



Lazy Days of Summer: A National Security Threat?

Retired Military Leaders Warn Lost Summers for
Children Can Reduce the Pool of Eligible Recruits



MISSION: READINESS
MILITARY LEADERS FOR KIDS



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For a full listing of our membership, please see our website at www.missionreadiness.org.

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Summary

Tens of thousands of California children each summer are falling behind in reading and math and also gaining excess weight – much to the dismay of educators, health officials and also the military.

During the months of summer vacation, research indicates that children on average fall one month behind where they left off academically in the spring. Low-income children are less likely to have access to a variety of summer enrichment opportunities. This loss in learning during the summer impacts poorer children the most, **accounting for as much as two-thirds of the total gap in their academic achievement compared to their more advantaged peers.**

While falling behind academically during the summer, children also put on additional weight – equal to **half the total weight gain children acquire during the entire year.**

This perilous combination of academic losses and rapid weight gain during the summer months has become a concern for the military. The Department of Defense reports that three out of four young adults cannot join the Armed Forces primarily because they are poorly educated or are overweight.

Providing children with effective ways to improve their academic skills and ways to achieve or maintain a healthy weight during the summer months can ensure that more children are able to lead healthier, more productive lives, and succeed at whatever career path they choose.



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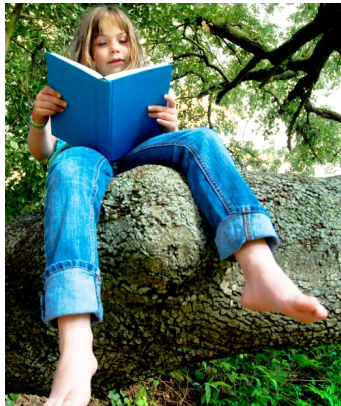
Lazy Days of Summer: A National Security Threat?

An outdated perspective on summer

Too many Americans have an outdated sense of what is happening with children during the summer months. The iconic ideal of Tom Sawyer running through the schoolhouse door and heading for a summer of outdoor freedom is no longer the norm for many American children.

Enrichment for some

In reality, some – often more advantaged – children do have enriching summers. They join a summer swim league, pick up drama skills, immerse themselves in books, visit museums, travel and make new friends. These activities help to improve their reading and vocabulary skills, keep them fit and broaden their horizons. Others might even review a few math problems to keep their math skills sharp.



Stagnation or worse for others

But for many disadvantaged children, and many other kids as well, summer finds them inside, on the couch, honing their video-game skills, watching reruns of children's TV shows, and snacking too frequently on chips, soda or other junk food. The Kaiser Family Foundation has found that "8- to 18-year-olds spend more time with media than in any other activity besides (maybe) sleeping - an average of more than seven and a half hours a day, seven days a week."¹ Without the interruption of school, the figure is likely higher for the summer months than the rest of the year.²

Year after year, this lack of enrichment and exercise during the summer, combined with excessive snacking, leads

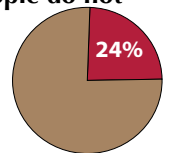
to academic losses and dangerous weight gain for many children, putting both their education and health at risk.

A national security issue

Academic losses and weight gain are concerns for our military because:

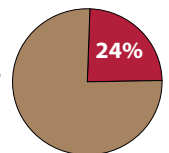
- *The military needs high school graduates:*

In California, 24 percent of young people do not graduate on time from high school, and it is rare in today's military for a recruit to be allowed in without a high school degree.³



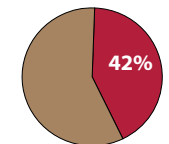
- *Prospective enlistees have to pass an entrance exam:*

Of California graduates attempting to join the military, **another 24 percent cannot join because they do not score well enough on the military's test of math and literacy skills.**⁴



- *Prospective enlistees cannot be too heavy:*

Nationally, one in four young adults has too much excess body fat to be allowed in the military.⁵ The Centers for Disease Control and Prevention – using wider criteria than the military – has found that **42 percent of California adults 18- to 24-years-old are overweight or obese.**⁶ The young adults in California would have to collectively lose weight equal to more than 400 Abrams tanks in order to reach a healthy weight.⁷



The available data for California on weight, education and other disqualifiers indicate that the proportion of the state's young adults who are not able to join the military is similar to the national rate – three out of four.⁸



US Department of Defense, 2012

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Summer is more than half of the problem

There is still much we do not know about what happens to children during the summer or what will work to help them succeed and stay fit. Joseph Mahoney, professor of education at the University of California, Irvine, explains that summer simply has not received the research attention it deserves: “While nearly one quarter of youth development occurs during the summer, it appears that fewer than 1 in 10,000 published studies on adolescence were concerned with summer in the last half century.”⁹ However, the research on summer is clear on one point: Summer is when too many American children fall behind academically and add on excessive weight.

Summer learning loss

The cumulative loss in academic skills is alarming:

- According to a review of the research literature by the RAND Corporation, “By the end of summer, [instead of continuing to make months of progress], students

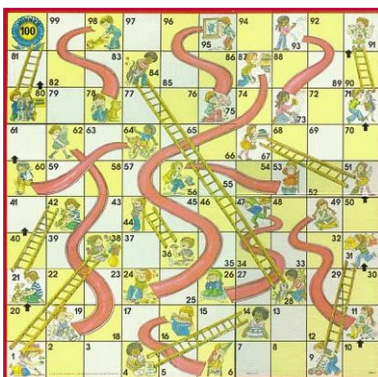
perform, on average, one month behind where they left off in the spring.... While all students lose some ground in mathematics over the summer, low-income students lose more ground in reading, while their higher-income peers may even gain.”¹⁰

- Karl Alexander, professor of sociology at Johns Hopkins University, studied almost 800 Baltimore children from first grade well into adulthood. He concluded, “**About two-thirds of the ninth-grade academic achievement gap between disadvantaged youngsters and their more advantaged peers can be explained by what happens over the summer during the elementary school years.**”¹¹ This is crucial because California data show that while 77 percent of more economically advantaged fourth-grade students achieved at or above the basic level of reading proficiency, only 42 percent of poor students (those eligible for free or reduced-priced meals) achieved this very modest level of reading achievement, and only 12 percent of low-income students were rated as “proficient.”¹²
- Alexander also discovered that “summer learning loss accounts for about two-thirds of the difference in the likelihood of pursuing a college preparatory path in high school.”¹³

Summer weight gain

Year after year, while most children are losing ground on academic skills during the summer months, many are also rapidly gaining body fat:

- Ohio State University statistician Paul von Hippel and his colleagues analyzed survey data on over 5,000 children in more than 300 schools. They discovered that “**children gain weight three times faster during the summer months as they do during the entire school year.**” At that faster rate, **children gain almost half of the total weight they gain all year during just the summer months.**¹⁴



Adapted from Chutes and Ladders™

While some advantaged kids move up academically each summer, too many disadvantaged kids slide backwards. Children are also gaining excess weight during the summer months.

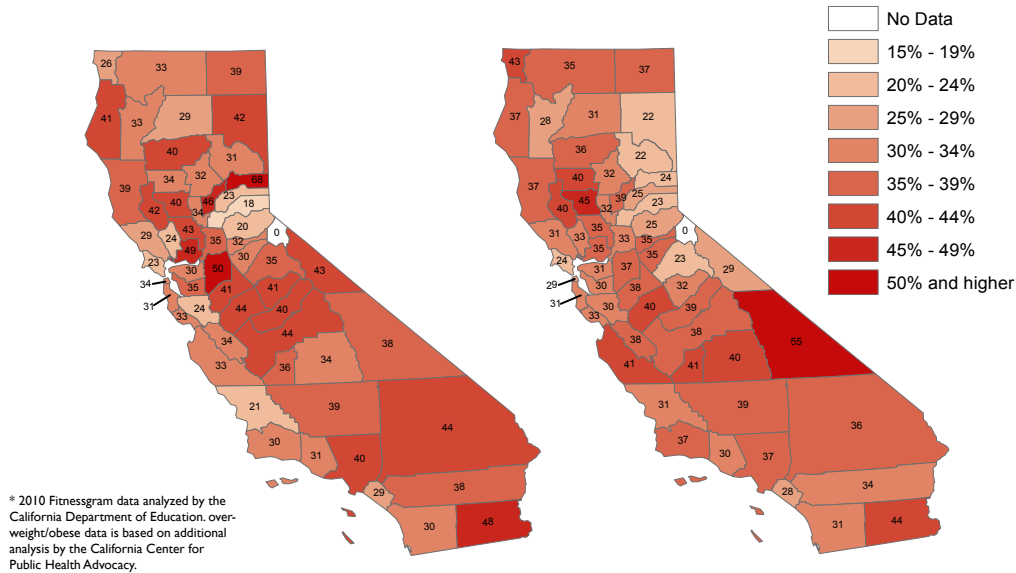


California's Ninth Graders

Percent With Poor Aerobic Capacity*

Percent Who Are Overweight or Obese*

(The California Center for Public Health Advocacy)



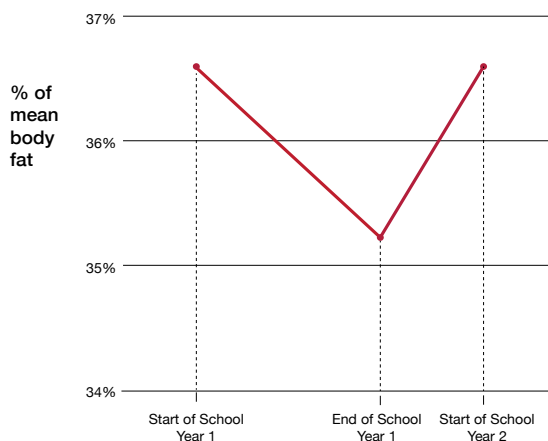
- Summer weight gain was even greater for African American and Hispanic children.¹⁵
- The biggest weight gains were among children who were already overweight before the study began. Summer further increased their risk of becoming obese.¹⁶

More proof that summer is a time for excessive weight gain was unexpectedly provided by a nine-month school-

year intervention of enhanced physical education. Among overweight middle school students, the intervention successfully reduced body fat and increased aerobic capacity during the school year. When the researchers measured what happened to their students during the three summer months without the program, however, they found that the improvements the students had achieved over nine months were wiped out. The children's body fat increased by 1.3 percentage points during the summer, back to levels similar to those recorded before the children started the intervention.¹⁷

Summer weight gain

A successful 9-month school year program to help overweight middle school children lose weight saw the weight reappear over the the three-month summer break



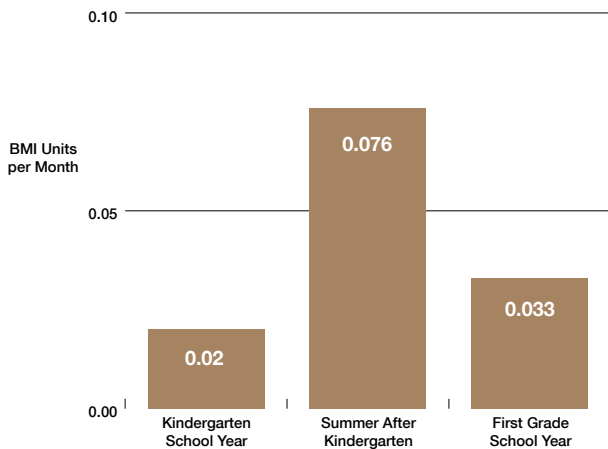
Why the academic losses and weight gain?

The summer data reinforce the argument that parents and communities matter when it comes to academic progress and weight gain. Schools cannot fully recover the academic and weight setbacks that too many children suffer each summer.¹⁸

Because the area of study is so neglected, it is not yet possible to say what the full potential is to help parents, communities and schools to keep children from losing ground on math or reading skills and gaining excessive weight. But some research already points the way to successful efforts that deserve more support.



Changes in weight gain per month



Source: von Hippel, 2007

What is already helping to prevent academic skill loss during the summers?

There are several ways commonly used to counter the loss in reading and math skills during the summer months. Voluntary summer learning programs can be offered to help children avoid losing reading and/or math skills. Schools have often used mandatory summer school programs, typically to help children avoid being held back a year in their studies. Offering children reading incentive programs, frequently with free books, is another approach. Finally, some schools are experimenting with different ways of breaking up the traditional school year and/or offering more class time.¹⁹

Voluntary summer learning programs

Unlike summer school programs, which tend to be solely academic and generally remedial (often providing opportunities for “credit recovery”), voluntary summer learning programs blend academic instruction with other activities, including enrichment, physical activities, community service and field trips. One voluntary summer learning program, **Building Educated Leaders for Life (BELL)**, demonstrated in a randomized controlled group study that it could provide children served with **about a month’s worth of additional reading skills** compared to the children not attending BELL.²⁰ The cumulative impact of an additional month of skills every year could help reduce the growing achievement gap suffered by many disadvantaged children.

Mandatory summer school programs

As discussed above, many schools offer remedial academic summer school programs to help children catch up with their peers. Schools should be strongly incentivized to offer summer programs because they provide the opportunity to avoid a more costly full year of remedial education.

From 1997 to 1999, over 30,000 third graders who did not meet Chicago Public Schools’ promotion standard attended the city’s **mandatory summer school program**. Over 21,000 sixth graders also attended. Classes were small with handpicked teachers and a highly structured curriculum. Researchers looked at students who attended the program and similar children who did not. They found that “for third grade students, summer school increases reading and math achievement two years later by roughly 12 percent of the average annual learning gain [**or roughly one month of gain**]. For sixth graders, the effects are roughly half as large.”²¹ Two other well-designed studies confirmed that mandatory summer school programs can be effective.²²

Obviously, one dose of summer school will not completely turn around a struggling student’s academic career. But the data show that summer school can deliver results that last at least two years instead of the routine and cumulative losses each summer that so many students experience.

Parent involvement helps

A meta-analysis of all summer programs looking into how they succeeded found that the “programs that included a parental involvement component were associated with more positive achievement effects than those that did not.”²³ An analysis of those findings published by RAND speculated that gaining buy-in by parents helped increase enrollment and/or regular attendance and that including parents in programs increased learning opportunities in the home.²⁴

Increasing reading at home during the summer

Another approach attempts to prevent reading-skill loss among children in high-poverty schools by providing them with free books. One study followed such children for three years. At the end of each school year, participating kids were allowed to select 12 books at a book fair that they could take home with them on the last day of school.



Compared to children in the control group who were randomly assigned to not receive free books, participating kids improved their reading scores on par with the average improvement for attending summer school. The average reading achievement gains for all the students three years later were **equivalent to improving more than a third of a grade level.**²⁵ At a cost of about \$40 a year per child, this intervention could be done in addition to other enrichment efforts for children attending high-poverty schools.²⁶

Adapting parent coaching on reading for use in the summer

Two studies showed even stronger results by **giving parents a few hours of coaching** on how to teach their first-grade children specific skills linked to reading success. Two randomized controlled group studies of these programs got **roughly ten times the impact** of simply giving children free books.²⁷ Parent coaching on reading holds great promise for summer learning if it can be routinely adapted for use during those “lost” summer months.



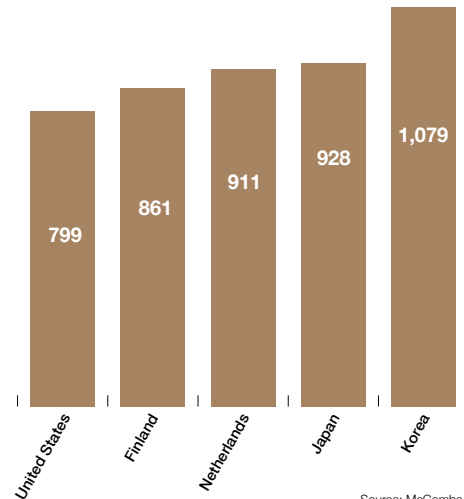
Some schools are expanding learning time into summer

The RAND analysis of summer programs pointed out one possible reason American children do not do as well as children in other developed countries:

*“Students in the United States receive fewer hours of instruction – 799 per year [on average in the U.S.], compared with 861 in Finland, 911 in the Netherlands, 928 in Japan, and 1,079 in Korea. Furthermore, **the American school calendar is notable for its long, formal summer break, especially when compared to school calendars in other countries.** [bolding added]”²⁸*

America's longer summer break and shorter school days result in less time for instruction

Average Hours of Instruction for Students



Source: McCombs, 2011

America's school hours and calendar were developed in an era when many children needed to do farm chores after school and help with planting and harvesting efforts during the summer. But such a calendar is not optimal for today's world of international competition.

Some schools are experimenting with adding more days to the year or spreading out their vacation times across the year to avoid the three months of losses on academic skills. Some charters, such as KIPP schools, are helping to close the achievement gap between advantaged and disadvantaged students.²⁹ The schools are doing many things differently, including adding more hours during the regular school day, so it is not yet possible to determine the effectiveness alone of breaking up the long summer vacation and adding extra weeks of school. But the hours can add up. The Washington Post reported that at KIPP:

A regular school day is from 7:30 a.m. to 5 p.m., plus extra weeks in the summer. Some schools even offer Saturday programs. That's up to 600 more hours a year in school than children who attend traditional public middle schools.³⁰

A combination might work best

One way to possibly get even stronger results is to combine changing the school year with a parent coaching effort. Students would continue making progress during the summer months and parent coaching could help young children achieve a surge



in reading skills. The only way to know for sure whether this combination would produce more than the individual efforts on their own is to set up a careful study to measure the outcomes.

What else works to prevent academic losses

The RAND review of what works to stem summer skill loss looked at the successful efforts and analyzed what components they often had in common. The researchers concluded that, beyond enlisting parents in their efforts, successful programs often:

- Cap class size at 20 students;
- Individualize instruction and use small learning groups;
- Employ high-quality teachers;
- Align summer with the regular school-year curriculum;
- Expand curriculum beyond remediation to attract kids and provide opportunities not found during the regular school year;
- Simply provide more time for learning; and
- Get children to show up initially and keep attending regularly (an especially crucial component).³¹

The researchers also suggested that quality evaluations will be needed to further discover exactly which approaches work and how they do so.

What works to prevent weight gain?

Definitive research is lacking on why young children gain almost as much weight in the summer as they do during the entire rest of the year.³² Logically, it is either due to less exercise, the consumption of more calories, or both. During summer, many young people may be more sedentary without regular physical education or recess activities offered by schools, making them less likely to meet the Centers for Disease Control recommendation of 60 minutes of moderate to vigorous physical activity per day to prevent obesity and other health problems. They may also have access to more unhealthy snacks and meals than during the regular school year. It is a rare school that allows children to eat potato chips and drink sodas during class time, but not all parents prevent such snacking behavior while children are watching TV.

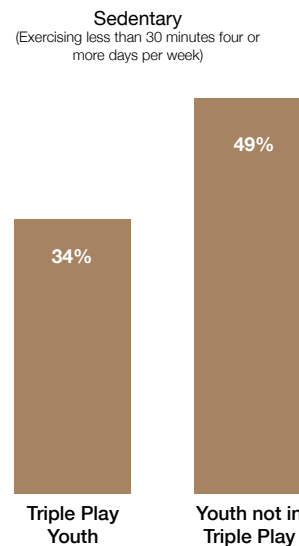
Summer sports and activities

Professor Joseph Mahoney from the University of California at Irvine looked at data on 1,766 adolescents ages 10-18. It showed that among adolescents who participated in summer activities – primarily sports – as their main form of care during the summer, 19 percent were overweight or obese, compared to 44 percent of adolescents who were not participating in organized activities and were at home with their parents.³³ This data cannot show which came first – for example, adolescents who are already unfit may decide not to participate in sports and instead stay home. But it certainly raises concerns that going without summer activities, particularly sports, and staying home with their parents may be leading many children to become overweight during the summer. Helping kids to become more involved in activities and supporting parents' efforts to emphasize more healthy food and exercise during the summer months should help.

Boys & Girls Clubs

There is encouraging research from the Boys & Girls Clubs that indicates change is possible. The Boys & Girls Clubs offer year-round out-of-school programs, not just summer programs. One of their new efforts, **Triple Play**, shows real promise. Aimed at increasing physical activity, reducing weight gain and building healthier social skills when children are not in school, Triple Play infuses physical activity, healthy nutrition and positive peer influences into all of the club's environments, instead of doing stand-alone programs to address each of those issues individually.

Youth in the Boys & Girls Clubs Triple Play program were less likely to be sedentary than youth in clubs without Triple Play



Source: Gambone, 2009



US Department of Defense, 2012

In a randomized-by-club test, 20 clubs that were assigned to adopt the new approach were compared to 10 clubs assigned to continue operating as usual. Almost two years later:

- **Half of the children** with unhealthy eating habits in clubs using the new approach had **improved their eating habits** compared to **less than one-quarter of unhealthy-eaters in the usual clubs**; and
- **Almost half of the children in the control group were still sedentary** when the study ended while just **one-third of children in the new approach** were sedentary.³⁴

While the Triple Play approach is a year-round program, and not just a summer program, it demonstrates that giving kids more opportunities to stay active, make friends and learn to eat healthier food works. Boys & Girls Clubs serve 4 million children through almost 4,000 clubs, including over 1,000 programs in schools.³⁵ Hopefully the lessons of Triple Play can be widely incorporated into more of their programs and also be used to inform other summer programs.

As the research above suggests, incorporating physical activity and healthy eating into summer learning programs can help curb obesity while also reducing summer learning loss.

School districts, states, communities and parents need help

Many teachers work very hard to help their students stay on track academically during the school year. Similarly, important changes are on the way to ensure that children have access to healthier school meals and healthier snacks and beverages in vending machines and other venues at school. But if all of these efforts can be largely undone by the months of summer, we will not succeed in helping young people become better educated and more fit. We simply cannot afford to continue to ignore the summer months.

A 2009 survey of California parents showed that “nearly 6 in 10 parents in California (59 percent) either did not enroll their child in a summer program at all or did so for less than half the summer.... [and that] Among parents who did not enroll their child in a summer program in 2009, nearly half (46 percent) say there was a program they were interested in, but that they couldn't afford it this year because of changing finances.³⁶

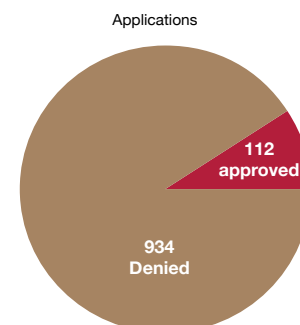
Funding to help families and schools is scarce and competition is always fierce. Schools can use federal Title I and 21st Century Community Learning Centers funding to support summer school and summer learning programs. They can also draw on other federal funds, such as the Child Care and Development Block Grant. In addition, they can attract more kids by providing meals and snacks through the federal school lunch and summer food programs. State and local funding can be crucial as well.

Not surprisingly, however, summer programs are being devastated by cutbacks in state funding. In California, summer school funding was reduced sharply because of both budget cuts and the enactment of a state law in 2009 that allowed districts to redirect summer school funds for other purposes during the school year. Between 2008 and 2011, 25 of the state's 30 largest school districts reported reductions, in many cases substantial, in the number of students participating in summer school.³⁷ For example, in the Los Angeles Unified School District, summer school funding has been cut since 2009 from \$42 million to just \$1 million, making 2012 its smallest summer school program ever.³⁸

The decline in summer school programs is the primary cause of an alarming decline in access to free or reduced price summer meals which are a source of nutritious meals for poor

Summer programs severely underfunded

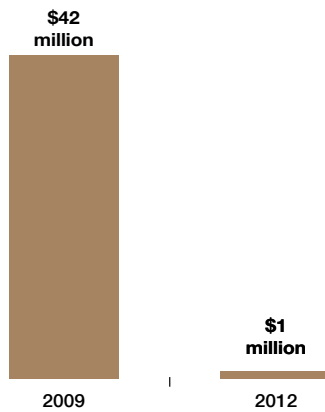
In Spring 2012, nine out of ten applications to the California Department of Education for federal supplemental funding that can be used for summer programs were denied



Source: California Department of Education, 2012



Los Angeles Unified School District spending on summer school



Source: Jones, 2012; National Public Radio, 2011

children and can also help encourage them to attend summer enrichment programs. Between July 2009 and July 2010, the number of school sites serving summer meals fell by more than half in California. By the 2010-11 school year, fewer than one out of six students participating in the federally subsidized school meals program during the school year continued to have access to free or reduced-price meals during the summer.³⁹

California's extensive infrastructure of after-school programs, including over 4,000 state- and federally funded programs, can help fill some of the demand for summer learning opportunities, but there is limited "supplemental" funding, beyond regular after-school grants, that is available to help those programs operate year-round. Fewer than 3 out of every 10 state- and federally funded after-school programs receive supplemental grant funding that can be used to support summer programs.⁴⁰ While officials operating many of the remaining programs are interested in expanding into summer, they cannot do so due to insufficient resources. In Spring 2012, when the California Department of Education announced federally funded grant awards for after-school and summer programs, it had to turn away 9 out of every 10 schools seeking supplemental funding – over 900 schools.⁴¹

Conclusion

The most crucial part of solving any problem is to identify where the problem lies. While schools are critical to efforts to improve academic outcomes and lower obesity rates, the data from the summer months demonstrates that how children spend their summers is also a central part of how well children will do.

Effective summer school and summer learning programs are part of the solution, but so is helping parents and others to

do a better job of supporting children in becoming better educated and more fit.

The military is not alone in needing fit and well-educated young people. Funding sophisticated military hardware is not sufficient to protect our national security. If we do not succeed at improving outcomes for children during the summer months, our country risks not having enough fit and educated young people for careers in the military, local law enforcement, the business sector or for careers in many other fields.

We call on local, state and federal policymakers to support:

- Increased federal funding, such as an expansion of the 21st Century Community Learning Centers program, to sufficiently address the unmet need for after-school and summer enrichment programs, especially for at-risk kids;
- Increased incentives and resources to expand after-school programs into year-round programs with robust summer components;
- Partnerships between the public and private sector to publicize the urgent need to increase evidence-based, structured summer activities for children and youth, particularly in economically-disadvantaged neighborhoods;
- Efforts to effectively enlist parents and others in the community to help children learn and become fit; and
- More exploration of extended school years and/or splitting up school vacations to help eliminate the annual two- to three-month gap in the education of our children.

We need to start by recognizing that what is taking place in the summer months is preventing too many of our children from becoming better educated and more fit. Now, we must find ways to bring real summer enrichment and healthier exercising and eating habits to more of our children.

We need to do this for our children's future and for our future national security.



Appendix

Summer Matters

Summer Matters is a statewide campaign led by the Partnership for Children and Youth that is helping expand quality summer learning programs across California. In collaboration with the National Summer Learning Association, ASAPconnect and State Superintendent of Public Instruction Tom Torlakson, the campaign works to build models of high-quality summer learning programs, increase public and policymaker awareness about the critical need for summer learning, and develop state and local policies that support summer learning opportunities.

The Summer Matters campaign builds on California's publicly funded after-school system and provides a variety of support via technical assistance, curriculum development and expanded resources to help administrators adapt their programs to the summer months.

Initially implemented in 2008, the campaign has grown from 3 to 10 summer learning communities and is expected to serve over 5,500 students at 50 sites in 2012 in Fresno, Gilroy, Glenn County (Orland and Willows), Los Angeles, Oakland, Sacramento, San Bernardino, San Francisco, Santa Ana and Whittier.⁴² The campaign is funded by The David and Lucile Packard Foundation, with additional support from the Kaiser Permanente, S.D. Bechtel, Jr. and Noyce Foundations.

At the program site level, the campaign incorporates a variety of program components to keep kids safe, physically active and engaged in high-quality learning activities. Though activities

vary greatly program to program, programs share the following primary objectives:

- Sustaining literacy;
- Encouraging healthy, active lifestyles; and
- Focusing on civic responsibility and community service.

In Oakland, for example, students wrote their own



autobiographies, stories about food and persuasive papers to encourage their peers to exercise. Others took a field trip to a salt marshland to learn about environmental health. Some Oakland students even created a fitness video. Overnight camping trips are also offered in several summer learning communities.

The campaign is already showing promising results. In Whittier, 92 percent of participants increased their reading fluency. In Los Angeles, over 85 percent of students reported an interest in staying physically active. Seventy percent of summer learning participants in Sacramento each completed over 100 hours of community service and 86 percent reported that, as a result of their summer of service, they were more interested in going to college than they were before. Summer Matters is giving more children access to summer learning opportunities and helping pave the way for expansion of summer learning in the years ahead.⁴³



Endnotes

- 1 Rideout, V.J., Foehr, U.G. & Roberts, D.F. (2010). *Generation M2: Media in the lives of 8- to 18-year-olds*. Washington, DC: Kaiser Family Foundation. Retrieved on June 28, 2012 from <http://www.kff.org/entmedia/upload/8010.pdf>
- 2 Rideout, V.J., Foehr, U.G. & Roberts, D.F. (2010). *Generation M2: Media in the lives of 8- to 18-year-olds*. Washington, DC: Kaiser Family Foundation. Retrieved on June 28, 2012 from <http://www.kff.org/entmedia/upload/8010.pdf>
- 3 California Department of Education. *Dataquest*. Retrieved on July 2, 2012 from <http://dq.cde.ca.gov/dataquest/cohortrates/GradRates.aspx?cds=00000000000000&TheYear=201011&Agg=T&Topic=Graduates&RC=State&SubGroup=Ethnic/Racial>. The cohort graduation rate for 2010-11 was 76.3 percent.
- 4 Theokas, C. (2010). *Shut out of the military: Today's high school education doesn't mean you're ready for today's Army*. Washington, DC: The Education Trust. Retrieved on May 31, 2012 from http://www.edtrust.org/sites/edtrust.org/files/publications/files/ASVAB_4.pdf
- 5 Center for Accessions Research (CAR), United States Army Accessions Command, Fort Knox, KY. Data provided by Lt. Colonel Gregory Lamm, Chief, Marketing and Research Analysis Division, February 25, 2010; Cawley, J., & Maclean, J.C. (2010). *Unfit for service: The implications of rising obesity for US Military recruitment*. Cambridge, MA: National Bureau of Economic Research. The Accession Command's estimate that 27 percent of 17- to 24-year-old Americans are too heavy to join is based in part on a survey done for them by the Lewin Group in 2005. The National Bureau of Economic Research (NBER) study is an analysis of data from the National Health and Nutrition Examination Survey (NHANES) study. The NBER analysis looks at eligibility rates for males and females based on BMI, body fat and exclusion criteria broken out for the different services. Based on the NBER analysis, we conclude that approximately 23 percent of adults eligible by age would not be able to join the Army because of excess body fat. Taking both studies into account – the NBER analysis of NHANES data and the Accessions Command's analysis – we conclude that approximately one-quarter of young Americans would be too heavy to join the military if they chose to do so.
- 6 Data from the Center for Disease Control's Behavioral Risk Factor Surveillance System (BRFSS) was used to estimate three-year weighted averages of the proportion of 18- to 24-year-olds in California who are overweight and obese according to the standard Body Mass Index cutoffs of 25.0 for overweight and 30.0 for obesity. We used three-year weighted averages to obtain an acceptable sample size. Centers for Disease Control and Prevention. (2011). *Behavioral Risk Factor Surveillance System – Prevalence trends and data*. Atlanta, GA: Author. Retrieved on May 31, 2012 <http://apps.nccd.cdc.gov/BRFSS>
- 7 This calculation of the excess pounds 18- to 24-year-old American women and men would have had to lose to be of healthy weight (below a BMI of 25) in each state and nationally was calculated by the CDC's epidemiologist who processes BRFSS data, Liping Pan, and was provided in a table to MISSION: READINESS in a personal communication, March 18, 2010 and was originally reported in our national *Too Fat to Fight* report. Other findings for this survey can be found at: . Centers for Disease Control and Prevention. (2011). *Behavioral Risk Factor Surveillance System – Prevalence trends and data*. Atlanta, GA: Author. Retrieved on May 31, 2012 <http://apps.nccd.cdc.gov/BRFSS>. The tank estimate is from: M1 Abrams main battle tank. Retrieved on May 31, 2012 from <http://www.globalsecurity.org/military/systems/ground/m1-specs.htm>. One tank equals 60 tons, or 120,000 lbs. 54.3 million pounds that must be lost equals 453 tanks.
- 8 Centers for Disease Control and Prevention. (2011). *Behavioral Risk Factor Surveillance System – Prevalence trends and data*. Atlanta, GA: Author. Retrieved on May 31, 2012 <http://apps.nccd.cdc.gov/BRFSS>; Theokas, C. (2010). *Shut out of the military: Today's high school education doesn't mean you're ready for today's Army*. Washington, DC: The Education Trust. Retrieved on May 31, 2012 from http://www.edtrust.org/sites/edtrust.org/files/publications/files/ASVAB_4.pdf; Chapman, C., Laird, J., Ifill, N., & KewalRamani, A. (2011). *Trends in high school dropout and completion rates in the United States: 1972-2009* (NCES 2012-006). Washington, DC: US Department of Education.
- 9 Mahoney, J.L. (2010). Adolescent summer care arrangements and risk for obesity the following school year. *Journal of Adolescence* (in press); Federal Bureau of Investigation. (2012). *Crime in the United States 2010*. Washington, DC: US Department of Justice. Retrieved on June 29, 2012 from <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2010/crime-in-the-u.s.-2010>
- 10 McCombs, J.S., Augustine, C.H., Schwartz, H.L., Bodilly, S.J., McInnis, B., Lichtern D.S., et al. (2011). *Making summer count – How summer programs can boost children's learning*. Santa Monica, CA: RAND Corporation
- 11 Alexander, K. (n.d.). *Summer can set kids on the right – or wrong – course*. Baltimore, MD: National Summer Learning Association; Alexander, K.L., Entwisle, D.R., & Olson, L.S. (2007b). Summer learning and its implications: Insights from the beginning of school study. *New Directions for Youth Development*, 114, 11-32.
- 12 National Center for Education Statistics. (2012). *National Assessment of Education Progress* (NAEP). Washington, DC: US Department of Education. Retrieved on June 29, 2012 from <http://nces.ed.gov/nationsreportcard>
- 13 Alexander, K. (n.d.). *Summer can set kids on the right – or wrong – course*. Baltimore, MD: National Summer Learning Association; Alexander, K.L., Entwisle, D.R., & Olson, L.S. (2007b). Summer learning and its implications: Insights from the beginning of school study. *New Directions for Youth Development*, 114, 11-32.
- 14 National Summer Learning Association. (n.d.). *Research brief – Summertime and weight gain*. Baltimore, MD: Author. Retrieved on May 31, 2012 from <http://www.summerlearning.org>; Hippel, P.T., Powell, B., Downey, D.B., & Rowland, N.J. (2007). The effect of school on overweight in childhood: Gain in body mass index during the school year and during summer vacation. *American Journal of Public Health*, 97, 696-702. The average monthly BMI rate of gain for the kindergarten and first grade months was .0265 compared to .076 for the summer between kindergarten and first grade, so the rate of gain is almost three times faster during the summer months. Comparing the summer between kindergarten and first grade to the kindergarten year plus the summer shows the children gained more than half their weight for the entire year during the summer months (52%), but comparing the summer before first grade to that summer plus first grade, the children gained 43% of their total weight during summer. So children gain almost half their weight for the entire year during the summer months.
- 15 National Summer Learning Association. (n.d.). *Research brief – Summertime and weight gain*. Baltimore, MD: Author. Retrieved on May 31, 2012 from <http://www.summerlearning.org>; Hippel, P.T., Powell, B., Downey, D.B., & Rowland, N.J. (2007). The effect of school on overweight in childhood: Gain in body mass index during the school year and during summer vacation. *American Journal of Public Health*, 97, 696-702.
- 16 National Summer Learning Association. (n.d.). *Research brief – Summertime and weight gain*. Baltimore, MD: Author. Retrieved on May 31, 2012 from <http://www.summerlearning.org>; Hippel, P.T., Powell, B., Downey, D.B., & Rowland, N.J. (2007). The effect of school on overweight in childhood: Gain in body mass index during the school year and during summer vacation. *American Journal of Public Health*, 97, 696-702.
- 17 Carrel, A.L., Clark, R., Peterson, S., Eickhoff, J., & Allen, D.B. (2007). School-based fitness changes are lost during the summer vacation. *Archives of Pediatric and Adolescent Medicine*, 161, 561-564.
- 18 Downey, D.B., Hippel, P.T., & Hughes, M. (n.d.). *Are 'failing' schools really failing? Using seasonal comparisons to evaluate school effectiveness*. Columbus, OH: Ohio State University. Retrieved on June 29, 2012 from <http://p12.osu.edu/reports/Downey.pdf>
- 19 McCombs, J.S., Augustine, C.H., Schwartz, H.L., Bodilly, S.J., McInnis, B., Lichtern D.S., et al. (2011). *Making summer count – How summer programs can boost children's learning*. Santa Monica, CA: RAND Corporation.
- 20 Chaplin, D., & Capizzano, J. (2006). *Impacts of a summer learning program: A random assignment study of building educated leaders for life (BELL)*. Washington, DC: The Urban Institute. Retrieved on June 29, 2012 from <http://www.urban.org/publications/411350.html>
- 21 Jacob, B.A., & Lefgren, L. (2002). *Remedial education and student achievement: A regression-discontinuity analysis*. Cambridge, MA: National Bureau of Economic Research. Retrieved on June 29, 2012 from <http://www.nber.org/papers/w8918>. Because children make their gains during the 9 months of the school year and typically lose a month of gains during the summer, the gains they achieve each year are essentially 8 months of actual progress for each year, and 100 percent of the progress divided by 8 months is about 12 percent, so the progress gained by this program for the younger children was roughly equivalent to 1 month's gain.
- 22 McCombs, J.S., Augustine, C.H., Schwartz, H.L., Bodilly, S.J., McInnis, B., Lichtern D.S., et al. (2011). *Making summer count – How summer programs can boost children's learning*. Santa Monica, CA: RAND Corporation.
- 23 McCombs, J.S., Augustine, C.H., Schwartz, H.L., Bodilly, S.J., McInnis, B., Lichtern D.S., et al. (2011). *Making summer count – How summer programs can boost children's learning*. Santa Monica, CA: RAND Corporation; Cooper, H., Charlton, K., Valentine, J.C., & Muhlenbruck, L. (2000). Making the most of summer school: A meta-analytic and narrative



review. *Monographs of the Society for Research & Child Development*, 65(1), 119-27.

24 McCombs, J.S., Augustine, C.H., Schwartz, H.L., Bodilly, S.J., McInnis, B., Lichter D.S., et al. (2011). *Making summer count – How summer programs can boost children's learning*. Santa Monica, CA: RAND Corporation.

25 Coalition for Evidence-Based Policy. (2011). *Top tier evidence initiative: Evidence summary for annual book fairs in high-poverty elementary schools*. Washington, DC: Author. Retrieved on June 29, 2012 from <http://coalition4evidence.org/wordpress/>

26 Allington, R.L., McGill-Franzen, A., Camilli, G., Williams, L., Graff, J., Zeig, J., et al. (2010). Addressing summer reading setback among economically disadvantaged elementary students. *Reading Psychology*, 31, 411-427; *Science Daily*. (July 21, 2010). Summer reading is key to maintaining or improving students' reading skills. *Science Daily*. Retrieved on June 29, 2012 from <http://www.sciencedaily.com/releases/2010/07/100721112234.htm>

27 Senechal, M. (2006). *The effect of family literacy interventions on children's acquisition of reading*. Portsmouth, NH: National Institute for Literacy. Retrieved on June 29, 2012 from http://lincs.ed.gov/publications/pdf/lit_interventions.pdf Using a common method researchers employ to compare impacts across different studies, the impact of the book-buying effort had an "effect size" of 0.14, while the other parent coaching efforts produced effect sizes of 1.10 and 2.00, or – in more comprehensible terms – roughly 10 times greater improvement in reading skills.

28 McCombs, J.S., Augustine, C.H., Schwartz, H.L., Bodilly, S.J., McInnis, B., Lichter D.S., et al. (2011). *Making summer count – How summer programs can boost children's learning*. Santa Monica, CA: RAND Corporation.

29 Washington Post. (July 20, 2010). The time to learn: KIPP schools show what a longer school day offers. *Washington Post*. Retrieved on May 31, 2012 from <http://www.washingtonpost.com/wp-dyn/content/article/2010/07/19/AR2010071904357.html>

30 Washington Post. (July 20, 2010). The time to learn: KIPP schools show what a longer school day offers. *Washington Post*. Retrieved on May 31, 2012 from <http://www.washingtonpost.com/wp-dyn/content/article/2010/07/19/AR2010071904357.html>

31 McCombs, J.S., Augustine, C.H., Schwartz, H.L., Bodilly, S.J., McInnis, B., Lichter D.S., et al. (2011). *Making summer count – How summer programs can boost children's learning*. Santa Monica, CA: RAND Corporation.

32 Hippele, P.T., Powell, B., Downey, D.B., & Rowland, N.J. (2007). The effect of school on overweight in childhood: Gain in body mass index during the school year and during summer vacation. *American Journal of Public Health*, 97, 696-702.

33 Mahoney, J.L. (2010). Adolescent summer care arrangements and risk for obesity the following school year. *Journal of Adolescence* (in press). In the study, 44 percent of children in parent care without organized activity care were at-risk for obesity (a BMI > or = to the 85th percentile); parent care with organized activity care 35%; self care 33%; self care with organized activity care 31%; other adult care 37%; other adult care with organized activity care 36%; and organized activity care alone 19%. But these are associations, not necessarily causal relationships, so they only indicate that parents need more help to keep their children fit and that organized activities promote less weight problems. The associations cannot prove that.

34 Gambone, M.A., Akey, T.M., Furano, K., & Osterman, L. (2009). *Promoting healthy lifestyles: The impact of Boys & Girls Clubs of America's Triple Play program on healthy eating, exercise patterns, and developmental outcomes*. Philadelphia, PA: Youth Development Strategies, Inc. Retrieved on June 29, 2012 from <http://www.ydsi.org/ydsi/publications/index.html>

35 Boys & Girls Club of America. (2012). *Facts and figures*. Atlanta: Author. Retrieved on May 31, 2012 from <http://www.bgca.org/whoware/Pages/FactsFigures.aspx>

36 Rochkind, J., Johnson, J., & Ott, A.N. (2011). *A time to learn, a time to grow*. New York: Public Agenda. Retrieved on July 3, 2012 from <http://www.publicagenda.org/pages/Calif-summer-survey>

37 Freedberg, L., & Frey, S. (2012). *Schools under stress: pressures mount on California's largest school districts*. Mountain View, CA: EdSource. Retrieved on June 28, 2012 from <http://www.edsource.org/pub12-schools-under-stress.html>

38 Jones, B. (2012, April 27). LAUSD slashes summer school. *Los Angeles Daily News*. Retrieved on June 28, 2012 from http://www.cta.org/en/Media-Coverage/In-the-News/2012/04/20120425_4.aspx

39 Sharp, M. & Shimada, T. (2012). *School's out ...who ate? A report on summer nutrition in California*. Los Angeles, CA: California Food Policy Advocates. Only 16 percent of students participating in

federal nutrition programs during the school year were also served during the summer.

40 Data on the number of supplemental grants provided by John Jones, Web Developer, California Afterschool Network. Personal communication on November 3, 2011. Data on total number of elementary and middle schools with after-school programs from California Afterschool Network's Afterschool Programs Database retrieved on June 12, 2012 from <http://www.afterschoolnetwork.org/afterschool-programs-database> For the 2011-2012 school year, 1,193 elementary and middle schools received supplemental grants out of a total of 4,158 elementary and middle schools with state or federal after-school funding. Supplemental grants are not available for high school after-school programs.

41 Application data provided by Michael Funk, Director, After School Division, California Department of Education. Personal communication on May 25, 2012. Awarded grants retrieved on July 2, 2012 from <http://www.cde.ca.gov/fg/fo/r27/cclcfndng.asp>

42 Data on students and sites provided by Katie Brackenridge, Senior Director, Out of School Time Initiatives, Partnership for Children and Youth. Personal communication on May 15, 2012.

43 Public Profit. (2011). *Summer matters campaign, summer learning communities, service and outcomes summary 2011*. Oakland, CA: Partnership for Children and Youth.





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