



**Diabetes Awareness and Prevention Education  
in Schools in India**



**May 2011 – March 2012**

## **YEAR 1 RESULTS 1. Knowledge**

The comparison of knowledge scores at baseline and at the end of year 1 showed an increase of knowledge in a number of categories, listed below, after year 1 of intervention among 6th and 7th grade boys and girls, in both private and government schools, in all age groups.

### **1.1: Knowledge about Healthier Eating Improved**

- After year 1, 94.8% of the students reported that having a balanced diet is important compared to 90.7% of students at baseline ( $p < 0.001$ ).
- 86.2% students after year 1 reported that whole grains, cereals and whole pulses are good sources of fiber as compared to 77.6% before intervention ( $p < 0.001$ ).
- That unhealthy eating habits can put one at risk for diabetes was reported by 77.2% students after year 1, as compared to 65.4% at baseline ( $p < 0.001$ ).

### **1.2: Knowledge about Physical Activity Increased**

- After year 1, 90.2% of students reported that dancing, climbing stairs, doing household chores (like cleaning the house, gardening, etc) are all forms of physical exercise, as compared to 85.7% students at baseline ( $p = 0.001$ ).
- 86.4% students reported that not only overweight people should exercise, as compared to 80.8% students at baseline ( $p < 0.01$ ).
- 61.3% after year 1 intervention reported that being physically inactive or not doing regular exercise can put one at risk of diabetes, while at baseline 50.1% students held that view ( $p < 0.001$ ).

### **1.3: Knowledge about Diabetes Increased.....**

- 52.4% of students after year 1 intervention vs. 48.7% at baseline reported that being overweight or obese now is related to getting diabetes in the future.
- Having a family history of diabetes increases the chance of getting diabetes was reported by 53.6% students after year 1 intervention as compared to 48.7% at baseline ( $p < 0.05$ ). More girls than boys showed improvement on this point.
- More students (51.9%) after year 1 intervention than at baseline (46.6%) felt that the risk of diabetes is higher in tobacco users than in non-tobacco users.



- More students (73.2%) after year 1 intervention, than at baseline (67.3%), reported that people with diabetes are more likely to develop heart disease, stroke, kidney and eye problems.

## **...As Did Knowledge That Diabetes is Preventable with Lifestyle Changes**

- The proportion of students who reported that Type 2 diabetes is preventable, and that exercise and healthy eating can prevent diabetes, was higher after Year 1 intervention (50.7% and 77.4%, respectively) than before the intervention (42.1% and 69.8%, respectively) ( $p < 0.001$ ).

## **2. Rich Insights were obtained into Behavior Change**

### **2.1: Eating habits– children chose healthier foods**

- No dramatic differences were observed in some eating habits of the children. More than three-fourths of the children said they eat breakfast everyday (78.7% students after intervention and 77.8% at baseline), and about 40% said they eat out regularly (42% students at baseline and 38.5% after year 1 intervention ( $p = 0.001$ )). We have work to do in this regard.
- The daily consumption of fruits and vegetables did not change: 74.7% students reported eating fresh fruits and vegetables at baseline and 74.9% after year 1 intervention in the overall student sample. Interestingly, there was a significant shift among government school children, where significantly, the daily consumption of vegetables and fruits increased to 76.4% of students after intervention from 68.3% at baseline ( $p = 0.003$ ).
- We probed further. We found very interesting reductions in the consumption of carbonated drinks, fried snacks, traditional and nontraditional Indian sweets and chips after year 1 intervention among both boys and girls (8.9% students at year 1 vs. 15.6% at baseline consumed carbonated drinks daily, 7.8% vs. 9.8% consumed fried snacks daily, 9.0% vs. 12.8% consumed traditional Indian sweets everyday, 10.3% vs. 15.3% consumed nontraditional Indian sweets daily, and 18.8% vs. 21.4% consumed packaged chips everyday).
- Also, encouragingly, children preferred healthier food options consistently after year 1 intervention:

- The proportion of students who preferred lemonade over sodas and cold drinks increased from 62.6% at baseline to 75.1% after year 1 intervention. And there was a decrease in those who preferred sodas and cold drinks, from 30.6% at baseline to 21.8% of students after year 1.
- Those who preferred fruit chaat (lower calorie fresh fruit snack) over aloo tikki (pan-fried potato patties) increased from 60.3% at baseline to 68.9% students after year 1, while those who preferred aloo tikki decreased from 31.9% to 28.2%.
- Those who chose vegetable poha (lighter snack made with beaten rice) over samosa (deep fried curried potato pastry) increased from 50.8% at baseline to 63% after the intervention, while those who chose the unhealthier option were around 40.9% at baseline and 33.8% after year 1.
- Those who preferred rajma rice (healthier option of rice and beans) over chole bhatura (deep fried white flour Indian bread with curried chick peas) increased from 57% of students at baseline to 64.3% of students after year 1. And those who chose the unhealthier option decreased from 36.4% to 32.4% of students after the year's intervention.
- 33.9% of students before intervention reported that they liked to buy fast foods with advertisements from their favorite film/ cricket or cartoon character. While 37.8% of students after the intervention reported that they liked to buy food items from the grocery store/supermarket that is fresh and hygienic, healthy and nutritious by looking at the ingredients on the label etc.

## **2.2: Physical Activity – increases recorded**

- More children reported going out and playing with friends during their leisure time: 44.1% after intervention vs 35.1% students at baseline. The proportion of students, who read books/magazines during their leisure time, was less after year 1 (25.4%) than at baseline (30.2%) ( $p < 0.001$ ).
- Importantly, more students after the intervention (72.2%) than at baseline (67.2%) reported walking while going to a nearby market ( $p = 0.001$ ).
- 68.5% of the students after intervention reported that they climbed stairs when going to somebody's house located anywhere between 2nd floor and 5th floor of a building as compared to 56.8% students at baseline ( $p < 0.001$ ).