



2013

## PROGRAM EVALUATION

ARIZONA

BOYS and GIRLS CLUB

Prepared by:

Melanie Steen  
Actuarial Analyst  
February 2014

## Table of Contents

### **Summary of Results**

Exhibit 1 – Summary of Results by School

Exhibit 2 – Percentage of Students - Graphical Results

Exhibit 3 – Prior Program Results for BGC

### **Pre & Post Test Scores**

Exhibit 4 - Pre & Post Test Scores for Knowledge of Nutrients

Exhibit 5 - Pre & Post Test Scores for Strength & Endurance

Exhibit 6 – Pre & Post Test Scores for Cardiovascular Measurements

Exhibit 7 – Pre & Post Test Score for Cardiovascular Ranges

Exhibit 8 – Pre & Post Test Scores by Systolic Blood Pressure Range

Exhibit 9 – Pre & Post Test Scores by Diastolic Blood Pressure Range

Exhibit 10– Pre & Post Test Scores by Resting Heart Rate Range

### **Statistical Tests**

Appendix A – Statistical Results

**Exhibit 1  
Operation Tone-Up  
2013 Program Evaluation  
Arizona Boys & Girls Club**

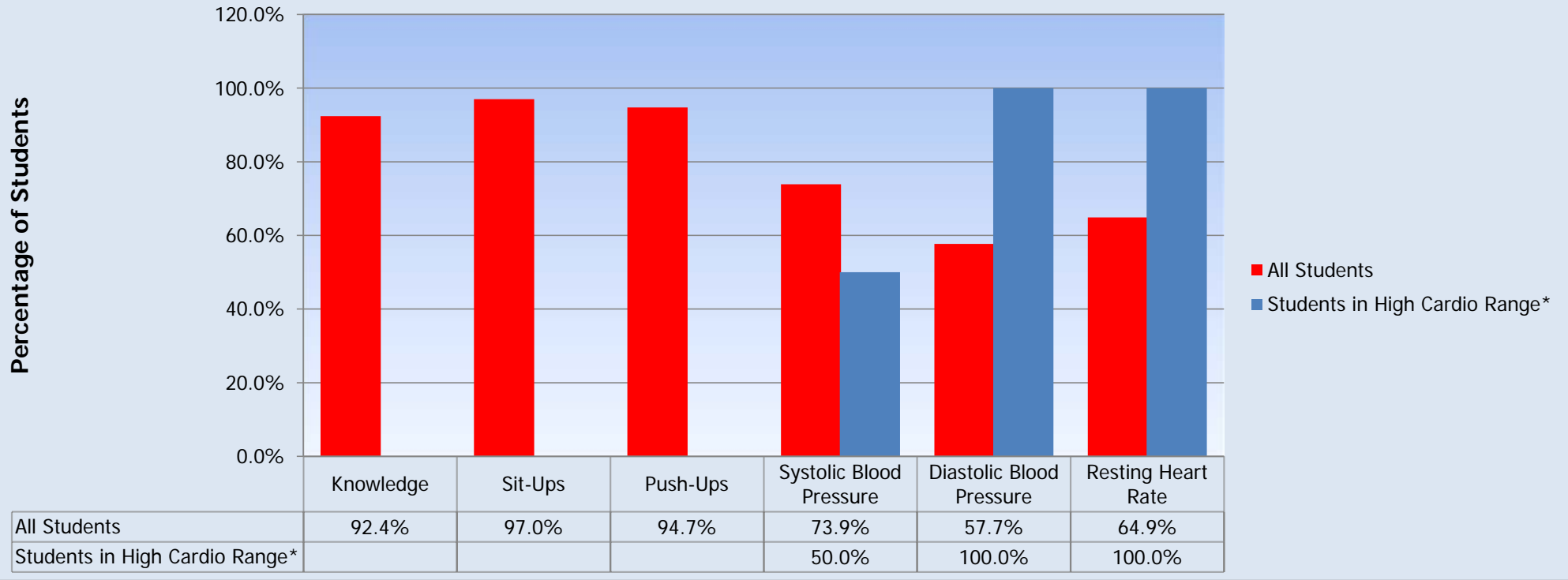
**Mean Score Improvement & Percentage Improvement by School District**

Boys & Girls Club	Classroom	Student Count*	Knowledge of Nutrients		Push-Ups		Sit-Ups		Systolic Blood Pressure		Diastolic Blood Pressure		Resting Heart Rate	
			Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change
Colangelo	Gonzalez	11	7.27	266.7%	7.73	101.2%	9.00	61.9%	-4.50	-4.3%	0.00	0.0%	-0.50	-0.6%
Sands	Navarro	6	4.00	114.3%	4.00	88.9%	6.67	100.0%	-10.00	-9.6%	-1.00	-1.5%	-6.00	-6.8%
Stewart	Carribon	15	28.67	52.4%	4.20	56.8%	10.53	171.7%	-7.27	-6.9%	0.36	0.6%	-13.60	-15.8%
Tolleson	Celaya	12	3.92	78.3%	7.75	97.9%	8.75	90.3%	-5.33	-5.4%	-1.44	-2.4%	-8.63	-9.4%
Gabel	Jason/Kyle	9	0.89	33.3%	2.88	24.0%	3.13	15.1%	-6.31	-5.9%	-1.33	-1.7%	-7.20	-8.6%
McKee	Quackenbush	10	2.40	54.5%	10.70	237.8%	27.10	1806.7%						
Kellen Holmes	Vestar	11	5.55	190.6%	8.73	69.6%	11.36	35.6%						
Swift	Miranda / Jessica	4	1.75	43.8%	6.60	73.3%	23.33	112.0%						
Tri City	Heather James	5	8.40	525.0%	7.80	433.3%	9.00	642.9%	-8.00	-7.2%	1.00	1.4%	1.00	1.2%
Peoria	Olga Luna	9	2.56	74.2%	10.67	78.0%	16.17	55.3%	-2.33	-2.2%	-10.75	-15.0%	-4.33	-6.3%
<b>Grand Total</b>		<b>92</b>	<b>8.11</b>	<b>68.7%</b>	<b>7.27</b>	<b>84.9%</b>	<b>12.37</b>	<b>84.6%</b>	<b>-6.18</b>	<b>-5.9%</b>	<b>-2.10</b>	<b>-3.0%</b>	<b>-7.73</b>	<b>-9.1%</b>

\*Student count is based upon the number of students that had a pre and post test score for knowledge of nutrients

**Exhibit 2**  
**Operation Tone-Up**  
**2013 Program Evaluation**  
**Arizona Boys & Girls Club**

**2013 Program Results**  
**Percentage of Students that Showed Improvement**  
**Boys & Girls Club**



\*Students with pre test scores greater than 125 for Systolic Blood Pressure, 85 for Diastolic Blood Pressure, and 100 for Resting Heart Rate

**Exhibit 3  
Operation Tone-Up  
2013 Program Evaluation  
Arizona Boys & Girls Club**

**2013 Program Evaluation  
2013 Mean Score Improvement & Percentage Improvement by Classroom**

Classroom	Student Count	Knowledge of Nutrients		Push-Ups		Sit-Ups		Systolic Blood Pressure		Diastolic Blood Pressure		Resting Heart Rate	
		Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change
Gonzalez	11	7.27	266.7%	7.73	101.2%	9.00	61.9%	-4.50	-4.3%	0.00	0.0%	-0.50	-0.6%
Navarro	6	4.00	114.3%	4.00	88.9%	6.67	100.0%	-10.00	-9.6%	-1.00	-1.5%	-6.00	-6.8%
Carribon	15	28.67	52.4%	4.20	56.8%	10.53	171.7%	-7.27	-6.9%	0.36	0.6%	-13.60	-15.8%
Celaya	12	3.92	78.3%	7.75	97.9%	8.75	90.3%	-5.33	-5.4%	-1.44	-2.4%	-8.63	-9.4%
Jason/Kyle	9	0.89	33.3%	2.88	24.0%	3.13	15.1%	-6.31	-5.9%	-1.33	-1.7%	-7.20	-8.6%
Quackenbush	10	2.40	54.5%	10.70	237.8%	27.10	1806.7%						
Vestar	11	5.55	190.6%	8.73	69.6%	11.36	35.6%						
Miranda / Jessica	4	1.75	43.8%	6.60	73.3%	23.33	112.0%						
Heather James	5	8.40	525.0%	7.80	433.3%	9.00	642.9%	-8.00	-7.2%	1.00	1.4%	1.00	1.2%
Olga Luna	9	2.56	74.2%	10.67	78.0%	16.17	55.3%	-2.33	-2.2%	-10.75	-15.0%	-4.33	-6.3%
<b>Total</b>	<b>92</b>	<b>8.11</b>	<b>68.7%</b>	<b>7.27</b>	<b>84.9%</b>	<b>12.37</b>	<b>84.6%</b>	<b>-6.18</b>	<b>-5.9%</b>	<b>-2.10</b>	<b>-3.0%</b>	<b>-7.73</b>	<b>-9.1%</b>

**Fall 2012 Program Evaluation  
2012 Mean Score Improvement & Percentage Improvement by Classroom**

Classroom	Student Count	Knowledge of Nutrients		Push-Ups		Sit-Ups		Systolic Blood Pressure		Diastolic Blood Pressure		Resting Heart Rate	
		Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change	Mean Change	Mean % Change
Gonzalez	24	8.38	515.4%	7.93	133.7%	7.93	72.6%	0.60	0.6%	-0.40	-0.6%	-2.27	-2.4%
Bachman	24	2.00	27.9%	4.29	40.9%	10.54	34.4%	-1.00	-0.8%	5.04	6.7%		
Rodrigues	20	4.60	97.9%	4.15	112.2%	10.30	57.9%	1.55	1.5%	5.60	8.2%	-10.25	-11.5%
Carribon	25	3.76	103.3%	1.58	11.6%	5.72	12.8%	-5.32	-5.0%	-0.16	-0.2%	-3.52	-4.1%
Chaney	16	1.81	46.8%	3.75	46.5%	19.56	132.1%	7.31	7.1%	1.15	1.7%	-3.77	-4.2%
Budzien /Solano	30	2.93	137.5%	1.52	231.6%	1.62	85.5%	4.29	3.5%	-4.25	-4.5%	-4.21	-4.9%
<b>Total</b>	<b>139</b>	<b>3.97</b>	<b>105.7%</b>	<b>3.48</b>	<b>49.6%</b>	<b>8.38</b>	<b>40.6%</b>	<b>0.67</b>	<b>0.6%</b>	<b>1.12</b>	<b>1.5%</b>	<b>-4.92</b>	<b>-5.6%</b>

**Exhibit 4**  
**Operation Tone-Up**  
**2013 Program Evaluation**  
**Arizona Boys & Girls Club**

**Pre & Post Test Scores for Knowledge of Nutrients**

<b>Boys &amp; Girls Club</b>	<b>Student Count</b>	<b>(a) Pre Test Mean Score</b>	<b>(b) Post Test Mean Score</b>	<b>(c) = (b) - (a) Mean Change</b>	<b>(d) = (c) / (a) Mean % Change</b>
Colangelo	11	2.73	10.00	7.27	266.7%
Sands	6	3.50	7.50	4.00	114.3%
Stewart	15	54.67	83.33	28.67	52.4%
Tolleson	12	5.00	8.92	3.92	78.3%
Gabel	9	2.67	3.56	0.89	33.3%
McKee	10	4.40	6.80	2.40	54.5%
Kellen Holmes	11	2.91	8.45	5.55	190.6%
Swift	4	4.00	5.75	1.75	43.8%
Tri City	5	1.60	10.00	8.40	525.0%
Peoria	9	3.44	6.00	2.56	74.2%
<b>Grand Total</b>	<b>92</b>	<b>11.80</b>	<b>19.91</b>	<b>8.11</b>	<b>68.7%</b>

**Exhibit 5**  
**Operation Tone-Up**  
**2013 Program Evaluation**  
**Arizona Boys & Girls Club**

**Pre & Post Test Scores for Strength & Endurance**

Boys & Girls Clubs	Push-Ups					Sit-Ups				
	Student Count	(a) Pre Test Mean Score	(b) Post Test Mean Score	(c) = (b) - (a) Mean Change	(d) = (c) / (a) Mean % Change	Student Count	(e) Pre Test Mean Score	(f) Post Test Mean Score	(g) = (f) - (e) Mean Change	(h) = (g) / (e) Mean % Change
Colangelo	11	7.64	15.36	7.73	101.2%	11	14.55	23.55	9.00	61.9%
Sands	6	4.50	8.50	4.00	88.9%	6	6.67	13.33	6.67	100.0%
Stewart	15	7.40	11.60	4.20	56.8%	15	6.13	16.67	10.53	171.7%
Tolleson	12	7.92	15.67	7.75	97.9%	16	9.69	18.44	8.75	90.3%
Gabel	8	12.00	14.88	2.88	24.0%	8	20.75	23.88	3.13	15.1%
McKee	10	4.50	15.20	10.70	237.8%	10	1.50	28.60	27.10	1806.7%
Kellen Holmes	11	12.55	21.27	8.73	69.6%	11	31.91	43.27	11.36	35.6%
Swift	5	9.00	15.60	6.60	73.3%	6	20.83	44.17	23.33	112.0%
Tri City	5	1.80	9.60	7.80	433.3%	5	1.40	10.40	9.00	642.9%
Peoria	12	13.67	24.33	10.67	78.0%	12	29.25	45.42	16.17	55.3%
<b>Grand Total</b>	<b>95</b>	<b>8.57</b>	<b>15.84</b>	<b>7.27</b>	<b>84.9%</b>	<b>100</b>	<b>14.62</b>	<b>26.99</b>	<b>12.37</b>	<b>84.6%</b>

**Exhibit 6**  
**Operation Tone-Up**  
**2013 Program Evaluation**  
**Arizona Boys & Girls Club**

**Pre & Post Test Scores for Cardiovascular Tests**

Boys & Girls Clubs	Systolic Blood Pressure					Diastolic Blood Pressure				
	Student Count	(a) Pre Test Mean Score	(b) Post Test Mean Score	(c) = (b) - (a) Mean Change	(d) = (c) / (a) Mean % Change	Student Count	(e) Pre Test Mean Score	(f) Post Test Mean Score	(g) = (f) - (e) Mean Change	(h) = (g) / (e) Mean % Change
Colangelo	4	105.00	100.50	-4.50	-4.3%	5	80.00	80.00	0.00	0.0%
Sands	5	104.00	94.00	-10.00	-9.6%	6	65.00	64.00	-1.00	-1.5%
Stewart	11	104.73	97.45	-7.27	-6.9%	11	65.27	65.64	0.36	0.6%
Tolleson	9	98.22	92.89	-5.33	-5.4%	9	60.56	59.11	-1.44	-2.4%
Gabel	8	106.88	100.56	-6.31	-5.9%	9	76.44	75.11	-1.33	-1.7%
Tri City	3	110.67	102.67	-8.00	-7.2%	4	73.50	74.50	1.00	1.4%
Peoria	6	107.33	105.00	-2.33	-2.2%	8	71.75	61.00	-10.75	-15.0%
Grand Total	46	104.50	98.32	-6.18	-5.9%	52	69.40	67.31	-2.10	-3.0%

Boys & Girls Clubs	Resting Heart Rate				
	Student Count	(i) Pre Test Mean Score	(j) Post Test Mean Score	(k) = (j) - (i) Mean Change	(l) = (k) / (i) Mean % Change
Colangelo	4	89.00	88.50	-0.50	-0.6%
Sands	3	88.00	82.00	-6.00	-6.8%
Stewart	10	85.90	72.30	-13.60	-15.8%
Tolleson	8	91.50	82.88	-8.63	-9.4%
Gabel	5	84.00	76.80	-7.20	-8.6%
Tri City	1	81.00	82.00	1.00	1.2%
Peoria	6	69.00	64.67	-4.33	-6.3%
Grand Total	37	84.49	76.76	-7.73	-9.1%



**Exhibit 7**  
**Operation Tone-Up**  
**2013 Program Evaluation**  
**Arizona Boys & Girls Club**

**Pre & Post Test Scores by Systolic Blood Pressure Range**

Systolic Pre Test Range	Student Count	<u>Systolic Blood Pressure</u>		(c) = (b) - (a) Mean Change	(d) = (c) / (a) Mean % Change
		(a) Pre Test Mean Score	(b) Post Test Mean Score		
0 < X ≤ 114	37	100.51	95.03	-5.49	-5.5%
114 < X ≤ 125	7	118.57	109.64	-8.93	-7.5%
> 125	2	129.00	119.50	-9.50	-7.4%
Total	46	104.50	98.32	-6.18	-5.9%

**Pre & Post Test Scores by Diastolic Blood Pressure Range**

Diastolic Pre Test Range	Student Count	<u>Diastolic Blood Pressure</u>		(c) = (b) - (a) Mean Change	(d) = (c) / (a) Mean % Change
		(a) Pre Test Mean Score	(b) Post Test Mean Score		
0 < X ≤ 75	34	63.38	63.53	0.15	0.2%
75 < X ≤ 85	15	79.60	74.53	-5.07	-6.4%
> 85	3	86.67	74.00	-12.67	-14.6%
Total	52	69.40	67.31	-2.10	-3.0%

**Pre & Post Test Scores by Resting Heart Rate Range**

RHR Pre Test Range	Student Count	<u>Resting Heart Rate</u>		(c) = (b) - (a) Mean Change	(d) = (c) / (a) Mean % Change
		(a) Pre Test Mean Score	(b) Post Test Mean Score		
0 < X ≤ 80	12	71.75	70.17	-1.58	-2.2%
80 < X ≤ 100	23	89.52	79.39	-10.13	-11.3%
> 100	2	103.00	86.00	-17.00	-16.5%
Total	37	84.49	76.76	-7.73	-9.1%

**Exhibit 8**  
**Operation Tone-Up**  
**2013 Program Evaluation**  
**Arizona Boys & Girls Club**  
**Pre & Post Test Scores by Systolic Blood Pressure Range**

**Systolic Blood Pressure Range 0 < X ≤ 114**

<b>Systolic Blood Pressure (Pre Test Score less than or equal to 114)</b>					
<b>Boys &amp; Girls Club</b>	<b>Student Count</b>	<b>(a) Pre Test Mean Score</b>	<b>(b) Post Test Mean Score</b>	<b>(c) = (b) - (a) Mean Change</b>	<b>(d) = (c) / (a) Mean % Change</b>
Colangelo	3	99.33	98.00	-1.33	-1.3%
Sands	5	104.00	94.00	-10.00	-9.6%
Stewart	9	101.00	95.78	-5.22	-5.2%
Tolleson	9	98.22	92.89	-5.33	-5.4%
Gabel	5	100.40	96.80	-3.60	-3.6%
Tri City	2	106.00	95.00	-11.00	-10.4%
Peoria	4	98.50	95.00	-3.50	-3.6%
<b>Grand Total</b>	<b>37</b>	<b>100.51</b>	<b>95.03</b>	<b>-5.49</b>	<b>-5.5%</b>

**Systolic Blood Pressure Range 114 < X ≤ 125**

<b>Systolic Blood Pressure (Pre Test Score less than or equal to 125 and greater than 114)</b>					
<b>Boys &amp; Girls Club</b>	<b>Student Count</b>	<b>(a) Pre Test Mean Score</b>	<b>(b) Post Test Mean Score</b>	<b>(c) = (b) - (a) Mean Change</b>	<b>(d) = (c) / (a) Mean % Change</b>
Colangelo	1	122.00	108.00	-14.00	-11.5%
Sands					
Stewart	1	115.00	103.00	-12.00	-10.4%
Tolleson					
Gabel	3	117.67	106.83	-10.83	-9.2%
Tri City	1	120.00	118.00	-2.00	-1.7%
Peoria	1	120.00	118.00	-2.00	-1.7%
<b>Grand Total</b>	<b>7</b>	<b>118.57</b>	<b>109.64</b>	<b>-8.93</b>	<b>-7.5%</b>

**Systolic Blood Pressure Range > 125**

<b>Systolic Blood Pressure (Pre Test Score greater than 125)</b>					
<b>Boys &amp; Girls Club</b>	<b>Student Count</b>	<b>(a) Pre Test Mean Score</b>	<b>(b) Post Test Mean Score</b>	<b>(c) = (b) - (a) Mean Change</b>	<b>(d) = (c) / (a) Mean % Change</b>
Colangelo					
Sands					
Stewart	1	128.00	107.00	-21.00	-16.4%
Tolleson					
Gabel					
Tri City					
Peoria	1	130.00	132.00	2.00	1.5%
<b>Grand Total</b>	<b>2</b>	<b>129.00</b>	<b>119.50</b>	<b>-9.50</b>	<b>-7.4%</b>

**Exhibit 9**  
**Operation Tone-Up**  
**2013 Program Evaluation**  
**Arizona Boys & Girls Club**  
**Pre & Post Test Scores by Diastolic Blood Pressure Range**

**Diastolic Blood Pressure Range  $0 < X \leq 75$**

<b>Diastolic Blood Pressure (Pre Test Score less than or equal to 75)</b>					
<b>Boys &amp; Girls Club</b>	<b>Student Count</b>	<b>(a) Pre Test Mean Score</b>	<b>(b) Post Test Mean Score</b>	<b>(c) = (b) - (a) Mean Change</b>	<b>(d) = (c) / (a) Mean % Change</b>
Colangelo	1	70.00	86.00	16.00	22.9%
Sands	6	65.00	64.00	-1.00	-1.5%
Stewart	10	63.80	64.80	1.00	1.6%
Tolleson	7	55.00	55.43	0.43	0.8%
Gabel	3	68.67	67.33	-1.33	-1.9%
Tri City	2	70.00	76.00	6.00	8.6%
Peoria	5	65.20	60.00	-5.20	-8.0%
<b>Grand Total</b>	<b>34</b>	<b>63.38</b>	<b>63.53</b>	<b>0.15</b>	<b>0.2%</b>

**Diastolic Blood Pressure Range  $75 < X \leq 85$**

<b>Diastolic Blood Pressure (Pre Test Score less than or equal to 85 and greater than 75)</b>					
<b>Boys &amp; Girls Club</b>	<b>Student Count</b>	<b>(a) Pre Test Mean Score</b>	<b>(b) Post Test Mean Score</b>	<b>(c) = (b) - (a) Mean Change</b>	<b>(d) = (c) / (a) Mean % Change</b>
Colangelo	3	81.33	80.00	-1.33	-1.6%
Sands					
Stewart	1	80.00	74.00	-6.00	-7.5%
Tolleson	2	80.00	72.00	-8.00	-10.0%
Gabel	5	78.80	78.80	0.00	0.0%
Tri City	2	77.00	73.00	-4.00	-5.2%
Peoria	2	81.00	60.00	-21.00	-25.9%
<b>Grand Total</b>	<b>15</b>	<b>79.60</b>	<b>74.53</b>	<b>-5.07</b>	<b>-6.4%</b>

**Diastolic Blood Pressure Range  $> 85$**

<b>Diastolic Blood Pressure (Pre Test Score greater than 85)</b>					
<b>Boys &amp; Girls Club</b>	<b>Student Count</b>	<b>(a) Pre Test Mean Score</b>	<b>(b) Post Test Mean Score</b>	<b>(c) = (b) - (a) Mean Change</b>	<b>(d) = (c) / (a) Mean % Change</b>
Colangelo	1	86.00	74.00	-12.00	-14.0%
Sands					
Stewart					
Tolleson					
Gabel	1	88.00	80.00	-8.00	-9.1%
Tri City					
Peoria	1	86.00	68.00	-18.00	-20.9%
<b>Grand Total</b>	<b>3</b>	<b>86.67</b>	<b>74.00</b>	<b>-12.67</b>	<b>-14.6%</b>

Exhibit 10  
 Operation Tone-Up  
 2013 Program Evaluation  
 Arizona Boys & Girls Club  
 Pre & Post Test Scores by Resting Heart Rate Range

**Resting Heart Rate Range  $0 < X \leq 80$**

Resting Heart Rate (Pre Test Score less than or equal to 80)					
Boys & Girls Club	Student Count	(a) Pre Test Mean Score	(b) Post Test Mean Score	(c) = (b) - (a) Mean Change	(d) = (c) / (a) Mean % Change
Colangelo Sands					
Stewart	2	73.50	75.50	2.00	2.7%
Tolleson	2	76.00	76.50	0.50	0.7%
Gabel	2	74.00	75.00	1.00	1.4%
Tri City Peoria	6	69.00	64.67	-4.33	-6.3%
Grand Total	12	71.75	70.17	-1.58	-2.2%

**Resting Heart Rate Range  $80 < X \leq 100$**

Resting Heart Rate (Pre Test Score less than or equal to 100 and greater than 80)					
Boys & Girls Club	Student	(a) Pre Test	(b) Post Test	(c) = (b) - (a) Mean	(d) = (c) / (a) Mean
Colangelo Sands	4 3	89.00 88.00	88.50 82.00	-0.50 -6.00	-0.6% -6.8%
Stewart	8	89.00	71.50	-17.50	-19.7%
Tolleson	4	93.50	84.50	-9.00	-9.6%
Gabel	3	90.67	78.00	-12.67	-14.0%
Tri City Peoria	1	81.00	82.00	1.00	1.2%
Grand Total	23	89.52	79.39	-10.13	-11.3%

**Resting Heart Rate Range  $> 100$**

Resting Heart Rate (Pre Test Score greater than 100)					
Boys & Girls Club	Student Count	(a) Pre Test Mean Score	(b) Post Test Mean Score	(c) = (b) - (a) Mean Change	(d) = (c) / (a) Mean % Change
Colangelo Sands Stewart					
Tolleson Gabel Tri City Peoria	2	103.00	86.00	-17.00	-16.5%
Grand Total	2	103.00	86.00	-17.00	-16.5%

**Appendix A**  
**Operation Tone-Up**  
**2013 Program Evaluation**  
**Statistical Tests**  
**Boys & Girls Clubs**

**Test and Confidence Interval for Paired t-Test**

Program Indicator	Sample Size	Mean	Standard Deviation	Standard Error Mean	Paired t-Statistic	Degrees of Freedom	P-Value (less than)	99.8% Confidence Interval of Difference	
								Lower	Upper
Knowledge of Nutrients	92	8.109	12.384	1.291	6.280	91	0.001	4.000	12.217
Sit-Ups	100	12.370	11.794	1.179	10.488	99	0.001	8.625	16.115
Push-Ups	95	7.274	5.052	0.518	14.034	94	0.001	5.627	8.920
Systolic Blood Pressure	46	-6.185	7.155	1.055	5.863	45	0.001	-9.646	-2.724
Diastolic Blood Pressure	52	-2.096	9.750	1.352	1.550	51	0.005	-6.501	2.309
Resting Heart Rate	37	-7.730	10.159	1.670	4.628	36	0.001	-13.296	-2.163

Knowledge of Nutrients

H0: Mean Post Test Score is less than or equal to the Mean Pre Test Score

Ha: Mean Post Test Score is greater than the Mean Pre Test Score

The mean Pre Test Score was 11.80; the mean Post Test Score was 19.91. The difference between these two paired means was significant at the 0.001 level. We reject the H0; there was sufficient evidence to conclude that the average score for Knowledge of Nutrients improved as a result of the Operation Tone-Up Program.

Sit-Ups

H0: Mean Post Test Score is less than or equal to the Mean Pre Test Score

Ha: Mean Post Test Score is greater than the Mean Pre Test Score

The mean Pre Test Score was 14.62; the mean Post Test Score was 26.99. The difference between these two paired means was significant at the 0.001 level. We reject the H0; there was sufficient evidence to conclude that the average score for Sit-Ups improved as a result of the Operation Tone-Up Program.

Push-Ups

H0: Mean Post Test Score is less than or equal to the Mean Pre Test Score

Ha: Mean Post Test Score is greater than the Mean Pre Test Score

The mean Pre Test Score was 8.57; the mean Post Test Score was 15.84. The difference between these two paired means was significant at the 0.001 level. We reject the H0; there was sufficient evidence to conclude that the average score for Push-Ups improved as a result of the Operation Tone-Up Program.

Systolic Blood Pressure

H0: Mean Post Test Score is greater than or equal to the Mean Pre Test Score

Ha: Mean Post Test Score is less than the Mean Pre Test Score

The mean Pre Test Score was 104.50; the mean Post Test Score was 98.32. The difference between these two paired means was significant at the 0.001 level. We reject the H0; there was sufficient evidence to conclude that the average score for Systolic Blood Pressure decreased as a result of the Operation Tone-Up Program.

Diastolic Blood Pressure

H0: Mean Post Test Score is greater than or equal to the Mean Pre Test Score

Ha: Mean Post Test Score is less than the Mean Pre Test Score

The mean Pre Test Score was 69.40; the mean Post Test Score was 67.31. The difference between these two paired means was significant at the 0.005 level. We reject the H0; there was sufficient evidence to conclude that the average score for Diastolic Blood Pressure decreased as a result of the Operation Tone-Up Program.

Resting Heart Rate

H0: Mean Post Test Score is greater than or equal to the Mean Pre Test Score

Ha: Mean Post Test Score is less than the Mean Pre Test Score

The mean Pre Test Score was 84.49; the mean Post Test Score was 76.76. The difference between these two paired means was significant at the 0.001 level. We reject the H0; there was sufficient evidence to conclude that the average score for Resting Heart Rate decreased as a result of the Operation Tone-Up Program.