Health Equity: Year-Round Schooling

Summary Evidence Table – Studies From the Updated Search (March 2002-August 2016)

Single-Track Calendar

Study	Population Characteristics	Intervention Characteristics	Outcome(s)	Baseline or Comparison	Follow-up or Intervention	Effect Size (95% Confidence Interval or p-value)	Summary
Author, Year: Brown, 2012 **Study Design**: Cross –sectional **Suitability of Design**: Least **Quality of Execution**: Good (1 limitation for description) **Description:** No description of study population overall; does not describe the comparison schools; describes students and intervention for a sample of schools but not for all year-round schools.	**Study Population:** Public elementary, middle, and high schools **Sample size:** 31 year-round schools **Demogrpahics:** Age: NR Gender: NR Race/ethnicity: NR SES: NR	**Location (urbanicity):** Viriginia (mixed) **Intervention:** Single-track year-round school calendar (most 45 days on followed by 15 day break, follows same curriculum as traditional calendar) + intersessions (length and content differ across schools; intersession could include one or more of the following: remedial, enrichment, extension classes with enrichment learning activities **Staffing:** NR **Implementer:** School divisions **Comparison:** traditional calendar schools;	% higher than predicted score by 10 pts MINUS % lower than predicted score by 10 pts on Standards of learning test scores in math among: Black students Hispanic students Economically disadvantaged students LEP students % higher than predicted score by 10 pts MINUS % lower than predicted score by 10 pts on Standards of learning test scores in Englsih	 NR NR NR NR	 NR NR NR NR	 19% -7% 13% 4%	In general, test scores of the general student population were similar at year-round schools and traditional calendar schools. However, test scores of certain student groups, in particular black students, were more likely to increase at a faster rate at year-round schools over the nine-year period from 2001 to 2009 and were also more likely to exceed predicted 2009 SOL test scores.

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		Study period: 2001-2009 (specific data from our analysis comes from 2009 only)	among: Black students Hispanic students Economically disadvantaged students LEP students	 NR NR NR NR	 NR NR NR NR	 16% 7% 6% 12%	
Author, Year: Graves, 2010/2011 **Study Design**: Panel **Suitability of Design**: Greatest **Quality of Execution**: Good (1 limitation for description) **Description:** No description of	**Study Population:** Public elementary and middle schools **Sample size:** Total number of schools 8394 **Demographics:** Age: NR 48% female 10% black 35% white 6% Asian 43% Hispanic 5% other SES:	**Location (urbanicity):** California, state-wide (mixed) **Intervention:** Single and multi-track year-round school calendar: consists of the same number of school days Single-track year-round school calendar; entire student body takes breaks at the same time intervals **Staffing:** NR **Implementer:** NR	National Percentile Rank score Math Reading Language Among overcrowded single-track schools	 NR NR NR	 NR NR NR	 -.40 pct. pts; NS 0.18 pct. pts; NS -0.37 pct. pts; NS Effects remain negative and become statistically significant for	Results are not clear for single-track year-round schools; single-track schools have mostly negative, non-statistically significant effects on academic achievement. Results become more negative for overcrowded schools ;for the subgroups of low SES, Hispanic, and

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tracks length of breaks	24% FRPL Comparison: 48% female 10% black 22% white 5% Asian 60% Hispanic 3% other SES: 18% FRPL	**Comparison:** traditional calendar schools; same number of school days as intervention schools **Study period:** 1998-2005	Also reports effects for minority and low SES group			reading and language in year 2 Negative main effects for low SES students; Largely mixed results across time for all subgroups	African-American students, effects of are less clear
Author, Year: Ramos, 2011 **Study Design**: Retrospective cohort **Suitability of Design**: Moderate **Quality of Execution**: Fair (2 limitations for description and sampling) **Description:** minimal description of	**Study Population:** 3 elementary schools that offer both year-round calendar and traditional calendar within the same school building **Sample size:** Intervention: n = 74 Comparison: n = 95 **Demographics:** Total sample:	**Location (urbanicity):** United States, 3 schools nationwide (NR) **Intervention:** year-round single-track school; 45 days on followed by 15 day break; same number of school days and curriculum as traditional calendar program; year-round program had been operating at least 3 years	National percentile rank score (NPR): Math Reading	 NR NR	 NR NR	5.2 greater growth in NPR for year-round in math; $p<0.05$ 1.6 greater growth in NPR for year-round in reading; NS	Results suggest that students on year-round calendars out perform traditional calendar students in math (statistically significant); no difference in reading scores

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population; can't tell if there are differences between groups (students and teachers could choose whether to be on the year-round or traditional calendar) **Sampling:** 7 potential schools met inclusion criteria; of these, two chose not to participate, two did not return data in time for inclusion	45% female Race/ethnicity: nearly 9% were "students of color"; White students made up majority at all schools SES: 18% FRPL 13% special ed	**Staffing:** Teacher volunteered to be on the year-round calendar or traditional calendar **Implementer:** NR **Comparison:** traditional school calendar program operating in the same facility as the year-round program **Study period:** data colfected 2004-2005					

Multi-Track Calendar (rotating four-track system where some students are on break, while others are still in school)

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Author, Year: Graves, 2010/2011 **Study Design**: Panel **Suitability of Design**: Greatest **Quality of Execution**: Good (1 limitation for description) **Description:** No description of tracks length of breaks	**Study Population:** Public elementary and middle schools **Sample size:** Total number of schools: 8394 **Demographics:** Age: NR Multi-Track: 49% female 8% black 43% white 8% Asian 36% Hispanic 5% other SES: 28% FRPL Comparison: 48% female 10% black 22% white 5% Asian 60% Hispanic 3% other SES: 18% FRPL	**Location (urbanicity):** California, state-wide (mixed) **Intervention:** Single and multi-track year-round school calendar: consists of the same number of school days Multi-track year-round school calendar: disperses breaks evenly throughout the school year and divides study body into separate tracks with vacations staged by track throughout the year **Staffing:** NR **Implementer:** NR **Comparison:** traditional calendar schools; same number of school days as intervention schools	National Percentile Rank score Math Reading Language Among overcrowded single-track schools Also reports effects for minority and low SES groups	 NR NR NR	 NR NR NR	 -0.32 pct. pts -0.12 pct. pts -0.44 pct. pts Effects are negative and statistically significant in most cases regardless of number of years since implementation; Negative effects for minority and low SES students; statistically significant results found for all subgroups	Results suggest that multi-track year-round schools have a negative effect on academic achievement, especially among over-crowded schools. For the subgroups of low SES, Hispanic, and African-American students, multi-track calendars have greater negative effects compared to the overall population

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		Study period: 1998-2005					
Author, Year: McMullen, 2012/2015 **Study Design**: Panel **Suitability of Design**: Greatest **Quality of Execution**: Good (1 limitation for exposure) **Exposure:** Authors counted a student as in year-round school (YRS) as long as one test score exists; students counted in the treatment group might not have the same degree of exposure to YRS; or been exposed to YRS	**Study Population:** Middle and elementary schools **Sample size:** Total sample: 50,657 students, 126 schools; each school <40% students on FRPL **Demographics:** Intervention: 18,554 students, 28 YRS 48.6% female 58.0% white 21.9*% black 10.3% Hispanic .32% Indian 5.1% Asian 4.3% mixed Comparison: 32,103 students,	**Location (urbanicity):** Wake County, North Carolina (NR) **Intervention:** year-round calendar; multitrack program to alleviate school crowding; same 180 days as traditional school students with days spread through the full calendar year; school year separated into 4 quarters, 45 days of instruction and 15 days of break; students with limited choice over school assignment and couldn't choose schools based on favor or disfavor of year-round calendar schools **Staffing:** NR **Implementer:** Wake County education department	End of grade test scores Math English Stratified analysis by race/ethnicity and baseline school achievement	NR NR	NR NR	-0.002 SMD, SE = 0.028 0.016 SMD, SE = 0.023	Little benefits for the average student; no statistically significant changes in class size, enrollment, teacher licensure or teach experience. Overcrowding decreased.

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long enough to experience difference in test scores;	49.4% female 51.1% white 28.5% black 10.2% Hispanic .27% Indian 5.7% Asian 4.2% mixed						
Author, Year: Mitchell, et al., 2005 **Study Design**: Cross sectional **Suitability of Design**: Least **Quality of Execution**: Fair (3 limitations for sampling, data analysis, and confounding) **Sampling:** Does not state how the district was chosen **Data analysis:** Descriptive statistics used to	**Study Population:** 1 elementary school district grades 2-6 **Demographics:** Intervention: n = 4,504 47.2% female 43.0% white 7.8% black 43.2% Hispanic 5.8% other SES; 49.2% FRPL 18.9% LEP 3.0% special ed 7.4% gifted and talented Comparison: n = 7,670 49.8% female 44.2% white 10.7% black	**Location (urbanicity):** Southern California (mixed) **Intervention:** The most prevalent rotation cycle is the "60/20" model, where students are "on track" for three months (60 school days) and "off track" for one month (20 days); Note – typically, assignment to track involves setting a sign-up date for parents (often in the spring months of May or June) when families express track preference; student assignment likely influenced by rules and	Mean Achievement scores Math Reading Also stratified results by tracks within schools	 C: 45.8 44.1	 I: 44.9 I: 43.4	 -0.9 -0.7 Negative effects for minority and low SES students; statistically significant intertrack differences grow larger over time in reading and math scores	Overall, multi-track calendar schools did not have an effect on achievement scores when compared to traditional calendar schools; However, when looked at by track, achievement scores vary and show a statistically significant negative effect for minority and low SES students

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compare multi-track calendar schools to traditional calendar schools;; comparability of groups is not taken into account **Confounding:** Analysis comparing traditional to multitrack calendars overall does not control for confounding	40.5% Hispanic 4.7% other SES; 51.3% FRPL 17.0% LEP 3.4% special ed 8.7% gifted and talented	practices governing track enrollment; often schools designate specific tracks for special programs (such as athletic teams, band or other music programs, and bilingual education programs) ; once assigned to an attendance track, students typically have little or no exposure to children in other tracks during the instructional portion of their day; does not report curriculum changes **Staffing:** Teachers in MT-YRE schools, on average, had less experience, less likely to have full credentials, more likely to have alternative credentials, and less likely to have post baccalaureate degrees, though more likely to have tenure,					

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		than those in traditional-calendar schools **Comparison:** traditional-calendar schools in the same school district **Implementer:** the school district or individual schools **Study period:** 1997-98 school year					

Single and Multi-Track Calendar

Study	Population Characteristics	Intervention Characteristics	Outcome(s)	Baseline or Comparison	Follow-up or Intervention	Effect Size (95% Confidence Interval or p-value)	Summary
Author, Year: Wu, 2010 **Study Design**: Panel	**Study Population:** Public elementary schools	**Location (urbanicity):** California (mixed)	Academic Performance Index (API) scores adjusted	Never YRS: 728.8	Always YRS: 731.6	Relative % difference: 0.38%; Once effects of covariates	Year round school did not have an effect on API when compared to

Suitability of Design: Greatest **Quality of Execution**: Fair (2 limitations for description and data anlaysis) **Description:** combined multi-track and single-track schools **Data analysis:** not sure groups were compared at baseline, although they do use a mixed ANCOVA design	**Sample size:** Intervention: 526 schools Control: 4,043 schools **Demographics:** Total sample: % female: NR 38.4% white 7.8% black 8.0% Asian 1.3% Am. Indian 2.3% Filipino 0.6% Pacific Islander 40.5% Hispanic SES: 51.9% eligible for free lunch 25.6% LEP	**Intervention:** Three typical YRS calendars in California: 30/15 (i.e., 30 days of school followed by 15 days of holiday), 60/20 and 90/30; most YRS in CA are multi-track; these schedules do not affect the total number of days spent in school in a year. **Staffing:** NR **Implementer:** individual school districts or schools **Comparison:** traditional calendar schools **Study period:** 2000-2005				were controlled for, the significant group difference in API averaged across 5 years disappeared, $F(1, 4555) = 3.7$, $p = 0.05$	traditional calendar schools

NR: not reported
NS: not statistically significant
FRLP: free/reduced price lunch program
LEP: limited English proficiency
SMD: standardized mean difference