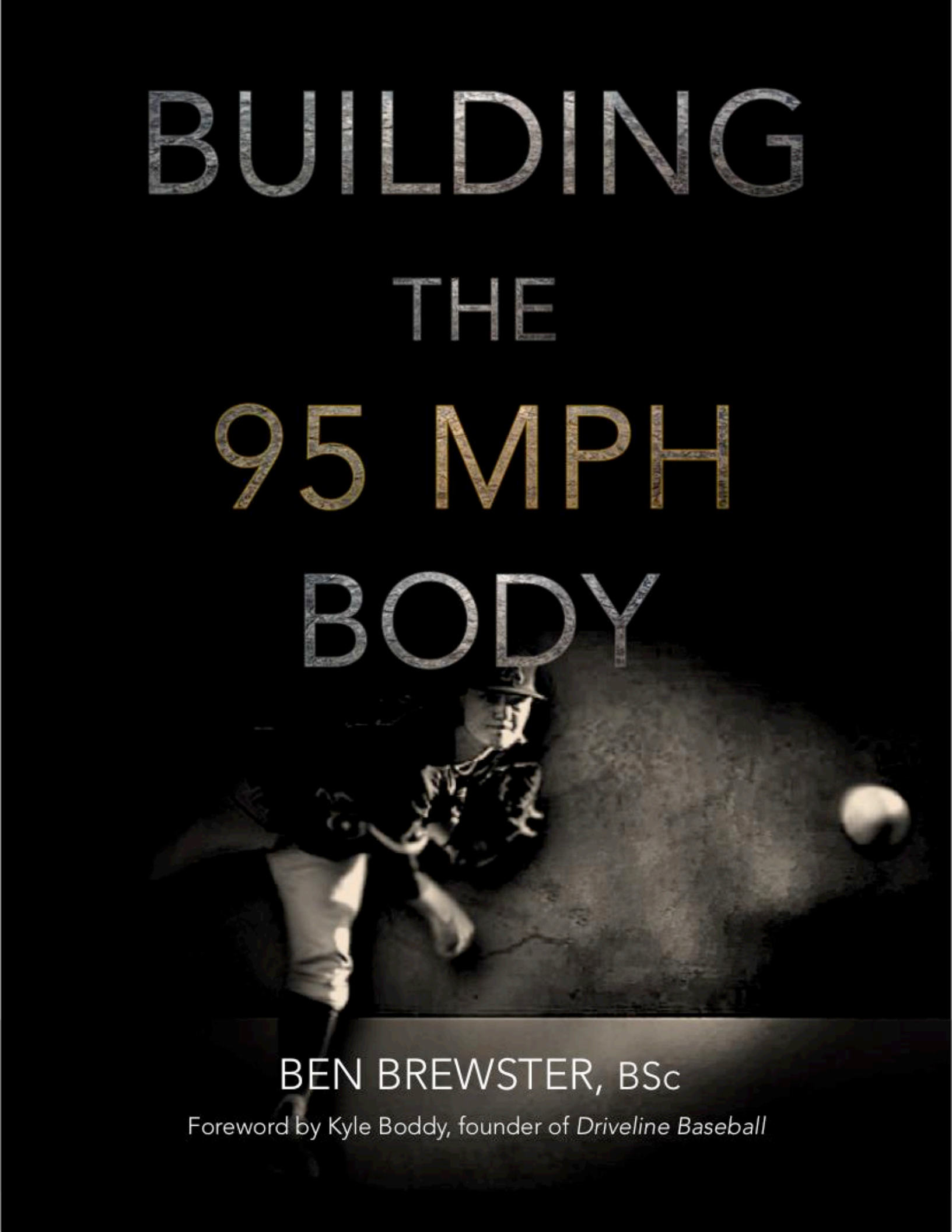
BUILDING THE 95 MPH BODY



BEN BREWSTER, BSc

Foreword by Kyle Boddy, founder of *Driveline Baseball*

BUILDING THE 95 MPH BODY

A PRIMER ON STRENGTH DEVELOPMENT & OPTIMAL NUTRITION FOR THE ELITE PITCHER

WRITTEN BY

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FOREWORD BY **KYLE BODDY**, FOUNDER OF ***DRIVELINE BASEBALL***

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I would like to thank several people that have had major influences on me in my journey for knowledge, success and athletic achievement.

To my mom and dad, for fully supporting me athletically and academically from the start, and for never pressuring me or doubting my lofty goals or my passion.

To two of my earliest training influences, Paul Nyman and Eric Cressey, whose groundbreaking work helped kick start my passion for strength, velocity and athletic performance training.

To my early mentors, Nick Tumminello and Dan Blewett, for patiently allowing me to bombard them with questions for months on end.

To Erik Bakich, for giving me, an un-recruited high school senior, a shot to play college baseball and for seeing something in me when it seemed like nobody else did.

To Seth Diters and John Philbin, for serving as professional role models during my college tenure, and supporting my academic, athletic and career goals.

To Kyle Boddy, for his constant support and friendship, in addition to his huge influence on my training philosophy.

Finally, to my business partners, Mike Leffer and Coan McAlpine, for believing in our mission and supporting it every step of the way.

Foreword By Kyle Boddy,

Founder of Driveline Baseball

At Driveline Baseball, we pride ourselves on collecting as much data as we can using tons of different tools - high-speed video, force plates, EMG sensors, and many other methods. Ben slotted in as an intern for us in the 2015 off-season and furthered our mission by not being afraid to address glaring holes that we had and stepped in with solutions of his own. He took the lead on training our athletes to become stronger, faster, and bigger, and it paid off for many of our guys. This included an athlete named Christian Meister, who was drafted in the 29th round by the Cleveland Indians despite not playing in college that year. Ben instilled the virtues of work ethic and accountability in Christian, and through these lessons, Christian became a much more physical athlete that ultimately benefited him on the mound.

I cannot recommend Ben's work enough. His meticulous attention to detail was reflected in his own history of training, going from a scrawny high school pitcher to a high-grades walk-on at Maryland, then ultimately drafted by the Chicago White Sox, putting up impressive statistics his first year of pro ball.

Ben's guidance is a huge asset that any athlete should seek out in any form. It is my great pleasure to recommend Ben as one of the sharpest strength trainers we've ever had at Driveline Baseball, and the bar for praise at my facility is set rather high.

-Kyle Boddy

INTRODUCTION

"The greater danger for most of us lies not in setting our aim too high and falling short; but in setting our aim too low, and achieving our mark."

This book will give you a snapshot into the scientific principles I've used to:

- Take myself from an untrained high school freshman touching 73 miles-per-hour at 155lbs to a 215lb professional pitcher.
- Walk-on to a major Division-I college program and develop from a non-scholarship benchwarmer into a 15th round draft pick pitching alongside million-dollar talent.
- Train my arm and body to throw 95 miles-per-hour in game, and 102 miles-per-hour in velocity testing, just several years after not knowing if I would even play in college.
- Develop a passion for exercise science and sports performance, brute-forcing my way to a 4-year degree at the very top of my graduating class.
- Manipulate my own body, learning the science behind adding muscle (even for the skinniest athletes), cutting body fat and developing peak power that can actually translate to in-game performance.

But it wasn't always this way.

The road to get to this point was less thrilling.

MY STORY (AND WHY YOU NEED THIS BOOK)

Spring 2007: Freshman year. I try out for my high school's baseball program and, miraculously, make varsity despite throwing 70 miles per hour. This tells you what kind of league I was in. Predictably, I proceed to get shelled, crushing my self-confidence. Off to a good start.

Summer 2007: I decide I want to be good at baseball. I tell myself I'm going to play in college, and start keeping an online log on a public pitching forum to track my training and progress. When my upper-class teammates find all of this out, I am mockingly called "D-1." I begin lifting, but get nowhere after 3 months from all the distance running and biking I am doing to "stay in shape for baseball." I feel like I am destined to be skinny and weak forever.

Fall-Winter 2008: Junior year. I quit the cross-country team, after shin splints and knee pain lead me to reevaluate how good distance running really is for "staying in shape." I quickly put on more weight than I had in the past two years and my velocity skyrockets. Now we're getting somewhere.

Winter 2008-Spring 2009: Without the money to hire a pitching coach, I continue trying to teach myself. I promptly strain my back and miss the next 6 months as doctors try to figure out what's wrong with me. People think I'm imagining the pain, and I'm politely invited to stop showing up at practice if I'm not going to play through my injury. Due to the missed season, I receive exactly zero recruiting offers.

Winter 2009-2010: Senior year. I save up all the money I earned from a summer job and hire a renowned strength coach to work with me one-on-one. I start to get stronger, but my weight stalls at 180 pounds. I build a wooden pitching mound and begin throwing in the upper floor of an industrial building to get ready for the spring. This is my last chance.

Spring 2010: I still have zero recruiting offers. My team squeezes into the conference championship and I throw a complete game, striking out 16 and giving up no runs or walks in 7 innings. After the game, I am interviewed for the first time ever, and I stumble over my words like a toddler.

May 2010: I decide to go to the University of Maryland, and sign up for their baseball "recruiting" camp in June. I bombard the head coach with emails so that he knows who I am.

June 2010: "*You're up*." I put on my hat, pound my glove once and jog out to the mound. After two innings, I've struck out six. Head coach Erik Bakich comes up to me with a smirk: "*If you can go out there and do that again, you have a spot on my team – let's see how you do under some pressure."* He was trying to make me nervous, but I barely registered the words he was saying. The next inning was a formality. After it was over: *"are you sure you want to commit to this? It's going to be a lot of work.*" I knew I wasn't one of his top recruits, and would probably be lucky to sniff the field, so I responded with the only thing that I could: *"I'm going to work harder than any player you've ever had."*

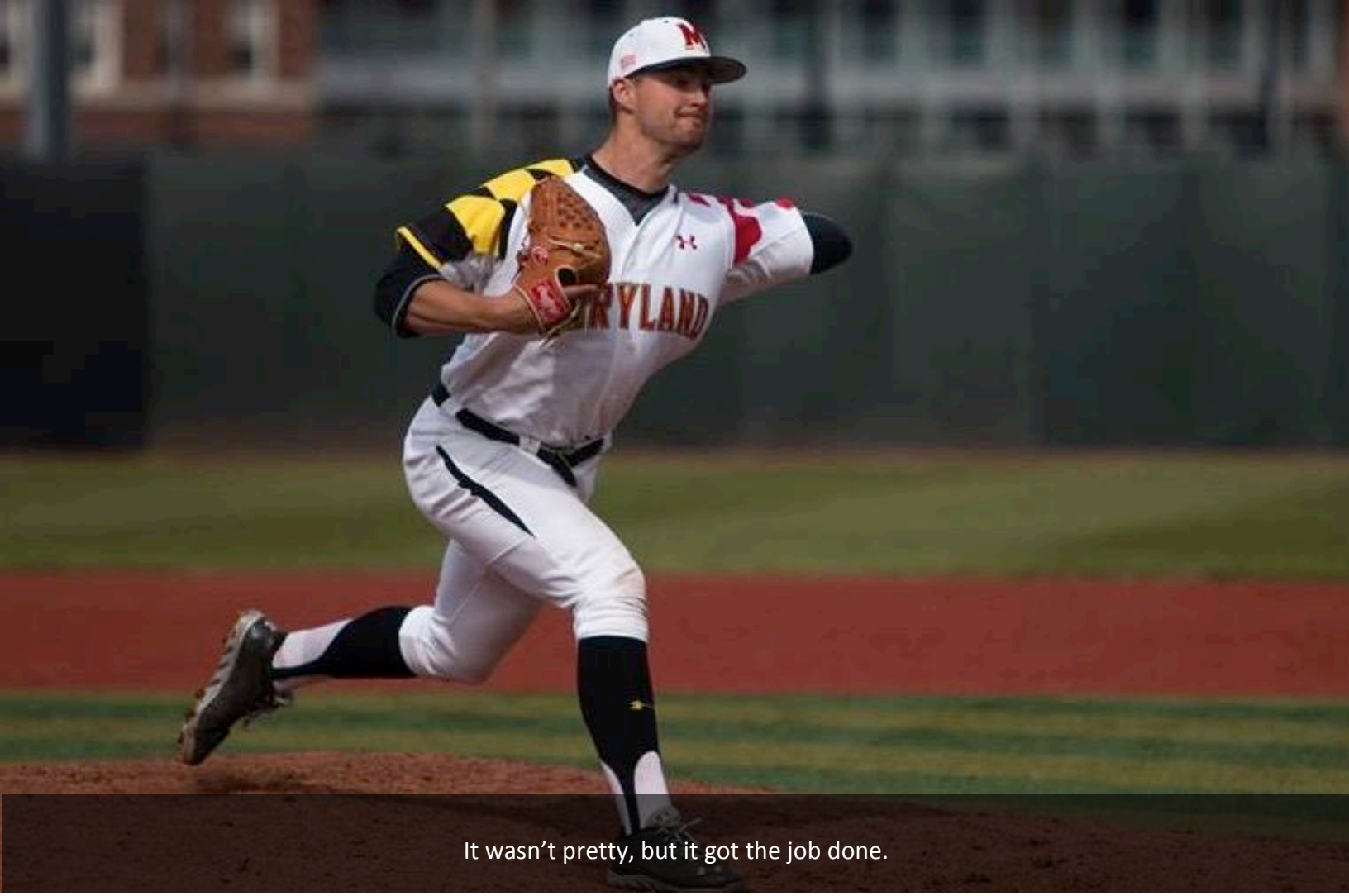
Winter 2010 – Spring 2011: I finish the fall 20lbs heavier, weighing in at 205lbs. I look like a different person. Opening weekend rolls around, and I am thrown into the fire in a blowout against powerhouse, University of Texas. I, figuratively, crap my pants in front of 10,000 people. It turns out pitching against high school kids in front of 200 fans hadn't quite prepared me for this type of pressure.

Spring 2012: A back injury forces me to miss 12 weeks right in the middle of the season. I come back throwing harder, and finally start to fit in with the talent around me.

Spring 2013: I struggle with command in several outings, and quickly lose my spot in the bullpen. Despite being an upperclassman, I am cut from the travel roster one weekend. I contemplate quitting, and for several days even entertain the idea of switching to javelin throwing. Luckily, I pull myself together, re-work my delivery and finish the season strong.

Summer 2013 - Fall 2013: I take the summer off from competing to develop my body and delivery. It becomes the best decision I could have made. I end up gaining 10lbs and long tossing up to 380 feet from a standstill. The velocity carries over to the fall, where I begin receiving letters from 26 MLB teams and hit 102 mph in velocity testing (from a crow-hop).

Spring 2014: Everything comes together. During the 3rd week of the season, I hit 95 mph, and finish the regular season with one of the lowest opponent batting averages in the



It wasn't pretty, but it got the job done.

ACC. Despite still being "raw," "unpolished," and throwing 95% fastballs, I help our team to a Super-Regional berth against powerhouse University of Virginia, where we fall one win shy of the College World Series. I'm drafted in the 15th round during game 3 – over 7 years after committing myself to chasing my dream of playing professional baseball. By this time, my online pitching log has reached over 150,000 page views, and dozens of high school players on the site have followed my lead, making their own logs and chasing after their dreams. I would later be described by one of my early college throwing partners (who went on to be drafted himself) as: *"the worst pitcher that I've ever seen get good."* I guess I'll take it.

The lesson is simple – with the right approach, a little bit of science and a whole lot of persistence, you are capable of more than you and those around you could have dreamed of.

CHAPTER ONE

ELITE PERFORMANCE – WHAT DOES IT REALLY TAKE?

Most of you are reading this book expecting a quick fix – I don't blame you. I wanted the same thing as a thin, soft-tossing lefty pitcher in high school. I quickly realized the truth – there are no quick fixes, and true mentors to guide you through the process are hard to come by. The sport of baseball quickly transitions from a pure game of teamwork, fun and sportsmanship to a harsh arena where roster spots, scholarships and playing time are the most valued commodities. All of this is to say that it is not going to be easy, should you decide to fully commit yourself to the dream – and if you do commit, success is still never guaranteed.

Realize that this is a game where small improvements in performance have huge implications. 2 or 3 miles per hour may make the difference between getting a scholarship to play college ball and hanging up the spikes after your senior year of high school; that may be the difference between an 88 mph pitcher not getting the call vs. the exact same pitcher at 91 mph being a mid-round draft pick. Details matter. Each individual training detail may not amount to much in isolation, but the way that we squeeze out *every last ounce* of performance is by accounting for all of these details at once.

THE 80 – 20 RULE

We have established that becoming elite is about managing the details to squeeze out every ounce of performance. This can be examined using a concept called the 80 – 20 rule. Also known as the "Pareto Principle," this rule states that roughly 80% of the results in an endeavor come from 20% of the effort. It then takes a massive 80% of the effort to achieve that remaining 20% of results/ performance. Think about it – it's not terribly difficult to become *good* at something, but becoming elite is another animal. For example, throwing 80 miles-per-hour is fairly common, even at the high school level, but it becomes progressively more and more difficult, and requires exponentially more effort and attention to detail to continue moving up the ladder toward one's individual potential. This is what generally makes becoming elite in anything so difficult. Rarely is it worth it to most people to put forth the effort to go from good to great, or from great to elite. That being said, this book is not intended for those people who are content with their 80%, so let's begin to further analyze what goes into elite performance.

Some perspective: performance ≠ velocity

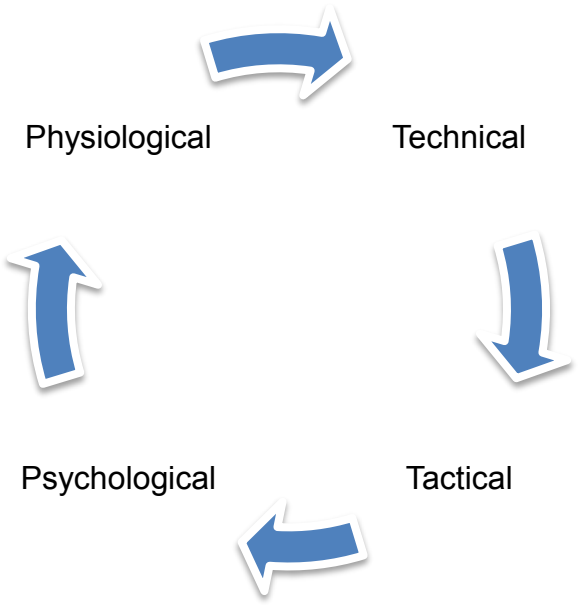
You are presumably reading this book, not for the sole sake of improving velocity, but for the sake of improving pitching performance with the goal of being given the opportunity to further your career at the next level. Who doesn't want to continue chasing the childhood dream for as long as possible?

While velocity is incredibly important, keep in mind that it is quite separate from performance, which is also quite separate from being given a shot to play at the next level. They obviously all overlap quite a bit, but it's worth pointing out that throwing hard does not guarantee pitching success, just as pitching success does not guarantee a chance to play at the next level. That being said, for two athletes with similar pitching abilities, velocity becomes an absolute game-changer, and almost a prerequisite for pitching in college and/or at the professional level. People love to cite rare examples like

Greg Maddux to dismiss the importance of velocity, forgetting that he threw in the low-90s in his youth. They also ignore the fact that few people now-a-days get recruited to play even low-level D1 college baseball without throwing over 88 mph, and that scouts glaze over pitchers who aren't at least flashing 90 mph.

All that is to say that velocity is important, especially for getting a shot at the next level, but it is not the only thing that matters when it comes to actually being a successful athlete. Performance can be generally categorized into four "pillars," each of which must be maximized in order to achieve one's true potential as an athlete, regardless of sport. Though this e-book is focused on velocity development, it would be inappropriate to not briefly discuss these pillars.

THE FOUR PILLARS OF PERFORMANCE



1. Technical

This includes mechanics, techniques and skills. This is the very essence of pitching – fine tuning the complex motor patterns that govern how you move your body through space

and time in order to dot a 2-seam on the black or break off a hammer curveball. The technical pillar also involves how you field a ground ball, how you pickoff to first base and how you angle your hand to release a breaking ball at just the right moment. This takes years – decades – to master, and while most players have been well versed in these "fundamentals" since tee-ball, even at the professional level, there must be a constant focus on improving and maintaining maximum proficiency in the technical aspects of the game.

2. Tactical

This includes strategies, plays and tactics. It's knowing what pitch to throw in what count, it's knowing how to read batters and what to do with the ball on a first-and-third play depending on the game situation. Tactical proficiency is important – but always knowing what to do is irrelevant if you can't actually execute when it's crunch time. Many players spend far too much time worrying about pitch sequences before they can even throw one quality pitch for strikes. It's important to have a fundamental knowledge of the tactical aspect of the game, but this is not what takes players 20 years to master. Time should be spent understanding this pillar, but this is not the limiting factor for most athletes who have been around the game since little league.

3. Psychological

This is performance related to mental and/or emotional functioning. This is often an entirely overlooked aspect of performance by both players and coaches alike. This is learning how to fine-tune one's mental state into a delicate balance of focus and aggression. This is being able to shrug off bad pitches, bad calls or unfavorable outcomes and zone right back in, always locked into the next play. The psychological pillar is knowing the difference between soft focus and fine focus, executing pre-game, pre-inning and pre-pitch routines, and not wavering for an instant – no matter how much that fear in the back of your mind might try to rear its ugly head. Psychology is

vitally important to being a “polished” pitcher, and this should be emphasized and mastered at every possible opportunity. Keep in mind; it does take actual live game experience to master the psychological aspect, so the bulk of your actual training hours will likely be spent outside of this pillar.

4. Physiological

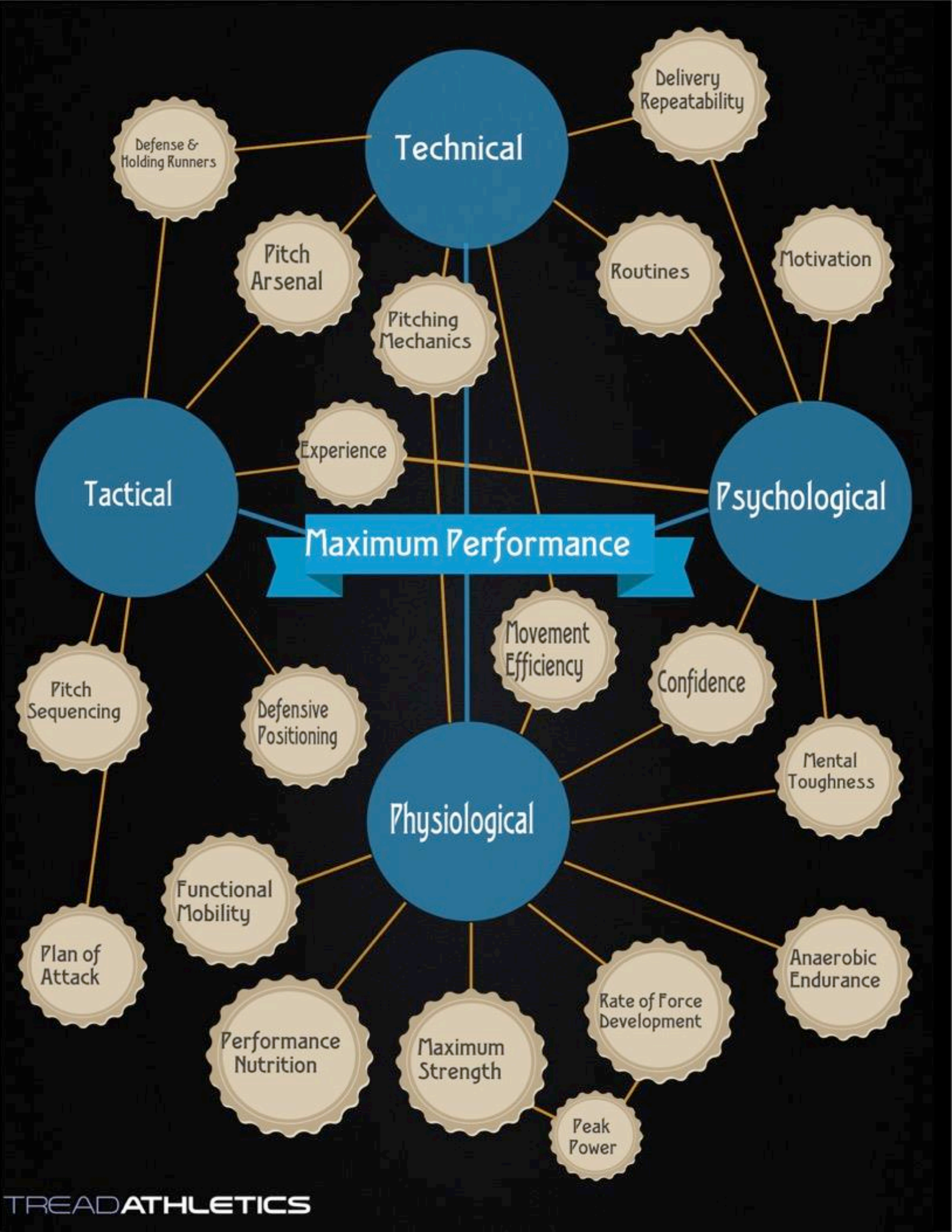
Ah, the meat and potatoes. This includes strength, power, endurance and everything related to how your body actually functions and performs. This is having the leg, hip and core strength to repeat your delivery and powerfully drive your body towards the target. This is your body’s ability to recover between pitches, between innings and between workouts. This is what governs you gaining or losing muscle, strength and power. Learning to harness the power of your physiology isn’t easy – but it’s necessary for reaching the highest levels of the game. A select few can break their way into top collegiate or professional levels without devoting much time to this aspect – but don’t emulate these guys. They are often taller (with longer levers), and naturally stronger, faster and more flexible than the rest of us. Whereas these guys can just roll out of bed at 6’ + and an effortless 200+ lbs, most of us are going to have to work – furiously hard – to train our physiology to perform in the same way.

Keep in mind that by neglecting any one of these pillars, performance will not be optimized. However, addressing all of these components is beyond the scope of this e-book. Again, there are outliers at the highest levels who achieve elite levels of performance despite being sub-optimal in one of these pillars. These individuals generally make up for their shortcomings by being exceptional at one of the other pillars. For example, some elite players make up for a lack of tactical and psychological prowess via extraordinary technical and/or physiological factors. There is always overlap, but the takeaway is not to emulate these outliers – instead, work to maximize every single pillar to squeeze out every last ounce of performance.

Optimize your physiology for big time velocity.

By optimizing your physiology, you will also see carry-over into the other pillars. For example, improved muscular strength, flexibility and explosiveness will allow more efficient technique to be used. Optimizing your physiology is about making your body a well-oiled machine geared for elite velocity.

The following graphic is an example of just some of the elements that factor into true maximum performance. Notice how inter-connected each of the pillars are with the others.


Technical
Delivery Repeatability
Defense & Holding Runners
Pitch Arsenal
Routines
Motivation
Pitching Mechanics
Tactical
Experience
Psychological
Maximum Performance
Movement Efficiency
Confidence
Pitch Sequencing
Defensive Positioning
Mental Toughness
Physiological
Functional Mobility
Plan of Attack
Anaerobic Endurance
Rate of Force Development
Performance Nutrition
Maximum Strength
Peak Power
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CHAPTER TWO

OPTIMIZING YOUR PHYSIOLOGY FOR MAX VELOCITY

Let's be clear – just because you commit to optimizing your physiology, maxing out your body for the demands of your sport, doesn't mean that you are committing to neglecting the other aspects of performance. I am not saying that mechanics, the mental game, pitch sequencing or pitch command are not important – indeed my very point is that ALL of these factors are important. Anybody who indicates that there is a magical secret or shortcut to the top that ignores these factors is either heroically ignorant or just after your hard-earned money.

So how do you optimize your physiology – fine-tuning your body to produce maximum velocity? Let's dive in.

The human body is remarkably adaptable – based on the environment and stimuli we expose it to, thousands of potential adaptations are in the process of occurring at any given moment in time. This is true of every tissue, organ and cell in the human body. Muscles grow and shrink, strengthen and weaken and take on slow or fast-twitch properties based on the type of training performed. Connective tissue has the ability to thicken and strengthen, and our central nervous system's ability to recruit groups of muscle fibers (selectively called "motor units") may be up or down-regulated depending on how we train.

This is just the tip of the iceberg. Training for max velocity is therefore about exposing your body to a training environment that creates optimal adaptations in your physiology – your muscles, your nervous system, your connective tissue, your energy systems, etc. in order to produce the maximum amount of usable power that your genetics will allow. While it sounds complicated, it's not a revolutionary concept – other throwing sports, particularly elite javelin throwers, place huge emphasis on physical preparation, as several feet on a throw could be the difference between winning or not placing in an event. While these athletes are an extreme example, it is useful to observe how some of the very best "throwers" in the world, religiously, prepare their bodies for maximum power output.

WHY TRAINING WORKS

"General Adaptation Syndrome" (GAS), a model developed by researcher Hans Seyle in 1936, explains how organisms respond and adapt to stressors. In his model, there is an initial "alarm" phase as the body deals with the initial stress. For example, if you go to the beach and stay in the sun for 30 minutes, the alarm phase would immediately follow the exposure to this stressor (i.e. the sun). Following is the "recovery" phase, where the body begins to recover from the damage of the stressor. The "adaptation" phase (also referred to in training as "supercompensation") occurs once the recovery phase has ended – in this case our skin would produce a response, i.e. getting tanner, to better deal with similar stressors in the future. Note that the level of adaptation is proportional to the intensity of the stressor – you will get tanner if you're out in the sun for an hour versus ten minutes. However, if you stay out in the sun for too long, the damage of the stressor becomes too great, and you will get a sunburn. The recovery process now takes much longer to occur. Once you stop exposing yourself to the sun, your body will decide that it no longer needs to hold on to that tan, and will begin to revert back to its baseline. This is the equivalent to the "detraining" phenomenon, where training adaptations begin to diminish following long periods of inactivity.