework, it is important to introduce a food-labeling system, as well as to exchange good practices with the European Union and the Netherlands. A good example is a clear food-labeling policy, such as the system of a 4-color label on the front of the product, e.g. the "Sailboat Design for the Region".

The information will automatically influence the purchasing behavior and promote the purchase of healthy food. This policy should be implemented in cooperation with the various supermarkets. Thus, a healthier purchasing pattern and eating habits can be created. The service clubs are working on a pilot project in this area. A labeling policy should be combined with a general information campaign.

4.5. Media and communication

There are *other actors* that are of importance to communicating about balanced nutrition and healthy physical activity. First, it is endeavored to involve the media sector, the food outlets/supermarkets, restaurants, snack bars. Within this framework, it is important to avoid advertising for candy and soft drinks during the children's shows on television. The media can contribute to this. Information programs and messages regarding the promotion of balanced nutrition and healthy physical activity should become part of the media. A complete large-scale awareness and prevention program in cooperation with the healthcare sector, education, sports, non-governmental organizations, and the private sector, coordinated by a central unit, such as a central prevention institute/foundation, is of vital importance to the success of the National Plan Aruba 2009-2018. Information can be provided via text-messaging and advertising on Cable TV.

Aforementioned guidelines have been drawn up based on WHO, IOTF, and the European White Paper, taking into account the *information* of the stakeholders, our culture and traditions. and the strong influence of other countries.

In 2007, the European Commission proposes its 'White Paper' (Commission of the European Communities, 2007) on a 'Strategy for Europe on Nutrition, Overweight, and Obesity related Health Issues'. It contains the following areas of interest for private actors, as well as the recommendation for a shared approach and the strengthening of local action networks:

- making the healthy option available and affordable;
- keeping consumers informed;
- encouraging physical activity
- priority groups and settings:
 - * schools bear a great responsibility in ensuring that children not only understand the importance of good nutrition and exercise but can actually benefit from both;
 - * businesses can also support the development of healthy lifestyles in the workplace;

- developing a picture of good and best practice.

In 2007, the WHO adopted the following objectives:

Workers' health: global plan of action 2008-2017 (WHO, 2007):

1. to devise and implement policy instruments on workers' health;
2. to promote health at the workplace, i.a. by promoting healthy food and physical activity;
3. to improve the performance of and access to occupational health services;
4. to provide and communicate evidence for action and practice;
5. to incorporate workers' health into other policies.

At the end of 2007, the WHO proposes the *Second Plan of Action* 2007-2012, consisting of six actions areas (WHO, 2007), which each country integrates into its policy at several levels and adjusts to its own situation:

1. supporting a healthy start: the care for mothers and children;
2. ensuring a safe, healthy, and sustainable food supply: sufficient good and safe food for everyone;
3. providing comprehensive information and education to consumers: know what you eat and how to avoid risks;
4. taking integrated action to address related determinants: taking into account other risk factors;
5. strengthening nutrition and food safety in the health sector: involving health professionals in the improvement of the health services;
6. monitoring, evaluation, and research: actions based on facts and gathering new knowledge.

The IOTF, or International Obesity Task Force, drew up a schedule called:

"The opportunities for influencing a child's environment".

From - Social Policies and National Legislation
to - organizational and commercial practices
to - planning controls and regional strategies
to - community and cultural traditions
to - school practices and peer influence
to - family customs and choices
to - individual self-control
till - THE CHILD

"It is clear from these suggestions that policies and actions will be needed at a variety of levels, some local and individually based, some national or internationally based. All of them will require the support and involvement of departments across the broad range of government and may include education, social and welfare services, environment and planning, transport, food preparation and marketing, advertising and media, and international trading and standard-setting bodies.

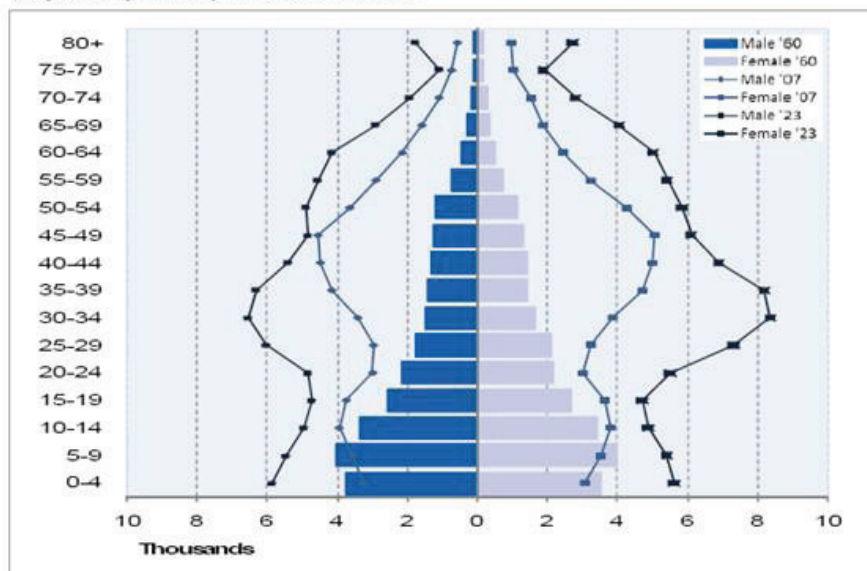
•government and inter-governmental activities in all departments, including education, agriculture, transport, trade, the environment and social welfare policies are assessed for their health impact, and Government food purchases, e.g. for departmental staff, for the military, police, prisons, hospitals and schools and other agencies involved in public sector supply contracts are consistent with health and nutrition policies."

5. PHYSICAL ACTIVITY AND EATING HABITS IN ARUBAN SOCIETY

5.1. Demographic data

- › The Aruban population amounts to 104,494, of which 49,844 female and 54,650 men (CBS, Statistical Yearbook 2007). Graph 1F shows the composition of the population and how this composition will be in the year 2023.

Graph 1F. Population Pyramid, 1960, 2007, 2023



- › The composition of the population according to age is as follows (CBS, Statistical Yearbook 2007):

<14 years	20.3%
15-65 years	70.6%
>65 years	9.1%

- › The population density per km² land is 581 (CBS, Statistical Yearbook 2007).
- › Aruban society is multicultural, as 40% of the population were not born in Aruba.
- › The educational level of the Aruban community is composed as follows. Only 8% of the population enjoyed education at a 'HBO' [university of professional education] or a university (CBS, Statistical Yearbook 2007).

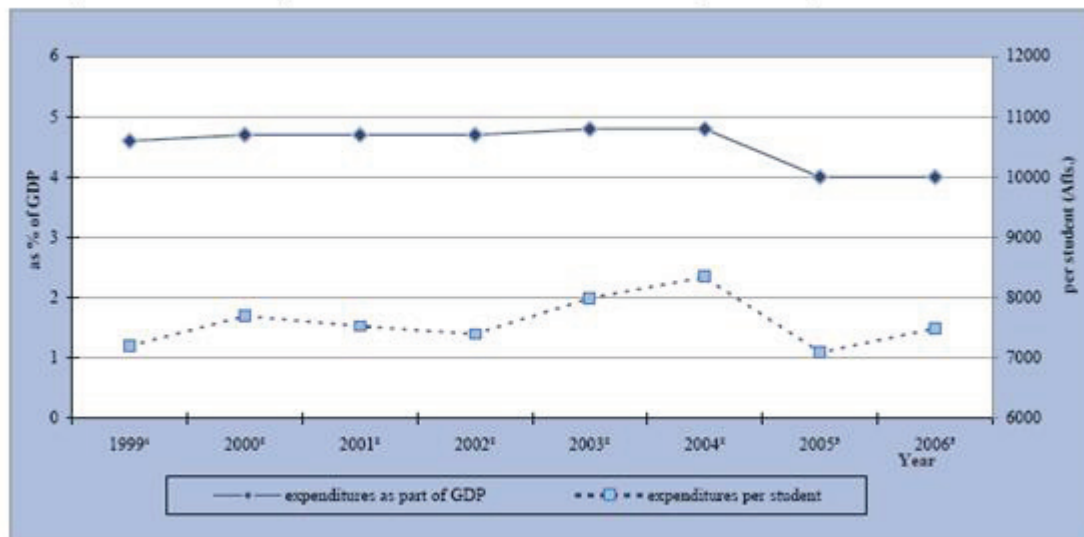
10. Population* by level of education obtained by age category, in percentage

Level of education	Age category					Total
	15-24	25-34	35-44	45-54	55-64	
Primary education or less	37%	29%	33%	45%	62%	39%
Secondary education	53%	50%	48%	39%	25%	44%
Vocational middle level	8%	12%	10%	6%	5%	9%
Higher level and University level	2%	8%	9%	9%	7%	8%
Not reported	1%	-	1%	-	1%	1%
Total	100%	100%	100%	100%	100%	100%

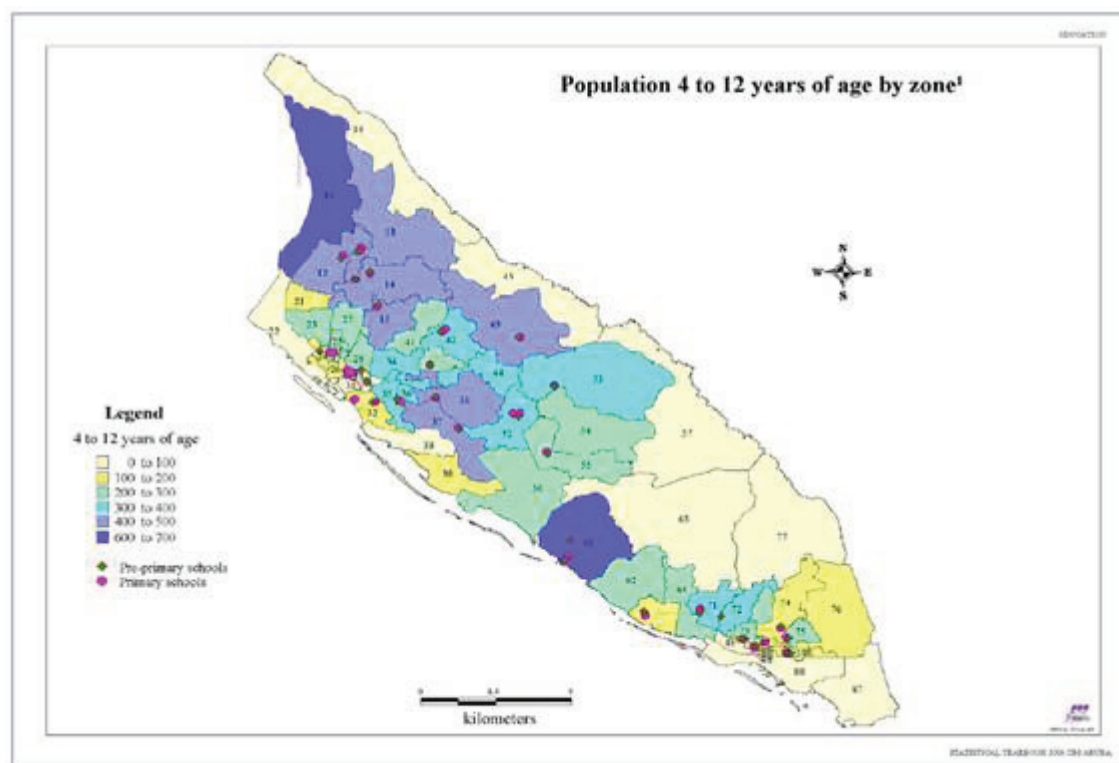
Source: "Onderwijs op Aruba. Context en Output", CBS 2003

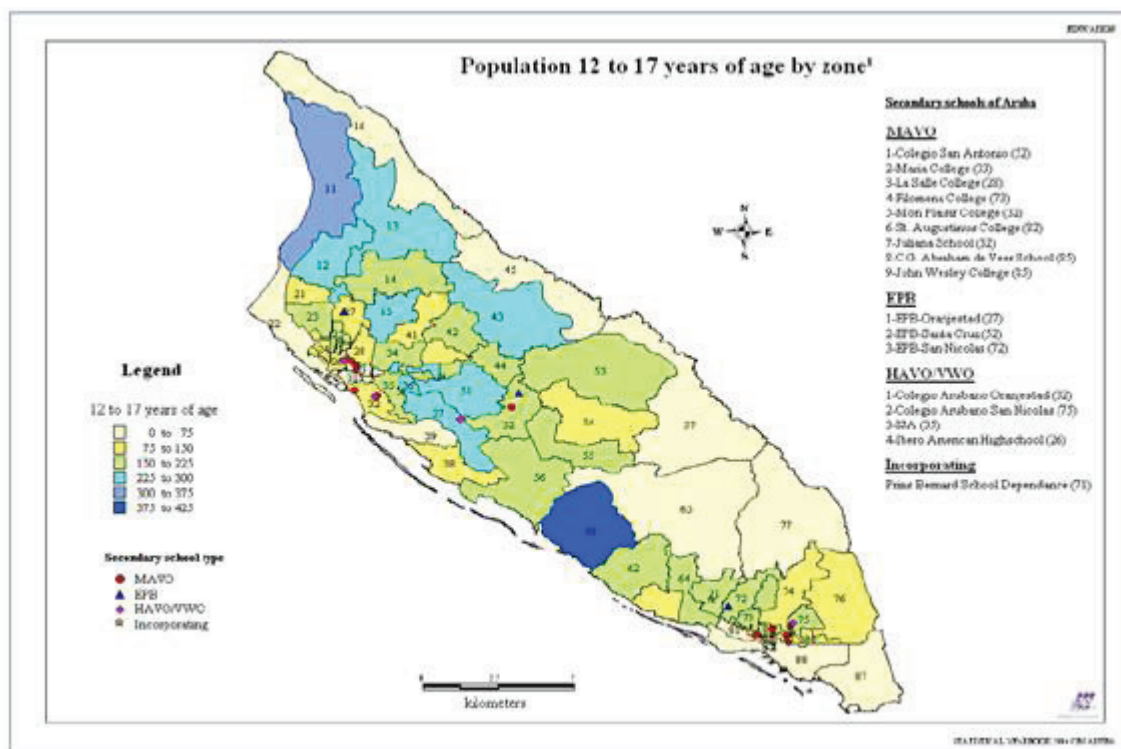
*Population 15-65 years, not visiting school

Graph5D. Government expenditures on education as % of GDP and expenditures per student



- › The GDP rate has decreased. The standard is 6% (*CBS, Statistical Yearbook 2007*).
- › Living zone of children according to age (*CBS, Statistical Yearbook 2007*).





C.B.S., Compilers
a 91 - 94 for areas of interest

› The gross income of the population (*CBS, Statistical Yearbook 2007*).

5. Average gross wages and salaries by income categories and gender, avg. 1999 - 2004

Income class	1999 - 2004			
	Tot. % of Employees	Cumulative	Male	Female
Afls.				
1 ≤ 20,000	17.1%	17.1%	7.0%	10.2%
20,001 ≤ 25,000	14.2%	31.3%	7.0%	7.2%
25,001 ≤ 30,000	12.5%	43.9%	6.6%	6.0%
30,001 ≤ 35,000	10.6%	54.5%	5.9%	4.7%
35,001 ≤ 40,000	7.4%	61.8%	4.3%	3.1%
40,001 ≤ 50,000	11.7%	73.6%	6.8%	4.9%
50,001 ≤ 75,000	16.2%	89.8%	9.9%	6.3%
75,001 ≤ IV	10.2%	100.0%	7.5%	2.6%

Source: C.B.S.

› Life expectancy for men is 70.1 years (2000), compared to 71.1 years previously (1991). Life expectancy for women is 76.2 years (2000), compared to 77.12 years previously (1991). Life expectancy has decreased by one year in a period of less than 10 years.

› Passenger transportation is equal to half the population. There are 50,211 passenger vehicles with a population of 75,817 aged 20 years and up (*CBS, Statistical Yearbook 2007*).

5.2. Eating habits in Aruba

A. Breastfeeding

The *Childhood Obesity Study 2004* shows that 90.8% of the overweight children and 93.3% of the obese children were not exclusively breastfed during a period of six months.

This is also confirmed by the "*KABP-onderzoek 2003*" [*KAPB Study 2003*], showing that only 17% of the children are exclusively breastfed within the first 48 hours after birth.

Of the group that does begin breastfeeding (45.8%) 66% stops when returning to work again, usually

within six weeks after the delivery.

Not giving exclusive breastfeeding for six months is one of the risk factors related to overweight, *Childhood Obesity Study 2004*.

Special attention to breastfeeding in the hospital, by the health care providers, and at work is really necessary.

B. Breakfast habits among schoolchildren

The *Childhood Obesity Study 2004* shows that 71.9% of the elementary school-going children do not eat breakfast regularly. The parents of this group hardly set an example. This means that 2/3 of our children skip breakfast. It has also turned out that the children who do eat breakfast often eat unhealthy foods, such as 'pastechi' or 'empana'.

The first meal of the children who do not have breakfast does not take place until 10:30 or 11:30, usually consisting of a 'pastechi' or another deep-fried snack with a soft drink.

Breakfast is the most important meal of the day, because it is the first meal the body gets after a long night's rest. The IOTF concluded that 25% of one's daily energy should come from breakfast. A healthy breakfast will reduce and possibly prevent the consumption of unhealthy food in the morning. A healthy breakfast will also stimulate the physical and mental capacities of the child. Skipping breakfast is one of the largest risk factors related to overweight.

C. Consumption of fruits and vegetables

Age Group	Number of servings of fruit per day ¹			Number of serving of vegetables per day ¹			Number of servings of fruit and/or vegetables per day ¹		
	Men N=664	Women N=895	Both Sexes N=1559	Men N=663	Women N=895	Both Sexes N=1558	Men N=665	Women N=898	Both Sexes N=1563
	Mean 95% CI	Mean 95% CI	Mean 95% CI	Mean 95% CI	Mean 95% CI	Mean 95% CI	Mean 95% CI	Mean 95% CI	Mean 95% CI
25-34 years	0.6 0.5 0.7	0.8 0.7 0.9	0.7 0.6 0.8	0.9 0.8 1.1	1.0 0.9 1.1	1.0 0.9 1.1	1.6 1.4 1.8	1.5 1.6 2.0	1.7 1.6 1.8
35-44 years	0.7 0.6 0.8	0.8 0.7 0.9	0.7 0.7 0.8	1.0 0.9 1.1	1.0 0.9 1.1	1.0 1.0 1.1	1.7 1.6 1.9	1.8 1.6 1.9	1.8 1.7 1.9
45-54 years	0.7 0.6 0.9	0.8 0.8 0.9	0.8 0.7 0.9	0.9 0.8 1.0	1.0 1.0 1.1	1.0 0.9 1.1	1.6 1.4 1.8	1.9 1.7 2.0	1.8 1.7 1.9
55-64 years	0.9 0.7 1.0	1.0 0.9 1.1	0.9 0.9 1.0	1.0 0.9 1.1	1.0 1.0 1.1	1.0 1.0 1.1	1.9 1.7 2.1	2.0 1.9 2.2	2.0 1.8 2.1
≥65 years	0.7 0.6 0.8	0.8 0.8 0.9	0.8 0.7 0.8	1.0 0.9 1.0	1.0 1.0 1.1	1.0 1.0 1.0	1.7 1.6 1.8	1.9 1.8 1.9	1.8 1.7 1.8

¹Note: number of servings per day on days consumed

STEPS Aruba 2006 shows that the consumption of fruit amounts to 0.8 fruits per day per adult. The usual recommendation of fruit consumption according to the WHO and IOTF amounts to 250 gr. or two servings of fruit each day. The fruit consumption of children is even less, whereas the recommendation of fruit consumption amounts to at least 350 grams or three servings daily.

The vegetable consumption by adults in Aruba amounts to 1.0 serving daily (*STEPS Aruba 2006*). This is far below the quantity recommended by the WHO and IOTF, viz.: 300 grams per day. Vegetables and fruits contain most of the vitamins, minerals, and fibers the body needs to stay healthy. They have a preventative effect with regard to oxidative stress and, therefore, improve the immune system. Not eating sufficient fruits and vegetables is a risk factor for overweight and being healthy.

D. Excessive consumption of soft drinks and sugar-sweetened drinks

Several local studies have shown that the consumption of soft drinks and other sugar-sweetened drinks by children and youngsters is so high that problems related to i.a. sugar level, dentistry, and overweight have grown excessively. At the same time, the consumption of water has decreased considerably, especially among the most vulnerable group of the population, viz.: the children. Attention should also be paid to the sale of soft drinks and other sugar-sweetened drinks in and around our schools.

The consumption of water should be promoted, and the 'WEB' [Water and Electricity Company], in cooperation with the Richard Visser Institute, is working on the preparation of a national campaign to promote the consumption of water.

E. Local and international fast foods

The Aruban meals and snacks are high in fat content, because the meals and snacks, such as 'pastechi', 'crocket', cheese balls, etc., are deep-fried. In addition, there is an abundance of international fast food chains, which also focus on our children by means of their influence through the media. School cafeterias mostly only sell local junk food, candy, chocolate, chips, etc. The school cafeterias that do not do this have to deal with competition from snack bars in the surroundings of the school. Social life and culture largely revolve around food, given the birthday culture. Nowadays, the celebration of a birthday entails complete meals at work. Eating is used as a reward for children and parents. Except for local snack bars and fast food chains, it turns out that the takeaway meals of the Chinese restaurants have become a weekly habit for the population. Most takeaway meals are high in caloric value, salt and fat content, and low in nutritional value.

Summarized:

- . We do not breastfeed enough.
- . We eat too little breakfast.
- . We eat too little vegetables, too little fruits.
- . We drink too little water and too many sugar-sweetened drinks.
- . We eat too much junk food or unhealthy food.

5.3. Physical activity in Aruba

Healthy exercise is understood to be a level of physical activity leading to positive health effects. This corresponds to a PAL value of more than 1.60 (Bouchard et al., 2007). Adults are recommended to get at least 30 minutes of moderate to intensive exercise per day, children and youngsters at least 60 minutes. To reduce the chance of obesity, this should be increased to 60 and 90 minutes, respectively, per day. This corresponds to a PAL value of 1.75 (Ross, 2007, Institute of Medicine, 2002). Given the dose-response relationship between physical activity and health, more will be gained when exceeding this minimum standard (Strong et al., 2005; Nelson et al., 2007; Haskell WL et al., 2007).

To get a complete picture of the amount of physical activity per day, the PAL value, the physical activity level, is a good parameter or indicator. The PAL value is the factor by which the basal metabolism (=energy expended at rest) should be multiplied to calculate the total energy use per day. In theory, this index can range between 1.0 for extremely sedentary individuals and approx. 2.5 for very physically active persons. This value encompasses both professional activities, quiet activities, sports activities, and sedentary activities. Internationally, it is assumed that a daily amount of physical activity corresponding to a PAL value exceeding 1.75 (combined with a low-fat diet) is required for acting preventively against obesity and diabetes type 2. Individuals with a PAL value of 1.40 or less show a sedentary lifestyle.

The *Childhood Obesity Study 2004* showed that 77.4% of the schoolchildren do not regularly exercise and/or participate in sports. They walked less than 10 minutes per day, spent three to four hours before the television and computer. This group is classified as sedentary.

STEPS Aruba 2006 shows that only 9.5% of the group ages 25-64 gets a high level of physical activity.

Age Group	Men (N=633)			Women (N=886)			Both Sexes (N=1539)		
	Low level of activity	Moderate levels of activity	High level of activity	Low level of activity	Moderate levels of activity	High level of activity	Low level of activity	Moderate levels of activity	High level of activity
	% 95% CI	% 95% CI	% 95% CI	% 95% CI	% 95% CI	% 95% CI	% 95% CI	% 95% CI	% 95% CI
25-34 years	27.9 18.5 37.4	52.8 42.4 63.3	19.2 11.8 26.7	41.1 32.4 49.8	51.8 42.9 60.6	7.1 2.6 11.6	38.6 29.0 48.0	52.2 45.5 59.0	12.3 8.2 16.4
35-44 years	44.6 36.8 52.2	37.9 30.5 45.3	17.6 11.8 23.4	46.8 40.2 53.3	47.3 40.7 53.8	6.9 2.9 9.0	46.8 40.8 50.7	43.2 38.3 48.1	11.0 7.9 14.1
45-54 years	49.6 41.1 57.9	41.6 33.5 49.6	8.9 4.7 13.1	46.7 50.1 63.2	37.3 31.0 43.6	6.0 2.6 9.5	53.3 48.1 58.5	39.3 34.3 44.4	7.4 4.7 10.1
55-64 years	43.2 35.2 51.2	50.0 41.9 58.1	6.8 2.9 10.7	57.2 50.2 64.2	39.7 32.8 46.6	3.3 0.7 5.5	61.2 45.8 66.6	44.1 38.8 49.4	4.7 2.5 6.9
25-64 years	41.6 37.0 46.1	44.4 39.8 49.0	14.0 11.0 17.0	49.2 45.4 53.1	44.8 41.0 48.6	6.9 4.1 7.8	48.5 42.9 48.8	44.6 41.7 47.6	9.6 7.8 11.2

The elementary schools in Aruba do not teach special gym classes. In cooperation with IDEFRE, 1½ hours of sports classes are taught to the 4th-, 5th-, and 6th-graders per week. Swimming lessons are given to the 3rd-graders once per week. There are no gym or sports classes for the 1st- and 2nd-graders. The elementary schools also have a problem with the facilities. Some do not have a gym, others have an indoor gym. Hardly any physical activity takes place during school hours. Given the duration of the school hours, there also is too little time to expand further sports possibilities, as school ends at 01:03 p.m.

It is difficult for children to participate in afterschool sports activities, because of transportation difficulties and the parents' working hours. Furthermore, the costs involved cannot be afforded by the part of the population earning a minimum income. The sports sector still has not been structured properly. Both education and sports work independently of each other, and each pursues its own policy.

It can be observed, however, that there are various projects to promote physical activity among children, such as Extreme H Games of the Richard Visser Institute, Fit Kids of IDEFRE, etc. Reference is made to the budget of the Minister of Sports.

Summarized:

- . 77.4% of the schoolchildren do not regularly exercise.
- . These children have a sedentary lifestyle (3 to 4 hours television/computer games).
- . Only 9.5% of the population gets at least 60 minutes of intensive physical exercise per day.
- . Not all schools dispose of sports facilities.
- . The 1st- and 2nd-graders are not taught any sports.
- . The 3rd-, 4th-, 5th and 6th-graders are taught sports 1x per week.
- . Access to afterschool activities is difficult.

5.4. BMI results

CHILDREN:

The *Childhood Obesity Study 2004* shows that:

WHO tables according to gender and age	Overweight BMI	Obesity BMI	Overweight + Obesity
Boys 6-11 years	11.4%	28.4%	37.8%
Girls 6-11 years	9.7%	24.5%	34.2%

YOUTH:

	Overweight BMI	Obesity BMI	Overweight + Obesity
17-24 years	22.11%	20%	42%

ADULTS:

	Overweight + Obesity	Of whom obese BMI > 29.9
Health survey 1993	52%	28%
Health survey 2001	73.5%	38%
STEPS Aruba 2006	77%	40.8%

Age Group	Both Sexes (N=798)							
	Underweight BMI<18.5		Normal weight 18.5>BMI<24.9		Overweight 25.0>BMI<29.9		Obese BMI>30.0	
	%		%		%		%	
	95% CI		95% CI		95% CI		95% CI	
25-34 years	0.0		29.8		30.5		39.7	
	-	-	20.4	39.1	20.7	40.2	29.1	50.4
35-44 years	0.6		22.3		38.2		38.9	
	0.0	1.7	15.8	28.8	31.1	45.4	31.8	46.1
45-54 years	0.0		20.4		38.9		40.7	
	-	-	15.1	25.7	31.6	46.2	33.7	47.7
55-64 years	0.0		15.7		36.4		47.9	
	-	-	10.7	20.7	29.8	42.9	41.2	54.7
25-64 years	0.2		22.8		36.2		40.8	
	0.0	0.5	19.2	26.4	32.1	40.3	36.6	45.1

The 1993, 2001, 2004 and 2006 health surveys show an increasing trend among all age groups. The increase of overweight among children is notably disturbing, viz.: from 15.0% to 37% in 2004. These figures are higher than those of the Netherlands and the United States.

The surveys show that people are not aware that they are overweight. They have a completely wrong self-image. 61% of the persons with overweight in 2001 thought that they had a normal weight.

Summarized:

- . 77% of the adults age 25 and up have an unhealthy weight.
- . 42% of [...] (17-24 years) are overweight and obese.
- . 37% of the children ages 6-11 are overweight and obese.
- . There is question of an increasing trend among all age groups.

5.5. Conclusion

In general, it can be concluded that the average Aruban exercises insufficiently and has an unbalanced eating pattern. The information about what we eat and how much we exercise clearly indicates that the recommendations are not met in several respects. This notably applies to children, youngsters, the elderly, and underprivileged groups. It has also been established that the overweight and obesity figures are excessively high in Aruba compared to the United States and the Netherlands. What is even more disturbing is that most people do not realize that they are overweight or obese. It is the ambition of the National Plan Aruba 2009-2018 to rectify these shortcomings and to harmonize the physical activity and eating pattern of the Aruban and the recommendations. This was the starting point for deciding on the concrete details of the healthy food and physical activity objective for the period 2008-2015.

6. THE NATIONAL PLAN ARUBA 2009-2018

6.1. Objective

The main objective is to achieve health gain for the entire population by creating an increase in the number of people that are sufficiently active, have a balanced diet, and strive for a healthy weight.

The objects pursued for 2018:

1. Children. Promoting sufficient physical activity from 22.6% to 45% to achieve health gain.
2. Adults. Promoting the number of people that are physically active to achieve health gain by increasing moderate activity from 44.6% to 55% and intensive activity from 9.5% to 15%.
3. The population's inactivity should decrease from 45.8% to 30%.
4. Promoting exclusive breastfeeding for six months from 15% (2003) to 30% and for four months from 37% to 60%.
5. School cafeterias should comply with the Healthy School System in the majority of our schools, and there should be a policy on the prevention of the sale of unhealthy food outside and around the schools.
6. Identification and examination policy, pursuant to which all school-going children are examined and advised on BMI and weight each year.
7. Gym classes for all schools and grades for at least 1 hour and three times per week.
8. Weekly health class.
9. Daily breakfast before school from 28.1% to 56%.
10. The number of people having a healthy weight should increase by at least 5%.

6.2. Achievement of the objective

It is clear that health gain can be achieved by promoting a balanced diet and healthy exercise. This requires a change demanding enormous social effort. The question arises 'which effort will lead to the best result?'.

An unbalanced diet, too little physical activity, and the consequences thereof are enabled by various factors. It has been demonstrated that the causes are related both to people's lifestyle and to their environment (National Heart, Lung and Blood Institute, 2004; Law, 2007). What people do or do not do is influenced by their opinions, preferences, or skills, as well as by their intentions, knowledge, risk assessment, and experienced social influence, or their expectations as regards the new behavior. Behavior can never be seen separately: it occurs in a specific environment, with physical, social, cultural, political, and economic characteristics. The more this environment invites people to make healthy choices, the bigger the chance that they will also actually opt for the healthy alternative. The starting point is to make the healthy choice the most obvious choice: easily available, at an acceptable price, in accordance with rules, and supported by the opinions and standards of the environment. A multifactoral cause pleads for a multifactoral solution. High consensus exists that the best results are obtained by taking an integral series of mutually supporting measures at the same time. The World Health Organization (WHO) and several European institutions argue that each country should elaborate a balanced nutrition and physical activity policy, adjusted to its own culture, region, and standards. This entails a mixture of interventions and measures, in which all policy levels find and support each other. The various international initiatives to promote a balanced diet and health physical activity are based on this same integral approach. They plead for wide consumer information and for working with priority groups, for education and for adjustments in the environment, for involvement of various social actors, and for an engagement from the private sector, for interventions responding to the needs of the population, and for a sustainable policy.

6.3. Preconditions

A basic condition to be able to put in place the National Plan Aruba 2009-2018 and, thus, to achieve the new health objectives is the involvement of the Government in playing its condition-creating role. This role consists of creating an environment, together with all parties concerned, which encourages individuals, families, and communities in a positive way to opt continuously for balanced nutrition and an active lifestyle.

Preconditions

Implementation of the National Plan Aruba 2009-2018 requires a clear division of tasks and sufficient structural financing.

Allocation of funds for prevention in the government budgets.

Preparation of a prevention policy document and a prevention policy by the Government, so that all actors are familiar with the prevention policy and the objectives thereof, as indicated in this National Plan Aruba 2009-2018.

An integral approach entails that the various policy areas, such as education, public health, sports, culture, youth, traffic, are involved and take responsibility, in order to influence the entire community.

An integral approach requires the designation or creation of an institute/organization as a central unit and a coordinating body that exclusively provides all information and coordinates activities.

Implementation of the healthy school policy, in order to arrive at a healthy basis for children and teachers at school.

Better coordination with regard to the various initiatives, and messages regarding sufficient physical activity and balanced nutrition should be integrated into them.

Cooperation between actors in the social sector should be initiated, and primary and secondary prevention should be in line with each other.

Reimbursement by the AZV of the treatment by dieticians and expansion of the number of dieticians, notably for children.

The themes 'healthy physical activity and balanced nutrition' should be integrated into the curricula, and there should be adjusted education for all actors.

There should be a sufficiently powerful investment in projects in support of the achievement of these health objectives, which meet the criteria of sustainability, intersectoral coordination, and a structural basis.

Amendment to the act on donations, in order to increase the financial support from the private sector to the sports sector again.

Additional funds should be obtained by increasing the excise duty on candy and soft drinks.

The Socio-Economic Council should be requested to prepare an economic impact study with regard to the consequences of overweight and obesity on our economy, labor market, and labor productivity.

The Free University of Amsterdam can be of assistance.

7. STRATEGIES

7.1. Promoting healthy physical activity and balanced nutrition

To tackle the problem of overweight and obesity it is extremely important to promote healthy physical activity and balanced nutrition. These issues are decisive the promotion of a healthy body and a change in lifestyle, which should lead to a decrease in the figures in Aruba. The approach should be focused on several target groups or environments, viz.: A) the community, B) the living environment of infants and young children, C) school, and D) the workplace.

A. The community

Interventions to take place will encompass all efforts made in district, ‘bario’, or the city to preserve or improve a healthy lifestyle in a healthy environment for all residents. The Government will provide for a (integral) policy. The numerous organizations in the city or the district can help with the implementation of the actions.

A nutrition and physical activity action plan focused on the entire population, and interventions focused on specific target groups (youth, the elderly, young mothers, underprivileged groups) should be prepared.

Health promotion in our small island will mainly be effective in the long term, if the various actors cooperate and spread the same message. The Government is the designated partner to draw up an action plan for sufficient physical activity and balanced nutrition, in cooperation with the actors (to be sensibilized first) and, if possible, with the participation of the residents. Such an action plan falls within the framework of the policy to protect and promote the citizens’ health.

In concrete terms, this means that this theme will be embodied in the government policy, in which the other social rights, with many of the same actors, are also safeguarded to guarantee each citizen maximum chances of health. To decide on the concrete details hereof, methods are required and support should be provided in the preparation of a nutrition and physical activity action plan. The degree of physical activity and eating habits in our community depend on the district one lives in, the cultural community one belongs to, and the social status, all entailing a different lifestyle [*sentence in the original text is not correct/transl.*]. Depending on the age category, we see important behavioral differences leading to other health risks.

Strategies for specific target groups and in specific settings within the local community should be developed in detail with the involvement of the relevant organizations.

Possible actors: Government, Public Health, AZV, ‘SVB’ [*Social Insurance Bank*], other policy areas, such as sports (IDEFRE), education, infrastructure, first-line care providers, health centers, White Yellow Cross, and various non-governmental organizations, sports clubs and their federations, sports organizations, such as COA and ASU, the hospital, medical and paramedical groups, trade unions, private sector, tourist sector, distribution sector, hospitality industry, service clubs, etc.

IMPLEMENTATION:

- 1) A political commitment on the part of the Government is essential to the successful implementation of the National Plan Aruba 2009-2018. Cooperation between and partnerships of groups or organizations should also exist. A central unit, e.g. an institute/foundation, should be created as a prevention center.
- 2) A national campaign to promote healthy physical activity and balanced nutrition among the population. This campaign should be initiated by the Government, in cooperation with the various actors. The campaign should consist of education and activities.
The campaign should raise awareness in the following areas:
 - exercising more, at least 60 minutes per day;
 - curbing a sedentary lifestyle, such as television and computer programs;
 - increasing the consumption of fruits and vegetables;
 - reducing the consumption of soft drinks and sugar-sweetened drinks;
 - promoting the consumption of water;
 - promoting breakfast;
 - it is better to eat smaller servings several times per day (6);
 - providing clear information about food.It is extremely important that all actors spread the same message in a national campaign.
- 3) In addition to education and activities, certain preconditions and the policy should be adjusted, such as maintenance of our parks, sports facilities. More areas should be created to promote physical activity, such as playgrounds for children and clubs for youngsters, so that they can be used frequently.
- 4) Stimulating the district centers to become more active, so that possibilities to exercise will be created in the living and residential environment, which are easily accessible to avoid transportation difficulties.
- 5) Closing certain roads during the weekend, so that the population can walk and exercise safely, e.g. Irausquin Boulevard (Eagle), San Nicolaas, and Oranjestad. This can take place in cooperation with IDEFRE, which already organizes many walking and running tours (*Appendix 12*). This stimulates the entire family to exercise, so that exercising becomes a family affair.
- 6) Cooperation between the Government and the private sector to promote the sale of healthy food.
- 7) Increasing the financial support to the White Yellow Cross for projects, such blood sample taking actions, as education, and prevention.
- 8) Amendment to the act on donations to promote the financial support from the private sector to sports clubs and organizations.

(Studies on the effectiveness of the interventions within the community can be found in appendix 12).

B. The living environment of infants and young children

Priority should be given to children ages 0-6 and their mothers. The first year of life is of crucial importance to a healthy life. Furthermore, the circumstances for the mother in these first years are heavy and expensive. Providing support to mother and child is important.

Stimulating mothers to breastfeed. Breastfeeding is the most natural way to feed a newborn. In the long term, breastfeeding offers protection against i.a. obesity. It turns out that most parents make their choice for the type of feeding before the pregnancy already. Therefore, it is important that women and their partners will already be informed before becoming pregnant about the importance of exclusively

breastfeeding the child as of birth. Babies who are breastfed have health benefits in the short term, such as a reduced risk of acute otitis media, atopic dermatitis, gastrointestinal infections, lower respiratory tract infections, asthma, and necrotizing enterocolitis (this last only in premature children).

In the long term, breastfeeding protects against chronic disorders, such as obesity, diabetes mellitus, celiac disease, leukemia (ESPHGAN Committee on Nutrition, 2007; Canadian Institute for Health Promotion, 2006; Arenz et al., 2004). To increase the number of mothers that begins breastfeeding, information should notably be provided about the benefits of breastfeeding. This raises knowledge and awareness, leading to a stronger motivation to begin and see through.

IMPLEMENTATION:

- 1) It is extremely important to support the 'Stiching Pro Lechi Mama' for the implementation of the National Breastfeeding Policy Plan Aruba ('NBBA').
- 2) Interventions relating to the prenatal and postnatal period, including the crucial days around the delivery, such as the program 'Hallo Wereld', seem to be more effective than interventions focusing on only one period.
- 3) Multifaceted interventions are notably effective, when they are focused on both the beginning, the duration, and the exclusiveness of breastfeeding.
- 4) Optimizing the essential social support to underprivileged groups.

In addition, attention is paid to young children in childcare/daycare centers. The first years of life are important to acquire a healthy lifestyle with balanced and varied eating habits and sufficient physical activity. In Aruba, obesity already increases as of childhood. Therefore, it is important to watch over good eating habits and sufficient physical exercise in this age group. As regards infants and toddlers, childcare is the main factor of influence, in addition to the parents and grandparents, in their immediate social environment. Therefore, additional attention is paid to the role these organizations can play in the promotion of balanced nutrition for young children. Toddlers really enjoy running, jumping, and climbing and should have the freedom to do so. Exercising forms part of the child's development. Young children should have sufficient possibilities to exercise and develop. In Aruba, there is no supervision over the daycare centers, so that there is no integral policy on the quality and contents of childcare.

IMPLEMENTATION:

- 1) Laying down by law the requirements for and supervision over the child daycare centers to protect the children as soon as possible. Supervision over the quality and contents of daycare should be guaranteed.
- 2) Working out supporting measures for childcare to draw up balanced menus (meals and beverages) and, thus, to promote a balanced and healthy offer. This can take place by means of e.g. brochures, work instruments, a website, education with attention for good practical examples.
- 3) Promoting parent participation in as far as healthy food in childcare is concerned by informing daycare facilities about how they can educate parents and involve them in the food offered and the composition of the menu. This can take place by making available brochures, a website, work instruments.

- 4) Informing daycare facilities about how they can stimulate children to exercise and enjoy exercising. This can take place by means of brochures, a website, work instruments.
- 5) Working out the active sailboat model for toddlers and preschoolers. The knowledge hereof should be transferred to the communities and care providers in cooperation with the services for integration.
- 6) Working on healthy nutrition together with the toddlers in a playful manner.

C. School

The eating pattern of children, young people, and young adults, notably as regards breakfast, beverages, snacks, consumption of vegetables and fruits, simply is problematical. This also applies to the extent to which pupils and students exercise. Even more so, now that physical exercise classes are not taught in each grade. Changing eating and exercising habits is of crucial importance to prevent overweight and obesity at a later age.

Of course, school is an important living environment for this target group. The impact thereof on the behavior of its pupils or students should not be underestimated. The prevention, promotion, and stimulation with regard to the children and youth should take place through education. The implementation of a food and physical activity policy at school, embodied in a broader health policy, is an effective way to promote balanced nutrition and healthy physical activity (www.gezondeschool.ned). International studies clearly show that the promotion of health at school yields a return (Stewart-Brown, 2006). Gain is actually achieved on both public health, healthy behavior, and the educational performances (Allensworth, 1997).

Studies show the following:

- Interventions through the school for children and young people are effective to reduce weight (Bessems et al., 2006).
- Daily physical education (increasing frequency, duration and intensity of gym classes), improving motor skills, physical education classes should be based on theoretic models, physical education teachers should be requested to inform and stimulate students, daily classes should be integrated into the school curriculum, and encouraging leisure time exercising is effective. Even a small increase in physical education classes is useful to reduce overweight (CIHI, 2006; Sharma, 2006).
- Interventions through school for children and young people are effective to increase leisure time physical activity (Bessems et al., 2006).
- Education to reduce screen-watching (television, games, DVD) is effective (Doak, C.M. et al., 2006; Sharma, 2006).
- Nutritional education (i.a. discouraging the consumption of soft drinks (including diet soft drinks), encouraging the intake of fruits and promoting the consumption of water) is effective (Doak, 2006).

Furthermore, the *SER report of January 2005* has also shown that afterschool care is not sufficient in Aruba, and that children are often alone, without supervision, after school. The participation and active involvement of parents in a behavioral change of the child is an important success factor for school interventions. Parents can be involved in several ways by making the parents more skilled in actively stimulating and encouraging physical activity among their children, increasing knowledge of the creation of taste preferences, increasing the offer of vegetables and fruits, creating a positive framework, and encouraging physical activity among their children. The best way to involve the parents is through parent-teacher contact, e.g. via newsletters, homework assignments, and sending material to the parents' home (Van Sluijs, 2007; Blanchette & Brug, 2005).

It is important that the same messages are spread and the same actions are taken at different levels: both in the classroom and at school and towards the parents. Only an ongoing, long-term effect leads to sustainable results. The school should explicitly opt for and work on health. The involvement of the

students and especially the parents leads to broad support.

An integral approach entails that there should be a structural change, such as keeping the children at school longer to make it possible that the children are looked after and are not lonely. In addition, these additional hours should be used to offer i.a. health classes, to promote sports up to three times per week, while also offering healthy food. There should also be possibilities to build up one's ability to do things independently and self-esteem. It is important that each school has a room for exercise/ gymnastics and promotes interscholastic games. In this way, a healthy school will be created. For this purpose, Aruba can enlist the help of the Netherlands Institute Healthy School. The project "healthy school cafeterias" of the Netherlands Nutrition Center is a concrete example of how healthy food can become an area of interest at school. An integral approach is used as a starting point, and not only the offer in the school cafeteria is looked at, but substantive support in the classes is also provided. The snack tents surrounding these schools play an important role.

The offer of meals, beverages, and snacks at the schools is a weak point. The policy should be focused on a more limited offer with less options and mainly 'healthy' choices, including i.a. a ban on soft drinks.

IMPLEMENTATION:

- 1) Implementing the healthy school.
- 2) Making sure that the 1st and 2nd grades attend physical education classes.
- 3) Increasing the number of physical education classes per week.
- 4) Implementing an integrated nutrition and physical activity policy.
- 5) Structural annual health education on all points.
- 6) Further developing and supporting school policy on nutrition and physical activity. Introducing the sailboat model.
- 7) Stimulating a balanced offer of school meals by increasing fruits and vegetables in the meals and as a snack.
- 8) Promoting expertise among the kitchen staff.
- 9) Stimulating a balanced offer of beverages, consisting of water and beverages of low sugar content.
- 10) Offering each grade free drinking water.
- 11) Banning soft drinks and beverages of high sugar content.
- 12) Prolonging the school hours, so that there is afterschool care, during which physical activity is stimulated by sports organizations (broad school system).
- 13) Implementing 'exercise snacks' throughout the school day.
- 14) Promoting active playgrounds, gyms to increase physical activity among elementary schoolchildren.

- 15) Implementing, screening, and steering educational material in the area of physical activity and nutrition.
- 16) Stimulating the teacher-training course 'Movecion y Salud' [Exercise and Health] ('IPA').
- 17) Promoting the expertise of school teams, management, teachers, school staff members (kitchen staff and educators) in the area of nutrition and physical activity.
- 18) Identification protocol with the schools for an annual measurement of weight, height, BMI, and waist circumference of all school-going children.

D. The workplace

Promoting balanced nutrition and sufficient physical activity at the *workplace* refers to every effort of employers, employees, and of society to strengthen the patterns of living of working people. Apart from the work or the working conditions, unhealthy living patterns have their own share in the occurrence of sicknesses and absenteeism. An unbalanced nutrition and insufficient physical activity lead to a considerable personal and social loss due to a decrease in the quality of life, loss of productivity, or premature incapacity for work.

Together with the Government, the employers are responsible for the indirect costs related to unhealthy eating and exercising habits, through medical expenses for hospitalization, medication, laboratory tests, and social benefits. On the other hand, a healthy weight and an improved physical condition lead to better concentration and an increased daily productivity. A balanced eating and exercising pattern also benefits the company. At present, physical inactivity is internationally recognized as a new labor risk (European Agency for Safety and Health at Work, 2005).

A person working fulltime eats $\frac{1}{2}$ to $\frac{1}{3}$ of his daily meals at work. However, the workplace often does not offer the possibility to bring healthy living habits into practice. Moreover, it turns out that working people tend to skip breakfast more often due to a lack of time in the morning.

The involvement of the employer in the employee's health is essential. Thus, the blood sample taking actions of the White Yellow Cross should be promoted by the employers. Programs should be prepared to educate and promote physical activity at the companies.

IMPLEMENTATION:

- 1) Stimulating employers to have the company participate in the preventative blood sample taking actions of the White Yellow Cross. Additional financial support to the White Yellow Cross is necessary.
- 2) Programs linked to the blood sample taking actions of the White Yellow Cross, including an incentive package for the participants, so that continuity in physical activity and nutrition programs is created.
- 3) Stimulating and having available fruits as a snack at work.
- 4) Avoiding the presence of soft drinks and beverages of high sugar content in the office.
- 5) Rooms for pumping and other changes to meet mother and child (environment).
- 6) Promoting the possible cooperation between companies, so that the smaller companies can participate in larger projects.
- 7) Exchanging intracompany and intercompany information (newsletter) as regards the activities in the area of physical activity and nutrition education.
- 8) Promoting company sports and tournaments between companies.
- 9) Family days, during which the entire family exercises and learns how to eat healthy - also stimulating healthy food/nutrition classes in the workplace.

7.2. Promoting breastfeeding

The promotion of breastfeeding requires a structural approach. The study “*KABP-onderzoek Borstvoeding Aruba 2003*” [KABP Study Breastfeeding Aruba 2003] of the Department of Public Health has shown that only 17% of the mothers exclusively breastfed during the first 48 hours (KAPB-Study 2003). The approach should be focused on stimulating and facilitating breastfeeding. This can be done by having the hospital promote exclusive breastfeeding for 6 months after the birth of the child. The implementation of the National Breastfeeding Policy Plan Aruba (“NBBA”) is desirable.

Research has shown that there is a correlation between stopping breastfeeding and returning to work. The new mothers stop breastfeeding when they return to work again. Recently, an act has been adopted, which makes it legally possible to breastfeed and/or to pump in the workplace. It has turned out, however, that there is not sufficient information for the employer and employee as to how this should take place. Targeted information should be given to the employer and employee.

An employee who breastfeeds is more productive. Besides, breastfeeding promotes the health of the mother/employee. The health benefits are: a reduced risk of diabetes mellitus type 2, breast and ovarian cancer, quicker recuperation of the womb, less bleeding. Women who do not breastfeed or prematurely stop breastfeeding, run an increased risk of postnatal depression. (“Voedingscel Vlaamse Vereniging Kindergeneeskunde”, 2006; Agency for Healthcare Research and Quality, 2007).

In addition to health benefits, breastfeeding also entails *economic benefits*. Breastfeeding reduces the costs of healthcare and decreases absenteeism. According to a study in the Netherlands, each increase

of 10% in breastfeeding results in a direct savings of approx. 1 million. Furthermore, the employee is more productive.

Many mothers worry that their child is receiving sufficient milk, so that the mothers start to give supplements of formula prematurely. Risk groups are mothers with low incomes, born in Aruba, who have given birth via cesarean, or who are not supported by their partners.

The duration of the period of rest after the delivery is an important predictor of the duration of breastfeeding. If the mother stays home longer than the assumed duration of maternity leave, the chance of long-term breastfeeding increases considerably. Therefore, it is important to provide supporting information. Offering breastfeeding information to parents-to-be or young mothers without personal contact or with very brief contact (folders or telephone advice) is less effective than offering information combined with in-depth one-on-one communication. Using only written material is the least effective intervention. Our objective is to increase the number of women that begins breastfeeding and to support and stimulate mothers when breastfeeding in the first days and weeks.

The actors of importance are: “Fundacion Pro Lechi Mama”, White Yellow Cross, hospital, Department of Public Health, midwives, gynecologists, and pediatricians.

IMPLEMENTATION:

- 1) Implementing the National Breastfeeding Policy Plan Aruba (“NBBA”).
- 2) Protocol with the hospital that exclusive breastfeeding for six months is promoted in the maternity ward. Also prohibition on offering new mothers free formula products. This can take place by means of a protocol with the formula agents.
- 3) Inserting the right to breastfeed and/or pump in the State Ordinance Substantive Civil Servants’ Law.
- 4) Informing employer and employee as to how the newly implemented act on breastfeeding and/or pumping works in actual practice by means of brochures.
- 5) Continuing the distribution of information (brochures), advice, and education with regard to breastfeeding to parents and among the actors.
- 6) Setting up mothers’ groups to share experiences with breastfeeding. Offering information with personal contact is more effective.
- 7) Interventions in healthcare in the form of a combined approach, consisting of refresher courses for the staff, appointing a breastfeeding consultant, or a lactation expert, making available written information to staff and clients.
- 8) Recognizing the lactation expert diploma.

7.3. Promoting unambiguous information by the healthcare providers

General practitioners, dieticians, exercise experts, (homecare) registered nurses, general dentists, pharmacists, gynecologists, pediatricians, and other care providers are inevitably confronted in their practices with all sorts of questions about nutrition and physical activity. They have the important task to make the patient aware of the importance of a balanced eating pattern and healthy exercising.

In Aruba, care providers are one of the most important sources of information for people as regards balanced nutrition, as well as the most reliable one. It has turned out that the healthcare providers are aware of the usefulness hereof but do not have time to discuss this during the consult. The knowledge of nutritional aspects can be improved. It has turned out that the general practitioners do not give unambiguous information as regards the approach of overweight and obesity. To properly inform and refer people, care providers should dispose of the appropriate knowledge and be able to make use of practical tools when giving advice. Therefore, it is necessary to draw up unambiguous information and to adopt guidelines for this group. As most of the prevention will depend on the first line, support to general practitioners is necessary. It is not the intention to turn the general practitioners into nutrition and physical activity experts. It is important that they recognize the problem and are able to provide relatively simple information. The support has to consist of highly educated nurses, who can provide the information. Dieticians and physical activity experts should be hired in the near future.

As regards morbid obesity, there should be a treatment protocol with competent central unit for the treatment of these cases. At present, the AZV only reimburses 20 gastric bypass interventions per year for patients with an average BMI between 50-55. This causes a waiting list of approximately 100 patients per year, who are eligible for this treatment, but who do not receive treatment due to the current policy.

An integral treatment procedure should be developed, so that more of these extreme cases will receive the medically necessary intervention.

The *summary study number of diabetics in AZV file 2005* shows that identified MED-DIAB insured persons amount to 6.4% of the insured persons, i.e. 6,000 persons. They are responsible for approximately 20% of all AZV medical expenses. The age group 50-80 incurs most expenses (medication, hospitalization, and amputations). Diabetes is a disease with enormous financial consequences for the AZV Fund. The demand for care will continue increasing in the years to come, given the prevalence of overweight in Aruba and the expected aging of the population. The demand for care will also increase because of necessarily catching up, as, apparently, a large number of insured persons with diabetes do not receive proper diabetes care at present. There also is reason to believe that there is a large group of "undisclosed diabetics". The document is focused on primary prevention, mainly encompassing the fight against overweight and the promotion of physical activity. Specific information and prevention for the youth, 'the healthy school' project. Consultation with the business community and schools. Government plays a decisive role. Intensifying physical activity at schools, increasing the excise tax on sugar and alcohol in order to obtain funds for the purpose of prevention. Cooperation between the Government, AZV, schools, business community, and physicians is required and is a critical success factor in the fight against overweight.

IMPLEMENTATION:

- 1) Preparing a scenario with agreements between the care providers, the AZV, and the Department of Public Health as regards preventative and curative care.
- 2) Providing for courses and information for general practitioners and/or HAVA.
- 3) Elaborating preventative guidelines for care providers to promote balanced nutrition and physical activity.
- 4) Preparing a prevention package for the care providers, based on the sailboat model, with direct tools to measure waist circumference and BMI.
- 5) Stimulating the general practitioner to systematically measure weight, height, and waist circumference.
- 6) Encouraging the engagement of multidisciplinary teams, such as a nurse, dietician providing information to the patient.
- 7) Providing unambiguous information both horizontally and vertically in the care sector.
- 8) Expanding surgical and other treatments of morbid obese patients.
- 9) Expanding and strengthening youth healthcare and several other divisions within the Department of Public Health.
- 10) Ensuring that financial funds are available for the Department of Public Health to implement projects for the promotion of balanced nutrition and healthy physical activity.

7.4. Good nutritional information

It has turned out that many groups are not aware of what balanced nutrition means, nor are they familiar with nutritional information. It is necessary that the consumer receives clear and non-contradictory information in a positive and attractive manner. Within this framework, it is important to introduce a food-labeling system, as well as to exchange good practices with the European Union and the Netherlands. A good example is a clear food-labeling policy, such as the system of a 4-color label on the front of the product, e.g. the "Sailboat Design for the Region".

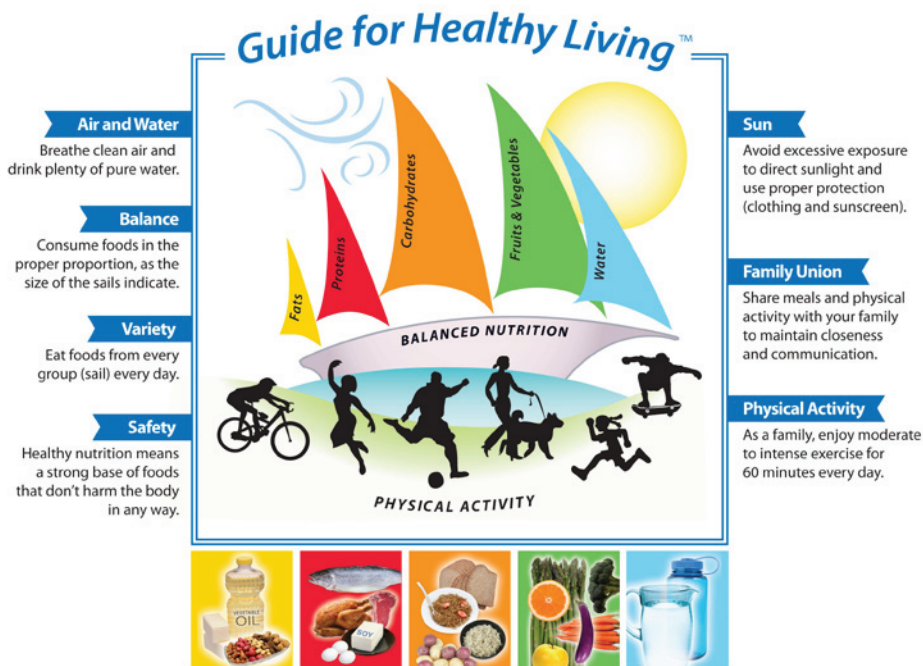
The information will automatically influence the purchasing behavior and promote the purchase of healthy food. This policy should be implemented in cooperation with the various supermarkets. Thus, a healthier purchasing pattern and eating habits can be created. The service clubs, in cooperation with the Richard Visser Institute, are working on a pilot project in this area. This project will be examined by the Free University Medical Center of Amsterdam. A labeling policy should be combined with a general information campaign.

A new Aruban information model "Sailing towards a healthy society".

The Balanced Diet Ship

The “Balanced Diet Ship”, with its five sails, reflects this concept as it moves through a sea of plenty filled with sunshine, clean air, healthy food and physical activity on its journey toward a longer and healthier life.

Each of the sails propelling the Balanced Diet Ship forward represents a distinct food group. The three large sails represent the consumption of *water, fruits and vegetables, and carbohydrates*; the medium sail represents fats; and the small sail represents proteins. The size of each sail is correlated with the amount of food that should be consumed from the food group it represents.



Water

(represented by a large blue sail on the Balanced Diet Ship)

Water is the principal component and most important element of every living organism, representing 50% or more of our total body weight. The importance of water as a nutrient is only exceeded by the importance of oxygen. Water is therefore represented by a large sail, reflecting the need to drink as much water as possible.

The physical and chemical characteristics of water make it an ideal medium for the distribution of chemical substances found in the body substances which are important to the metabolic process. Given its role as a general transport medium, water plays a direct part in enabling various biological functions to operate effectively.

The total amount of water found in the body changes with age. In the newborn, it comprises up to 75% of total body weight. The percentage of water decreases as one grows older, down to 55-65% of body content in adult men and 50-55% in adult women. This difference between men and women is due to the fact that women have less muscle and more fat tissue. In a physiologically ideal situation, a male individual 20 years old and 1.83 m tall, with a body weight of 70 kg and in good health should have a

body water content of about 40 liters.

Total body water content remains relatively constant due to the action of two powerful reflex mechanisms: the sensation of thirst and a reduction in the volume of urine eliminated when total body water volume begins to diminish. Should the total body water content increase for any reason, the sensation of thirst tends to wane and the volume of water eliminated through the kidneys increases as well, producing the desired balance of body water content.

There are three principal sources of body water: water ingested as such; water found in food; and water generated by one's cells as a by-product of the metabolism of carbohydrates, fats and proteins. The total amount of water ingested by an individual, either as water or as water contained in his diet, can vary widely, depending upon factors such as climate and type of food consumed. For example, oranges, watermelons, cantaloupe and similar fruits have a high water content per unit of weight, while the water content per unit mass of other foods, such as grains, legumes and tubers, is much lower. The need for water also increases in hot, dry climates and in situations involving increased respiration or what is known as "alveolar ventilation".

Urine is the principal channel through which water is lost from the body. The amount of water lost through the skin is extremely variable and may occur as sweat, which is noticeable, or "insensible perspiration", which is unnoticeable. It can also occur through fecal matter, the lungs and exhaled air.

It has been suggested that at least 1.5 liters of water should be consumed each day, but it is practically impossible to determine one's true water needs in a given situation with any degree of precision because of the large number of factors that can increase or decrease water loss. Water nourishment requirements have been established with this in mind. Of these water requirements, over half are obtained from the water content of food with the remainder coming from the water we drink.

Water must be clean and drinkable and must not contain any physical, chemical or biological agents in significant quantities or any harmful characteristics that could adversely affect one's health. Mineral content, or hardness, is also of particular importance and must be kept within certain limits. Consumption of so-called "hard water", or mineral-rich water, places an excessive functional load on the kidneys which can cause severe balance disorders in the body if certain limits are exceeded. It can even lead to death which would occur if an individual were to drink sea water, for example.

At the other extreme, we find distilled or completely de-mineralized water which, in addition to causing other disorders, can have a negative impact on the dynamic equilibrium that exists between various mineral components of the cells that make up body tissues. It too can lead to death if allowed to persist for a sufficient period of time.

Fruits and Vegetables

(represented by a large green sail on the balanced diet ship)

Fresh fruits and vegetables must be part of a varied, nutritious diet. These foods provide significant amounts of the vitamins, minerals, trace elements, dietary fiber and antioxidant nutrients that protect an individual's health and are active in the prevention of disease. A diet consisting of large quantities of fruits and vegetables is one that is high in both taste and nutrition. Fruits and vegetables are therefore represented by a large sail, indicating the need to consume large portions of these types of foods in your diet.

Consumption of fruits and vegetables increases the antioxidant content of one's diet which is currently thought to be a basic dietary requirement. Nutrition experts now recognize the contribution of fresh

fruits and vegetables in helping to destroy or neutralize the oxygen-based free radicals generated as part of the human metabolic process, supporting the defense systems that reduce the adverse effects of these free radicals. The damage caused by free radicals, if extensive enough can harm the body's cells and makes it difficult for them to adapt to change. It can even lead to cell death. The consequences of these changes can be severe, and have been linked to the development of arteriosclerosis, cancer, inflammatory bowel disease, neuro-degenerative diseases, autoimmune problems such as rheumatoid arthritis, and the complications of diabetes.

Fruits should be eaten fresh in their natural state, and salads should be eaten raw due to the loss of vitamins and minerals that occurs during the cooking process.

Preference should be given to dark-green and yellow or orange vegetables, and to fresh, unstrained vegetable juices with no salt or sugar added.

Fruits and vegetables also play a significant role in providing the required amount of *dietary fiber*. Not long ago, dietary fiber was thought to be an inert substance consisting largely of cellulose and having an insignificant influence on human health. However, it is currently suggested that insufficient fiber in the diet may contribute to the development of many diseases including colon and rectal cancer; diverticulitis; appendicitis; constipation; hemorrhoids; diabetes; and obesity.

Much research has been done on the relative importance of dietary fiber, and some controversy exists as to which foods should, or should not, be defined as dietary fiber. However, there is general agreement on the value of a number of properties characteristic of this element.

One important property of dietary fiber is its ability to retain water. This property makes a major contribution toward a well functioning digestive system. Dietary fiber also has the ability to form gels in the gastrointestinal tract, leading toward increased glucose tolerance and lessening the absorption of cholesterol and salt. Another important property attributed to dietary fiber is its ability to absorb calcium, magnesium, zinc and iron. The fermentation of dietary fiber in the colon also produces two elements, gas and energy, that are necessary for proper colon function.

The consumption of a sufficient amount of dietary fiber therefore has a positive effect on the digestive system through increased fecal mass; increased stool fluidity; shortened intestinal passage time; dilution of solids found in the large intestine; excretion of nitrogen, fatty acids, cholesterol and salt through the feces; and the stimulated growth of beneficial bacteria. It also helps to reduce the absorption of carbohydrates which increases glucose tolerance, reduces insulin requirements after meals, and increases the efficiency of glucose metabolism.

Currently, there is no definite agreement among researchers on the amount of dietary fiber that should be consumed daily, and there is even less agreement as to the type and variety of fiber that should be eaten. It has been suggested that consumption of 15 – 30 grams daily is sufficient for a healthy adult, and 3 – 4 grams a day is recommended for children two years of age or older. No recommendations have been made for younger children. Diets providing 6 grams of fiber or more are considered to be rich in this nutrient which should form a regular part of every person's diet.

Vegetables that should be eaten include chard, cabbage, lettuce, carrots, squash, beets, beans, peppers, onions, pumpkin, cucumbers, radishes, tomatoes, celery, eggplant, broccoli and okra, among others. Fruits that should be eaten include oranges, lemons, limes, grapefruit, mangos, papaya, bananas, guava, apples, pineapple, pears, grapes, apricots, peaches, coconut, cherries, mandarin, mango, anon, sour sop, pineapple pear, coco, prunes, red currants, mamoncillo, medlar, strawberries, cantaloupe and watermelon, among others.

The importance of consuming large amounts of fruits and vegetables is reflected in the large size of the green sail representing this food group.

Carbohydrates

(represented by a large orange sail on the Balanced Diet Ship)

Foods containing carbohydrates are critical in that they provide the energy we need to function well and to lead an active life style. Of all of the dietary elements, carbohydrates, represented by a large orange sail, has to be consumed most frequently in order to meet the body's energy needs. Sixty percent or more of an individual's total energy needs must be satisfied through this food group.

There are two basic types of carbohydrates: *complex carbohydrates* such as starch, and *simple or refined carbohydrates* such as sucrose, maltose, or lactose. Carbohydrates should preferably be eaten in the form of starch which is absorbed into the bloodstream more slowly than simple carbohydrates. This slower absorption, as compared with the rapid absorption of simple carbohydrates, is beneficial because it does not produce the concentrated peaks of large glucose production that simple carbohydrates does and therefore does not require the production of large quantities of insulin by the pancreas. When combined with adequate amounts of soluble dietary fiber, carbohydrates will be digested more slowly, thereby improving glucose tolerance so critical to the prevention and control of diabetes.

No less than 85% of carbohydrates eaten must come from starch, with the remaining 15% consumed through simple or refined carbohydrates. Foods containing high levels of starch include rice, wheat, corn, barley and rye. It is important that these foods be designated as "whole grain", that is, grains that have not had their shell completely removed or depleted through industrial processing. Pasta is also an excellent source of carbohydrates, and pastas too should be "whole grain. Other sources of carbohydrates include potatoes, yucca, and bananas, among others. Foods containing high concentrations of simple or refined carbohydrates, which should be consumed in limited quantities, include jam, candy, donuts, cakes, cookies, sugary beverages and other foods containing large quantities of sucrose, maltose or lactose. Priority should be given to low glycemic index carbohydrates.

Fats

(represented by a medium yellow sail)

Fats are represented by a medium yellow sail, indicating that 25-30% of an individual's total energy needs should be met through this type of food.

The most common fats in the human diet are *triglycerides* and *cholesterol esters*. Triglycerides may be *saturated* or *unsaturated*, depending on the presence or absence of what are called "double bonds." If a fatty acid contains only one double bond between two carbon atoms, the fat is considered to be mono-unsaturated. Fat containing two or more double bonds are considered to be poly-unsaturated.

Of the total energy received through the ingestion of fat, 5 –10% should be in the form of saturated fats; another 10% in the form of mono-saturated fats; and the remaining 10% as poly-saturated fats.

Fats may have an *animal* or *plant origin*. Animal fats are generally saturated fats. Foods containing this type of fat are also generally rich in cholesterol. With the exception of coconut and palm oil, fats originating in plants, known as oils, contain a greater amount of unsaturated fat.

The fats we consume may be *visible* or *invisible*. Visible fats include fats used for cooking, such as oils, lard or bacon, or those served at the table, such as butter, cream cheese or margarine. Because this type of fat is visible, it can be easily avoided. Non-visible fat, on the other hand, cannot be seen, even though it is present in many of the foods we eat. These fats can be found in meat, fish, eggs, milk, and nuts, among others.

Fats are also classified as being *non-essential* or *essential*, depending upon the body's capacity to synthesize its own fatty acids. The non-essential group consists of fat produced by one's own body;

essential fatty acids must be supplied through one's diet in quantities equivalent to 3 – 5% of an individual's total energy needs.

Excessive fat consumption is associated with many medium and long-term health implications. This is especially true of foods rich in saturated fat and fatty acids. Limited consumption of pork, beef, lamb, bacon, lard, butter, chicken skin, cream cheese, whole milk and fatty cheeses is therefore recommended. Coconut, palm and avocado oils also have a high saturated fat content. Fats that are liquid at room temperature, in contrast, are rich in polyunsaturated fats and can be found in vegetable oils such as olive, soy, corn, sunflower, sesame and peanut oils.

When preparing food rich in fat, especially fried foods, it is important to avoid overheating the fat or reusing it to the point where its essential qualities are altered. This can produce toxic substances in the fat leading to various illnesses, including cancer.

Proteins

(represented by a small red sail on the Balanced Diet ship)

Foods containing large amounts of protein are represented by a small red sail, suggesting that this type of food should be consumed in amounts smaller than those recommended for any of the other food groups.

Foods containing protein should satisfy 10-15% of an individual's total energy needs. However, the fundamental nutritional purpose for consuming proteins is not their use as an energy source but rather their role in the process of cell multiplication and the repair of body tissues.

Proteins are made up of simpler structural units known as *amino acids*. There are currently 22 different types of amino acids.

Amino acids too are classified as *essential* and *non-essential*. Non-essential amino acids can be synthesized from carbohydrate and nitrogen residues, whereas essential amino acids cannot be produced this way and must be obtained through one's diet.

Proteins must be digested before their constituent amino acids can be released and subsequently absorbed. The digestion of protein begins in the stomach and is completed in the small intestine, with help from the pancreas. The nutritional quality of the proteins found in food depends, among other things, upon their digestibility and upon their biological use and importance once they have been digested and their constituent amino acids absorbed. A protein is considered complete from a nutritional perspective if it contains all essential amino acids in the correct proportions, as is true for milk and egg proteins.

Dietary proteins can also be of *animal* or *plant* origin. Animal proteins tend to have a higher amino acid score and a higher level of digestibility, adding to their nutritional value.

Many experts believe that 50% of the total amount of protein consumed should be of animal origin and the remaining 50% of plant origin, although this may vary depending on the individual's life style, functional capacity and health.

Excellent sources of animal protein include milk, meat and meat products, free-range poultry, fish, eggs and internal organs such as the heart, liver and spleen. Plant-based foods, such as grains and legumes or beans, make the greatest quantitative contribution in meeting an individual's protein needs, especially in developing countries. When grains and legumes are combined in appropriate proportions, amino acid mixtures that significantly reduce the actual need for animal-based proteins can be achieved.

Vegetables, tubers and other starchy foods provide very little protein, and any protein obtained from these foods is of poor nutritional quality.

Foods of animal origin are often related to food-borne illnesses caused by biological contaminants. It is therefore important to be sure that these types of foods are fully and evenly cooked by applying enough heat to allow the thermal center of these foods to reach 70 degrees. You should also avoid cross contamination from other uncooked foods or contaminated surfaces.

This instructional guide is designed to go together with a colored “front of Label” food labeling system – to ensure change in the public's buying habits.

7.5. Media and communication

There are other actors that are of importance to communicating about balanced nutrition and healthy physical activity. First, it is endeavored to involve the media sector, the food outlets/supermarkets, restaurants, snack bars.

Information programs and messages regarding the promotion of balanced nutrition and healthy physical activity should become part of the media. A complete large-scale awareness and prevention program in cooperation with the healthcare sector, education, sports, non-governmental organizations, and the private sector, coordinated by a central unit, such as a central prevention institute/foundation, is of vital importance to the success of the National Plan Aruba 2009-2018. Information can be provided via text-messaging and advertising on Cable TV. Furthermore, several stakeholders, such as ATIA, Chamber of Commerce, OPPA (1200), SNBA, FTA, SETAR, etc., have indicated to be willing to provide information to their members through their newsletters.

The central prevention institute should take care of the distribution of information to all actors, so that the same information and messages are spread in the entire island and at each level. If messages are contradictory, the consumer gets confused and threatens to lose interest in healthy physical activity and balanced nutrition.

By repeatedly campaigning under the same “brand name” of the central institute, the public profile will be raised.

It is easier to change the exercising and eating habits of children and young people, because their behavioral patterns have not yet or not entirely set in. This also indicates that commercials for candy and soft drinks during children's shows on television should be avoided. The media can contribute to this.

IMPLEMENTATION:

- 1) Establishing a central prevention institute.
- 2) Organizing a large-scale campaign on balanced nutrition and healthy physical activity.
- 3) Entering into a protocol with the media in connection with the campaign.
- 4) Providing information to the actors that have a newsletter to pass on the message to their members.
- 5) Promoting recreational physical activity in addition to sports on television.
- 6) Supervision and legislation as regards commercials during children's shows.
- 7) Teaching to cook healthy and affordably by means of television shows.
- 8) Special rates of the media for information campaigns on balanced and healthy nutrition.
- 9) Creating special information segments in all media and stimulating interactivity among the population.