



THE PLAY STANDARD

Research Foundations

The Evidence Base, Graded

For grant applications, board review, and partner due diligence

Document 12 of 12 | Version 1.0

Play Academy Foundation, Inc.

10760 Brunello Pl #206, Wellington, FL 33414

About This Document

Everything in The PLAY Standard that makes a factual claim is sourced. This document collects those sources, grades them honestly, and states plainly which claims the Foundation may make and which it may not.

It exists because a curriculum that cites nothing is an opinion, and a curriculum that overstates its evidence is worse than one that cites nothing. A reviewer who checks one citation and finds it weak will discount every other claim in the application.

The Grading System

Grade	Meaning	How to use it
STRONG	Replicated, meta-analytic, or consensus-body evidence. Survives a skeptical reviewer.	Cite freely and without hedging.
MIXED	Real evidence exists but effect sizes are small, contested, or dependent on conditions.	Cite with the caveat attached. Never cite the headline without the qualification.
ADVOCACY	Asserted by a credible organization without published evaluation data behind the specific claim.	Usable as framing language. Never as an evidence claim in a grant.

Full research reports. This document is the synthesis. Nine underlying research reports covering swimming, basketball, soccer, volleyball, flag football, running, movement literacy, character and health evidence, and federal policy sit alongside the curriculum set. Every URL is in those files.

The Case in One Page

If a funder reads only this page, it should contain the argument.

1. Roughly seventy percent of American children and eighty-five percent of teenagers do not meet the federal guideline of sixty minutes of physical activity per day. [STRONG]
2. Roughly half of American high school students attend no physical education in a given week, and fewer than three in ten attend daily. Daily attendance collapsed from 41.6 percent to 25.4 percent between 1991 and 1995 and has been essentially flat since, sitting at 27.4 percent in 2023. The deficit is thirty years old and is not closing on its own. [STRONG]
3. Children quit organized sport at a mean age of 12.93 years. Thirty-four percent of those who quit do so between twelve and fourteen. The two leading reasons given are not being good enough, at twenty-nine percent, and bad coaching, at twenty-one percent. [STRONG]
4. Sport does not automatically build character. The research literature is explicit that there is nothing special about sport that automatically translates to positive developmental outcomes, and that outcomes depend on how adults structure the environment. [STRONG]
5. Therefore a deliberate curriculum layer, delivered by trained coaches, is not an enhancement to a sports program. It is the difference between a program that builds character and one that merely hopes to. [STRONG]
6. Drowning is the leading cause of death for children aged one to four. [STRONG]

The Foundation's claim is not that sport is good for children. It is that sport coached deliberately is good for children, that most sport is not coached deliberately, and that this is a fixable problem with a curriculum and a training standard.

Part One: Why a Deliberate Curriculum

Sport Does Not Automatically Build Character

Grade: STRONG. Turnnidge, Côté and Hancock (2014), Positive youth development from sport to life: Explicit or implicit transfer? *Quest* 66(2), 203–217. The paper states directly that there is nothing special about sport that automatically translates to positive developmental outcomes.

This is the intellectual foundation of the entire curriculum and it is worth stating in a grant narrative rather than assuming. Most youth sport funding rests on an unexamined premise that participation itself produces character. The literature does not support that premise, and a Foundation that says so demonstrates it has read the field.

What Does Produce It

Grade: STRONG. Holt et al. (2017), A grounded theory of positive youth development through sport, *International Review of Sport and Exercise Psychology* 10(1), 1–49, built from a qualitative meta-study of 63 articles.

Holt's model has three linked components: a positive youth development climate built on relationships with coaches, peers and parents; a life skills program focus containing both skill-building and explicit transfer activities; and the outcomes themselves. The structural finding that matters is that climate alone produces implicit gains, while explicit outcomes require the program focus component to be filled in.

That is the single best citation available for the proposition that a sport program needs a deliberate curriculum layer rather than good intentions, and The PLAY Standard is that layer.

Explicit Versus Implicit Transfer

The same literature distinguishes two approaches. An explicit approach deliberately teaches children about transferability and requires structured curricula, coach training, reflection activities, and feedback. An implicit approach relies on high-quality coach relationships and naturally occurring teachable moments.

The PLAY Standard is deliberately both. Call It Out is the implicit mechanism, capitalizing on naturally occurring moments. Huddle Out and Carry It Home are the explicit mechanism, asking children to name what they saw and to attempt the skill outside sport. The frame exists because the evidence supports doing both.

Grade: MIXED, honestly stated. Transfer of life skills from sport to other settings is real but conditional and inconsistently demonstrated. Supporting studies exist for both explicit and implicit approaches. The Foundation should claim that its design follows the conditions the literature associates with transfer, not that transfer is guaranteed.

Social and Emotional Learning

CASEL's five core competencies are self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. CASEL's own framework places these inside four settings, one of which is communities, explicitly including out-of-school programs. A sport-delivered curriculum sits inside that framework rather than adjacent to it.

Finding	Figure	Grade
Durlak et al. (2011) meta-analysis, 213 programs, 270,034 students — effect on social-emotional skills	0.57	STRONG, but see caution

Finding	Figure	Grade
Same meta-analysis, effect on academic performance	0.27	STRONG
Same meta-analysis, grand mean across all outcomes	0.30	STRONG
Contemporary all-domain figure from more recent meta-analytic work	g approximately 0.19 to 0.22	STRONG

Do not quote 0.57 as the SEL effect size. It is the effect on social-emotional skills only, from 2011 data. The contemporary all-domain figure is roughly 0.19. Quoting 0.57 unqualified reads as cherry-picking to any reviewer who knows the literature, and the honest smaller number is still a meaningful effect for a low-cost intervention.

Part Two: Retention

Retention is the Foundation's central operational challenge and its most defensible outcome measure. It is also where the sector's most-quoted statistic is unusable.

The Sourced Figures

Grade: STRONG. Aspen Institute Project Play national youth survey, fielded October to December 2025, 3,827 youth aged 10 to 17 across all fifty states and the District of Columbia.

- Mean age at quitting is 12.93 years. Boys 12.4, girls 13.30.
- Thirty-four percent of youth who quit did so between ages twelve and fourteen. That is the dropout spike and it sits precisely at the Climbers-to-Summit transition in this curriculum.
- Leading reasons given by former players: not being good enough, twenty-nine percent; bad coaching, twenty-one percent.
- What current players say they want: having fun, forty-eight percent; playing with friends, forty-seven percent. Only twelve percent cite a college scholarship or roster spot.
- The income gap in core participation widened from 13.6 points in 2012 to 20.2 points in 2024 between households under twenty-five thousand dollars and over one hundred thousand. Lowest-income children play at about half the rate of the highest-income.
- Youth sports costs are up forty-six percent since 2019.

Why this matters for program design. The two leading reasons children quit are both coach-controllable. A curriculum that makes competence visible to a child who is not the best player, and that trains coaches to name moments available to every child regardless of skill, is a direct intervention on the stated causes of dropout. That is a stronger grant argument than a generic claim about character.

Do not use the figure that seventy percent of children quit sports by age thirteen. It traces to an unsourced poll with no named study, date, methodology, or sample. A reviewer who checks will find nothing behind it. The Aspen figures above are better and are sourced.

Part Three: Coaching Behavior

Claim	Grade	Note
Specific praise outperforms generic praise; more positives than corrections	STRONG in direction	Well supported across the behavioral and sport psychology literature.
The specific five-to-one ratio of praise to correction	MIXED / convention	Imported from marital research, supported by one classroom randomized trial, never tested in youth sport. Describe it as a widely used practice standard, not a sport finding.
Autonomy-supportive coaching and a mastery climate outperform controlling coaching and an ego climate	STRONG	Consistent across the sport psychology literature.
Growth mindset interventions produce meaningful achievement gains	MIXED / contested	Two competing meta-analyses in 2023 is the definition of unsettled. See below.

Growth Mindset, Handled Honestly

The Perseverance pillar teaches effort, resilience, and treating mistakes as information. That content is sound on its own terms. What the Foundation should not do is present growth mindset as a proven achievement lever, because the replication literature does not support it.

The correct framing is that growth mindset is a climate practice, and that CASEL itself lists maintaining a growth mindset as a sub-skill of self-awareness rather than as a standalone intervention. That lets the Foundation keep the content as a competency component without making a claim that will not survive review.

Part Four: Movement and Development

Fundamental Movement Skills

- The three-category taxonomy — locomotor, manipulative, and stability — is standard across the field. [STRONG]
- Stability functions as a statistically independent construct, and children cannot develop optimal stability by practising only running, throwing, and catching. The most widely used assessment instrument contains thirteen skills and no stability skills at all. [STRONG]
- The association between fundamental movement skill competence and later physical activity is real but modest and largely cross-sectional. [MIXED]
- Most children do not reach mastery of fundamental movement skills. That is the strongest single argument for a movement foundation program. [STRONG]

The Frameworks, and Their Limits

Grade: MIXED, and this matters. The prescriptive frameworks in this space — the American Development Model and Long-Term Athlete Development — are considerably better established as consensus documents than as validated science. The peer-reviewed literature examining LTAD's core mechanism, the windows of trainability, has largely failed to support it.

The Foundation uses these frameworks to structure a curriculum, which is a reasonable use, and does not cite them as evidence. A grant narrative should describe them as professional consensus, not as findings.

Instructional Constraints

- Working memory capacity is roughly two to two and a half independent items at ages four to five, against three to four in adults. This is the source of the two-instruction ceiling in Document 9. [STRONG]
- Chunking multiplies capacity. A named, rehearsed routine occupies one slot regardless of its complexity. [STRONG]
- Performance on standard false-belief tasks crosses from below chance to chance at roughly forty-four months and rises above chance after forty-eight months. Below approximately age four, asking a child to consider how another child felt requests a capacity that is not yet present. [STRONG]
- Perspective-taking under real-time load continues developing into late adolescence. The oldest adolescent group tested, aged fourteen to seventeen, was still significantly less accurate than adults. A sixteen-year-old failing to consider a teammate in a heated moment is displaying a developmental limitation, not a character defect. [STRONG]

The attention-span rule of thumb is not evidence. The coaching heuristic that a child can attend for two to three minutes per year of age has no peer-reviewed source. It may be a serviceable practical rule. It is not a finding and must not be cited as one.

Early Specialization

The American Academy of Pediatrics, the American Orthopaedic Society for Sports Medicine, and the National Athletic Trainers' Association have all published against early single-sport specialization. [STRONG as consensus.] The injury evidence underlying the consensus is real but weaker than the consensus implies. [MIXED.] The Foundation's position — that it does not recommend early specialization and that coaches refer the conversation to programming staff — is consistent with all three bodies and does not require the Foundation to assert a causal injury claim.

Part Five: Health Literacy

Sleep

Grade: STRONG. American Academy of Sleep Medicine consensus statement, endorsed by the American Academy of Pediatrics. Ten to thirteen hours for ages three to five including naps, nine to twelve for six to twelve, eight to ten for thirteen to eighteen.

- Adolescent athletes sleeping under eight hours per night were 1.7 times more likely to have been injured. A subsequent meta-analysis of seven studies found a pooled odds ratio of 1.58 for injury with chronic poor sleep. [STRONG]
- Sleep-dependent consolidation of motor learning in children is a real literature but the Foundation has not verified a synthesis. Do not build the lesson on it. [NOT VERIFIED]

Nutrition

- Dietary Guidelines for Americans 2025 to 2030, published January 2026: no amount of added sugars is recommended for children aged five to eighteen. This is a substantial tightening from the previous edition. [STRONG as current federal guidance]
- Ultra-processed food supplies 61.9 percent of calories for American youth aged one to eighteen, peaking at 64.8 percent in the six to eleven band. [STRONG]
- The association between ultra-processed food intake and weight gain in children is real and replicated. Whether processing itself is causal, as distinct from energy density, sugar, salt and palatability, is contested. There is still no United States government-wide definition of ultra-processed food. [MIXED]

Safe and unsafe phrasing. Safe: diets high in ultra-processed foods are associated with excess energy intake and weight gain in children. Unsafe: ultra-processed foods cause childhood chronic disease.

Hydration and Heat

- Youth do not have less effective thermoregulatory ability, insufficient cardiovascular capacity, or lower exertion tolerance than adults when adequate hydration is maintained. The claim that children are inherently poor thermoregulators is obsolete and still widely repeated in coaching material. [STRONG]
- Ages nine to twelve require roughly three to eight ounces every twenty minutes; adolescents up to one to one and a half litres per hour depending on conditions. [STRONG]
- Exertional heat stroke is a core temperature above 104 degrees Fahrenheit with central nervous system dysfunction. Cooling within thirty minutes by cold water immersion is the gold-standard response. [STRONG]

This is the cleanest and most directly operational evidence in the entire research base. It translates into session rules rather than advice, and it is the basis for the heat protocol that governs every outdoor session.

The Body-Talk Prohibition

Grade: STRONG. Three professional bodies, consistent direction, explicit prohibitive language. The National Athletic Trainers' Association position statement on disordered eating in athletes, and two American Academy of Pediatrics clinical reports — one on preventing obesity and eating disorders in adolescents, one on healthy weight-control practices in young athletes. AAP guidance states that coaches should not discuss weight or weight loss with athletes except in sports with mandatory weigh-ins.

The supporting literature consistently finds that comments from authority figures about shape and weight are associated with elevated eating and exercise psychopathology in young athletes. One study of young European athletes found that 46.1 percent believed they needed to lose weight to improve performance, and that female and younger athletes reported higher weight-related pressure from coaches.

This is why the prohibition in Document 11 is written as binding rather than advisory. It will not be challenged by any reviewer.

Part Six: Safety Evidence by Sport

Swimming

- Drowning is the leading cause of death for children aged one to four. Centers for Disease Control and Prevention. [STRONG]
- Water Safety USA, the thirteen-organization consortium including the Red Cross, the YMCA, the AAP and the CDC, specifies one instructor to four students for young or beginner swimmers without a caregiver in the water, and no more than one to six. The World Health Organization sets a ceiling of one to five. [STRONG]
- Water Safety USA specifies certified lifeguards assigned to patron surveillance during swim lessons in addition to the swim instructors. The aquatic safety literature documents multiple child drowning deaths in which a coach served as the lifeguard. [STRONG]
- Mandatory-staffing law applies in several Foundation states. Texas requires a minimum of two lifeguards at any pool being used for the recreation of youth groups. Washington reclassifies a limited-use pool as general-use during organized programs. California and Utah trigger lifeguard requirements on a direct fee. [LAW]

Flag Football

- Tackle players sustain a median of 378 head impacts per season against 8 for flag players, and 23 times more high-magnitude impacts per exposure. This is the strong claim and it is well evidenced by mouthguard sensor data from 524 athletes aged six to fourteen. [STRONG]
- The single prospective study comparing the two found flag's overall injury rate higher than tackle, at 5.77 versus 2.60 per thousand exposures, with no significant difference in severe injuries or concussions and roughly nine and a half times faster return to play. It has never been replicated in either direction. [MIXED, single study, underpowered flag arm]
- An independent prospective study with athletic trainers on site found 74.5 percent of youth flag injuries resulted from direct impact, and head, face and neck was the most-injured region at 31.9 percent. [STRONG]
- The same study found girls sustained injuries at roughly three times the rate of boys, 12.8 versus 4.3 per thousand exposures. Single study, small female sample, but the most program-relevant finding available. [MIXED]

What this means for public language. Non-contact by rule is defensible. Non-contact is not. Substantially lower head impact exposure is defensible. Safer than tackle football, unqualified, is not.

Soccer

- US Soccer prohibits heading entirely for players aged eleven and under, in games and in practice, with the rule keyed to the player's actual age rather than the team's age group. [STANDARD]
- Athlete-to-athlete contact, not heading itself, is the leading cause of concussion in youth soccer — 68.8 percent in boys and 51.3 percent in girls. Within heading-related concussions, the actual mechanism was still player contact in 78.1 percent of boys and 61.9 percent of girls. A heading ban is necessary but not sufficient. [STRONG]
- Girls sustain concussions at roughly 1.6 times the rate of boys in high school soccer. [STRONG]
- The Consumer Product Safety Commission documented at least twenty-one deaths from tipping movable soccer goals between 1979 and 1994, and roughly one hundred and twenty falling-goal emergency room injuries per year. Most incidents occurred when goals were unattended. [STRONG]

Running

- The claim that distance running damages children's growth plates is folklore. It was asserted before it was tested, has never been demonstrated in distance runners, and the American Academy of Pediatrics reversed the 1982 position that generated it in 1990. [FOLKLORE — do not repeat]
- The evidenced concern is overuse injury from rapid increases in training load. AAP guidance, January 2024: advance training load by no more than ten to twenty percent per week, at least one rest day per week, and two to three months off each sport per year. [STRONG]
- The AAP test is symptom-based and enjoyment-based rather than distance-based. That should shape the curriculum: the safety mechanism is asking children whether it hurts and whether they want to, not counting miles. [STRONG]

Pickleball

- Facial injuries are the largest category of pediatric pickleball emergency department visits at 27.1 percent, 58.4 percent of a decade's injuries occurred in 2024 alone, and 57.4 percent fell in the thirteen to seventeen band. A 2025 ophthalmology paper explicitly calls for standardized protective equipment guidelines. No governing body requires eye protection. [STRONG]

The Foundation requires eye protection anyway. This is a case where the organization exceeds the governing body standard rather than implementing it, and coaches should say so plainly to parents who ask.

Part Seven: Policy Alignment

The Foundation is aligned with the Make America Healthy Again agenda established by Executive Order 14212 in February 2025, and with the reestablishment of the Presidential Fitness Test under Executive Order 14327 in July 2025.

The MAHA Strategy commits the Administration for Children and Families, in partnership with the President's Council on Sports, Fitness, and Nutrition, to promote greater physical activity in afterschool and out-of-school-time programs. Play Academy Foundation is an out-of-school-time physical activity provider. That is the category, named in federal strategy.

The Citation Rule

Cite MAHA documents for policy alignment. Cite the CDC, the AAP, the Physical Activity Guidelines and the Dietary Guidelines for scientific authority. Never the reverse. The MAHA Assessment report has documented citation defects including references to studies that do not exist, and independent methodological analysis found that fewer than seven percent of its citations presented primary data. Cited as a statement of federal policy priorities it is an asset. Cited as evidence it is a liability that discredits the whole application.

The American Academy of Pediatrics has published a formal response to MAHA identifying areas of disagreement alongside opportunities to collaborate, and the collaborative space it names is physical activity, reducing ultra-processed food, screen time, and sleep. The Foundation operates entirely inside that space. It takes no position on vaccines, on agricultural chemicals, or on the contested elements of the 2025 to 2030 dietary guidelines.

Part Eight: What the Foundation May and May Not Claim

Defensible today	Requires evaluation the Foundation has not done
Children receive accurate, sourced health information on sleep, fuel, hydration and heat, delivered by trained coaches inside sessions they attend voluntarily	That the program measurably improves diet, sleep, or body composition
Coaches are trained to a documented standard, and delivery fidelity is measured	That the program produces measured character outcomes
The curriculum is designed against the conditions the research associates with life-skills transfer	That life skills transfer to school or home
Programming reaches whoever lives in the community rather than whoever can travel or pay	That the program has closed any measured equity gap
Children practise counting, measurement and self-tracking in a context they enjoy	That the program improves school mathematics attainment
Water competency is taught to a defined six-skill standard under a published safety gate	That the program has prevented drownings

Every claim in the left column is true today and verifiable by observation or document. Every claim in the right column would require evaluation. Asking a funder to pay for that evaluation is a stronger and more credible request than asserting the outcome now, and it is the request the Foundation should make.

Part Nine: Four Things Not to Put in a Grant

7. Seventy percent of children quit sports by age thirteen. Unsourced poll. Replace with the Aspen 2025 figures: mean quit age 12.93, and thirty-four percent of quitters between twelve and fourteen.
8. An SEL effect size of 0.57. That is the effect on social-emotional skills only, from 2011 data. The contemporary all-domain figure is roughly 0.19. Quoting 0.57 unqualified reads as cherry-picking.
9. Growth mindset as a proven achievement lever. Two competing meta-analyses in 2023 is the definition of unsettled. Frame it as a climate practice.
10. The five-to-one praise ratio as a sport-research finding. It comes from marital therapy by way of one classroom trial and has never been tested in youth sport. Call it a practice standard — and note that testing it is a credible evaluation question for the Foundation's own program.

Part Ten: The Evaluation the Foundation Should Build

The Foundation has no outcome data. That is normal for a first-year organization and it is the single biggest constraint on its funding path, because federal and state funders score organizational capacity and prior performance heavily. The remedy is to instrument programming from the first session rather than to wait for a grant that requires data the organization does not have.

Measure	Why it is the right one
Attendance and dosage per child	The denominator for every other measure. Without it nothing else can be interpreted.
Retention across a season and across seasons	Directly addresses the sector's core problem and the two coach-controllable reasons children quit.
Presidential Fitness Test, pre and post	Standardized, externally defined, federally canonical from fall 2026, free, and comparable across every community and sport.
Water competency, six component skills	The life-safety outcome, and the one most legible to a funder given CDC's framing of drowning.
Curriculum fidelity	Distinguishes the program as designed from the program as delivered, which is exactly the distinction the Holt model says determines outcomes.
Baseline activity level at intake	Evaluations of comparable programs find gains concentrated in children who start below average. Without a baseline the Foundation cannot detect the effect it is most likely to produce.

The strategic point. Nobody funds a first-year nonprofit. Almost everybody will consider a second-year nonprofit with outcome data. The instrumentation is not administrative overhead — it is the asset that converts this curriculum into a fundable program.

Play Academy Foundation, Inc. is a national nonprofit that brings professional sports, wellness, and recreation programming directly into the neighborhoods where children live.

Roughly half of American high school students attend no physical education in a given week, and fewer than three in ten attend daily, against a national recommendation of daily physical education. That deficit has held for thirty years. The Foundation exists because it is not going to close on its own.