



# A comprehensive approach to weight management in Hispanic adolescents in Orange County, CA

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## Background

In 2005 NHANES reported 22 million children < 5 years old are overweight, with 9 million (15%) in the US. An additional 15% are at risk for overweight. With 80% of overweight children becoming obese adults it is easy to see why childhood overweight is being treated as an epidemic. A unique feature that children face, unlike adults, is lack of portion control. Likewise, children are subject to parental choices & lifestyle impacting the availability of healthy food selections. Largely due to their cultural beliefs, Hispanics have the highest percentage of overweight or at risk for overweight adolescents across all race/ethnic groups (in 2001 - 2003 5 - 11 y/o, 21.2% to 23.6% Hispanics)

Despite the prevalence of obesity there are many barriers to children combating this disease as evidenced by the staggering statistic that less than 20% of children receive treatment. Some of the barriers include the physician's misdiagnosis of children i.e. not using the correct BMI scale. Even if they do discover a child is overweight or at risk for overweight there are other psychosocial factors contributing to the lack of treatment, such as fear of alienating a family or hurting a child. Lastly logistical barriers exist including uncertainty about what weight loss approaches have the best outcomes—or work at all, time pressures of visits, insurance systems that do not reimburse doctors for follow-up visits to treat obesity alone, and the lack of a place to refer children who need more intensive help managing their weight.

Although our understanding of the importance of treatment and prevention of obesity is improving, there remains to be concrete guidelines for either. What is known however is that using caloric restriction alone predisposes children to weight regain by decreasing lipolysis, fat oxidation, and resting metabolic rate. Reduction of sedentary behavior by incorporating regular activity shows improved compliance as opposed to forced exercise. It is well accepted that a multi-pronged approach to weight loss is best for both long term results and improved compliance. A Cochrane review of obesity treatments in children published in 2003 reported no conclusive evidence due to lack of consistency and insufficient descriptions of intervention plans. In 2005, the Cochrane collaboration published another review focused on prevention of obesity in children which concluded that short term studies incorporating diet and activity do not have a significant impact on BMI. Studies did show however, a positive influence on BMI and changes in diet and activity level.

## Purpose

The goal of this study was to develop an innovative approach for treatment of overweight in Hispanic adolescents which is enjoyable for children (PowerPlay MD-OC). The program included increased access to pediatric subspecialists and links to community programs and activities using culturally and linguistically sensitive methodologies.

## Methods

Study design: Referral of children (ages 3-15) with BMI > 85% to participate in program for 8 weeks. Convenient sample based on geography & self-referral. Program consisted of nutrition counseling twice a week, three mandatory psychology consults (child alone, child with parents, parents alone—with the opportunity for additional meetings upon request), and supervised physical fitness 2x week with encouragement to participate 5x week.

## Results

In the current study 95% of participants identified themselves as bilingual (Spanish). All of the participants were part of the Medicaid healthcare system, and the average age of the participants was 9.83 years (n=47). At completion of the program the compliance and satisfaction rates were exceptional: 84% compliance rate (attended all 8 weeks of sessions), 92% stated they were "very satisfied" with the results, 100% would recommend to others, 100% rated instructors as excellent or good, 92% stated nutrition and exercise information was "very useful." Additional notable effects of the program were that the average weekly exercise = 5 days, and when polled/examined participants were less likely to consume fruit/vegetable juice, sodas and other snacks, and were better able to identify foods from 4 major food groups.

Table 1. Measured diagnoses of participants

Clinical diagnosis	# participants	% of total participants	Notes
Acanthosis nigricans	30	63.8%	Evident skin discoloration present on back of neck or in skin folds
Elevated BP	11	23.4%	As measured by CDC age matched pediatric charts
Asthma	8	17.0%	As determined by medical history and prior treatment
Family history of diabetes	6	12.8%	From extensive family/patient interview
Hypercholesterolemia	5	10.6%	From blood tests
Hypertriglyceridemia	4	8.5%	From blood tests
Low HDL	4	8.5%	From blood tests
Prediabetes	2	4.2%	From blood tests (C-peptide & insulin)

Table 2. Mean anthropometric measures pre and post 8 week intervention

Parameter	Initial	8 weeks	Notes
BMI	26.3 ± 4.3	24.8 ± 4.2	Average loss = 1.5
Weight (lbs)	126.7 ± 41.3	122.8 ± 41.5	Average loss = 3.9 lbs
Waist circum. (in)	36.4 ± 4.4	34.5 ± 4.7	Average loss = 1.9 in
BMI %	98.7 ± 5.7	96.4 ± 5.3	Average loss = 2.3 %
Fat mass %	34.4 ± 7.3	31.8 ± 7.7	Average loss = 2.6 %

Figure 1. Graphical representation of participants' success after completion of program

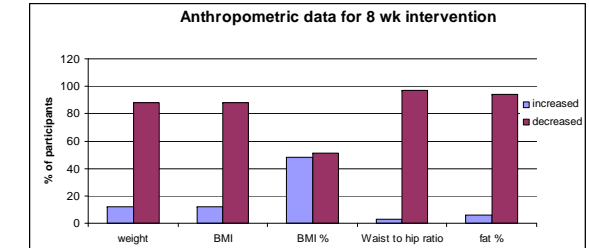


Figure 2. Photograph of selected participants during supervised exercise class



## Conclusion

Through a comprehensive exam and extensive medical history we (PowerPlay MD-OC) have demonstrated that many overweight children have multiple associated medical conditions. We have shown that many of these co-morbidities have gone previously undiagnosed, illustrating the medical community's unawareness of the impact obesity has on general health. Our study proves that a comprehensive program addressing diet, exercise and the psychosocial aspects accompanying obesity has positive effects on total weight, BMI, waist circumference, and fat mass. We also provide evidence that to maintain high levels of compliance a weight reduction program needs to be strictly personalized including the incorporation of culturally sensitive methods to relate to the participants and their families.

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