



Program Evaluation of Operation Tone-Up[®]

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I. Executive Summary

Operation Tone-Up[®] is a rigorous and challenging program for combating childhood obesity that has been developed, piloted, and implemented during the last ten years by Accept the Challenge, a non-profit 501 (c) (3) organization. The program takes place in the elementary school classroom (grades 3-6) and focuses on the development of healthy habits through daily structured exercise and nutrition lessons. The emphasis is to increase the students' strength and endurance levels to lower blood pressure and resting heart rate to prevent and reverse childhood obesity and all of its secondary diseases. These ideals have been widely accepted by students, teachers, parents, and school administrators. The program has been widely accepted because its results are consistent and effective and are easily incorporated into classroom instruction because activities teach to the National Academic Standards, which govern school instruction. Children are involved in daily structured exercise and lessons that build knowledge of nutrition over a ten-week period. Because of the success of Operation Tone-Up, teachers and children often wish to extend the program much beyond the required timeframe.

Results of this study show consistent and significant positive changes in factors related to childhood obesity during a "snapshot" in time covering the years 2007 and 2009. Results of sampling 500 students show consistent improvement in strength/endurance, nutritional knowledge, resting heart rate, and systolic and diastolic blood pressure of children with data from pre-post measurements significant at the 0.001 level. Additionally, comments from students and their teachers indicate that the students have lost weight and gained a better sense of well being. Interviewed teachers claimed that they, too, had lost weight by participating in the program with students, and several also wrote statements that they had lost inches. One school principal in Phoenix, Az. indicated that he had lost 80 pounds simply by exercising and following the nutrition guidelines that are both a part of Operation Tone-Up.

Reasons why Operation Tone-Up is effective is that it reaches into the home environment, as students partner with parents in activities such as checking for nutrients in foods while grocery shopping, meal planning, going over homework assignments regarding graphing, and writing about nutrients and food consumption, and other joint activities required by the program. The home/school connection plus the fact that the program requires frequency of exercising and it is rigorous, produces positive results.

There are many supporters of Operation Tone-Up. Several giants of the food industry such as Albertsons, General Mills, Quaker Oats, Tropicana and others comprise that list and have helped Accept the Challenge provide the program to schools at no cost. School principals indicate that their school's climate has changed since introducing Operation Tone-Up— students expect to exercise at school as a result. Current U. S. Secretary of Education, Arnie Duncan, who was Superintendent of Schools for Chicago Public when Operation Tone-Up was implemented, has also written supportive statements.

This research-based program has been field tested or implemented in five U.S. cities: Phoenix, Chicago, Dallas, Tucson, and Sioux Falls, promoting healthy lifestyles for over one million students and also promoting healthy lifestyles for their parents and teachers. The program is now ready to be implemented on a much larger scale, making it a national model for reducing childhood obesity in America.

II. Program Description

Background/Introduction

Operation Tone-Up[®] is a ten-week program developed by Accept the Challenge, Inc. (ATC), a 501 (c) (3) organization that is designed to prevent childhood obesity. Major program developments for the current program started in 2000 with emphasis on effective classroom strategies and instructional materials. Refinement continued through classroom participation and feedback in school districts in five U.S. cities, i.e., Phoenix, Chicago, Dallas, Tucson and Sioux Falls. Accept the Challenge's main emphasis has been in bringing the program to the most underserved and vulnerable populations. Specifically, urban core neighborhoods with high minority counts have been emphasized. To date, the program has served over 1 million students and ATC has brought the program at no cost to schools through the generous support received through grants, gifts, and sponsorships.

A recent determination of Operation Tone-Up's effectiveness in reducing childhood obesity has included measurements of the cardiovascular system, i.e., resting heart rate and blood pressure readings. A direct side effect to childhood Obesity is high blood pressure and high blood pressure is the # 1 precursor to heart disease, which is the leading cause of death in America. Seeing that there is a direct correlation between resting heart rate and blood pressure to childhood obesity and heart disease, Accept the Challenge felt the need to include these variables in program assessments. The independent evaluator, responsible for this study, chose to include the data as part of the 2009 study.

Program Goals/Outcomes

The major program goal of Operation Tone-Up is to reduce childhood obesity through a program based on daily structured exercise and nutritional knowledge. Specifically, measurable outcomes include the following: 1) To increase students' knowledge in nutrition, as measured by pre and post tests, 2) To increase students' strength and endurance, as measured by sit-ups and push-ups, via pre and post tests and 3) To decrease students' blood pressure and resting heart rate, as measured by pre and post readings.

Additional goals include the following: 1) To enhance the health of families and community members and promote healthy lifestyles, and 2) To encourage the health and well being of classroom teachers whose students are participating in the program.

Program Content

Operation Tone-Up is an exemplary program for students in that it inspires them and their teachers and parents to take action in promoting their own health and prevention of disease. It consists of teaching children about the top six nutrient groups and their effects upon the human body. Children learn to identify the nutrients (carbohydrates, water, protein, fat, vitamins, and minerals), how the nutrients benefit the human body, as well as how to read Nutrition Facts to make sure they are getting the nutrition they need. Children also learn that added sugars such as corn syrup and table sugar give them quick-acting short term energy with no nutritional benefits. Cautionary advice is provided about the amounts of sodium present in many foods and the effects of consuming too much sodium. Learning takes place around a text-to-self connection, with students--singularly and in small groups--reading and analyzing food labels, and recording information about their own food consumption and how it makes them feel. Thus, the student workbook component of the program allows children to collect data about themselves and the text becomes relevant and meaningful to them because it is personal. Operation Tone-Up is aligned with the National Academic Standards in reading, writing, math and science and is fully endorsed by teachers who have used it.

Operation Tone-Up is creative and immediately captures and holds students' attention.

Additional characteristics of the program include:

- Operation Tone-Up is very intriguing to students, making learning fun so that children enjoy learning. They go on a "Mission" through a text filled with animated characters representing the Top Six Nutrients and exercise to a DVD that contains real child role models who demonstrate the exercises to music.
- Key nutrient concepts are taught, such as what nutrients build muscle, which are necessary to sustain energy, and which foods are void of most nutrients. The method of presenting the nutrients is creative and villains such as "Sly Sodium™" and "Sugar Sweets™" are part of the narrative in the workbook. The workbook also includes fun facts, quizzes and games that help reinforce the program's lessons.

- Children are involved in reading and analyzing food labels and, as a result, influence the choice of foods being purchased and served at home daily. They are required to log in food consumed, and how it makes them feel, as well as develop graphs and charts of data collected, and write about their experiences. This is a creative, fun way to teach to the National Academic Standards.
- Learning evolves around a text-to-self connection. Children collect data on themselves and mentally process it. The text becomes relevant/meaningful to them, as it is personal.
- Learning is intended to creatively involve parents, as students accompany their parent(s) to the grocery store and encourage him/her to read labels and to really understand what it is that they will be consuming and the consequences associated with their food choices.

Program Uniqueness:

Operation Tone-Up provides long-term scientific data that demonstrates achievement of consistent positive results in fighting childhood obesity. Studies (consisting of pre and post measures) after 10 weeks of instruction on over 8,000 children over a ten-year period indicate that the program is effective in increasing knowledge of nutrition; increasing physical endurance, as measured by push-ups and sit-ups; lowering resting heart rate and systolic/diastolic blood pressure; and improving discipline and student attendance in school. Even students who were chronically absent (missing 1-2 days per week) showed reduction in absenteeism. Additionally, it was evident that teachers, family, and community members benefitted by the program, once they were asked to provide feedback.

Operation Tone-Up utilizes one of the most viable and in-place mediums available to address childhood obesity, as children are in the classroom a major portion of their day.

“This program is a solution to the obesity epidemic facing our children today. The program’s curriculum-based teaching method and application sets it apart from all the rest.”

Letter from Tucson Mayor Robert Walkup to Chicago Mayor Richard M. Daley 2/7/08

The program also infiltrates the children’s home life, by the required structured activities that children participate in. When children teach others and are role models to their parents, concepts become incorporated into their mental structures and this activity promotes a lasting effect upon children. Parent(s) support their child’s endeavor to become healthy and are also encouraged to

promote a healthy lifestyle for themselves. Therefore, the program reaches the home environment, in addition to being taught at school.

III. Previous Research

Previously, in 2006, research was conducted in an independent study by an Arizona research firm, Key HealthCare Concepts. After numerous on-site interviews with teachers in two Phoenix school districts and Chicago Public Schools, Operation Tone-Up was identified as being unique and holding the potential to result in real benefits to children and adults, as well as savings in future healthcare costs of up to 10.2% after Operation Tone-Up is offered over a two-year period on a national level. This includes reductions from decreased pharmaceuticals, rehabilitation services, hospital stays and doctor visits. The researcher noted that teachers and students were excited about the program and tangible results could be observed during the interviews. A conclusion was drawn that the program was most effective in Title I schools (schools located in impoverished areas which receive some subsidy for food programs and other programs). “Given the shortcomings of these schools and the community they serve, the lack of knowledge about physical activities and nutrition is even more pronounced” was noted.

The researcher noted that almost all teachers mentioned that they could see results shortly after the implementation of the program. “This is, to a large extent, due to ease of implementing and the fact that the program is well organized,” was an additional statement. Several student essays reported that the program has resulted in significant changes in their weight. As a conclusion the researcher wrote:

“Additionally, it can be assumed that the instructors and parents, by getting exposed to such a program, would be reeducated as far as activity and nutrition are concerned, which would benefit not only them individually, but also the other people that they come in contact with.”

IV. What Others Have Said About Operation Tone-Up

A major accomplishment for Operation Tone-Up is its universal acceptance by teachers, administrators, parents, community members, and city officials who are knowledgeable of the

program's results. There is currently a waiting list of teachers and schools who wish to bring Operation Tone-Up to their schools at no cost. They embrace the program because it is effective, easily works into classroom instruction, and students enjoy the program.

Researchers do not have to search long or far before the positive results of the program become evident. For instance on 3/27/10 callers participating in a Phoenix talk show had this to say about Operation Tone-Up, as published on their website [Vote - KTAR.com](http://www.ktar.com)

"I think it's great that Michelle Obama is adding her voice to this issue, but her ideas don't seem that rooted in results. You guys should be supporting a local hero in the fight against childhood obesity, Tony Lamka. He's worked with a million kids over the past ten years and has the results to prove that his program not only works-but encourages life-long healthy habits. Check it out at <http://atchallenge.org>. He's about to take the program national, so keep an eye on this!

FinnDee

"Although, I do think it's great she's bringing attention to the issue, we need someone with expertise in this matter, not just "celebrity" appeal Have you all heard of Tony Lamka? My child was in his program a year or so ago and drastically improved her health and got our whole family to be healthier. Now that's someone who should be featured!"

Jlboyd

Operation Tone-up has captured the attention of the food retail industry. After distributing 5,100 Operation Tone-Up books to customers, the Southwest Division of Albertsons, Inc. had this to say:

"Operation Tone-Up is by far the most original and fun program I feel we have ever offered to our customers...From my experience, this program seems to be very appealing to our customers, and I hope we continue to be the Official Grocery Store of Operation Tone-Up for many years to come. I have worked with Tony Lamka on this program and his enthusiasm and dedication lead me to believe that Operation Tone-Up, with the proper backing and support, will be the best program available to our youth today."

Gayle Greene
Marketing Assistant

Additionally, current U.S. Secretary of Education, Arnie Duncan, voiced the following as he observed Operation Tone-Up being implemented in 65 Chicago schools:

"We chose to work with Operation Tone-Up because the program empowers children to develop eating and exercise habits they carry the rest of their lives. Most other programs try to tackle one issue rather than taking a surround strategy that addresses all the problems that can lead to overweight and obesity."

Arnie Duncan, Chief Executive Officer
Chicago Public Schools
Now: U.S. Secretary of Education

The following examples are snapshots in time illustrating additional widespread support that Operation Tone-Up has garnered over the last 10 years:

- Comments videotaped from General Mills (Leslie Hamblin, Regional Director,) in presenting Tony Lamka a \$10,000 check to continue to support Operation Tone-Up. Dated 2/10.
- A request from El Monte City School District in California (Jeff Seymour, Superintendent) to implement Operation Tone-Up during 2010-11, Dated 1/10.
- A written letter of support from Phoenix Mayor Phil Gordon and Councilman Claude Mattox stating that they have participated with Operation Tone-Up and have seen the results, enthusiasm, and enjoyment of the children and their teachers and recommend the program. Dated 10/09.
- A written request from Chicago Public Schools (Deborah E. Dusky, Chief Specialized Services Officer) recognizing that Operation Tone-Up was implemented in 65 schools for over 10,000 children in Chicago in 2004-05 and requesting current support for 20 weeks of implementation. Dated 4/3/09.
- Article in *Education World* (by Ellen Delisio) discussing how Operation Tone-Up helped children prepare for a Fittest School Challenge, and learned more about healthful eating, lost weight, and improved their thinking processes. Dated 1/12/09.
- CBS News -“Dallas Independent School District Ready to Help Students Fight Obesity.” Operation Tone-Up was brought in after a thirteen-year old boy collapsed and died in gym class. Covered by Jay Gomley on 11/6/06.
- Press quotes in 2006 from CIGNA Healthcare Employees, who helped sponsor the program and participated in program activities (Belinda Goodman, Training Manager and Frank Benedetto, VP of Sales) indicating that the program got them up and moving and that OTU is a good program that is “driving healthy behaviors.”
- A letter of support from CIGNA Healthcare in 2006 (Kirk Strawn, M.D., Director of Diabetes and Health Education) stating that Operation Tone-up is medically sound and holistic.
- A letter from Chicago Public Schools (Calvin Davis, Director of Sports Administration for High Schools) recognizing that Operation Tone-Up has a consistent track record over the last 6 years since the program was born and that the impact upon Chicago schools has been powerful. Dated 5/25/05.

- A letter from Frank Williams, Advertising & Marketing Director for Albertsons stating that over 70% of the children who participate in Operation Tone-Up get into better shape because the program has taught them to eat healthier and exercise properly and that he supports Mr. Lamka's professionalism and determination to take the program to a national level. Dated 6/10/03.
- A written proclamation by Mayor Drake of Avondale, AZ, that April is Operation Tone-Up month in that town because of all the benefits experienced by children and adults in that town. Dated 4/02.
- Over 25 pages of unsolicited sources of positive comments from teachers, parents, and community members become visible when one does a Google search for "operationtoneup" on the internet.
- Numerous news clips from press around the country on www.atchallenge.org

V. Statistical Analysis of Program Results

Study Design

The evaluation design selected for statistical analysis for this report on Operation Tone-Up was a pretest/posttest design with a review of program records that are available in their original format for Operation Tone-Up for years 2007 and 2009. Teachers for both timeframes were given the same two-hour inservice training as part of the program by Tony Lamka. All results collected were from pre and post measurements, before and after program implementation. Post-test results were collected at the end of the ten-week period, and in some cases, for results outside of this study, were collected four and twelve months after program implementation and showed sustained similar results.

Key Research Questions

Four different research questions were explored. The first research question was "Are the results of Operation Tone-Up consistent across one grade level over time?" In order to answer that research question, data was analyzed for the two years (2007 and 2009) for one grade level (4th grade). Descriptive statistical results including mean scores, amount of improvement and percentage of improvement were analyzed to determine consistency over time.

A second research question of concern was “Are the results of Operation Tone-Up significant across one grade level over time?” Additionally, t tests of significance were applied to the 4th grade data for 2007 and also for 2009.

The third research question of concern was “Will Operation Tone-Up result in positive strength and endurance gains as well as positive cardiovascular results?” This question arose because the literature abounds with information about the fact that a direct side effect of childhood obesity is high blood pressure and that as one increases strength and endurance, blood pressure goes down. Thus, it seemed important that evaluative data on the cardiovascular system, i.e., resting heart rate and blood pressure readings should also be analyzed. Accept the Challenge began collecting this data for students in grades 4-6 in 2009 and it is included in the study, along with strength and endurance and nutritional knowledge for all students. Descriptive statistical results including mean scores, amount of improvement and percentage of improvement were analyzed to determine results on all measures.

A fourth research question that arose was in regard to significance of the 2009 study data and that question was “Are all results achieved by Operation Tone-Up significant?” To answer this question, once again t tests of significance were used.

Target Population for This Study

The target population for this study was 500 students in elementary schools in Arizona. For the 2007 data, 4th grade students from the following elementary schools were selected. Zuni (Scottsdale School District), Scott Libby (Litchfield Park School District), Desert View (Washington Elementary School District) and Richard E. Miller (Washington Elementary School District). These schools were selected because detailed data was available on the students, as they participated in the “Fittest School Challenge”. Quantifiable records were entered by the evaluator on Excel spreadsheets for 161 students. Mean score, amount of improvement and percentage of improvement were determined for sit-ups, push-ups, and nutritional knowledge. Cardiovascular data on students was not available in 2007, because Accept the Challenge started measuring those indicators in 2009.

Data for 2009 was readily available and collected for three schools in Phoenix and one school in Tucson for 339 students in Grades 3-6. Schools participating in the study included Mission Manor (4th grade, Sunnyside Unified School District), Richard E. Miller (3rd-5th grades, Washington Elementary School District), Moon Mountain (6th grade, Washington Elementary School District), and Roadrunner (3rd grade, Washington Elementary School District). Demographics of the study population included: 65.5% Hispanic; 15.5% Anglo; 10% Native American; 7.5% African American, and 1.5% Other, being of ages 8-12. For both study groups, children's data was included in the evaluation study when there were both a pretest and a posttest score for that individual. The number of 4th graders included in 2009 study data was 130 students.

Additionally, some data is included for participating teachers who came to an after-school class during a three-month timeframe in fall, 2009 that was offered by Accept the Challenge at the teachers' request. Tony Lamka taught the class and teachers were pre-tested in August before introducing the program to their classes. The results of the after-school class include data on 10 teachers who participated for the duration of the program.

Verification of Data Sources

The program evaluator verified all data used in the study. Data sources and methods of collection for review and verification included the following: 1) Data on child strength and endurance and nutritional knowledge that was documented on teacher tally sheets or summary results received from school principals by e-mail on the various indicators, 2) Data collected by school nurses on resting heart rate and blood pressure 3) Observations and interviews by the independent evaluator of program results during a culminating event entitled "Fittest School Challenge" in 2009 and 4) Review of approximately 30 documents from teachers, principals, corporate and foundation sponsors, and press agents, illustrating original signatures and demonstrating support for the program, and 5) Review of newscasts on Operation Tone-Up available on Accept the Challenge's website.

Table 1- Applicable Program Success Indicators

Indicator	Children's Progress Regarding Nutritional Knowledge
1	<p>Results for 2007 4th grade students indicate that a mean score of 3.27 was achieved on the pretest and 8.29 was achieved on the post test (from a total of 10 questions). Thus, an increase of 5.02 or 153% was achieved on this indicator.</p> <p>Results for 2009 4th grade students indicate that a mean score of 4.65 was achieved on the pretest and 9.04 was achieved on the post test (from a total of 10 questions). Thus, an increase of 4.39 or 95% was achieved on this indicator.</p> <p>Results for 2009 for 3rd - 6th grade students indicate that a mean score of 5.33 was achieved on the pretest and 9.78 was achieved on the post test (from a total of 10 questions). Thus, an increase of 4.45 or 84% was achieved on this indicator.</p>
	Children's Progress Regarding Strength and Endurance
2	<p>Sit-ups - Fourth-grade students in the study group for 2007 demonstrated a mean of 23.55 on Sit-ups performed as a pretest measure. A mean posttest reading of 45.36 was achieved, thus showing that an increase of 21.81 or 93% was achieved on this indicator.</p> <p>Fourth-grade students in the study group for 2009 demonstrated a mean of 14.25 on Sit-ups performed as a pretest measure. A mean posttest reading of 36.12 was achieved, thus showing that an increase of 21.87 or 153% was achieved on this indicator.</p> <p>Students in grades 3-6 in the study group for 2009 demonstrated a mean of 13.41 on Sit-ups performed as a pretest measure. A mean posttest reading of 33.53 was achieved, thus showing that an increase of 20.12 or 150% was achieved on this indicator.</p>
3	<p>Push-ups - Fourth-grade students in the study group for 2007 demonstrated a mean of 6.82 on Push-ups performed as a pretest measure. A mean posttest reading of 13.32 was achieved, thus showing that an increase of 6.50 or 95% was achieved on this indicator.</p> <p>Fourth-grade students in the study group for 2009 demonstrated a mean of 8.6 on Push-ups performed as a pretest measure. A mean posttest reading of 14.37 was achieved, thus showing that an increase of 5.77 or 67% was achieved on this indicator.</p> <p>Students in grades 3-6 in the study group for 2009 demonstrated a mean of 7.96 on Push-ups performed as a pretest measure. A mean posttest reading of 13.72 was achieved, thus showing that an increase of 5.76 or 72% was achieved on this indicator.</p>
	Children's Progress Regarding the Cardiovascular System
4	<p>Resting Heart Rate – Fourth, fifth and sixth grade students in the study group for 2009 demonstrated a mean of 85.82 on their resting heart rate performed as a pretest measure. A</p>

5	<p>mean posttest reading of 76.62 was achieved, thus showing that a decrease of 9.20 points or 10.7% was achieved on this indicator.</p> <p>Systolic Pressure - Fourth, fifth and sixth grade students in the study group for 2009 demonstrated a mean of 111.24 on Systolic Pressure performed as a pretest measure. A mean posttest reading of 101.07 was achieved, thus showing that a decrease of 10.17 points or 9.1% was achieved on this indicator.</p>
6	<p>Diastolic Pressure - Fourth, fifth and sixth grade students in the study group for 2009 demonstrated a mean of 67.94 on Diastolic Pressure performed as a pretest measure. A mean posttest reading of 63.57 was achieved, thus showing that a decrease of 4.37 points or 6.4% was achieved on this indicator.</p>
Teacher's Progress Regarding the Cardiovascular System	
7	<p>Resting Heart Rate - Teachers wishing to participate in the after-school class during 2009 demonstrated a mean reading of 80.2 on this indicator performed as a pretest measure. A mean posttest reading of 69.3 was achieved, thus showing that a decrease of 10.9 points or 13.6 % was achieved on this indicator.</p>
8	<p>Systolic Pressure - Teachers wishing to participate in the after-school class during 2009 demonstrated a mean reading of 135.9 on this indicator performed as a pretest measure. A mean posttest reading of 121.3 was achieved, thus showing that a decrease of 14.6 points or 10.7 % was achieved on this indicator.</p>
9	<p>Diastolic Pressure - Teachers wishing to participate in the after-school class during 2009 demonstrated a mean reading of 82.6 on this indicator performed as a pretest measure. A mean posttest reading of 74.6 was achieved, thus showing that a decrease of 8 points or 9.7 % was achieved on this indicator.</p>

**Table 2- Mean Score Improvement & Percentage Improvement
Over Time of Operation Tone-Up Results**

Year	Nutritional Knowledge	Sit-ups	Push-ups
2007 (4th grade)	5.02 (153%)	21.81 (93%)	6.50 (95%)
2009 (4th grade)	4.39 (95%)	21.56 (151%)	5.77 (67%)
2009 (3rd - 6th grade)	4.09 (84%)	20.12 (150%)	5.76 (72%)

Thus, the above results indicate that Operation Tone-Up showed consistently positive results over time. Also, the results indicate that although the percentage of improvement fluctuated over time, the results were consistently positive and mean score improvements were within a relatively close range over time. These statements are true when comparing 4th grade students from 2007 with 4th grade students from 2009 and also when examining the results for all grade levels for 2009.

In statistics, a result is called statistically significant, if it is unlikely to have occurred by chance. The amount of evidence required to accept data that is unlikely to have occurred by chance is known as the significance level. In typical studies and in this study, the population sampled (500 students) was used to make a judgment about results incurred by a much larger population of students that participated in Operation Tone-Up during those two years. Popular levels of significance that appear in statistics reference tables are 5% (0.05), 1% (0.01) and 0.1% (0.001). In terms of probability of results occurring by chance for these 3 levels of significance, there are 5 chances in 100, one chance in 100, and one chance in 1000 respectively. Statistical tables do not show critical values beyond the 0.001 level because anything beyond that level is considered too remote.

Determining the significance level that the data represents is an arbitrary task, but for many applications, a level of 5% is chosen, for no better reason than it is conventional. However, a more exact method is to determine the significance level using a published statistical chart and comparing the computational value of the data utilizing t tests of significance or other tests deemed appropriate. Once computations are done, by using Excel spreadsheets or SPSS software, the researcher simply compares the t test score with the critical values in the published statistical chart. If the t score exceeds the published critical value, then that level it is deemed appropriate for the data. The following chart illustrates the significance level of all student indicators. The significance level of teacher indicators was not determined, as the sample size was considered too small.

**Table 3- Significance Levels of Indicators
For Pre/Post Comparisons**

Indicator	2007 (4th grade)	2009 (4th grade)	2009 (3rd - 6th grades)
Push-ups	0.001	0.001	0.01
Sit-ups	0.001	0.001	0.001
Knowledge of Nutrition	0.001	0.001	0.001
Resting Heart Rate	n/a	0.001	0.001
Systolic Blood Pressure	n/a	0.001	0.001
Diastolic Blood Pressure	n/a	0.001	0.001

For the data in the current study, almost all measurements calculated for pre and post tests showed a 0.001 level of significance, when t tests of significance were applied. The t tests for students in grades 3-6 in 2009 for push-ups, however exceeded the critical value for the 0.01 level of significance for a paired situation, but did not exceed the critical value of the 0.001 level. When one separates the 4th graders out of that group, however, results for those children are significant at the 0.001 level.

VI. Conclusions and Recommendations

Children spend the majority of their time in the classroom and Operation Tone-Up allows students to participate in health-enhancing activities as part of their regular instruction. This is very cost-effective, as facilities, supervisors, and time commitment, are already in place.

This study clearly shows that increasing strength and endurance reduces resting heart rate and blood pressure. The latter are important precursors to the cause of America's #1 killer, heart disease, as mentioned in the Background/Introduction section of this report. Reducing childhood obesity provides children with longevity and a healthier quality of life, free from secondary diseases. As demonstrated in a previous study by Key HealthCare Concepts, Operation Tone-Up holds the potential of reducing America's healthcare costs in a nation embarking on a solution to make healthcare available to all.

Students participating in Operation Tone-Up have reached an attainment of relevant results at the 0.001 level of significance. This indicates that there was one chance in one thousand that the results attained were achieved by chance. The evaluator also notes that in her 20 years of performing program evaluations, she has never seen such high levels of significance consistently and extensively on indicators being studied. Examining vast amounts of data for this study and concluding that important indicators were almost all significant at the 0.001 level was a real eye-opener. When student results were shared with a fellow evaluator, and that person was asked to comment, the fellow evaluator said, "It doesn't get too much better than that!"

A mounting body of evidence shows the correlation between exercise and intake of nutritious foods to combat childhood obesity. Operation Tone-Up is founded on those principles. Extensive data collection that has been completed for this report confirms that Operation Tone-Up is motivational to children, parents and school personnel and gets positive results. Children happily participate in the exercise and class work and the synergy created by these experiences propels them to move ahead with the program. Operation Tone-up has been described as "infectious." Children enjoy the program and look forward to coming to school to participate in it. They realize that exercise is work, but are ready to reap the benefits. Teachers have commented that some of the children you would least likely expect to participate in the program, become the driving force in the program that spreads to their peers. School Principals have commented that Operation Tone-Up changes the whole culture and climate of the school.

As an additional observation, this evaluator notes similarities between the results of student interaction processes encountered in Operation Tone Up, with those in a previous award-winning study which she performed for her dissertation research. In the dissertation research, by teaching others, children benefited greatly from the interaction. The concepts that were taught to others became ingrained in children's mental structures and were retained better than if they were simply learned from a teacher or text. This evaluator believes that children teaching their parents about Nutritional Facts and the importance of exercise in Operation Tone-Up, helps them not only to become role models for their parents, but also helps them to incorporate the concepts into their mental structures with lasting effects. Thus, children's learning of concepts related to

health and wellness is assisted by the interactive processes of Operation Tone-Up. Children experience the lasting effect from the parent-child interaction, so that the concepts are mentally lasting and can become a part of their lifestyles with the passage of time.

Operation Tone-Up enhances the health of families, community members and classroom teachers because peripheral adults benefit from the program through interactions with participating students, or in the case of classroom teachers, participating in the program alongside their students. Parents are an integral part of the program, as they participate in activities with their child such as grocery shopping, meal preparation, checking their child's homework assignments or recording nutrients eaten, and other assignments. Other children in the family benefit from these activities, as well as community members who hear about the program from parents.

Recently Risa Lavizzo-Mourey, President and CEO of the Robert Wood Johnson Foundation, has stated that it is time to turn research into action in order to result in healthy, productive lives for young people across the country. Operation Tone-Up holds the potential of becoming a national model for helping to fight childhood obesity. By investing in Operation Tone-Up on a large scale basis, America has a solution to the escalating health and economic problem that is now prevalent in our country.

VII. Biographical Sketch of Evaluator

Dr. Janice Johnson resides in Phoenix, AZ and is President of the Research and Evaluation firm, Desert Sage Associates, LLC. The firm operates independently and specializes in the evaluation of grant-funded programs. Dr. Johnson has a background in how children learn and worked in program evaluation for more than 20 years, evaluating programs on a national level. Her Ph.D. is from Syracuse University in the area of Science Education, where she specialized in research methods for measuring cognitive growth of students in the areas of science and math. For her doctoral research and resulting published article, she earned the highest award given nationally for research in Science Education (*The Journal of Research in*

Science Teaching Annual Award). The research concluded that 3rd grade children retained new concepts better when they had to explain the concepts in a paired situation to a peer. By having to explain the concepts to others, the new concepts became ingrained in children's mental structures and the children retained the concepts over long periods of time, as evidenced by delayed posttests.

Dr. Johnson has conducted numerous evaluations in Arizona for school districts and not-for-profit organizations and is known for her ability to design and develop evaluation systems that provide relevant feedback for funding organizations. During the past 5 years she has specialized in evaluation of programs designed to improve children's health and fitness through grants from the U.S. Department of Education. She enjoys evaluating programs that demonstrate success in the area of health and wellness for children.