



CROSSFIT KIDS TRAINING GUIDE

CrossFit
TRAINING

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CROSSFIT KIDS SCIENCE

INTRODUCTION

Since its inception in 2006, CrossFit Kids has understood the importance of having published research support and affect the program. Research from such disparate fields of study as behavioral science to molecular biology provides not only the core framework for what and how aspects of the program are implemented but more importantly, why.

The references and information that follow are included for several reasons. First and foremost, this section provides many avenues for CrossFit Kids Trainers to further their education. The topics presented here are merely a first step and not intended to be exhaustive. The journey to become the most qualified trainer possible never ends; you can always benefit from gaining more experience and knowledge. Secondly, supporting literature is valuable when discussing the CrossFit Kids program with parents. There is no greater responsibility than being entrusted with another's child; having external studies to support your program can instill an additional level of confidence from them as well as with you, the trainer. Finally, for those who desire to bring CrossFit Kids into specific schools or districts, this information may be the basis for a presentation to principals or superintendents in support of potential benefits and efficacy.

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CrossFit Kids Science, continued

A PRESCRIPTION TO IMPROVE HEALTH

As an organism, humans are accustomed to a very different lifestyle (1). In prehistory, the diet of our ancestors was extremely varied and movement was a necessity (hunter-gatherers walked 5–9 miles per day)(2). As the Agricultural Revolution spread across the globe (~10,000 years ago), the diet of our species became more restricted. Foods that were grown became the staples; whereas diversity decreased, quantity and accessibility increased. Homo sapiens of this time period may have walked less, however they still worked quite hard to tend to their crops (2). Fast forward to the Industrial Revolution (~250 years ago), when food variety decreased even further as did the variety of activities in daily jobs (2). Today the variety of our diets is very restricted and we walk less than 0.3 miles per day, quite a change! Food products today generally contain more refined sugar and less fiber, leading to an increased insulin response and caloric uptake (2). The resulting “metabolic perturbation” has implications for the obesity epidemic (3).

Obesity is a result of a mismatch between the environmental conditions we evolved in over the course of the vast majority of our history and the conditions and behaviors of today; resulting in what Lieberman (2) calls dysevolution. Dysevolution refers to the lifestyle we pass on culturally, to subsequent generations (2). Because these are not genetic changes they can be affected by compensatory changes in environment and behavior. CrossFit is one component of how to change the behaviors of adults, in an attempt to reverse our maladaptation to our current circumstances. The goal of CrossFit Kids is to break the cycle of passing on poor behaviors, by instilling in this and future generations of children a positive association with exercise, a desire to be fit, and a goal to live a long healthy life.

The need to achieve this goal becomes clear with the realization that within the United States, the prevalence of individuals 2–19 years old who had body mass index measurements at or above the 95th percentile for their age and gender was 16.9% in 2012 (4, 20, 21). Obesity engenders additional near-term morbidities such as: hyperinsulinemia, glucose intolerance, type 2 diabetes, sleep apnea, and depression (5,21). In the long term there is an increased risk of obesity as an adult, heart disease, cancer, and osteoarthritis (5,21). The acute nature of this problem is represented by the fact that “childhood obesity has more than doubled in children and quadrupled in adolescents in the past 30 years” (21).

Children being overweight and obese is not only a problem within the United States, but also globally. “Worldwide, in the period 1990–2010, there was a relative increase of 21% (first decade) and 31% (second decade) in the prevalence of early childhood overweight and obesity, whereas the forecast for the relative increase in the coming decade (2010– 2020) is 36%. Fifty-three of the 111 countries with trend data show a rising trend” (6). The actual numbers are staggering, in 2010 43 million children throughout the world were overweight or obese; more than 80% were from third-world countries (6).

The rapid increase in the prevalence of this condition, especially within the most recent generations, suggests that genetic factors are not the primary cause (5,7). Changes in lifestyle appear to be an instrumental factor (8). Sedentary behavior is a contributing factor to the decline of health indicators in children (9) and adults (10). This association of behavior and outcome is made even more troubling from the observation that “the percentage of 9th to 12th graders undergoing daily physical education in US schools has declined from 42% to 27% (1991–1997)” (7). However, the increase in sedentary behaviors emerge well before high school; “recent epidemiological reports indicate that contemporary youth are not as active as they used to be, and this decline in physical activity seems to emerge by age 6” (11). This shift in activity patterns has led to the coining of the term Exercise Deficit Disorder (11,12) in order to begin to establish the parameters to monitor and confirm the best methods of intervention; as well as train the personnel within society that can effect change (7,11,12,13,14).

CrossFit Kids Science, continued

CrossFit Kids is composed of elements designed to reduce Exercise Deficit Disorder and poor lifestyle choices: laying foundational movement patterns, providing children with a portion of their prescribed amount of exercise for the week, improving muscular fitness, engineering endless opportunities for success, and discussing roles for food—all while keeping the class and its information fun and engaging (14,15,16). As an infinitely scalable program CrossFit Kids can also bring the benefits of physical activity to disadvantaged populations (17,18,19).

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CLASS STRUCTURE PROMOTES LEARNING AND RETENTION

The CrossFit Kids program, first and foremost, provides individuals between the ages of three and eighteen with a portion of their prescribed physical activity in a fun and engaging format. The goals of the CrossFit Kids program however, are more far reaching in the short as well as the long term. For example, one intent is to have the children learn the points-of-performance of foundational movements that have universal application; developing motor recruitment pathways, ensuring safe and efficient movement now as well as into the future. Along the way, what they do and how they feel because of it will provide them a definition of what fitness is and means to them. In addition, layering information about food into the program leads to an understanding of and a mechanism to adhere to a healthier lifestyle. CrossFit Kids classes also provide an opportunity to hone life skills. Skills such as perseverance and working hard as well as those espoused by SHAPE America (formerly American Alliance for Health, Physical Education, Recreation and Dance—AAHPERD) including: acknowledging personal responsibility, accepting feedback, working with others, following rules, and exhibiting etiquette (1).

It is appropriate that a significant amount of education occurs within the various CrossFit Kids classes, because “exercise boosts brain power” (2,3)(see also the Positive Changes In Brain Function section below). Additionally, as a species, we are designed to learn by actively moving through and experimenting in our environment (2). Within the CrossFit Kids program, classes and instruction are designed to capture and maintain the attention of participants, reinforcing learning points; many of our methods are based on those outlined in Brain Rules (2).

Human brains store information as a complex set of connections between neurons. The connections are called synapses and we are not born with every synapse preformed, awaiting assignment. Instead, our brains physically change to make synaptic connections and encode information. The discovery that a brain is not a static organ was first made in a sea slug, the invertebrate *Aplysia californica* by Nobel Prize recipient Dr. Eric Kandel (2). Indeed, the plasticity of our brains ranges from an everyday occurrence to specialized responses; such as allowing victims of strokes to “relearn” how to control limbs. Under normal conditions, the growth and death of neurons as well as the formation and removal of synapses is a tightly controlled process (4). Importantly, everyone’s brain does things a little different than the next person (2,5) and everyone experiences life in their own unique way. Therefore, it is incumbent upon us as CrossFit Kids Trainers to utilize as many techniques as possible to affect the most number of children.

Capturing an individual’s attention is a critical first step to teaching. (2). Novelty is a straightforward way of focusing awareness. Things that are new or unexpected tend to engage us (2). CrossFit Kids classes always have an aspect of unpredictability; they are constantly varied. There is a consistent structure to the class, but what happens within each of the components of the class is what changes. Classes are built on a foundation of age-appropriate short segments that allow goals to be accomplished within them, and are not too long to lead to boredom. The whiteboard is an opportunity to highlight distinctive aspects and build on the excitement of making the unknown, known (2; p116). Then, with the start of every segment during a class, attention may need to be refocused, especially for the younger age groups.

Making the subject or activity interesting is another way to create engagement. What is interesting or important to different age groups varies dramatically, and finding that is a key responsibility for a CrossFit Kids Trainer. For example, while explaining to junior-varsity athletes that getting stronger will increase their chances to making varsity next year, that will not motivate preschoolers. For the younger ages, a motivator may be letting them know that the more they exercise, the longer they can take their pets for a walk. Additionally, the game at the end of class is THE

CrossFit Kids Science, continued

most important motivator of the class to preschoolers and kids. Just reminding them of the game may garner attention throughout the class.

The presence of the game also taps into a mechanism of improving retention. “Emotionally arousing events tend to be better remembered than neutral events” (2; p79). Children know games are fun and pairing a skill within a game is a powerful way to further associate the skill with being fun. For example, executing a good super-slow air squat so that you can roll a medicine ball and knock over foam rollers. This emotional connection is not only important for the short term recall, but more importantly for a long term, positive association between exercise and feeling good. Another mechanism to foster this connection, especially in teens that do not play games in their classes, is to celebrate successes. Positive feedback can be extremely important to an adolescent, we have found that endeavoring to compliment improvement of any amount fosters a desire to continue the effort.

From the opposite perspective, chronic (and incongruent) stress negatively impacts learning (2,6). Additionally, chronic stress can reduce efforts to be physically active as well as recovery from activity (7,8). A goal of CrossFit Kids classes should be to provide opportunities for success and learning to overcome hurdles. For children with stressful home and/or scholastic environments, these classes may be one of the few positive moments their day. Evidence, in fact, exists that physical activity is a means to also protect against and remediate the effects of stress (9,10).

John Medina (2; p83) explains that “memory normally works by recording the gist of what we encounter, not by retaining the literal record of the experience.” Establishing larger themes first, before delving into intricate details may be a more effective way of teaching. In CrossFit Kids, Preschoolers are taught full movements from the start, for example a full range-of-motion air squat or shoulder press. Three general positions are cued to delineate the extent of each movement: where the athlete starts, goes to, and finishes. These refer to the minimum positions that must be achieved, and are also the limits of our expectations as CrossFit Kids Trainers. Although more detailed points of performance may be covered in skill work (e.g. knees out or weight on heels) for these young ages, the goal is their introduction for familiarity not full compliance. Increasingly more detailed instruction is provided to older age groups, although they all still begin with the simplest global cues; the progression to details however, occurs on an ever more condensed timeline, from years to perhaps months.

The gradual introduction of more details that reinforce and expand upon the global theme is one way to make the long-term retention of the information more reliable (2; p147). While this layering refers to the example above with respect to additional points of performance within a specific movement, it also relates to the overall teaching progression where complexity increases; for example, starting with the air squat, then the front squat, and finally the overhead squat. It is worth noting that the final detail added to the long-term instruction of any movement is intensity, either load or speed.

Experiments done by Dr. Richard Mayer support the conclusion that “groups in multisensory environments always do better than the groups in unisensory environments. They have more accurate recall” (2; p208). To ensure longer-term retention of the things we teach in CrossFit Kids classes, material is presented to various senses simultaneously. For all ages, the desired movement pattern is shown (visual) while the points of performance are established (verbal), and the class does the movement (tactile). Similarly, teaching information, rather than movement, in classes also benefits from this paradigm. For example, the association of specific foods with macronutrient classes can be taught utilizing plastic food replicas and teams shouting answers, all in an exciting game format.

Beyond teaching to various senses, learning is also enhanced if the information is elaborately encoded (2; p110); providing a context and making the information meaningful not only can capture attention (see above), but also improve recall (2 p114–115). In preschool and kids, four to six weeks is spent working on a specific skill, allowing the material to be presented in numerous contexts with the intent of peaking the interest of and engaging as many children as possible. For example, the beginning of the deadlift for preschoolers may be cued by calling it the “angry gorilla.” That “start” position can be taught by telling a story about a trip to the zoo, having a contest for the angriest gorilla, explaining how strong gorillas are, or just telling them how fun it is to pretend. Essentially, one enhances the instruction by briefly, yet creatively elaborating on the age-appropriate “what,” “how,” or “why.”

The methods for teaching outlined above are most effective in conjunction with extensive repetition. “Memory is not fixed at the moment of learning, but repetition, doled out in specifically timed intervals, is the fixative” (2; p130). Despite being “constantly varied” CrossFit Kids has the overarching purpose to teach safe and efficient movement; therefore the context of teaching that movement may vary day to day (see the angry gorilla example above), however the teaching of the underlying skill (the deadlift) is held constant for four to six weeks. This scheme provides extensive repetition within each class as well as over weekly intervals. Although movement repetition itself is a key ingredient to motor skill learning, so may be the extensive cognitive processes that occur during the repetitions (11,12,13,14), leading to enhanced motor solutions.

Imitation and shared attention are relied upon heavily within CrossFit Kids classes to create an effective teaching and learning environment. “Human children readily learn through social interactions with other people. Three social skills are foundational to human development and rare in other animals: imitation, shared attention, and empathic understanding” (15). Indeed, Meltzoff (15) also states “imitation accelerates learning and multiplies learning opportunities. It is faster than individual discovery and safer than trial-and-error learning.” Imitation is most effective when the transfer occurs from a “skilled to an unskilled agent” (16). The role of the CrossFit Kids Trainer, therefore, is to provide an environment where imitation can happen in a structured and coordinated fashion. Visual cues are used constantly to introduce and reinforce movement patterns, from the global to fractional perspective; transferring and integrating sensory information into a motor pattern, possibly through a mechanism involving mirror neurons (17).

Classes for all age groups are set up to focus attention on a desired example. Preschool classes use a “special leader,” while kids and teens classes utilize capable demonstrators from within their own ranks. Being the exemplar, chosen by the CrossFit Kids Trainer is a desired role, a reward for effort and a celebration of success. These individuals, therefore, become the ones who others in class imitate. Simplistically, they imitate these demonstrators because they are told to however it is also via a skill that emerges in infancy, learning through shared attention (18). Shared attention is the ability to follow the gaze of others to identify targets of interest in the environment; it also necessarily includes an interpretation of the intentions behind the gaze being followed (15,18). The in-class demonstrators become the focus of attention for everyone, because of the positive relationship with being chosen by the instructor. This scenario establishes a definitive subject to be used for learning through imitation and is an opportunity to highlight achievements or abilities in a constructive manner.

CrossFit Kids Science, continued

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CrossFit Kids Science, continued

Virtues Of Teaching Movement Skills And Patterns

A goal of CrossFit Kids is to lay the foundation for a healthy lifestyle. As they leave this program, the hope is that physical activity remains an integral part of their lives, whether as part of continual journey toward general fitness or in search of optimal performance on the field of sport. A primary mechanism for that is to constantly teach safe and efficient movement.

In addition, CrossFit Kids supports the philosophical notion of “physical literacy,” looking at the concept broadly:

“It could be suggested that the overarching characteristics of a physically literate individual are that the person moves with poise, economy and confidence in a wide variety of physically challenging situations. Furthermore the individual is perceptive in ‘reading’ all aspects of the physical environment, anticipating movement needs or possibilities and responding appropriately to these, with intelligence and imagination. (1).

Physical literacy is also “an end state that needs constant attention to be maintained” (1). Maintenance can be achieved by improving such capacities as: “balance, coordination, flexibility, agility, control, precision, strength, power, endurance and the ability to move at different speeds—that is explosively, right through to sustaining a movement over a long period of time” (1). These are familiar concepts to CrossFit athletes!

Several practical approaches have been developed with the goal to provide physical literacy in a developmentally appropriate manner (2). The long-term athlete development (LTAD) model most recently put forth by Balyi (3), discusses distinct stages of development. He posits windows of opportunity that should be utilized to prevent limiting future potential. The LTAD model is embraced by the Canadian Sport For Life organization, Lloyd (4) published an explanation of their Youth Physical Development Model (YPD) that takes the view that “most fitness components are trainable throughout childhood” (4). More detailed articles concerning components of training within the YPD model, such as agility and speed, have also been published (5,6). The Integrative Neuromuscular Training (INT) model is designed to “enhance health and skill-related components of physical fitness” (7). Finally, the curriculum put forth by the National Association for Sport and Physical Education (NASPE), an association of SHAPE America, provides a comprehensive sequence along five stages, for the development of physical literacy in children from kindergarten to grade 12 (8). Within each stage are specific standards and outcomes to focus on and strive for within a physical education class. The NAPSE standards are the basis for the K-12 physical education curriculums in numerous states within the U.S.

The methods used to teach movement within this program are broad, general, and inclusive. They are consistent with yet do not necessarily adhere to every aspect of the systems mentioned above. In what should sound familiar to CrossFit athletes, CrossFit Kids espouses a program of constantly varied, functional movements, executed at a relative (and age-appropriate) high intensity; and is governed by the progression of establishing sound mechanics and demonstrating consistency before intensity (load or speed) is introduced or increased (9). Powerfully, CrossFit Kids can leverage the over 11,000 CrossFit Affiliates to insert this paradigm in communities around the world. Additionally, as of the first quarter of 2015, there are over 2100 CrossFit Kids Affiliates (in 49 countries) and more than 600 schools are using CrossFit Kids.

CrossFit Kids Science, continued

The idea of consistency would appear to be at odds with realization that the acquisition of motor skills is a dynamic process. However, the quote below, reprinted from Lee (10) succinctly observes that, in fact, motor skills do not maximally benefit from rote repetition and recapitulation of a single motor pattern:

“The process of practice towards the achievement of new motor habits essentially consists in the gradual success of a search for optimal motor solutions to the appropriate problems. Because of this, practice, when properly undertaken, does not consist in repeating the means of solution of a motor problem time after time, but in the process of solving this problem again and again by techniques which we changed and perfected from repetition to repetition. It is already apparent here that, in many cases, ‘practice is a particular type of repetition without repetition’ and that motor training, if this position is ignored, is merely mechanical repetition by rote, a method which has been discredited in pedagogy for some time.” (11)

The dynamic nature of motor solution learning is especially relevant with a population that changes as much as children do throughout their tenure in the CrossFit Kids program. The first three figures from Verkhoshansky’s paper entitled “Supermethods of Special Physical Preparation for High Class Athlete” (12) together provide a graphical underpinning to the programming within the CrossFit Kids program. Despite being written expressly for elite athletes, with a slight change in perspective the figures are equally adaptable for use here.

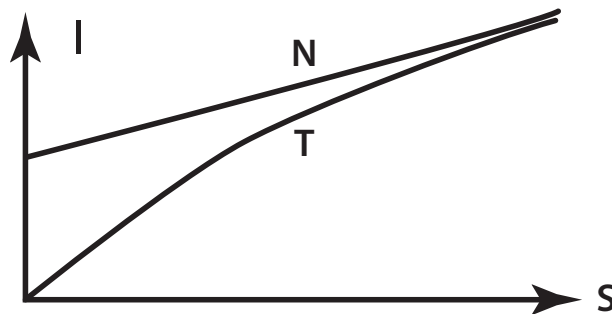


Figure 1. The tendencies in the rise of motor potential of the organism (N) and skill of the athlete to utilize its (T) over many years of training; S - sport result (12, 15).

CrossFit Kids Science, continued

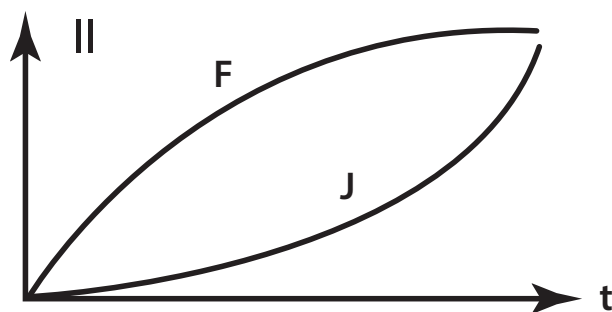


Figure 2. The tendencies in the rise of the leading motor function (F) and intensity of training influences on the organism of the athlete (J) over many years of training; t-time spent on training (12, 15).

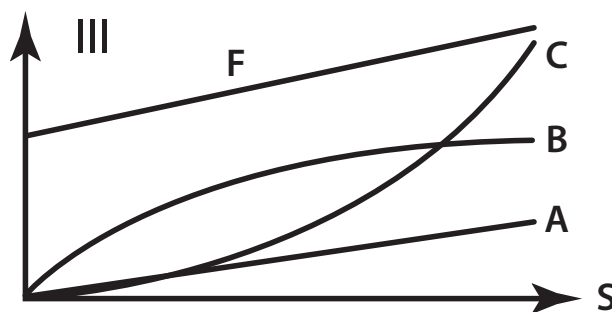


Figure 3. The tendencies in the improvement of the leading function (F) and development of functional systems of the organism (conditionally A, B and C) during many years training; S - sport result (12, 15).

Figure 1 shows that athletic performance (X-axis) is related to the maximum theoretical motor potential (N) and how much of it has been realized by the individual (T). Athletic performance needn't be the pinnacle for CrossFit Kids, it would be equally valid to substitute the broader term fitness. In either case the goal is to have your personal motor skill set reach your inherent potential to accomplish desired tasks, although it often just asymptotically approaches it. A motor function (F), or fitness in the CrossFit Kids context, is improved over time (T), as shown in Figure 2. This figure however, suggests that increases in intensity (J) need only happen in later stages of training, once a motor function approaches peak levels. Similarly, intensity should not be introduced to children until a solid foundation of fitness, movement mechanics, and consistency is developed. Figure 3 introduces the idea that athletic performance (X-axis) is correlated with improving the leading motor function (f) for that endeavor; and that advancement of other

CrossFit Kids Science, continued

functional systems (A, B, and C) support the former. Indeed, for CrossFit Kids, fitness (or physical literacy) is continually developed and reinforced through complex interactions between underlying components, such as learned motor skill sets, desired tasks, and available environments (or capacities, environmental situations, intentions, and perceptions [1]). Practice and accomplishment in one necessarily leads to advances in others.

The importance of a general physical preparedness (GPP) program like CrossFit Kids is underscored by the fact that, “regular participation in organized sports activities does not ensure that youth are adequately exposed to fitness components that can improve their health and reduce risk of injury” (13). Additionally, focusing on a single sport can lead to overuse injuries (14), whereas sampling multiple sports may be beneficial for strength and motor coordination (15). Indeed, resistance training and GPP may prevent sports related injuries (16,17). Especially for physical education teachers, NASPE published a position statement on guidelines for youth specialization or multiple-sport participation (33), stating that specialization has more risks than rewards.

Within CrossFit, it is well understood that optimal sports performance is the culmination of successful training for a substantial amount of time. As described above for Verkhoshansky’s Figure 3 (12), there are other functional systems that support the leading motor function for a sport. CrossFit has established three broad movement-related tiers that provide a foundation for sports performance: metabolic conditioning, gymnastics, and weightlifting (9). Again, for CrossFit Kids, sports may not be the ultimate goal; fitness may be a more applicable state. CrossFit Kids follows this hierarchy in its programming design as well. The initial goal is to provide a foundation of cardiorespiratory fitness through relative (and age-appropriate) high-intensity activity. Strength is gained neuromuscularly through body-weight gymnastic movements until mechanics, consistency, and enough testosterone are present to warrant the use of an external object in weightlifting.

In addition to these programming attributes, CrossFit Kids recommends the addition of two other types of activity, impact loading and vestibular work. Each has clear connections to improving athletic skills as well as directly improving health.

IMPACT LOADING—Bone mineral content deposition reaches a maximal point at approximately 12–14 years old, between Tanner stages 3 and 4 (18). A larger opportunity exists for females, in that:

“In boys, increased bone growth and accrual is matched by increases in muscle strength. In girls, growth is slower, but bone growth and accrual is disproportionately greater when expressed in relation to muscle mass. The implication of this is that the effect of circulating reproductive hormones is to increase the sensitivity of female skeletons to load compared with males. At the menopause, the reduction in circulating reproductive hormones has the opposite effect” (19)

Indeed, a meta-analysis “supports previous research highlighting the advantage of performing high-impact, weight-bearing activity on bone mineral accrual during prepubescence and imply that even non-competitive levels of weight-bearing exercise can exert a positive influence on the bone health of young girls” (20). The process through which physical activity can cause greater bone accrual is described by Wolff’s Law (21). Bones react and remodel according to the forces put on them, in this case strengthening them. Bones can sense the forces exerted on them by mechanotransduction (21,22). Fluid pressure within the bone is monitored by specialized cells and signals downstream changes in bone density. This model predicts “high frequency (>30 Hz), low magnitude loads (<1 MPa) loads

CrossFit Kids Science, continued

are sufficient to elicit cellular response (21). Indeed, this is what has been observed on the gross anatomical scale. Static loading of the skeleton was ineffective at inducing an increase in bone mass compared to cyclical loading (23). Although the load is a factor the rate of force or strain change is more critical.

Such forces can be applied to the skeleton of individuals within CrossFit Kids classes without the need for external load. High frequency impact activities such as jumping and bounding, broadly termed impact loading, are an effective means to cause rapid force changes and perhaps elicit positive changes (24). Without an external load, these activities are self-scaled by ability to reduce the risk of injury. Regarding load, the rather slow lifting phase as well as the static hold may do far less to influence bone mass than the sudden de-loading (high frequency change) when the weight is dropped (or the rapid loading in a jerk)(23). Weeks (25,26) noted sex-specific improvements in bone density after an eight-month intervention of adding ten minutes of jumping twice a week to an adolescent physical education class. Impact loading activities are a priority for all age groups within CrossFit Kids, for the benefits they may provide to a growing skeleton as well as the improvements they bring about in such physical skills as power, speed, and strength.

VESTIBULAR WORK—The overall importance of the vestibular system is underlined by the fact that it evolved approximately 500 million years ago (27). In humans it is comprised of the semicircular canal system of the inner ear with nerve efferents extending to various parts of the brain, including the limbic system, the hippocampus, and the neocortex (27). The vestibular system provides self-motion information by assessing acceleration (27). Vestibular lesions and dysfunction can cause movement, learning, and anxiety disorders (28,29,30). When Franco (31) conducted vestibular examinations on children performing and underperforming, she found “73.3% of the children performing well at school had normal findings, whereas 32.6% of the underperforming children had normal test results.”

Such interventions in humans as Sensory Integration Therapy (32), cold water irrigation of the outer ear canal, electrical stimulation, as well as rotational treatments in animals have suggested that vestibular stimulation could increase brain function (27). Partly for this potential benefit, the programming for all age groups within CrossFit Kids classes contain movements that stimulate the vestibular system; such as log rolls, forward rolls, standing spins, handstands, cartwheels, and skin the cats. Additionally, training the vestibular system can also improve coordination, balance, agility, and accuracy. General care and consideration should be taken in implementing these movements; making sure children are not becoming overly dizzy, nauseous, or scared.

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Resistance Training, Benefits And Compliance With External Standards

The benefits a safe resistance training program can have on children and adolescents include: muscle strength, muscle power, muscular endurance, bone strength, flexibility, agility, physical performance, body composition, cardiovascular health, injury resistance, psychosocial well being, and promotion of positive exercise habits (1,2,3,4,5,6).

In the general population however, there appears to be an undercurrent of concern that children lifting loads is inherently dangerous. This notion most likely began in 1842 in England and has been discredited by modern sports science (7). Indeed numerous position statements, backed by research papers, endorse the use of resistance training with children and adolescents, including: the American Academy of Pediatrics, the National Strength and Conditioning Association, the Canadian Society of Exercise Physiology, the Australian Strength and Conditioning Association, the UK Strength and Conditioning Association, and an international consensus of endorsing groups (1,2,3,4,5,6,8,9).

These publications suggest specific guidelines as well as underlying program designs that should be implemented. Recommendations from six of the articles spanning the past twelve years are collated in Table 1. The majority of these published references agree across the board on the guidelines for running a safe and effective resistance-training program for children and adolescents. By virtue of what is discussed at the CrossFit Kids Certificate Course, contained in this training guide, or available in the [CrossFit Journal](#), the CrossFit Kids program is in compliance with nearly every recommended feature for an age-appropriate resistance training program (see Table 1).

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GENERAL RESISTANCE- TRAINING PROGRAM GUIDELINES	American Academy of Pediatrics 2001	American Academy of Pediatrics 2008	Canadian Society for Exercise Physiology 2008	National Strength and Conditioning Association 2009	Faigenbaum 2010	International Consensus 2014	CrossFit Kids & Teens	CrossFit Teens Weight- lifting
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Medical clearance by physician			----- Only when either symptoms and/or disease are present -----					
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Taught by a qualified instructor								
▪ Considers cognition, physical maturity, and training experience								
▪ Follows proper training techniques								
▪ Ensures safe environment								
▪ Provides close supervision								

Class and exercise components								
▪ Session begins with dynamic warm up								
▪ Training on nonconsecutive days (2-3 times/week)								
▪ Aerobic and resistance training coupled together								
▪ Include exercises that strengthen all major muscle groups								
▪ Move through complete range of motion								
▪ Include exercises requiring balance and coordination								
▪ Focus on proper technique and training procedures rather than load								
▪ Begin with light loads								
▪ Perform 1-2 sets of 8-15 repetitions with a light to moderate load to learn proper technique								
▪ Perform 1-3 sets of 1-6 repetitions on power exercises								
▪ Session ends with a cool down							Teens only	
▪ Listen to needs of class participants								
▪ Injury or illness should be evaluated immediately before continuing with training								

KEY

		Resource incorporates enumerated guideline listed in left column
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CrossFit Kids Science, continued

GENERAL RESISTANCE- TRAINING PROGRAM GUIDELINES	American Academy of Pediatrics 2001	American Academy of Pediatrics 2008	Canadian Society for Exercise Physiology 2008	National Strength and Conditioning Association 2009	Faigenbaum 2010	International Consensus 2014	CrossFit Kids & Teens	CrossFit Teens Weight- lifting
Long-term design aspects								
▪ Avoid maximal lifts and related competitivelifting events until physical and skeletal maturity is reached								
▪ Educate athletes as to the dangers of using performance enhancing drugs								
▪ Increase resistance (or load) gradually								
▪ Gradually progress (commensurate with ability) to more advanced movements that enhance power production								N/A only two lifts
▪ Systematically vary the training program over time to optimize gains and reduce boredom								
▪ Use logs to monitor progress								
Supplemental components								
▪ Optimize performance discussing benefits of recovery, nutrition, hydration, and sleep								
▪ Adjust volume and intensity throughout the year to accommodate sports or other activities								
▪ Create an enjoyable exercise experience								
▪ Support and encouragement from instructors and parents								

KEY



  Resource incorporates enumerated guideline listed in left column

Table 1. Across the top (left to right) are six articles concerning the design of resistance training programs from: the American Academy of Pediatrics 2001 (1), the American Academy of Pediatrics 2008 (2), the Canadian Society for Exercise Physiology 2008 (3), the National Strength and Conditioning Association 2009 (4), Faigenbaum 2010 (5), and the International Consensus 2014 (6). The far left column contains the general guidelines gathered from the six references. Major headings are in grey, with additional enumerated points below. The green cells indicate that the article at the top of the column mentioned the incorporation of the attribute from the far left column. The final two columns on the right (highlighted in blue) represent the CrossFit Kids and Teens classes as well as the Teens Weightlifting class; all involve resistance training to some degree. Blue cells under these last two columns means that the attribute to the far left was referred to in the CrossFit Kids Course, the CrossFit Kids Curriculum, this Training Guide, or the CrossFit Journal.

CrossFit Kids Science, continued

The CrossFit Kids program takes these guidelines seriously, they focus CrossFit Kids Trainers on reinforcing sound mechanics, educating proper behaviors, providing opportunities for success and long-term adherence; and most critically, they lay out a structure for creating a safe environment.

Safety during any physical activity is of the utmost importance considering the adolescent skeleton is actively growing. Therefore, it is considered immature compared to the adult skeleton (10). The relatively thin layer of cells that comprise the growth plate (physeal plate), where bones actively grow, is susceptible to injury, in fact:

“Physeal injuries have been reported to account for between 15% and 30% of all skeletal injuries in children, occurring most commonly after the age of 10. 80% of physeal injuries will occur between the ages of 10 and 16 years, with a median age of 13 years” (10).

Growth plate injuries can occur from acute trauma as well as repetitive stress, with varying degrees of severity (Saltzer-Harris Types I–V)(10,11) Types I and II are more likely to have positive outcomes however, Types III–V put the future proliferation of that bone at risk without medical intervention (10). Faigenbaum (12) specifically addresses concerns for growth plate injuries with respect to resistance training:

“Of note, injury to the growth cartilage has not been reported in any prospective youth resistance training study that provided professional guidance and instruction. Furthermore, there is no evidence that resistance training will negatively impact growth in height during childhood and adolescence. The risk of growth plate injury may be greater when young athletes perform jumping and landing activities during competitive sport play that induces ground reaction forces of up to five to seven times body mass.”

Additionally, Myer (13) states, “injuries during resistance training are less frequent than in actual sport performance.” Caine (14) and Emery (15) review the risk factors and incidences in sports-related injuries involving children and adolescents. From estimates in 1998, the number of weightlifting injury cases in the United States requiring a doctor were 12.5% of those reported for soccer and 5% of those reported for basketball (14). Furthermore, when specifically investigated, injuries reported to derive from resistance training vary dramatically in etiology from adult to child populations (13). More than 75% of injuries sustained by children during resistance training are deemed “accidental,” and refer to pinching or bruising from actions such as dropping weights on extremities or tripping (13). Meanwhile, this ratio is reversed for adults; nearly 75% of resistance-training injuries are related to effort and degradation of technique, resulting in muscle sprains or strains (13).

The CrossFit Kids program strives to prevent injuries due to accidents by actively honing skills such as accepting personal responsibility, working safely with others, following rules, and exhibiting etiquette. Injuries related to effort are mitigated by strict adherence to a policy established at the inception of the CrossFit Kids program, “quality of movement supersedes load and intensity,” a sentiment echoed recently by Faigenbaum (16). While children and adolescents within the CrossFit Kids program may lift, move, and play with various objects during the course of a class, when they perform the movements from the foundational series (squats, presses, and deadlifts) the mechanics of and consistency with the movement informs the load. Expectations for what defines acceptable mechanics change with age; it always includes safe movement and progressively demands adherence to a hierarchy of points of performance. Consistency not only refers to proper form from one repetition to the next but more importantly maintenance across longer time domains. Therefore it may be weeks to months for teens, and possibly months

CrossFit Kids Science, continued

to even years for younger participants before loads are increased. For example Preschoolers (three to five years old), although the quality, at times, may be acceptable the consistency never reaches a point to warrant any type of load or implement being used. With children (generally between the ages of five to twelve years old), mechanics and consistency may allow the application of a very light load. For the oldest, most adept in this age range the load may approach ten-pound dumbbells for front squats, various pressing movements, and cleans; while upwards of a twenty-pound kettlebell may be used for deadlifts. These same standards are used to govern loading teenagers. As mechanics and consistency improve, loads increase along that same trajectory without the upper limits of the younger age group; the mandate is that the load is well within the margins of safe and efficient movement for the time duration and other contributing factors (16). Examples of additional factors include if the movement is being done during focused skill work, during an intense workout, or in a partially fatigued state. Furthermore, load and expectation adjustments are made daily based on developmental status (17), growth spurts, injuries, psychological state, level of recovery, and many other factors that can affect performance. It is recommended that teens do not attempt one-repetition maximum lifts in the context of this program unless they are mature enough and participating in related weightlifting or powerlifting competitions. Despite the procedure put forth by Faigenbaum (16) for such testing, the need is not necessarily apparent; strength can still be tracked by improvements in the maximum lifts completed in the Teen Weightlifting class.

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Positive Changes In Brain Function

With tightened budgets and a need to show scholastic achievement results for their efforts, schools have been increasingly removing physical education and recess from their curricula (1). Research however, indicates that the removal of physical activities may cause a significant detriment to academic achievement. In fact, numerous studies link an increase in physical activity with improved test scores (2,3,4,5). The CrossFit Kids program supports the maintenance (and even reintroduction) of physical education and recess in schools. The fact that so many schools and even districts have embraced the methods outlined in the CrossFit Kids Course and this document is a hopeful sign that priorities are shifting.

While CrossFit embraces the “black box” concept of not needing to know the specific mechanism through which changes or adaptations occur, it fully supports scientific investigations designed to further our knowledge concerning the intricacies of human performance. Indeed, many studies have been conducted assessing the impact of physical activity on cognitive function. Reviews and meta-analyses generally find a small, yet significant association between the two parameters (6,7,8). One of the largest, single studies to show a relationship between brain function and fitness had more than 1.2 million subjects. In an observational, cross-sectional study incoming eighteen year olds to the Swedish military from 1950 to 1976 were assessed for physical as well as intellectual performance (9). Aerobic fitness was assessed using a stationary cycle and isometric muscle strength was measured by knee extension, elbow flexion, and hand grip (9). “Four cognitive tests were used covering the following areas: logical performance test, verbal test of synonyms and opposites, test of visuospatial/geometric perception, and technical/mechanical skills including mathematical/physics problems” (9). The results indicated that aerobic fitness, but not muscle strength, is positively associated with scores on the various intellectual tests (9). In addition, those individuals who improved their fitness the most from the previous three years showed higher intelligence test scores than those whose fitness decreased from the age of fifteen (9).

This resulting correlation is from one study in an older adolescent age range and tests for brain function in strictly defined knowledge categories. Sibley (7) conducted a broader analysis of 44 studies concerning the ages 4 to 18 years old. This meta-analysis also showed a positive relationship between physical activity and cognitive function. Tomporowski (3) reviews a much smaller set of studies (16 in total) and separates them into three categories of how brain function was measured: intelligence, cognition, or academic achievement. Tests for intelligence include IQ tests as well as methods of assessing abilities that “require memory, spatial organization, vocabulary, and problem solving” (3). Those that quantify cognitive abilities “evaluate mental function at more molecular level of analysis than do traditional IQ tests” for example, “attention, information processing, working memory, and executive function” (3). Finally, the most subjective method, academic achievement relies on “standardized tests, academic grades, and teacher evaluations” (3).

Results from the three studies looking into intelligence, all from the 1960s, were varied and inconclusive (3). In terms of academic achievement Tomporowski (3) concludes, “at best, the studies reviewed demonstrate that time spent in physical education classes does not have a deleterious impact on children's academic progress,” but does improve their health. Indeed, this sentiment was also noted in a specific study involving third- and fifth-graders (10). Perhaps the strongest associations exist between physical activity and cognitive abilities. Tomporowski (3) concludes:

“The results of cross-sectional studies indicate that children who are physically fit perform cognitive tasks more rapidly and display patterns of neurophysiological activity indicative of greater mobilization

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of brain resources than do less fit children. Several large-scale experiments provide evidence to suggest that exercise training exerts specific, rather than global, effects on children's cognitive function. Following aerobic exercise training, children's performance improves exclusively on tests that involve executive function."

Similar conclusions were reached from a study involving more than 4500 adolescents from the United Kingdom (11). In this study, the physical activity was objectively measured by collecting personal accelerometry data over the course of seven days and further used as a proxy for average daily physical activity. "Higher levels of free-living moderate-vigorous intensity physical activity had a beneficial association with attention/executive attention task performance in adolescents, in particular for males" (11). A smaller study showed a more acute effect of exercise; rather than using average daily activity, a twenty-minute dose of treadmill walking was applied (12). The nine to ten year olds in this study either walked at 60% of their maximum heart rate or sat quietly. Twenty to thirty minutes after each of these conditions, the children participated in cognitive tests while their brainwaves were monitored (12). Compared to the rested control group, those individuals that had exercised had improved response accuracy in the cognitive tests and greater measured amplitude of a specific brainwave component called the P3 wave; "the amplitude of the P3 is believed to index the allocation of attentional resources during stimulus engagement, with greater amplitude indicative of greater resource allocation" (12). Beyond the observation that children with higher physical activity levels have improved executive function (11,13), this treadmill study suggests a more immediate and possibly causal association (12). Finally, in a study published in 2011, twenty children aged eight to ten participated in a nine-month intervention to improve their fitness (measured by $\text{VO}_2 \text{ max}$)(14). As their fitness improved, so did their performances on some of the cognitive tasks and certain brainwaves (14). Interestingly, a recently discovered anatomical difference seen in higher fit nine- and ten-year olds is that the white matter in their corpus callosum (as well as several other brain regions) had an increased integrity compared to lower fit controls (15). This structural difference raises the possibility that the fit children "have faster neural conduction between brain regions," leading to improved cognitive function (15).

Although direct mechanisms have not been proven for these effects, data indicates that it has less to do with genetics compared to the environment (or what you do). Of the more than 1.2 million subjects discussed in the research study above, there were 1432 monozygotic twin pairs (9) with identical DNA. Analysis of their fitness and intelligence data indicated that genetic factors only explained ~15% of the association, while a differential environment explained the rest (9). Numerous research efforts have begun to show the multifactorial nature concerning the connection between physical activity and cognitive abilities.

One of the most remarkable post-exercise effects on the brain is the increased growth of new neurons (neurogenesis) in the dentate gyrus, a subregion of the hippocampus involved in memory and learning (16,17,18,19,20). The generation of new neurons is neuroplasticity that has gone beyond merely the remodeling of existing synapses. In fact, lines of evidence now indicate that a subset of these newly formed neurons are genetically distinct from each other as well other neurons in the brain (21,22); and may "help to diversify the range of behavioral phenotypes that are possible from a given genome" (22).

While increased neurogenesis occurs subsequent to exercise, what mechanisms allow the working cardiovascular system and musculature to signal the brain? Certainly the nervous system itself is a direct link between these systems

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that could be utilized. In addition, there are soluble factors that appear to mediate the association of exercise and brain function. Lactate, a byproduct of glycolysis, could be one such messenger because it is a utilized fuel source by the brain (23,24). Specific peptides and proteins can also fill this role (26). Myokine, is a recently coined term to describe molecular messengers that are produced in and secreted from muscle cells resulting in local or distal effects (26,27). Examples of myokines are: interleukin—(IL) 4, IL-6 IL-7, IL-8, IL-15, brain derived neurotrophic factor (BDNF), fibroblast growth factor 21, leukemia inhibitory factor, myostatin, chemokine (C-X-C motif) ligand 1 (CXCL1), calprotectin, erythropoietin, insulin-like growth factor-1 (IGF-1), basic fibroblast growth factor (FGF2), and perhaps irisin (26,27). These myokines are a means of communication from the muscle to diverse cell types and organs, including: adipose tissue, the liver, the pancreas, bones, the circulatory system, and the brain (27).

IGF-1 is an extensively studied protein, most notably associated with its effects on growth and metabolism (28). In humans, levels of IGF-1 are positively associated with fitness in untrained children (29); and from animal studies, IGF-1 appears to mediate effects of aerobic exercise (wheel running) on the brain (30,31,32). Indeed, even injecting IGF-1 into the periphery of rats can induce the growth of new neurons in the dentate gyrus region of the brain (33). The effects of resistance training on circulating levels of IGF-1 in humans remain unclear (34,35). Perhaps the total work or overall muscle groups utilized has some confounding effect (35).

BDNF also has pleiotropic effects throughout the body, it has been implicated in being involved with such varied biological processes as circadian rhythms, mood, and heart rate (36). Circulating BDNF levels are increased in individuals following a regular exercise program and after an acute bout of exercise; although resistance training lacked consistent results (37). Acute and chronic exercise have also been associated with improvements in cognitive function, with BDNF “tentatively suggested” as a mediator in humans (38); based on more direct connections established in animal studies (39). In humans, BDNF is released in response to exercise. The signals coordinating this release are actively being investigated; including signaling cascades involving IGF-1 (30,40) and possibly irisin (41,42). Circulating BDNF levels increase during activity and decrease toward baseline levels during rest with varying kinetics (38,43,44,45). The amount of BDNF released is positively correlated with the intensity of the exercise bout (43,46). Interestingly, the infusion of lactate into the bloodstream of resting humans also induced a transient BDNF peak (47) that appeared to be independent of changes in blood pH (48). Animal studies indicate that increased stress and forced exercise reduce the amount of BDNF released and hippocampal neurogenesis (49,50). This result perhaps allows an alternate hypothesis to why cycling next to a busy roadway resulted in a lower BDNF response than controls (51), and further supports the need to make each CrossFit Kids class as age-appropriately fun as possible.

The interaction of stress and exercise is not unidirectional (52). Indeed, exercise and the resulting release of BDNF as well as other trophic factors can have neuroprotective and antidepressant activity as well as improve overall stress resilience (53,54,55). The benefits that exercise can have on neurobiology as a whole may reach as far as improving symptoms of ADHD (56,57). Therefore, the inclusion of exercise in childrens’ lives with such programs as CrossFit Kids is critical to and has dramatic implications for not only their physical health, but their mental and cognitive health as well. Following this prescription, it is recommended that as programs progress, CrossFit Teen classes end with approximately seven minutes of cool down and study to take advantage of a unique opportunity to improve their intellectual performance through any (or all) of the mechanisms described above.

In addition, attempts should be made at every opportunity to prevent the removal of physical education from schools for these same reasons. There are numerous examples of schools that have seen significant improvements

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in test scores and behavior with the incorporation of more physical activity. For example, Learning Readiness PE in Naperville, IL (59) or City Park Collegiate, a high school in Saskatoon, Saskatchewan (60). These examples may have influenced the founders of the [Girls Athletic Leadership Schools](#) in the development of their entire curriculum. As suggested for high-intensity training programs (58), the CrossFit Kids program is also a powerful mechanism with which to reinstate movement into the scholastic environment, in terms of its ease of implementation, fitness gains, and enjoyment.

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Rhabdomyolysis and Hyponatremia

Rhabdomyolysis is defined as:

“A potentially life-threatening syndrome characterised by the breakdown of skeletal muscle resulting in the subsequent release of intracellular contents into the circulatory system.” (1)

Rhabdomyolysis in the adult population has been covered extensively in various CrossFit Journal articles (2,3,4,5). Rhabdomyolysis can also occur in the pediatric population from a variety of causes (6,7), including being exercise-induced (8). Several reviews have been written on the topic (1,9,10). The risk of exercise-induced rhabdomyolysis occurring in any of the CrossFit Kids populations is mitigated by direct actions taken by CrossFit Kids Trainers. The preschool and kids age groups are never pushed to continue moving or exercising. If they choose to stop moving (due to fatigue, discomfort, or because something else caught their attention), it is completely acceptable and is most likely an indication to stop the entire class and move on to the next segment. For teens, loaded eccentric movements are significantly reduced or eliminated from programming. Exercises such as jumping pull-ups, downhill running, heavy kettlebell swings, and GHD sit-ups are examples of movements whose benefits of inclusion or need for volume might be outweighed by the risks. Certain illnesses, medications, and fitness level are also factors that should be taken into account by CrossFit Kids Trainers in assessing athlete-specific programming with the intent of reducing risk of harm (10).

Hyponatremia is defined as:

“A condition that occurs when the level of sodium in your blood is abnormally low. Sodium is an electrolyte, and it helps regulate the amount of water that’s in and around your cells. In hyponatremia, one or more factors—ranging from an underlying medical condition to drinking too much water during endurance sports—causes the sodium in your body to become diluted. When this happens, your body’s water levels rise, and your cells begin to swell. This swelling can cause many health problems, from mild to life-threatening.” (13)

Of greatest concern, with respect to swelling, is the brain. For a comprehensive review of hyponatremia, its etiology, history, and prevalence see “Waterlogged” by Noakes (11). CrossFit Kids is not an endurance sport. Within the classes, none of the age groups participate in activities approaching the time-frame usually associated with hyponatremia. To reduce the risk of this condition and promote better behaviors, CrossFit Kids does not prescribe a total amount of water to drink every day or even suggest a drinking schedule. Based on the work of Noakes (11) and Hew-Butler (12), CrossFit Kids recommends that individuals drink when thirsty and choose water over carbohydrate-laden beverages and dilute electrolyte-containing “sports drinks.”

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OPTIMIZING THE CHILD'S LEARNING ENVIRONMENT

As many teachers and coaches well know, children cannot be thought of simply as miniature adults, they are operating with a different set of skills and priorities than we are. In order to fulfill our overall objective of instilling a lifelong love of fitness in kids, we have to tailor our approach to meet them at their level, not only physically, but also cognitively and emotionally. The degree of variance in these parameters both within and across age groups makes training kids an ultimate expression of the infinite scalability of CrossFit. While there is no perfect solution or fail-safe recipe for success, there are some governing principles that will guide you towards keeping your CrossFit Kids Program safe, fun, and effective.

In this article, we look at neurological development in terms of the order and timing of acquisition of physical, cognitive, and social milestones. Also discussed will be various learning strategies as well as how to tailor instruction to maximize learning for all students. Next, we will look at how our brain strategizes movement and how our sensory environment influences learning. Finally, some recommendations for how to configure your physical environment, optimize communication, and create a culture of success in your CrossFit Kids Program for athletes of varied ages and abilities.

HOW YOUNG PEOPLE LEARN: MAKING THE MOST OF RELATIVE NEUROPLASTICITY

The ability of the human brain to create and change neural pathways (series of connected nerve cells linking multiple areas of the brain to each other, or the brain to other systems in the body) is referred to as *Neuroplasticity*. As we grow from infancy to adulthood we develop and refine the neural pathways needed to perform the myriad of cognitive and physical tasks life requires of us. The early process of *learning* has occurred throughout human history in an overwhelmingly consistent manner, allowing us to develop an estimation of the order and relative timing in which developmental milestones will occur. Understanding the timing and progression of these milestones is extremely helpful in determining the appropriate teaching style for a given age group, however it is important to remember that every child brings their unique combination of genetics and cultural environment (*nature and nurture*) into every interaction and so we cannot assume each child comes to us with the exact same set of tools.

In general, the human brain develops the ability to carry out primary functions like movement and sensation first, followed by things like basic language skills, and finally higher level association areas like attention and behavior modulation ⁽¹⁾. It is not by any means a linear progression, however, which is why there are clear changes in both the cognitive and motor (movement) skills kids demonstrate as they grow.

The average preschooler is still mastering basic balance and coordination skills like running, jumping, and standing on one foot. Programming for the CrossFit Preschool class is therefore going to remain primarily focused on these basic gross motor skills, static positions for body awareness (plank holds versus push ups and grip strength in lieu of pull ups), and the first tier of the foundational movements (air squat, deadlift, and shoulder press). Preschoolers may not have good awareness of the difference between fact and opinion and will likely have limited understanding of the perspectives of the people around them; they are learning social skills like cooperating and taking turns but do so more by rote than by a genuine appreciation of each other's feelings. This age group has a strong desire to please

(1) Casey, B. J., Tottenham, N., Liston, C., & Durston, S. (2005). Imaging the Developing Brain: What We Have Learned About Cognitive Development? *TRENDS in Cognitive Sciences*, 9 (3).

adults and are often disappointed when they disappoint you, therefore they need constant gentle reinforcement of behavioral expectations and equally constant affirmation that they are “doing a good job”. The CrossFit Preschool program is designed to create understanding and comfort with the structure of group exercise, in the context of playing games and having fun, so that they are prepared for the increased physical and cognitive demands of the more advanced class formats.

In the School Age years (ages 5–12), physical skills progress with exposure to increasingly complex motor activity. In our CrossFit Kids classes, we can start to introduce the second tier of foundational movements (Front squat, Thruster, Push press, and Sumo Deadlift High Pull), vary complexity and directionality of movements in increasingly varied contexts, and allow them to work to a moderate state of fatigue without catastrophically reducing the “fun” factor. While they are still relatively focused on the world as it relates to them, children in this age range develop increasing insight into the perspectives, motivations, and actions of their peers. They are increasingly disinterested in imaginative play and gravitate to more competitive games and sports. Programming in this class can include activities and games where there are definitive winners and losers (e.g. tag, races, and team games). While their coping skills are considerably better than the preschool crowd, they can still struggle with differentiating “not winning” in a given moment with failure as a person. At this age, positive reinforcement is still the most effective tool in your belt.

In all contexts, adolescence is the transition into adulthood. In terms of motor function, they have the essential skills to perform any desired task but must repeatedly alter movement strategies due to the rapid changes in size and configuration of their bodies inherent to puberty. Programming for the CrossFit Teens class includes all the movements, skills, and exercises one might use with a typical adult client, appropriately scaled to their ability level on that day. As emerging adults, teenagers are capable of logical, hypothetical, and abstract thought, although they may struggle to separate the ideas from emotional influence. Socially, they are distancing themselves from their parents but are still very susceptible to role modeling from adults in their lives, particularly those in an authoritative role. In the Teens class we can begin to stretch our students outside of their comfort zone a little more in terms of the fatigue and psychological challenges inherent to a difficult workout. In many cases we are not only focusing on their physical development as individual humans, but also as athletes on the field of sport and competitors for success of all kinds in the greater world around them.

COGNITIVE LEARNING STYLES: ALL BRAINS DO NOT WORK THE SAME WAY

While these “developmental norms” are a really helpful guideline for how to effectively frame your interactions with different age groups, the importance of respecting their individual differences cannot be overstated. Just as we see in adults, kids use multiple sensory systems to absorb and learn from their environment and many of us lean more heavily on one system than the others. While it would be folly to assume a “cookie cutter” approach to teaching, it is helpful to understand how each system contributes to information gathering to be sure we are covering all of our bases.

Visual learners ⁽²⁾ primarily utilize mental pictures of events or written words for comprehension. They are particularly observant of color and generally focus better if they are looking directly at a speaker. A person who favors visual information may have trouble picking up on the nuances of verbal communication and can be easily distracted by

(2) Fliess, S. D. (2009, March). What it Means to Be a Visual Learner. Retrieved from Education.com: http://www.education.com/magazine/article/Ed_Could_You_Write_Down/—accessed 1/2016.

background noise. The whiteboard is a really good way to reach these individuals. Drawings paired with key words and phrases, preferably in a variety of colors, will help them stay on track with your verbal instruction. The visual depiction on the board should be complemented by a physical demonstration of movement so that there is a clear representation of what the complete movement should look like in real time.

[Auditory learners](#) ⁽³⁾ are generally the ones who are always talking. Because they process information through hearing and repeating and/or explaining concepts to themselves or others, these kids are really tuned into sound. This is an important consideration during instructional time. The child who is continually asking questions or calling out while you are teaching might be doing so for his or her own comprehension, but this could be easily interpreted as disruptive or attention seeking behavior. Establishing a strategy for these kids might be as simple as asking them to raise their hand or encouraging them to whisper to themselves versus calling out. Not surprisingly, background noise can be very distracting for this group as well.

[Kinesthetic learners](#) ⁽⁴⁾ do not generally enjoy sitting still and are often labeled as hyperactive, but this may be because they tend to be very physical in the way they interact with the world around them, both expressively and receptively. They typically communicate emotion with their bodies as much or more than their words (gesturing, hugging, etc.), and similarly, they learn best through physical movement and exploration. For the kinesthetic learners in your class it is important to keep periods of instruction brief and to the point, and to mix active practice in with verbal and visual instruction as much as possible. Another useful strategy is to allow younger kids who just can't sit still to be in the back of the group rocking or tapping as needed to stay focused without being overly distracting to the rest of the class.

Obviously, it is no small task to keep all these factors in mind when you are teaching children and teens in your classes, but simply being aware is a huge step in the right direction. By endeavoring to provide visual, auditory, *and* kinesthetic experiences in your instruction, you can give any learner a solid chance at success. Certainly, this is evidence to the fact that training kids is as much *art* as it is *science*.

MOTOR LEARNING: ESTABLISHING FUNCTIONAL MOVEMENT STRATEGY

To further explain the progression of physical skills from the milestones chart above, it is helpful to understand a few of the key sensory systems involved in the development of *Neuromotor control* (combined action of the neurological and musculoskeletal systems to produce movement of the body). Because it is, ideally, a stepwise progression of skills from birth to adulthood, there is value in looking at what should have already happened before kids walk in the door of our CrossFit Kids Program ⁽⁵⁾. Please, bear in mind that these are simplified definitions of very complex processes for the sake of brevity and readability ⁽⁶⁾.

(3) Hutton, S. (2013, September). Helping Auditory Learners Succeed. Retrieved from Education.com: http://www.education.com/magazine/article/auditory_learners/—accessed 1/2016

(4) Hutton, S. (2013, August). Helping Kinesthetic Learners Succeed. Retrieved from Education.com: http://www.education.com/magazine/article/kinesthetic_learner/—accessed 1/2016

(5) Bly, L. (1983). The Components of Normal Movement During the First Year of Life and Abnormal Motor Development. Neuro-Developmental Treatment Association, Inc.

(6) Brown, K. (2008). Neuromotor Development: Bridging the Gap Between Illness and Fitness. CrossFit Kids Magazine. Issue 32.

The *Vestibular System* is the brain's way of relating to gravity, and consequently the speed and direction of movement. A series of fluid-filled canals with internal projections called hair cells residing in the inner ear give the brain information about head position and movement. For example, if you are jumping on a trampoline, the vestibular system is giving your brain constant information about which direction the body is leaning or moving so it can adjust appropriately to avoid falling down.

Around the age of 2 months, babies begin demonstrating labyrinthine reflexes that alter body position in response to gravity. These skills continue to emerge as the baby develops the strength and coordination to achieve more challenging postures like sitting, quadruped (on hands and knees), and upright stance. It is important to understand the codependence of these phenomena. Without adequate vestibular function, these positions cannot be achieved due to loss of balance. However, without attempting to attain these positions through trial and error, babies do not challenge the vestibular system to develop this level of communication with the brain. As kids achieve new motor milestones (sitting, standing, walking, running, jumping, etc.) the amount of information the brain must process and assimilate increases and the impact of any deficiencies also increases.

The *Somatosensory System* references the neurological receptors in the skin and soft tissue of the body that provide information to the brain about pressure being applied to that tissue. If you are standing the middle of a room, somatosensory receptors in your feet are informing your brain about how much pressure the floor is exerting on you. Is your weight evenly distributed across the sole of the foot, or is your weight more towards one side, your toes, or your heels? If you are holding an object or leaning against something, receptors in those areas of the body are also providing information to help your body remain in balance.

Somatosensory information is critical to early movement strategy. Newborns have little to no volitional control over the movement or position of their bodies. Initially, they must stay in whatever position they are placed until someone moves them. Small children are, however, vehicles of discovery. As visual acuity improves and babies begin to be able to see what is going on around them, curiosity takes over. They become impatient with whatever has been placed in their visual field and will try to move to see something else. In prone (lying on the stomach) somatosensory receptors in their arms, chest, and legs give them information about the supportive surface and they begin to push through their arms to try to lift their heads off the floor to look around. They are rewarded by a whole new view on the world, which motivates repeated practice until they master the skill. The learning progresses to include understanding of weight shifting to unload a limb in order to reach or roll, or eventually step, run, and jump.

The definition of the *Proprioceptive System* is a subject of some debate. The formal definition includes multiple types of sensory information originating from deeper structures within the body all of which contribute to postural control and joint stability. The more commonly used definition in clinical environments is that proprioceptors carry information regarding joint position and relative pressure within the joint. In this discussion, we will use the latter definition. Joint capsules and ligaments provide structural stability to the joints, but are insufficient to fully prevent excessive motion that can cause loss of balance or injury. Proprioceptors trigger rapid activation of muscles surrounding the joint to compensate for asymmetrical forces on the joint surface ⁽⁷⁾. A simple analogy for how this mechanism develops is learning to ride a bike. Initially, it is a challenge just to keep the bike on the correct half of

(7) Riemann, B. L., & Lephart, S. M. (2002). The Sensorimotor System, Part 1: The Physiologic Basis of Functional Joint Stability. *Journal of Athletic Training*, 37 (1), 71–79.

the road. However, with practice, you develop the ability to make small, essentially subconscious corrections to your direction in order to keep the bike moving in a relatively straight line. Proprioceptors function in a similar way, via small rapid corrections to keep the joints in-line and balanced. In early childhood development, proprioceptive input is utilized in the same manner as somatosensory information. As the infant experiments with cause and effect of various movements, the brain integrates proprioceptive information related to these movements and helps formulate more complicated movement strategies in the future.

All of the terms above contribute to overall body awareness, which is loosely defined as an understanding of where one's body is in space. It is a cognizance of the external boundaries and relative orientation of body parts to one another. While this seems intuitive and obvious, it is startling how many children and adults have poor awareness of their own physical form.

So far, we have only discussed the sensory side of Neuromotor control. All the above information is used by the brain to figure out what the body should do at a given moment to accomplish a given task. Unless there is some underlying dysfunction, the brain does this very efficiently. It then sends a message, via the neurological system, to the appropriate muscles to accomplish the desired action. The ability to activate the appropriate combination of muscles at the ideal relative timing and intensity is generally known as *coordination*. There is considerable debate and discussion about how coordinated movement is developed in early childhood. A theory that expands easily into later childhood and adulthood is that coordinated movement is the result of the brain choosing the most efficient path based on the set of *internal and external constraints* existing in that moment ⁽⁸⁾ ⁽⁹⁾ All of the above factors, combined with bunch of the other [10 General Physical Skills](#) ⁽¹⁰⁾ comprise the primary internal constraints on coordination of a given movement or task.

External constraints represent the environment in which the movement is occurring, and would include things like the firmness or evenness of the supportive surface, auditory or visual distractions, the weight and size of an object to be moved, the speed and direction it must go, and so on. In any given moment, the brain determines the most efficient movement solution based on its understanding of the existing internal and external constraints. With time and experience, the brain learns to anticipate movement requirements based on context, which leads to the development of universal motor recruitment patterns; Rodolfo Llinás calls them *fixed action patterns* ⁽¹¹⁾ and in CrossFit we like to refer to them as *functional movements* ⁽¹²⁾. As kids learn to squat, lift, push, pull, and jump inside our CrossFit Kids Program, they are teaching their bodies how to move safely and efficiently in play, in sport, and in life.

The impact of modern technology on the physical demands of our lives is becoming evident in health trends related to children and teens as much as their adult counterparts. Obesity, Type II Diabetes, Gross Motor Delay, Sensory Processing Disorder, and attention and behavioral disabilities can all be linked to decreased amounts of physical activity

(8) Shumway-Cook, A., & Woolacott, M. H. (1995). Motor Control: Theory and Practical Applications. Williams and Wilkins.

(9) Newell, K. (1986). Constraints on the Development of Coordination. In M. Wade, & H. Whiting (Eds.), Motor Development in Children: Aspects of Coordination and Control (pp. 341–360). Kluwer Academic Publishers.

(10) CrossFit, LLC. (2002, October). What is Fitness. CrossFit Journal. Retrieved from library.crossfit.com: <http://library.crossfit.com/free/pdf/CFJ-trial.pdf>, page 4.—accessed 1/2016

(11) Llinás, R. R. (2001). I of the Vortex, From Neurons to Self. MIT Press. P. 133.

(12) Glassman, G. (2007). Understanding CrossFit. CrossFit Journal (56).

and play. It is important to note that the milestones and progressions discussed above are based on the assumption that kids are getting appropriate amounts of physical, social, and cognitive interactions. The reality is that many do not, and often, medical intervention is required to help get kids back on track. Across the age groups, the CrossFit Kids Program is designed to provide age appropriate experiences for young people designed to facilitate normal progression of these milestones.

OPTIMIZING THE PHYSICAL ENVIRONMENT

Creating the culture you want inside of your classes sets you up to be successful over the long term. There are some important considerations for structuring your classes and setting up your space that can really maximize the opportunities for both learning and fun.

Making sure students are grouped appropriately in terms of physical, cognitive, and emotional maturity is key, and out of those three, physical development is potentially the least important. It is generally easier to scale around a deconditioned or physically delayed child or teen than it is to help a someone who cannot understand the level of instruction or is unable to handle the relative social/emotional tenor of the group. It is important to note that development in these areas is far from linear. There will likely be considerable variance in each of these three parameters within a given age group or even considerable discrepancy between relative maturity in each area for a given child. Putting kids in the class that meets them where they are as an individual, versus what their chronological age dictates, allows them to feel and, in turn, become successful. That being said, we have created some generalized age groupings, which we will refer to as Preschool (Ages 3–5), Kids (Ages 5–12), and Teens (Ages 12–18) during the CrossFit Kids Course. These should be thought of as general guidelines versus a prescription for inclusion or exclusion. A word of caution: It might be tempting to combine age groups initially in order to maximize your resources and appease the potential demand for a wide range of youth classes. However, referring back to the developmental milestone discussion on pages 36 and 37, it is clear that it would be very difficult to keep teaching intervention age appropriate across such a wide range of skills and the likely result is loss of interest in the kids on either end of the spectrum.

The benefits of small group training, especially at the beginning, are also worthy of discussion. The number of demands on you as a coach in terms of the number of athletes you are trying to coach at once, the potential equipment needs of those athletes, and the aforementioned opportunities for developmental variance are considerably improved by keeping your classes small to start. Figuring out the rhythm of the class, what your particular group of kids are motivated by, and building their knowledge base of the CrossFit movements and vernacular will take time (and lots and lots of patience), not to mention, the more kids, of any age, that are present in a given space, the more opportunities for distraction there will be. Ideally, the organic growth of the program mirrors the relative number and skills of your training staff so that one never outpaces the other. Certainly, in most academic environments it is not possible to limit class size, but for those who do have the ability to start with 3–5 students in one of the three age groups, it is highly recommended.

Optimizing the Child's Learning Environment, continued

The following chart includes suggested ideal ratios of trainers to athletes for the various age groups and some general equipment recommendations as you build your program. It is important to note that a very successful CrossFit Kids Program can be operated with little to no gear. However, these items will increase your options for programming and skill development.

	Ages	Ratios	Equipment Recommendations
Preschool	3–5 yrs	1:5	Cones, Ropes, Balls, Mats, Adjustable pull up bars
Kids	5–12 yrs	1:10	+ Light Dumbbells, Kettlebells, Medicine balls
Teens	12–18 yrs	1:15	+ PVC, Barbells, other Adult Gear

You can find just about any equipment you could ever want online (i.e. Google “kids jump ropes”) but here are some specific websites to get you started:

- Sportime⁽¹³⁾— www.sportime.com
- S&S Discount⁽¹⁴⁾— Sports, Games & PE Supplies—www.ssw.com/sports-pe-recreation/
- Rogue⁽¹⁵⁾— www.roguefitness.com

In addition to setting up your class structure for success, the way you use your workout space is also important; endeavor to minimize distractions. If it is possible to schedule your youth classes for a time when no one else is in the gym, it will certainly make things easier. That may not be a very realistic expectation for a lot of affiliates with a full schedule of adult classes already in place, so making the best of the situation you are in is key. Traffic cones or large equipment can be used to physically separate your youth classes from the rest of the gym environment. During instructional periods, orient yourself or your demo so that kids have their backs to the rest of the room. Make sure heavy or suspended equipment are out of reach in your teaching space or be sure to set up clear rules and expectations about what gear kids are allowed to touch and when. A letter to parents, explaining your goals, training approach, and rules for both participants and their parents is strongly recommended. Proactively setting expectations can save you some uncomfortable or difficult conversations when complications arise.

EFFECTIVE TEACHING STYLES

The very best information in the world loses its value if your audience doesn't understand it or isn't listening. Consequently, the way you instruct inside of your classes is critical to the potential absorption and retention of your message. We have already discussed the importance of addressing our visual, auditory, and kinesthetic learners; know that age is also a factor. As kids get older, the method of communication that gets the desired result changes considerably. For example, rhyming words and animal sounds are generally appealing to the preschool set but may be off-putting to older children and teens. On the flip side, sarcasm can be very useful in disarming teenagers but could be quite confusing to a three year old. Age appropriate language conveys respect for their perspective on the world and is foundational to establishing effective communication with your athletes.

(13) S&S Discount: Sports, Games & PE Supplies— <http://www.ssw.com/sports-pe-recreation/>—accessed 1/2016

(14) Sportime— www.sportime.com—accessed 1/2016

(15) Rogue— www.roguefitness.com—accessed 1/2016

One universal truth across all age groups is the value of focusing on the positive; almost everyone responds well to genuine praise. While the majority of your communication must center around telling kids how to move correctly, a single-minded focus on movement standards can make it difficult for them to remain interested in the learning process. If, instead, we make a point of recognizing their successes, i.e. “Nice job keeping your heels down” or “Wow, those are some fast elbows” it opens the door for any cue or correction that follows. Now they are interested in hearing what they can do to earn *more* praise. In addition, when you do offer a correction, it is more effective to tell them *briefly* and *specifically* how you want them to move versus telling them to stop doing whatever they are doing wrong. For example: “keep your arms long as you stand up,” potentially gives them a much clearer path to success for initiating a Med Ball Clean than “don’t bend your arms.” When they make an observable effort to accomplish a task make sure you praise that effort, and when they do get it right definitely let them know!

The same strategy can be applied to affecting the behaviors, both positive and negative, that occur during class time and, hopefully, beyond. Disruptions, disrespectful behavior, cheating, etc. are inevitable occurrences when you are working with young people. How you choose to deal with them will determine whether they are occasional hiccups or major roadblocks to your success. To explain this further, let's return to our discussion of the psychology of learning and B.F. Skinner's ideas on [Operant Conditioning](#) ⁽¹⁶⁾. Reinforcing the behaviors you want to see (effort, quality of movement, respect for others) via praise and opportunities for advancement makes it clear how to achieve success in your class. Overtly condemning the behaviors we don't want to see or punishing those behaviors (particularly with exercise) can have a profoundly negative impact on the “fun” factor in your classes. When a child or teen displays negative behavior it is often an attempt to gain attention either from the trainer or from his or her peers. By giving that person attention, you are, in effect, reinforcing the negative behavior. Overtly punishing the behavior with exercise, i.e. assigning burpees or the infamous “go run a lap”, not only has the potential to foster a negative relationship between trainer and athlete, but can also lead to a long term association of that exercise (or perhaps all exercise) with getting in trouble and being unhappy, which is the exact opposite of pairing fitness with fun. If a behavior is annoying but not a significant hindrance to the rest of the class, the best approach may be to simply ignore it and continue praising the students who are demonstrating the desired behavior. Suppose a 10 year old is doing half the stated repetitions in an attempt to impress everyone by finishing first but gains no recognition for doing so. While he is waiting for everyone else to finish, he observes the rest of class getting lots of attention and praise for effort and good mechanics. Over time, he learns what he needs to do to be included in that group. Perhaps a 5 year old in the Preschool class routinely throws a temper tantrum when she does not get to be first in line. The trainer redirects her to the end of the line with as little reaction as possible and then makes a point of praising the group for standing in line patiently throughout the class. At some point, the little one will more than likely figure it out.

(16) McLeod, S. (n.d.). Skinner- Operant Conditioning. Retrieved from SimplyPsychology.org: <http://www.simplypsychology.org/operant-conditioning.html>

If all else fails, and the behavior must be overtly addressed with a child in your Preschool or Kids class, the following three-tiered approach is recommended:

- First, let the child know what the desired behavior is, i.e. “I need you to be quiet while I am explaining the workout so that everyone can hear and understand. If I have to speak to you about it again, you will need to sit out the first minute of game today.”
- If it continues, follow through with the consequence and let the child know they will miss the first minute of game time.
- If it persists beyond that, the child may need to go see a parent.

Teenagers are often better served by a more hard line approach. A good rule of thumb is to be clear about your expectations for behavior and then be consistent in how you choose to deal with failure to comply. It is also a very good idea to outline all behavioral policies in your parent letter so that families understand the class expectations and will be better equipped to support you in your efforts.

Offering choices versus ultimatums or refusals is also a very effective way to guide behavior in the direction you would like it to go ⁽¹⁷⁾. As teachers, trainers, and most certainly as parents, it is easy to find yourself issuing a constant stream of “don’ts” to the children in your care. Endeavor to give them viable options for what they *can* do. When kids come into the gym before class, let them know where they can be and what they are allowed to touch. If at all possible, give them more than one option; perhaps your gym has both a designated play area and a seating area away from the workout space that they can safely be in. If there is not another class going on at that time, allow them a couple of safe pieces of equipment to play with in the gym space: dodge balls, jump ropes, hula-hoops, etc. If you are teaching in a school setting maybe they are allowed to shoot baskets or sit in the bleachers until the bell rings. More than likely, at some point you will have a child in your younger classes who struggles with complying with rules or perhaps tries to bargain with trainers to change to an activity he or she prefers. Offering choices can be an effective form of redirection. Perhaps a student in your Kids class is unhappy about having to use a dodge ball instead of a medicine ball for the Wall Ball activity; letting him select the color of dodge ball he uses might be enough of a distraction to get him re-engaged in the exercise. In some cases it’s as simple as offering kids the chance to sit and watch the activity they are resistant to. Often children realize before long that it is more fun to be doing the activity than watching it and they join back in on their own volition. Choices give both children and teens a sense of autonomy versus the sense of being told what to do. As long as you only offer choices that are acceptable to you, everybody wins.

WORKING WITH SPECIAL POPULATIONS

Due to the infinite scalability of CrossFit, the CrossFit Kids Program has a unique ability to accommodate the needs of young people with a broad array of physical, cognitive, and behavioral disabilities. Much the way we can configure a workout like “Fran” to be safe and beneficial for anyone from an octogenarian to a professional athlete, we can adapt any CrossFit Kids Workout for a child or teen with special needs. If you have the opportunity to work with kids with special needs, you should embrace it, but first, do your homework. Learn what you can about that particular disability and how it might impact programming decisions in terms of efficacy and safety. Parents are generally experts on their child’s medical situation and capabilities, so that is a great place to start.

(17) Foster Cline, M., & Fay, J. (1990,2006). Parenting with Love & Logic. Piñon Press.

It is very possible to provide an effective supplement to whatever clinical services children with physical disabilities might be receiving during your CrossFit Kids classes. Many kids with long-term disability only have access to clinical intervention for intermittent periods of time. A well-implemented program might be an excellent way to minimize the amount of “lost ground” between treatment phases or even continue to make gains. The following are some basic terms used to describe common aspects of physical disability and how they are relevant to your programming decisions.

- **Hypertonia** is a condition caused by dysfunction in the central nervous system (brain and spinal cord) resulting in an overactive neuromuscular response and increased resistance to muscle stretch. Clinically it is often referred to as “spasticity” or “high tone” and is essentially a perpetual or fluctuating involuntary muscle contraction. Despite this state of near constant muscle activation, individuals with hypertonia are typically very weak in voluntary contraction of the affected muscle groups as well as the muscle groups that move the joint in the opposite direction.
Programming Recommendation: Closed chain exercises (connected to surface not free in space) targeting the muscles that work in opposition to the affected muscles. For example, if an individual has increased biceps tone, elevated push-ups or planks would challenge the triceps in a weight bearing position but keep the relative intensity of the exercise at an appropriate level.
- **Hypotonia** is symptomatically opposite to hypertonia and can be caused by a wide array of medical issues. Individuals with low muscle tone have slow or inefficient communication between the nerves and the muscles leading to poor muscular recruitment, decreased joint stability, decreased balance and coordination, and as a result, increased risk of injury.
Programming Recommendation: Lots of midline stabilization exercises. Static holds will be very challenging but beneficial so find a way to make them fun (think Plank Games!)
- **Paraplegia** refers to decreased ability to move and/or receive sensory information from the lower half of the body. Sensorimotor loss can be complete or partial.
Programming Recommendations: Depending on the level of injury, the individual may or may not be able to sit without support. If he or she is able, have them sit without back support for upper body exercises to increase the work at midline. If the individual generally uses a wheelchair for mobility, transitions in and out of the chair might be a suitable substitute for squats (just make sure the breaks are on)
- **Quadriplegia** refers to decreased sensorimotor function that includes both the upper and lower extremities and sometimes the head and neck as well.
Programming recommendations: Because this condition limits the use of essentially the entire body, it is one of the few conditions that might be very difficult to scale for inside of your program. However, the social benefits of inclusion might outweigh the minimal physiological impact we can expect, making it a worthwhile endeavor.

For additional information on working with individuals with physical disabilities, the [Crossroads Adaptive Athletic Alliance](#) ⁽¹⁸⁾ is a great resource. Local pediatric rehabilitation facilities might also be able to offer educational opportunities.

Children and teens with cognitive delays may have difficulty keeping up with the pace and demands of the class generally associated with their age group. Scaling the complexity of movements or simplifying the rep scheme for that athlete will help them keep up with the class. For example: if the Workout in your Teens class is 15-12-9 of pull-ups and hang squat cleans, an appropriate scale might be 10-10-10 pull-ups and front squats. In some cases, placing the athlete in class designed for a younger age group might be the best solution. Often, in this population, cognitive maturity and emotional maturity are relatively on par. A 14 year old with Down syndrome might be more comfortable and have more fun in your Kids class than in the Teens program. Obviously, relative safety awareness and size of the student are important considerations when planning games and team workouts.

Children and teens diagnosed with behavioral disorders or Autism Spectrum disorders can be significantly challenged by large group activities like recreational sports and traditional physical education classes. This is due in part to their unique perspective on the world around them and also to the prevalence of [sensory processing issues](#) ⁽¹⁹⁾ within this population. The predictability and scalability of the age appropriate CrossFit Kids format can enable these kids to participate without feeling over stimulated. Each section of the class occurs in a consistent order for a relatively consistent amount of time and can be anticipated. By giving kids permission to sideline themselves whenever they are feeling tired, overwhelmed, or just need a little personal space, you can make it possible for them to choose when to go outside of their comfort zone versus forcing them into a potentially stressful environment. Of all the many types of special needs the kids in your program might bring to your classes, those with behavioral issues will probably challenge your patience and creativity the most, but also present the greatest opportunities for life altering growth.

For all the possible health benefits of providing a safe, fun, and engaging environment for kids with special needs to participate in exercise activity, the real prize is the social and emotional benefits of inclusion. Many of these kids spend much of their lives in clinical environments working one on one with doctors, therapists, and other medical professionals. While the value of these interventions cannot be overstated, at some point, inevitably, it can start to feel like work. Your CrossFit Kids Program might be one of the first opportunities for young people with special needs and their families to experience some normalcy; a place where they can have typical social interactions with their peer group and to just get to be a kid.

CONCLUSION

In the end, the key to running a successful CrossFit Kids Program is finding the right trainer for the job and providing them with the education they need to thrive. Understanding the various stages of the developmental process and the factors that heavily influence learning is a great foundation to build on. A trainer who can muster the patience, enthusiasm, and flexibility to adapt to the variable perspectives and constantly changing needs of a diverse group of young people will be well equipped to steer them down the path to success.

(18) Crossroads Adaptive Athletic Alliance: <http://crossroadsalliance.org>—accessed 1/2016

(19) Retrieved from Understood.org: <https://www.understood.org/en/learning-attention-issues/child-learning-disabilities/sensory-processing-issues/understanding-sensory-processing-issues>—accessed 1/2016

CROSSFIT KIDS NUTRITION AND LIFESTYLE

INTRODUCTION

Establishing nutrition and lifestyle behaviors that support a healthy life is an enormous responsibility parents have towards their children. What children learn to eat and what habits they acquire may be perpetuated into adulthood, dramatically affecting quality of life. This critical task is often made more difficult by the daunting amount of information and opinions on the topic, as well as the perception that better needs to be more expensive. Because parents may not have the time to study the newest research or cost compare with every trip to the market, this brief primer together with the resources that follow, as well as the information presented at the CrossFit Kids Course, are meant to assist parents and CrossFit Kids Trainers alike. Foundational concepts are presented that lead to a minimal set of aspects to move towards prioritizing. Specifically, calorie counting is not the best option nor is replacing real food with distilled or re-amalgamated versions of it. Instead, children should be taught how to make the best food and drink choices possible and that appropriate sleep and recovery are just as important as exercise; these are lifestyle lessons than can be learned at home and within a CrossFit Kids program.

INTRODUCTORY CONCEPTS

Calories

Simply put, we need food and water to provide energy and raw materials to sustain our existence (1). The widely used energy balance model simply subtracts your daily total energy expenditure (calories) from your total daily intake of nutrients (calories) to determine your daily weight change, complying with the First Law of Thermodynamics. However, how much of a caloric deficit is required to lose a pound of body weight is not a straightforward calculation. Hall (2) concludes that initial body fat and the amount of weight already lost can dramatically influence the often-quoted value of 3500 kcal per pound. Beyond just one's intake and expenditure, Hall (2) states "resistance exercise or high protein diets may modify the proportion of weight loss resulting from body fat versus lean tissue." And therefore suggests that "a more comprehensive model of macronutrient metabolism and body composition change would be required to model such factors" (2). Indeed, Thomas (3) discusses the impact of additional factors that may confuse the issue, such as: metabolic adaptations, non-exercise activity, and dietary compensation. Finally, Ebbeling (4) showed that "commonly consumed diets can affect metabolism and components of the metabolic syndrome in markedly different ways during weight-loss maintenance, independent of energy content." Rather than being a simple physics or math problem, understanding the connection between what we eat and tissue changes (and the resulting health effects) is a complex systems biology question.

Panaceas

Some mass media campaigns claim the advantages of single nutrients that provide near complete health or remediation from illness. The vast majority are marketed as supplements and therefore under no obligation to conduct any scientific research in order to make those statements. Some of those with a research backing and implemented by governments have resulted in a beneficial effect on global health, such as the iodization of salt that prevents its deficiency. Limiting iodine reduces the synthesis of the thyroid hormones T3 and T4; in adults this can lead to goiter and mental impairment. Improper levels of thyroid hormones in developing fetuses and children can impair proper brain development. The global, positive health repercussions from the addition of a single element to a food product as ubiquitous as salt are an impressive accomplishment. Equally impressive are other well thought out attempts that have lead to failures. For example the use of vitamin B9 (folate), vitamin C, and vitamin E for cardiovascular disease prevention or beta-carotene and vitamin A to reduce the risk of lung cancer in smokers (5,6). Potential reasons for these discrepancies in general, include nutrient toxicity, metabolic interferences, bioavailability, and bioactivity (5).

In the case of lung cancer prevention with beta-carotene and vitamin A, trials were begun because “a large body of observational epidemiologic studies has consistently demonstrated that individuals eating more fruits and vegetables (which are rich in carotenoids) and people having higher serum-carotene levels have a lower risk of cancer, particularly lung cancer” (7). However, results from two separate studies showed an increase in the appearance of lung cancer in smokers who were supplemented with vitamin A and beta-carotene (7,8). While beta-carotene is an important nutrient (perhaps most notably as a precursor to vitamin A) it appears that tobacco smoke acts antagonistically (especially at high doses) with the molecule in lung tissue. Russell (7) states, “we had better understand the metabolism and breakdown of natural products, and have thoroughly tested them at various doses in appropriate animal models, before embarking on large-scale intervention trials, particularly when using unusually high doses that greatly exceed normal dietary levels of the product.” Indeed, Lichtenstein (5) concludes “there are insufficient data to justify an alteration in public health policy from one that emphasizes a food-based diet to fulfill nutrient requirements and promote optimal health outcomes to one that emphasizes dietary supplementation.”

A model

It would therefore seem that the consumption of varied, nutrient-rich real foods is a much more sound general approach and prescription. The optimal ratio of macronutrients (carbohydrate, fat, and protein) could theoretically be determined for any health effect (fat loss, longevity, cancer prevention, athletic performance, etc.) if it were possible to conduct experiments on humans as has been done with laboratory mice subjected to 25 different diets (9). Lacking this long-term empirical population-based data, CrossFit recommends for everyone to optimize their own ratios (starting with those recommended by Dr. Barry Sears 40/30/30), by weighing and measuring food, and eating “meat and vegetables, nuts and seeds, some fruit, little starch and no sugar. Keep intake to levels that will support exercise but not body fat.” Together with the main focus of CrossFit, i.e., general physical preparedness, this prescription overlaps with that suggested by Wells (10), “Avoid refined carbohydrates and get fit to boost metabolic flexibility.”

Wells (10) discusses a model that suggests a diet rich in refined carbohydrates is the direct cause of hyperinsulinemia and fat deposition. This initial metabolic and hormonal derangement, then progresses over time to insulin resistance, reduced glucose tolerance, leptin resistance, increased stress, and loss of sleep. These resulting conditions lead to feelings of increased hunger and lethargy, ultimately creating a positive energy balance and a feed forward loop. In other words, food choice perturbs metabolism, causing behaviors that result in further weight gain; rather than an energy imbalance itself being initially causal.

This model was put forth earlier to explain childhood obesity (11,12,13,14). In these articles Lustig describes the interaction between molecular components and systemic processes that result in modified behaviors. Leptin is a hormone that signals energy sufficiency; it reduces the neurological reward for food (13) and allows for “the initiation of high-energy processes” (11). Hyperinsulinemia is a response to chronically elevated blood sugar; it triggers an energy storage response, resulting in obesity (13). Elevated insulin can also antagonize leptin action, conveying a false “starvation” signal and increasing positive feelings about food (11,12,13,14); perpetuating a cycle of maladaptation. These concepts are complex. The interactions between our environment, genes, actions, choices, hormones, metabolism, organs, and even our microbiome (15,16,17,18,19,20) make nutrition a difficult topic to talk about with adults, let alone children.

The “metabolic perturbation model” (10) just described is not necessarily mutually exclusive with the energy balance model. Indeed, energy balance is part of it; however, this model also informs a more approachable way to begin discussing and making lifestyle changes. Rather than immediately and severely curtailing intake amount and dramat-

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ically increasing the volume of exercise, an alternative first step could be to simply reduce intake of foods that lead to problematic metabolic and subsequent behavioral outcomes. This short-term achievable adjustment is important because long-term changes require an initial belief that lifestyle adjustments are possible as well as a subsequent adherence to that chosen path (21).

A path forward

CrossFit Kids does not recommend an immediate wholesale change of dietary intake or nutritional behaviors. Similar to the long-term plan for movement, there should be an extended strategy for affecting eating habits within this program. Specifically, begin by informing. Simply providing information such as food identification and macronutrient classes. Then transition to educating, facilitating a deeper understanding of the effects of various foods, for example how they make us feel and impact performance. CrossFit Kids Trainers should adhere to a long-term curriculum of instruction, combined with a short-term mandate to celebrate every success made by the children in the program. Praise wisely, the process or journey, in order to engender perseverance and further improvement (http://www.ted.com/talks/carol_dweck_the_power_of_believing_that_you_can_improve?language=en#t-298029—accessed 4/2015).

This strategy must involve the parents or caregivers as well. The goal is to have entire families strive to make the best choices concerning food that they can: **maximizing nutrient complexity, minimizing the insulin response, while providing appropriate amounts of essential nutrients.** They should also understand the role hydration plays in health and appreciate that sleep and recovery are complementary aspects to exercise and performance, not detractors.

MINIMAL COMPONENTS TO CONSIDER

The following section covers the broad themes that CrossFit Kids suggests guide your curriculum and actions concerning nutrition within the program.

Making Best Choices

Rather than prescribe a set of rules to adhere to, our ultimate goal is to have children and their families make the best choices they can about the foods they eat in every situation. The ultimate desire may be to maintain a diet that: is low to moderate in carbohydrate (to reverse or prevent the onset of Type 2 diabetes, respectively)(22), provides the rest of the dietary calories through protein as well as fat, has an omega-6:omega-3 fatty acid ratio less than 5, and encompasses all of the essential nutrients. However, for CrossFit Kids, the primary (and sometimes only) suggestion is to **choose real foods over processed foods for every meal.** This simple choice nearly eliminates refined sugars from the diet, decreases omega-6 fatty acid consumption (and with grassfed beef or wild caught fish, increases omega-3 fatty acids), while providing a complex set of vital nutrients.

This first, simple best choice of real foods is consistent with the ideas of Lustig and Wells outlined above and takes into account the fact that family life is hectic; rules established in a diet can lead to unnecessary stress about failure or even portion size. Our role is to help families make these choices; they will feel better, want to be more active, and become healthier. Resources at the end of this section are provided for you to use for yourselves as well as to assist families: cookbooks, recipes, nutrition websites, books, and videos. The greatest impact we can potentially make is to start children on a path of choosing wisely as early as possible (23), even in utero (24) and pre-weaning (25). Allowing an opportunity for children to identify and taste real foods is something that can occur within a CrossFit Kids class; when the famous chef Jamie Oliver did this he had some amazing reactions (65). Learning early to appreciate what

real foods are and what they taste like is a foundation that can last a lifetime.

Hydration

In *Waterlogged* (26), Noakes states, “even though we are less able to replace our (larger because we sweat) water deficits as they develop through exercise, we are better adapted for prolonged exercise in the heat than those mammals who do not develop voluntary dehydration” (p28). Indeed, military studies in the Nevada desert observed, “no immediate health risk associated with the level of dehydration of 7% to 10%” (26; p48). Results from prolonged endurance races show that runners who are the most dehydrated at the finish ran the fastest (26). Additionally, hypohydration does not affect cramp susceptibility (27,28)

CrossFit Kids therefore recommends that children drink when they are thirsty (64). Humans are capable of making up water deficits at the end of the day (26). The preference is that children choose water over carbohydrate-laden beverages and dilute electrolyte-infused beverages. We highly encourage children (and families) to avoid energy drinks altogether, these drinks have varying amounts of caffeine, some staggeringly high (29). Emergency department visits involving energy drinks and caffeine toxicity are on the rise for 12–18 year olds (66). “Serious adverse effects have been reported when consumed in larger doses, especially in children, adolescents, and young adults with anxiety, seizures, agitation, migraines, sleeplessness, dehydration, gastrointestinal problems, arrhythmias, and other cardiac events” (30). There are no benefits to these energy drinks that a varied diet, sleep and water don’t provide.

Omega-6:Omega-3 Fatty Acid Ratio

A varied diet ensures consumption of components that humans cannot synthesize themselves, such as essential amino acids, vitamins, and minerals. Another class of required compounds is the essential fatty acids: the omega-3 fatty acid, alpha-linolenic and the omega-6 fatty acid, linoleic acid. Humans evolved under conditions where the overall omega-6:omega-3 fatty acid ratio of consumed foods was approaching 1:1, whereas today’s Western diet skews that ratio to ~15:1 (31). This dramatic increase in omega-6 fatty acids with our diets

“May have negative consequences for metabolic health. These concerns are based on the biological actions of omega-6 [linoleic acid; 18:2(n-6) and derivatives thereof], which are largely proinflammatory, prothrombotic and proadipogenic. It has been suggested that increases in omega-6 PUFA intake over the past few decades may be an important factor contributing to the current obesity epidemic.” (32)

This abnormal ratio can even affect babies in utero because “placental fatty acid transfer shows considerable dependence on maternal plasma fatty acids, and is not regulated to protect the fetus from high maternal omega-6 fatty acids, or low DHA” (33). Additionally, the problem exists in infancy where a mother’s milk may have an increased percentage of omega-6 fatty acids because of her consumption habits; alarmingly, even commercial infant formulas have been sold with increased amounts of omega-6 fatty acids (34).

Normalizing the omega-6:omega-3 fatty acid ratio can be accomplished by reducing the quantity of consumed omega-6 fatty acids. Items with the highest levels are certain vegetable oils (67); these oils are prevalent in processed as well as fried food. Consuming real foods rather than these packaged or fried varieties can be a straightforward first step in limiting the intake a large concentrated dose of omega-6 fatty acids as well as trans fatty acids. Additional efforts can be made to actively increase the quantity of omega-3 fatty acids in the diet. Foods with the highest levels of omega-3 fatty acids are fish (67) and this graphical chart may also help with choosing a type (68). The essential nature of both the omega-6 and omega-3 fatty acids as well as the reported associated effects of a skewed ratio

makes knowing the quantities present in the foods we commonly eat an important metric to monitor in order to make accurate adjustments and assess outcomes.

Many studies have investigated the health benefits of reducing the omega-6:omega-3 fatty acid ratio by increasing the amount of certain omega-3 fatty acids through supplementation, specifically: eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Research has even looked into the effect these compounds (especially DHA) may have on children's health and development, for example: lipid profiles (35), asthma (36), cognitive dysfunction (37,38), memory (39,40), and cardiovascular diseases (36). The results of these studies are varied in outcomes and predictive power. Intake guidelines for EPA and DHA have been established based on an even larger set of studies; international recommendations can be found here (69), for the United States here (70) and then summarized here (71). CrossFit Kids suggests similar guidelines as in these reports, from 0.5 g per day for children to upwards of 3 g per day for the oldest teenagers however, the lack of (and difficulty of establishing) well designed, large, and long-term interventional studies makes the suggestion of supplementation secondary to focusing on improving dietary practices (34,41).

Sleep

The necessity of sleep is underscored by the fact that sleep deprivation

"Reduces learning, impairs performance in cognitive tests, prolongs reaction time, and is a common cause of seizures. In the most extreme case, continuous sleep deprivation kills rodents and flies within a period of days to weeks. In humans, fatal familial or sporadic insomnia is a progressively worsening state of sleeplessness that leads to dementia and death within months or years." (42)

Furthermore, sleep is a time during which growth hormone is secreted; repairing damage from the day's activities or as part of the normal developmental growth program of children (43,44). More recent research also shows that sleep allows clearance of metabolites and toxins from the brain (42,45,46). Besides these biological examples there was a positive relationship reported between fatigue-related injuries and children experiencing less than 6 hours of sleep the night before a sporting event (47).

In a literature survey, Youngstedt (48) found that "exercise was associated with small-to-moderate effects" on various aspects of sleep and that "exercise could be a healthy, safe, inexpensive, and simple means of improving sleep" (49). Interestingly, there appears to be a bi-directionality between sleep and obesity. "Experimentally imposed sleep debt, for example, has been shown to perturb carbohydrate metabolism, with reduced glucose tolerance and raised evening levels of cortisol" (10). Obesity, on the other hand, is associated with an increased risk of sleep apnea, further deteriorating quality sleep and setting up a recursive cycle (50). Therefore, letting parents know the necessity of sleep for their children and that exercise is a means to achieve better sleep are additional important topics to improve overall health.

Recovery

Like sleep, recovery is not specifically about nutrition, it too represents a behavior that is foundational to optimal performance in sport and life. Allowing time off can help prevent overuse injuries (51,52). Some sports have seasons that continue throughout the year, creating the perfect environment for repetitive motion injuries in those children that choose or are told to participate and therefore specialize for a prolonged period (53). Farrey (53) states:

“Early specialization can cause mental exhaustion and, as a child gets older, overuse injuries. With orthopedists seeing a rise in joint injuries involving preteen athletes over the past decade the [American Academy of Pediatrics] now formally opposes specialization before a child reaches puberty.” (65)

Providing recovery time, whether it is resting, switching to a different sport, or the participating in a general physical preparedness program like CrossFit Kids can reduce the risk of the injuries described above as well as improve their overall fitness and motor coordination (54). It is the responsibility of the CrossFit Kids Trainer to assess the need for recovery in individuals within the program, either by knowing their other commitments or monitoring performance.

Interestingly, the importance of recovery in this longer-term time frame is juxtaposed with the innate ability of healthy adolescents to recover within short-term activity bouts. Children appear to have a higher resistance to fatigue than adults (55,56,57). Reasons for this difference have been ascribed to differences in energy substrate utilization (58,59,60,61), increased type-I muscle recruitment, and increased phosphocreatine regeneration (62). These features, together with the established mechanics and consistency make teens the most appropriate group to provide the health benefits associated with high-intensity exercise (63).

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RESOURCES

This section contains information to assist you in informing, and educating yourself, your clients and their families. Various sources for recipes are included along with general nutrition and food sourcing material. The following lists are not meant to support specific products, show favor to any one diet, or be exhaustive. All sites in this section were last accessed 4/2015.

Please note that various states within the United States have laws governing who can provide nutrition advice in specific settings. Do your due diligence to understand the scope of relevant laws. The following websites are for U.S. residents:

- <http://www.cdrnet.org/state-licensure>
- <http://www.nutritioned.org/state-requirements.html>
- <http://www.nutritionadvocacy.org/laws-state>

WEBSITES

Recipes

- Sweet Cheeks <https://twitter.com/sweetcheekshq>
- PaleoOMG <http://paleomg.com>
- Everyday Paleo <http://everydaypaleo.com/>
- Paleo and Primal Lunch Ideas (from Following in my shoes) <http://followinginmyshoes.com/bento-2/paleo-and-primal-lunch-ideas-printable-list/>
- The Paleo Mom <http://www.thepaleomom.com>
- Paleo Nick <http://www.paleonick.com>
- Paleo Parents <http://paleoparents.com>
- Nom Nom Paleo <http://nomnompaleo.com>

Nutritional information

- Type the name of a food and get an exhaustive set of nutrition facts.
 - <http://nutritiondata.self.com>
- The Eating Academy - A blog by Dr. Peter Attia
 - <http://eatingacademy.com>
- "An independent organization that investigates the science behind supplementation and nutrition."
 - <http://examine.com>
- The blog of Richard David Feinman, "a Professor of Cell Biology (Biochemistry) at the State University of New York (SUNY) Downstate Medical Center in Brooklyn, New York."
 - <http://feinmantheother.com>
- The Eating Academy
 - <http://eatingacademy.com>
- Institute for Responsible Nutrition
 - <http://www.responsiblefoods.org>
- Local Harvest's "directory lists over 30,000 family farms and farmers markets, along with restaurants and grocery stores that feature local food."
 - <http://www.localharvest.org>

CrossFit Kids Nutrition and Lifestyle: Resources, continued

- “Eatwild’s Directory of Farms lists more than 1,400 pasture-based farms, with more farms being added each week. It is the most comprehensive source for grass-fed meat and dairy products in the United States and Canada.”
 - <http://www.eatwild.com/PRODUCTS/index.html>
- Mark’s Daily Apple
 - <http://www.marksdailyapple.com>
- Nutrition Science Initiative - NuSI
 - <http://nusi.org>

BOOKS

Recipes

- Eat Like a Dinosaur by Paleo Parents
- Everyday Paleo by Sarah Fragoso
- Well Fed by Melissa Joulwan and David Humphries
- Paleo Comfort Foods by Julie Sullivan Mayfield and Charles Mayfield
- Real Life Paleo by Stacy Toth and Matt McCarry

Nutritional information

- Salt Sugar Fat: How the Food Giants Hooked Us by Michael Moss
- Pandora’s Lunchbox: How Processed Food Took Over the American Meal by Melanie Warner
- What If It’s All Been a Big Fat Lie? by Gary Taubes
 - <http://www.nytimes.com/2002/07/07/magazine/what-if-it-s-all-been-a-big-fat-lie.html>
- Good Calories, Bad Calories: Fats, Carbs, and the Controversial Science of Diet and Health by Gary Taubes
- Why We Get Fat: And What To Do About It by Gary Taubes
- Fat Chance: Beating the Odds Against Sugar, Processed Food, Obesity, and Disease by Robert Lustig
- Know Your Fats: The Complete Primer for Understanding the Nutrition of Fats, Oils, and Cholesterol by Mary Enig
- The Vegetarian Myth: Food, Justice, and Sustainability by Lierre Keith
- The Story of the Human Body: Evolution, Health, and Disease by Daniel E. Lieberman

VIDEOS/PODCASTS

Nutritional information

- Sugar: The Bitter Truth - Dr. Robert Lustig
 - <https://www.youtube.com/watch?v=dBnniua6-oM>
- Sugar—the elephant in the kitchen: Robert Lustig at TEDx Bermuda 2013
 - <https://www.youtube.com/watch?v=gmC4Rm5cpOI>
- Fed Up (Director: Stephanie Soechtig)
- Supersize Me (Director: Morgan Spurlock)
- Fat Head (Director: Tom Naughton)

Examples of content

- CrossFit King of Prussia Nutrition and Recipe Blog
- <http://crossfitkopnutrition.blogspot.com/>

RECIPES

Compiled Recipes from Christal Widman

Paleo Pumpkin Pancakes

4 eggs, beaten
1/2 c pumpkin puree
1–2 T of coconut flour
2 t butter or coconut oil, melted
1 t pure vanilla extract
Optional: 2 T honey or maple syrup
1/4 t baking soda
1 t pumpkin pie spice or 1/2 t cinnamon, 1/4 t cloves, 1/4 t nutmeg
1 t cinnamon
Pinch salt

- Whisk the eggs, canned pumpkin, pure vanilla extract, and pure maple syrup together. Sift the pumpkin pie spice, cinnamon, coconut flour and baking soda into the wet ingredients.
- Melt 2 T of butter in a large skillet over medium heat. Then, mix the butter into the batter.
- Grease the skillet and spoon the batter into the skillet to make pancakes of your desired size. When a few bubbles appear, flip the pancakes once to finish cooking.
- Serve with butter and maple syrup or sautéed cinnamon apples.

Coconut Flour Pancakes

2 eggs
2 T butter, melted
2 T milk
1 T honey
1/4 t salt
2 T coconut flour
1/4 t baking powder
*can add 1 cup of your favorite fruit ; blueberries, bananas...

- Blend eggs, butter, milk, honey and salt. Combine flour with baking powder, then add to batter and mix well. Add fruit if using, mix.
- Batter should be thick, add more coconut flour as needed to reach the consistency of regular pancake batter. Cook on a griddle like regular pancakes. Serve with butter and maple syrup.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

'Peanut Butter' and Jelly Muffins by PaleOMG

2 medium bananas, mashed
3/4 c sunflower seed butter or almond butter
1/4 c honey
3 medium eggs, whisked
1 t vanilla extract
1/4 c coconut flour
1/4 t cinnamon
1/2 t baking soda
1/2 t baking powder
Pinch of salt
About 1/4–1/3 c favorite jam (strawberry...)

- Preheat oven to 350 degrees.
- Mash bananas in a large bowl. Add sunflower seed butter, honey, eggs and vanilla extract and mix together.
- Then add coconut flour, cinnamon, baking soda and powder and a pinch of salt and mix well.
- Using a silicone muffin pan or greased and lined muffin pan, scoop a large spoonful of the muffin mixture into 9 cups, filling the cups about half way. Then use a small spoonful (a little over 1 teaspoon) of the jam and put in the middle of each cup. Use the rest of the batter to cover each jelly filled cup.
- Place in oven and bake for 35–40 minutes.
- Remove from oven and let cool completely before eating!

Bacon Potato Sausage Frittata by PaleOMG

1/2 pound bacon, cut into lardons
1 small sweet potato or yam, diced into small cubes
1/2 lb italian sausage (or other ground meat)
8 eggs, whisked
1/2 t garlic powder
1/2 t red pepper flakes
1/2 t ground paprika
Salt and pepper, to taste

- Preheat oven to 325 degrees.
- Place bacon in a large cast iron skillet or in an oven safe sauté pan. Cook bacon until crispy. Remove and place on a paper towel lined plate. Remove bacon fat as necessary, leaving behind 3–4 T. Add sweet potato, coat in bacon fat and let cook for 10–12 minutes, or until the sweet potatoes are soft. Add italian sausage to the pan with the potatoes, break apart with a wooden spoon and cook until no pink remains. Once sausage is cooked through, remove pan from heat to let cool.
- In a bowl, whisk together eggs, garlic powder, red pepper, paprika and salt and pepper. Once pan has cooled, pour in eggs and add the bacon on top of the sausage and potatoes. Mix well to evenly distribute the eggs around the pan. Place in oven and bake for 12–15 minutes until the eggs are fully cooked in the middle of the pan.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Zucchini Egg Bake by Primal Blueprint

4 T butter
1/4 c onion, finely chopped
2 lb zucchini, grated
1/2 lb ground italian sausage or bacon
3 eggs beaten
1/3 c grated parmigiano-reggiano cheese

- Preheat oven to 350 degrees.
- In a sauté pan, melt butter and add onion and zucchini. Sauté until zucchini is tender, 5–7 minutes. Put zucchini in a colander to drain off any excess liquid. Add sausage to the sauté pan and sauté until just cooked. Combine the sausage and zucchini and season to taste. Add eggs, mix well, and pour into an 8x8 square pan. Grate cheese on top. Bake uncovered 35–40 minutes.

Lemon-Blueberry Muffins by Practical Paleo

6 eggs
1/2 c butter or coconut oil, melted
1 t vanilla extract
1/4 c maple syrup
1 lemon, juice and zest
1/2 c coconut flour
1/2 t sea salt
1/4 t baking soda
1 c fresh or frozen blueberries

- Preheat oven to 350 degrees.
- Whisk the eggs, butter or coconut oil, vanilla extract, maple syrup, lemon juice and lemon zest together in a large mixing bowl. Sift in the coconut flour, sea salt and baking soda, and stir until well combined. Gently fold in the blueberries.
- In a muffin tin, scoop 1/4 c of the batter into each lined muffin cup (aluminum or silicon works best) and bake for 35–40 minutes.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Pumpkin Nut Muffins by Primal Blueprint

1/2 c coconut flour, sifted
1 t cinnamon
1/2 t nutmeg
1/4 t cloves
1/2 t baking soda
1/2 t salt
1/2 c pureed pumpkin
6 eggs, beaten
4 T coconut oil or butter, gently melted
1/3 c maple syrup or honey
1 t vanilla extract
1/4 c coarsely chopped pecans or walnuts
3/4 c fresh or dried blueberries or bittersweet chocolate chips

- Preheat oven to 400 degrees.
- Grease muffin pans very well or use aluminum/silicon muffin liners. Sift coconut flour, baking soda, salt and spices into small bowl. Stir to blend well and set aside.
- Place pumpkin puree in a medium mixing bowl. One by one, crack the eggs into the bowl, mixing well with the pumpkin puree after each egg is added. Add melted coconut oil or butter, maple syrup and vanilla extract and mix thoroughly.
- Add flour mixture to egg mixture and blend well with a whisk until most of the floury lumps have disappeared, but don't stir more than necessary to blend. Gently fold in nuts and fruit or chocolate chips.
- Spoon into greased muffin pan or liners to two-thirds full. Bake for 18–20 minutes, until lightly golden brown on top and toothpick comes out clean. Serve warm.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Pumpkin Granola by PaleOMG

1/2 c sliced almonds
1/2 c pumpkin seeds (pepitas)
1/2 c pecans, chopped
8–10 dried dates, pits removed, then chopped
1/2 c pumpkin puree
1/3 c coconut oil, melted
1/3 c unsweetened shredded coconut
1/3 c maple syrup
1 t vanilla extract
2 T cinnamon
1 T nutmeg
1/8 t ground cloves
1/8 t ground ginger
Pinch of salt

- Preheat oven to 325 degrees.
- In a large mixing bowl, add your pumpkin puree, coconut oil, maple syrup, vanilla extract, and all spices. Mix well.
- Then add your nuts, seeds, and dates and mix well with your wet ingredients.
- Place parchment paper on a large baking sheet and pour your granola mixture on top. Use a spoon to spread out the mixture evenly so everything will cook at the same time.
- Place in oven and cook for 30–40 minutes, moving the granola around half way through to be sure it doesn't burn.
- LET COOL. Letting the granola cool will help it harden up.

Breakfast Sausage

2 1/2 lb ground pork
2 t kosher salt
2 t freshly ground black pepper
2 t finely chopped fresh sage leaves
2 t finely chopped fresh thyme leaves
1/2 t finely chopped fresh rosemary leaves
1 T light brown sugar
1/2 t fresh grated nutmeg
1/2 t cayenne pepper
1/2 t red pepper flakes

- Combine all ingredients, mix well and make into thin patties. Cook thoroughly in a frying pan

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

APPETIZERS

Sausage Stuffed Dates by Everyday Paleo

6 dates
1/2 lb italian sausage
6 bacon strips

- Preheat oven to 375 degrees.
- Using a pairing knife, cut a slit in the dates lengthwise and remove the seed.
- Use 2 T of sausage per date, form into a ball, and wrap the date around the sausage (the date will not be big enough to wrap all the way around). Secure the sausage and date by wrapping a piece of bacon around the date.
- Bake in a glass baking dish for 35–40 minutes.

Buffalo Chicken Dip

4 lb chicken
2 pkg cream cheese
1 small bottle Red's Original Hot Sauce
1 small bottle Ranch dressing
2 pkg colby-jack cheese, shredded

- Cut up chicken into small cubes and marinate overnight in Red's Hot Sauce. Preheat oven 375 degrees. Sauté chicken with marinade until done. Spread cream cheese on the bottom of a casserole dish. When chicken is cooked, drain some of the hot sauce off. Put remaining chicken and sauce on top of cream cheese in casserole dish. Pour Ranch over the top of the chicken, then add shredded cheese. Bake until cheese is melted and heated through, about 15–20 minutes. Serve with bell pepper strips, celery and carrot sticks.

Guacamole Deviled Eggs

6 hard boiled eggs
1–2 avocados (depending on size)
1/4 c salsa
1 T fresh cilantro, finely diced
2 garlic cloves, finely diced
1 lime, juiced
Salt
Pepper

- Boil your eggs. Set them aside to cool. Slice them in half and remove yolks and put into separate bowl. In bowl with yolks, add in avocado, chopped tomatoes/salsa, cilantro, garlic, salt and pepper. Mash until smooth with fork. Stuff each egg half with guacamole-egg mixture and chill until ready to serve.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Nut Crackers by Primal Blueprint

2 c fine almond meal
1 t baking soda
1–2 T dried oregano or Italian seasoning
1 c finely grated Parmesan or Romano cheese
2 T olive oil
3 T water

- Preheat oven to 350 degrees.
- In a mixing bowl, combine all ingredients and stir to form a moist, sticky dough. Add more water or oil if needed. Using wet hands, place the dough on a baking sheet lined with parchment paper. Using your fingers, flatten the dough out into a thin rectangle measuring about 10x8. Sprinkle a little sea salt on top. Bake for 15 minutes or until dough becomes dry and golden in appearance. Remove and cool on a wire baking rack. Once the dough is cooled (and this is important, because it becomes very brittle right out of the oven) use a pizza cutter to create crackers. If not consuming immediately, be sure to store in an air-tight container.

Jalapeno Poppers

12 jalapenos, sliced lengthwise, seeded
8 oz whipped cream cheese
1 lb bacon, cut in half

- Preheat oven to 400 degrees.
- Line a shallow baking sheet with aluminum foil. Clean and slice jalapenos lengthwise. Stuff peppers with cream cheese. Wrap 1/2 slice of bacon around the stuffed peppers. Place on baking sheet. Bake for 20 minutes or until bacon is crispy.
- Can precook the bacon half way (3–5 minutes in the microwave) to speed up the baking.

SALADS AND SIDES**Honey-Lime Coleslaw**

1 pkg of coleslaw or:
1/4 red cabbage, shredded
1/2 green cabbage, shredded
3 carrots, shredded
Zest of 1/2 lime or lemon
1/4 c fresh lime or lemon juice
1/4 c olive oil
1 T honey
1 t salt
1/4 t black pepper
1 small shallot
1/2 c sour cream
Handful of cilantro, chopped

- Remove any tough outer leaves from the cabbage. Trim the core and any tough stems from the cabbage and thinly slice. Add to a bowl with the shredded carrot, lime/lemon zest, lime/lemon juice, olive oil, honey, shallots, sour cream, cilantro, salt and black pepper. Toss to combine. Serve this right away for more of a salad, or store it in the fridge overnight for a slaw that's more pickled.

Paleo Panzanella Salad

2 large, ripe tomatoes, cut into 1-inch cubes
1 hothouse cucumber, unpeeled, and sliced 1/2-inch thick
1 red and yellow bell pepper, seeded and cut into 1-inch cubes
1 shallot, cut in 1/2 and thinly sliced
20 large basil leaves, coarsely chopped
1 t finely minced garlic
1/2 t Dijon mustard
3 T Champagne vinegar
1/2 c good olive oil
1/2 t kosher salt
1/4 t black pepper
8 oz feta cheese or fresh mozzarella boccolini or ciliegine, optional

- In a large bowl, mix the tomatoes, cucumber, red pepper, yellow pepper, shallot, basil, and cheese, if using. Season liberally with salt and pepper. Whisk together garlic, Dijon mustard, champagne vinegar, olive oil, salt and pepper and pour over salad. Toss and serve, or allow the salad to sit for about half an hour for the flavors to blend.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Grilled Portobello Mushrooms

3 Portobello mushrooms
1/4 c light olive oil
3 T chopped onion/shallots
4 cloves garlic, minced
4 T balsamic vinegar

- Clean and de-stem mushrooms. Mix the remaining ingredients together and pour 1/3 of mixture into each of the mushroom caps and allow to marinate for at least 30 minutes. Heat grill. Grill mushrooms until desired doneness.
- Great to use as a substitute bun/bread for hamburgers, blt's or sandwiches.

Hot Brussels Sprout and Bacon Salad

1 lb Brussels sprouts, washed, trimmed and halved
1 large tart apple, cored and diced
4 slices of bacon, cooked and crumbled
1/4 c extra virgin olive oil
1–2 T of Maple Syrup
1 T balsamic vinegar or apple cider vinegar
Salt and pepper, to taste
Toasted Pecans

- Preheat oven to 375 degrees. In a large bowl, combine sprouts, apple and bacon and stir until evenly distributed. In a small bowl, whisk together olive oil, maple syrup and balsamic vinegar. Pour olive oil mixture over sprout mixture and toss to coat. Pour out the sprout mixture in one layer onto a greased cookie sheet. Season liberally with salt and pepper. Roast in oven for 10–15 minutes, turning once halfway through cooking, or until sprouts are tender and brown. Add toasted pecans to serve.

Blue Cheese Asparagus Salad

2 lb asparagus
1 can mandarin oranges, drained, juices reserved
1/4 c extra-virgin olive oil
1 c crumbled blue-cheese
Sea salt to taste

- Fill a large bowl with ice water. Set aside. Bring a large pot of salted water to a boil. Add the asparagus and cook until crisp-tender. Drain the asparagus and plunge into the ice bath for 1 minute, then drain and set aside.
- Whisk together the orange juice and olive oil. Toss the asparagus, blue cheese and oranges together and drizzle over the dressing. Toss gently and sprinkle with salt to taste.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Sweet Potato Fries by Everyday Paleo

2–3 yams, cut into “french fries”
3 T coconut oil
1/2 T paprika (optional)
1/2 T cinnamon (optional)
1/4 t cayenne pepper (optional)
Sea salt and black pepper to taste

- Preheat oven to 375 degrees.
- In a large bowl, whisk all of the spices together with the oil and then toss the sweet potato spears with the oil mixture until all the spears are coated.
- Line a cookie sheet with tin foil and evenly spread the potato spears on the foil.
- Bake for 25–30 minutes, turning the spears over halfway through the cooking time.

Roasted Cabbage and Bacon

1 large head green cabbage, outer leaves removed
Olive oil
Kosher salt and freshly ground black pepper
4 slices thick bacon

- Heat the oven to 450 degrees. Cut the cabbage into quarters and slice the bottom of each quarter at an angle to remove the stem core. Cut each quarter in half again so you have eight wedges. Lay these down on a large broiling pan and drizzle lightly with olive oil. Sprinkle generously with salt and pepper.
- Cut each slice of bacon into small strips and lay on top of the cabbage.
- Roast for 30 minutes, flipping the cabbage wedges once halfway through. If the edges are not browned enough for your taste after 30 minutes, put them back in for five-minute increments until they are.
- Serve immediately; the wedges cool down fast.

Roasted Broccoli or Cauliflower

2 large heads of broccoli or cauliflower, cut into small pieces
3–4 T olive oil
Sea salt, to taste
3 garlic cloves, minced (optional)

- Preheat oven to 400 degrees. Clean and cut broccoli or cauliflower into small pieces.
- Toss with olive oil, salt and garlic if using. Bake for 15 minutes, then flip vegetables and continue to cook for 10–15 minutes or until broccoli/cauliflower is slightly browned and crispy. Serve immediately.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Baked Kale Chips

1 large bunch of Kale (organic purple kale is a favorite)
1–2 T olive oil
Sea salt, to taste
Cayenne pepper (optional)

- Preheat oven to 400 degrees. Clean and de-stem Kale, tear into chip size pieces. Toss with olive oil and sea salt and cayenne if you like spicy chips. Spread kale in a single layer on a large baking sheet. Bake for 10–15 minutes.

Warm Spinach and Sweet Potato Salad

3 c peeled and diced sweet potatoes
1 T coconut oil
1 apple diced
8 strips of bacon, diced
2 leeks, thinly sliced
6 oz of fresh baby spinach
Handful of sliced almonds for garnish

Dressing:

1/4 cup olive oil
1 T apple cider vinegar
1 t spicy brown mustard
Fresh ground black pepper to taste
1 T of dried basil
Pinch of cayenne pepper

- Preheat oven to 400 degrees. Toss the diced sweet potatoes with the coconut oil and spread evenly on a baking sheet. Bake in your preheated oven for 20 minutes. While the sweet potatoes are baking, cook the diced bacon in a large skillet. Once the bacon is crispy, add the sliced leeks in with the bacon and sauté for another 4–5 minutes. Put your spinach in a large salad bowl and add the bacon and leek mixture. Toss well, letting the warm bacon wilt the spinach. Add the apples and sweet potatoes to the salad and toss together. In a separate bowl whisk together the salad dressing ingredients. Pour over the salad, mix well and garnish with the sliced almonds.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Bacon Wrapped Asparagus

1 bunch of asparagus, washed and trimmed
Olive oil
Sea salt
Black pepper
1 lb bacon, cooked slightly

- Preheat oven to 400 degrees. Pre-cook your bacon, so that it is about half-way cooked, about 3 minutes in the microwave. Set aside to cool. Toss asparagus with olive oil, salt and pepper to lightly coat. Wrap one piece of bacon around 3–5 asparagus stalks and place on a broiler pan. Bake until asparagus and bacon are crispy, about 20–25 minutes.

Spinach and Apple Salad with Warm Bacon Dressing

4 strips of bacon, cooked and cubed, oil reserved
1 granny smith apple, chopped
2 handfuls baby spinach
2 handfuls arugula
1/4t sea salt
1/4 t black pepper
1 T chives
1/4 c pecans, roasted
2 shallots, fried in butter
Goat cheese or gorgonzola/blue cheese

Vinaigrette:

1 T coconut vinegar or apple cider vinegar
1/4 t Dijon mustard
1/4 c olive oil
1 T honey
Reserved bacon grease

- Chop the apple and shallots into slices. Dice the chives. Roast the pecans and break into small pieces. Cook bacon and crumble, reserve hot grease for vinaigrette. Fry the shallots in butter over medium-high heat until browned and crispy. In a separate bowl, mix together the vinegar, Dijon mustard, and bacon fat. Whisk in olive oil until the desired consistency is reached. Toss the spinach, chives, pecans, onion and cheese with the warm vinaigrette. Serve immediately.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Apple and Roasted Pecan Salad with Balsamic Vinaigrette

Salad:

Mixed Organic Greens Salad

Pear or Apple, diced

Roasted Pecans

Feta or Blue cheese or Gorgonzola, optional

Vinaigrette:

1/2 c balsamic vinegar

1 1/2 c light olive oil

Splash of red wine vinegar

2–3 garlic cloves, or to taste

1 t sea salt

1 t pepper

1 T Dijon mustard

1–2 T Honey

- Beat the vinegar in a bowl with the honey, garlic, Dijon, salt and pepper until honey and salt dissolves. Then beat in the oil by droplets, whisking constantly. Or place all the ingredients in a screw-top jar and shake to combine. Or place all vinaigrette ingredients in a small blender and blend on low to desired emulsification. Taste and adjust the seasonings. Toss a few tablespoons of the dressing with the salad mix and desired salad ingredients, top with cheese and serve immediately. Add chicken, steak or fish to make it a meal!

Bacon Broccoli Salad by Primal Blueprint

1 c homemade mayonnaise

2–3 T honey

1–3 T apple cider vinegar

10 slices cooked bacon, crumbled

2 lb broccoli, rinsed, cut into small florets

1 c nuts, chopped coarsely

1/2 c assorted raisins or dried fruit, or 1 cup of fresh fruit: grapes, cherries, blueberries or chopped apples.

- Combine mayonnaise and honey in a large bowl and mix well (adjust sweet-tart taste with cider vinegar). Add bacon, broccoli, nuts and fruit (if using) and mix until everything is evenly distributed and coated with dressing. Flavor is best if allowed to marinate in the refrigerator at least a few hours.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Cauliflower with Lemon Mustard Dressing by Primal Blueprint

1 head of cauliflower, cut into small florets
3 T oil
1 T lemon juice
1 T Dijon mustard
1/3 c half and half
1/3 c pecans, walnuts or hazelnuts
1/8 t black pepper

- Preheat oven to 450 degrees.
- In a shallow roasting pan, toss the cauliflower with 2 T of the oil and a little salt. Roast cauliflower until tender and lightly browned, stirring once or twice for even roasting, 15–20. Meanwhile, toast the nuts in a dry skillet for a few minutes over medium-high heat, shaking pan or stirring nuts often to avoid burning. Nuts will continue to toast a little as they cool, so remove pan from heat before they finish toasting and set aside to cool. In a large bowl, whisk together the lemon juice, mustard, half n half and remaining 1 T of oil. Add the roasted cauliflower, scraping any residual oil and brown cauliflower bits into the bowl. Add the nuts and black pepper, toss to coat. Serve warm.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Grain-Free Thanksgiving Stuffing by Against All Grains*For the bread:*

- 2-1/2 c almond flour (2 and 1/2 c)
- 8 oz farmers cheese (dripped yogurt or thick greek yogurt will work too)
- 1/4 cup melted coconut oil or butter
- 1 t baking soda
- 1/4 t sea salt
- 3 eggs
- 1/4 c water
- 1 T fresh herbs, chopped (rosemary, parsley, or thyme)

- Combine all bread ingredients (except for the flour and water) in a food processor and blend until smooth. Add the flour and water and pulse until dough is combined. Dough will be a very sticky consistency. Grease a 9×9 pan and put a rectangular piece of parchment paper at the bottom. This will help the loaf come out easily. Spread a little more oil on top of the parchment piece. Fold the dough into pan and even it out with a spatula. Bake at 325 degrees for about 35 minutes. Careful to not let the top burn. While the bread is baking, sauté the celery, onions, garlic, sausage, apples, herbs and mushrooms in 1 T olive oil for about 15 minutes. Once the bread has cooled, slice it in half lengthwise to make two thin loaves. Next, slice it into 1/2 inch strips and then across those cuts to make small cubes. Coat with 5 T melted butter. Place on a cookie sheet and toast in the oven for 30 minutes on 300 degrees turning occasionally. The bread should come out golden brown and slightly dry.

Stuffing:

- | | |
|--|--|
| 1 T olive oil | 1 fuji apple, chopped with skin on |
| 1 yellow onion, chopped | 6 cups bread cubes (see previous recipe) |
| 2 celery stalks (leaves included), chopped | 3 eggs, lightly beaten |
| 2 garlic cloves, minced | 1/4 c dry vermouth |
| 3 sprigs parsley, chopped | 1-1/4 c turkey stock or chicken stock |
| 1 sprig rosemary, chopped | 2 t sea salt |
| 2 sprigs thyme, chopped | 1/2 t pepper |
| 2 sage leaves, chopped | 7 T salted butter |
| 1/2 c mushrooms, chopped | |
| 1/2 lb sweet italian sausage | |

- While the bread is baking, sauté the celery, onions, garlic, sausage, apples, herbs and mushrooms in 1 T olive oil for about 15 minutes. Add the vermouth and bring to a boil. Remove from heat while you wait for the loaf to bake and cool.
- Toss the toasted bread crumbs with the sautéed mixture, eggs, salt and pepper, and turkey stock. Transfer stuffing to a well buttered baking dish and sprinkle the additional 2 T of butter on top. Cover with foil, and bake at 350 degrees for 35 minutes. Uncover and bake 15 minutes until top is golden.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

BEEF ENTREES

Barefoot Contessa's Weeknight Bolognese

2 T olive oil
1 lb ground beef
4 t minced garlic (4 cloves)
1 T dried oregano
1/4 t crushed red pepper flakes
1 1/4 c dry red wine, divided
1 (28-ounce) can crushed tomatoes
2 t tomato paste
Kosher salt and freshly ground black pepper
1/4 t ground nutmeg
1/4 c chopped fresh basil leaves, lightly packed
1/4 c heavy cream
1/2 c freshly grated Parmesan cheese, optional

- Heat 2 T of olive oil in a large (12-inch) skillet over medium-high heat. Add the ground sirloin and cook, crumbling the meat with a wooden spoon, for 5 to 7 minutes, until the meat has lost its pink color and has started to brown. Stir in the garlic, oregano, and red pepper flakes and cook for 1 more minute. Pour 1 cup of the wine into the skillet and stir to scrape up any browned bits. Add the tomatoes, tomato paste, 1 T salt, and 1 1/2 teaspoons pepper, stirring until combined. Bring to a boil, lower the heat, and simmer for 10 minutes. Add the nutmeg, basil, cream, and the remaining 1/4 cup wine to the sauce and simmer for 8 to 10 minutes, stirring occasionally until thickened.
*Serve over roasted spaghetti squash, or zucchini noodles with Parmesan on the side.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Moroccan Beef Stew

2 t olive oil
1–2 lb stew beef
1 large onion
2 cloves of garlic, minced
1 T fresh ginger
1 lb butternut squash, peeled and cut into 1 1/2 inch cubes
1 can (14.5oz) no-salt added diced tomatoes
1 can (8oz) no-salt added tomato sauce
1 1/2 c low-sodium beef broth
1 1/2 t ground cumin
1 t cinnamon
1/2 t red pepper flakes
1/4 c sliced almonds, toasted in a dry skillet over med-high heat until golden brown, 2 minutes
4 t minced fresh parsley
Parmesan cheese for serving

- Heat oil in a 4-quart saucepan over medium-high heat. Add beef and cook until browned on all sides, about 5 minutes. Transfer meat to a plate, leaving juices in saucepan. Add onion; cook, stirring, until translucent, about 6 minutes. Add garlic and ginger; cook, stirring 1 minute more. Return beef to pot; stir in squash, tomatoes, sauce, broth, cumin, cinnamon and pepper flakes. Bring to a boil; reduce heat to low. Cover; simmer until beef is tender, 30–35 minutes. Serve with sliced almonds, parsley and parmesan cheese.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Beef and Vegetable Chili by Sweet Cheeks HQ

1 lb grass fed ground beef
1 carrot—chopped
1 onion—chopped
2 stalks of celery—chopped
1 zucchini—chopped
1 red bell pepper—chopped
1 can fire roasted tomatoes with green chiles
16–20 oz organic low sodium vegetable or beef broth
2 T chili powder
1 T garlic granules
Salt to taste
1 t pepper
1/2 t cayenne pepper
1–2 T cumin
1/2 t cinnamon
1 t oregano
Garnish: cilantro, cheddar cheese and avocado

- Brown your meat in a pan. Put all the ingredients into crock pot, stir and let cook on low approximately 6 hours. Enjoy your chili— put it in a bowl and top it with cilantro, cheddar cheese and avocado.

All Beef Chili by Sweet Cheeks HQ

2 packages ground beef (2 lb)
1 1/2 onions—chopped
3 bell pepper; red, yellow, orange—chopped finely
1 scoop crushed garlic
2 T chili powder
1 T cumin—plus a bit more
1 t cayenne pepper
1/2 t salt or to taste
1 t oregano
Few shakes of pepper
1 can tomato paste
2 cans diced tomato
1 can beef broth
1 handful cilantro chopped finely
Cheddar cheese to serve

- Brown your meats in a pan, when almost brown add your onions and cook until slightly soft. Next add peppers, garlic and seasonings, and cook for another few minutes then add tomato paste, diced tomatoes and broth. Taste it and adjust spices to your liking. Add cilantro and cheddar cheese and serve.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Lasagna

1 small red onion, diced
4 cloves of garlic, minced
2 T olive oil
1 lb ground beef
1 lb mild or spicy Italian sausage
2 T dried oregano
1/2 c fresh basil
1/2 t cayenne pepper
1/2 t sea salt
1/2 T black pepper
1 can of diced tomatoes, drained
1-6oz can of tomato paste
5-6 small zucchini, thinly sliced long way with a mandolin slicer
1 c sliced black olives
2 c cottage cheese/ricotta
2 c mozzarella cheese

- Preheat oven to 350 degrees. In a large soup pot sauté the onions and garlic in the olive oil for about 3 minutes. Add the ground beef and sausage and brown. Drain grease.
- Season the meat mixture with all of the dry ingredients, add the drained diced tomatoes and tomato paste, and mix well. In a 9x11 baking dish place a layer of sliced zucchini, making sure to overlap the long slices, ladle on a thick layer of the meat mixture, then cottage cheese/ricotta and mozzarella and olives (if using). Repeat one more layer: zucchini, meat mixture, cottage cheese/ricotta, mozzarella, olives. Cover tightly with foil and bake for 30 minutes. Uncover and cook for another 5 to 10 minutes to brown cheese. Let lasagna rest for 10 minutes before slicing and serving.

Beef Brisket

5-6 lb Brisket
3 oz liquid smoke
Garlic salt
Salt and pepper
Worcestershire
Your favorite bbq sauce

- Place brisket in a baking dish. Pour liquid smoke over meat and sprinkle with garlic salt. Cover and marinate in fridge over night. Preheat oven 275 degrees. Before baking, sprinkle both sides of brisket with salt, pepper, and Worcestershire sauce. Cover with foil and bake 5 hours. Slice diagonally across grain and top with bbq sauce. Bake an additional hour.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Sloppy Joes by Real Simple

1 T olive oil
1 small yellow onion, finely chopped
1 clove garlic, minced
1 red bell pepper, finely chopped
1 lb ground beef
1 6-oz can tomato paste
1 1/2 t chili powder
1 t cumin
1/8 t black pepper
1/8 t cinnamon
1 t sea salt
1/2 c grated cheddar
1/2 c sour cream

- Heat the oil in a large saucepan over medium heat. Add the onion, garlic, and red pepper. Sauté until fragrant, about 3 minutes. Add the ground beef and brown, about 5 minutes. Stir in the tomato paste, chili powder, cumin, black pepper, cinnamon, and salt. Simmer, stirring occasionally, until the sauce has thickened slightly, about 12 minutes. Top each cheddar and/or sour cream.
- Goes great with cheese drop biscuits, honey-cornbread or sweet potato fries.

Savory Boeuf Bourguignon by Wellness Mama

3 lb beef (roast, round, steak, etc)
3 slices of bacon
3 large carrots
1 onion
1/2 (6 oz) can tomato paste
2 cloves garlic
Small package of mushrooms, sliced
4 T butter
Spices (basil, thyme, salt, pepper, parsley, etc)
1 c beef broth (or water)
3–4 c (1 bottle) of dry red wine
1/4 c almond or coconut flour (or powder almonds or coconut flakes in blender until finely ground)—optional

- Preheat oven to 325 degrees. Brown bacon in large pan, remove bacon and add 2 T butter to bacon fat grease in pan. Cut beef into 1 inch square pieces. Roll beef in almond or coconut flour. Brown beef evenly in pan with bacon grease and butter. Put into large baking or casserole dish with cover. Chop carrot and onions and brown slightly in the same pan and then put in baking/casserole dish with beef. Mince garlic and onion, then sprinkle over beef. Sprinkle mixture with spices to taste (thyme, basil, bay leaf and parsley are really good additions to this). Mix tomato paste with broth, then pour broth and wine over mixture and cover baking pan or casserole dish— can also use foil if you don't have a covered casserole dish. Cook in oven 2.5–3 hours until beef is fork tender and breaks apart easily. About 15 minutes before beef is done, brown mushrooms in a skillet with 2 T butter. Add to beef and cook an additional 5–10 minutes in oven. Remove from oven, let sit 10 minutes before serving and serve with parmesan cheese

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Beef and Broccoli Cashew Stir Fry by PaleOMG

1 c coconut aminos or tamari or soy sauce
1/2 c orange juice
3 T honey
1 t fish sauce
2 garlic cloves, minced
1 t fresh ginger, grated
1/2 t red pepper flakes
3 T arrowroot powder
1 lb flank steak, thinly sliced against the grain
3 crowns of broccoli, cut into florets
Salt and pepper, to taste
Couple tablespoons of coconut oil
1/2 c toasted cashews

- Whisk together coconut aminos, orange juice, honey, fish sauce, garlic, ginger, red pepper flakes, arrowroot powder, and a bit of pepper.
- Place sliced flank steak in a shallow bowl and pour whisked mixture on top of the meat to cover. Place in fridge and let refrigerate for 30 minutes.
- After meat has refrigerated, place a large pan or dutch oven over medium heat. Add about a tablespoon of coconut oil to the pan when hot, then add broccoli florets. Sprinkle with a little salt and mix around in the pan to help crisp up. To make sure my broccoli gets soft, I use a teaspoon of water, add it to the pan and then cover to help steam the broccoli for just 1 minute.
- Once broccoli is cooked through to preference, remove from pan and set aside.
- Place pan back over high heat, add a little more coconut oil then add the meat and sauce directly to the hot pan, trying not to overcrowd the bottom of the pan. Cook meat until barely any pink remains, then add broccoli back to the pan, along with toasted cashews. Mix together and cook for 1 more minute. Serve!

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

CHICKEN ENTREES

Chicken, Broccoli, Bacon Casserole

2 heads broccoli, chopped, steamed
4 chicken breasts, diced, cooked
7 slices bacon, chopped, cooked
3/4 c sour cream
4 T cream cheese
1 1/4 c monterey jack cheese, grated
1 c chicken stock/white wine
1/4 c milk
1/8 t ground pepper
1/2 t garlic powder
1/2 c monterey jack and cheddar cheese blend, grated
2 T parmesan cheese
1/2 t bacon grease, reserved

- In a medium saucepan, heat chicken stock until boiling. Reduce heat to low and stir in sour cream and milk. When dissolved, stir in Monterey jack. When dissolved, stir in cream cheese. Add garlic powder, ground pepper, and bacon grease (optional). Whisk until smooth. Layer chicken, bacon and broccoli in a rectangular glass casserole dish. Pour the sauce evenly over the casserole. Sprinkle cheddar/jack and parmesan over the top. Bake at 350 degrees for 15–20 minutes.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Chicken Tetrazzini

Meat of 1 whole chicken (or 4–5 chicken breasts cooked and shredded)

2–3lb Spaghetti Squash

3 T butter

1 red bell pepper, chopped

3/4 c chopped onion

8 oz mushrooms, sliced

1 clove of garlic, chopped

2 T lemon juice

3 T flour (sub arrowroot powder)

1/2 c sherry cooking wine or white cooking wine

1/4 t nutmeg

1/4 t poultry seasoning

1 c half n half or milk

1 c cheddar cheese, shredded

2/3 c parmesan cheese

Sliced almonds (optional)

Salt and pepper to taste

- Cut spaghetti squash in half, scoop out seeds, drizzle with olive oil, sea salt and pepper. Bake squash 1 hour at 375 degrees. Shred spaghetti squash into a 9x13 pan with meat. In large saucepan sauté bell pepper, mushroom, onion and garlic in 3T of butter plus lemon juice. Add flour, stirring until smooth. Add cream/milk and sherry/wine and allow to thicken. Turn to low, add cheddar cheese and spices. Pour sauce over spaghetti and meat, mix well, sprinkle parmesan cheese and sliced almonds on top and bake at 350 for 30–40 minutes or until hot. Serves 8

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Blueberry Chicken Salad

2 t Dijon mustard
2 T minced shallot
2 T honey
3 T freshly squeezed lime juice
1 t salt
1/2 t black pepper
1 T minced fresh rosemary leaves
1/4 c olive oil
1 roasted chicken, meat torn into bite-size pieces
1 large Granny Smith apple, cut into 1/4 inch slices
1 1/2 c green grapes
1 1/2 c fresh blueberries
1/2 c hazelnuts, toasted, coarsely chopped (I use pecans)
1/2 c crumbled blue cheese or feta

- In small bowl, whisk together the mustard, shallot, honey, lime juice, salt, pepper and rosemary. Slowly whisk in the olive oil to make an emulsion.
- In a large bowl, combine the chicken, apple, grapes, blueberries, nuts, and cheese. Toss well.
- Pour the dressing over the salad and toss well to coat thoroughly. Taste and adjust the seasoning as necessary. Serve immediately or cover and refrigerate for up to 2 days.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Paleo Pad Thai

1 med spaghetti Squash or 5 small zucchinis
Olive oil
Sea salt and pepper
1 lb chicken or shrimp
1/4 c coconut oil
1 onion—chopped
4 cloves garlic—minced
1 T White balsamic vinegar
2 T fresh ginger, minced
3 T almond butter
1 t crushed red pepper
3 limes, 2 juiced, 1 garnish
Sliced green onions
1/4 c–1/2 c chicken broth
Julienned carrots
Black sesame seeds
Salt and pepper
Chili powder

- Preheat oven to 375 degrees. Cut spaghetti squash in half, scoop out seeds, place face up on baking sheet and drizzle with olive oil, salt and pepper, bake for 1 hour. Or use a mandolin to make noodles out of the zucchini. Heat a large sauce pan on medium/high heat. Add coconut oil and let melt. Season your chicken with salt, pepper and chili powder. Add chicken to pan and brown one side, flip and brown the other until meat is fully cooked. Remove chicken and let it rest.
- In the same pan (with grease and drippings), sauté the onion, garlic and ginger until soft. Add the vinegar, lime juice and almond butter and red chili flakes. Stir to combine. Depending on thickness you might want to add some broth at this point.
- Once squash is done, scoop squash noodles or your zucchini noodles into the sauté pan with the sauce. Stir them around to get the sauce incorporated onto the noodles. Add chicken back in and stir well. Serve hot and topped with a squeeze of lime juice and some chopped green onions, carrots, and black sesame seeds.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Crockpot Buffalo Chicken Lettuce Wraps by Skinny Taste

24 oz boneless skinless chicken breast
1 celery stalk
1/2 onion, diced
1 clove garlic
16 oz fat free low sodium chicken broth
1/2 c hot cayenne pepper sauce (like Frank's)
1/2 c butter

For the wraps:

6 large lettuce leaves, bibb, romaine or Iceberg
1 1/2 c shredded carrots
2 large celery stalks, cut into 2 inch matchsticks

- In a crockpot, combine chicken, onions, celery stalk, garlic and broth (enough to cover your chicken, use water if the can of broth isn't enough). Cover and cook on high 4 hours. Dump broth and celery, shred chicken, return to crockpot with a stick of butter and 1/2 c Franks original hot sauce. Cook on high for 30 minutes, stirring occasionally. Serve on lettuce with desired toppings; cheddar cheese or blue cheese, celery, shredded carrots, avocado!

Pecan Crusted Chicken by Everyday Paleo

4 chicken breasts
1/2 c organic spicy brown mustard
2 T raw organic honey
1 c pecans
Sea salt

- Preheat oven to 350 degrees. In a medium sized mixing bowl blend together the mustard and honey. Toss the pecans in a food processor and pulse until the nuts are finely chopped. Pour the chopped pecans either on a plate or in a pie pan if you have one.
- Using a paper towel, remove any excess moisture from the outside of your chicken breasts. Taking one chicken breast at a time, first place the chicken into the mustard/honey mixture and coat on both sides. Transfer chicken to the chopped pecans and again cover both sides. Place coated chicken into a greased glass baking dish (I used a little olive oil spray to cover the bottom of the dish) and sprinkle each chicken breast with just a little sea salt. Bake at 350 for 45 minutes or until the chicken juices run clear.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Chicken Cordon Bleu

8 thin chicken cutlets (1 1/2 lb)
 Sea salt and pepper
 2 T honey mustard
 4 slices deli ham, halved
 12 thin slices swiss cheese, halved into 24 strips

- Heat broiler. Line a rimmed baking sheet with aluminum foil. Place cutlets on work surface and season with salt and pepper. Spread cutlets with mustard, layer with 1 slice of ham and 2 strips of cheese. Starting at a short end, roll up cutlets, place seam side down on prepared baking sheet. Top each cutlet with 1 piece of remaining cheese. Broil until browned and chicken is opaque throughout. 6–10 minutes.

Chicken Tortilla Soup by PaleOMG

3–4 large chicken breasts	2 t cumin
1 T cumin	1 t chili powder
2 t cayenne pepper	1 t garlic powder
2 t garlic powder	Salt and pepper, to taste
Salt and pepper, to taste	32 oz fluid chicken stock
1 T olive oil	Juice of 2 limes
<i>For your soup:</i>	<i>Garnish: Avocado, cilantro, plantain</i>
2 T olive oil	chips, and cheese
2 garlic cloves, minced	
1 yellow onion, diced	
1 red bell pepper, diced	
1 poblano pepper, diced	
1 jalapeño, finely diced	
1 (4oz) can diced green chiles	
1 can fire roasted tomatoes	

- Preheat oven to 375 degrees.
- Place chicken on a parchment lined baking sheet. Pour on some olive oil and then sprinkle with cumin, cayenne pepper, garlic powder, and salt and pepper. Bake for 20–30 minutes (depending on the thickness of the chicken breasts). Once your chicken is done baking, use two fork to shred the chicken. While your chicken is baking, get your soup ready. Heat 2 T of olive oil in a large pot over medium-high heat then add your minced garlic. Add onions, red bell pepper, jalapeño pepper, and poblano pepper. Mix around to help coat. Once your onions begin to become translucent, pour in your green chiles and diced fire roasted tomatoes, along with the rest of your spices. Mix together. Then add your shredded chicken and chicken stock to the pot. Simmer on low heat for 30 minutes.
- When your soup has simmered, add in your lime juice and a bit more salt and pepper. Add your soup to a bowl along with avocado, cilantro, and plantain chips.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Chicken Stroganoff by Real Simple

2 T olive oil
1 large onion
1 green bell pepper
1 red bell pepper
1 1/2 t sea salt
1/2 t black pepper
8 oz sliced mushrooms
4 chicken breasts, cut into 1/2 inch strips
1 c dry white wine
1 c chicken broth
2 T barbeque sauce
1 t Worcestershire sauce
2 T Dijon mustard
1 t hot sauce
1/2 c sour cream

- Heat 1 T of oil in a large saucepan over medium heat. Add the onions and cook, stirring frequently, until soft, about 8 minutes. Add the green and red pepper, 1/2 t of the salt, 1/4 t of the pepper, and the mushrooms. Continue cooking until the mushrooms give up their liquid, about 6 minutes. Place the vegetables and in a colander, reserving both vegetables and liquid. You should have about 1/2 c. Return pan to heat and add the remaining 1 T of oil. Season the chicken with the remaining 1 t of salt and 1/4 t pepper. Cook the chicken in batches until golden brown and cooked through, about 5 minutes. Add it to the vegetables. Pour the wine, broth and vegetable liquid into the pan and bring to a boil. With a wooden spoon, loosen any brown bits stuck to the pan and let cook in the sauce. Add the barbecue sauce, Worcestershire, mustard and hot sauce. Whisk until smooth. Boil until the liquid has reduced by half, to about 1 1/4 cups. The liquid should thicken slightly. Reduce heat and whisk in the sour cream. Do not let the sauce boil. Return the vegetables and chicken to pan and simmer until heated through. Serve garlic roasted cauliflower.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Paleo Chicken Nuggets

2 lb boneless, skinless chicken breast, cut into strips

2 eggs, whisked

1/2 c coconut flour

1/2 c almond flour

Pinch of salt

1 T garlic powder

1 T fresh or dried thyme

1/4 parmesan cheese

Black pepper, to taste

Coconut oil, for greasing pan

- Preheat oven to 350 degrees.
- Cut chicken into strips. In a shallow bowl, whisk together egg. In another shallow bowl, mix together coconut flour, almond flour, garlic powder, thyme, parmesan, pepper and salt. Dredge chicken strips in the whisked egg, then straight to the flour mixture. Coat on all sides then place on a plate. Repeat with all chicken strips.
- Place a large pan over medium heat. Add a tablespoon or two to the pan. Once the pan is super hot, add the strips to the pan without crowding it. Cook for about 1 minute on both sides. You may need to do this in 2-3 batches depending how big the strips are. Place the strips on a cooling rack that has been placed on top of a baking sheet. This will help the chicken strips cook on both sides without getting soggy. If you don't have a cooling sheet, you will just have to flip them half way through the baking. Place baking sheet in the oven and cook for 10-12 minutes or until no pink remains inside the chicken. Let cool on baking sheet before serving.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

SEAFOOD ENTREES

Salmon Burgers with Cilantro-Lime Vinaigrette by PaleOMG

For the patties:

1 lb salmon, skin removed
1 egg, whisked
1/2 cup almond flour
3 stalks celery, finely chopped
1 T olive oil
2 T fresh cilantro
1 T green onions
1 T dijon mustard
1 t salt
1/2 t pepper
1/4 t ground ginger

For the vinaigrette:

1/3 cup olive oil
2 T fresh cilantro
1-1/2 limes, juices squeezed
1/2 lemon, juices squeezed
1 T honey

- Pull out your food processor. Add all your patty ingredients to the food processor, except for the celery. Once everything is mixed, fold in the chopped celery. Make patties however big you want. Place on hot, greased skillet and cook on both sides for about 3–5 minutes or until cooked through. While the salmon burgers are cooking, make the vinaigrette. Add all vinaigrette ingredients to the food processor. Taste to perfect! Add salt if needed. Serve burgers with vinaigrette.

Fish Tacos

1 1/2 lb Snapper (or white mild fish of your liking)
2 T Olive Oil
Sea Salt, moderately sprinkled over fish
Cumin, generously sprinkled
Chili Pepper, generously sprinkled

- Heat oil over medium heat. Sprinkle seasonings on both sides of fish.
- Fry for 4–5 minutes on each side or until done. Serve on fresh coconut tortillas or lettuce wraps topped with honey lime coleslaw and mango-avocado salsa.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Spicy BBQ Shrimp

1/2 c Caesar dressing
1/3 c Worcestershire sauce
2 T butter
1 T dried oregano, paprika, rosemary and thyme
1 1/2 t black pepper
1 t hot pepper sauce
5 bay leaves
3 garlic cloves, minced
2 lb large shrimp
1/3 c dry white wine
10 lemon wedges

- Combine the first 11 ingredients in a large nonstick skillet; bring to a boil. Add shrimp, and cook 7 minutes, stirring occasionally. Add wine, and cook 1 minute or until shrimp are done. Serve over roasted cauliflower with lemon wedges.

Coconut Shrimp by Everyday Paleo

1 lb large shrimp, tail on peeled and deveined
1/3 c coconut flour
1/2 t sea salt
1/4 t cayenne pepper
3 egg whites
2 c coconut flakes

- Preheat oven to 400 degrees. In a mixing bowl, stir together the coconut flour, salt, and cayenne pepper. In a separate bowl, beat the egg whites until foamy. In another bowl, pour the coconut flakes. Taking one shrimp at a time, dry well with a paper towel and dredge each shrimp in the coconut flour mixture, dip into the egg whites and then roll into the coconut flakes. Bake on a lightly greased (with coconut oil) baking sheet for 12–15 minutes or until the shrimp are pink and the coconut flakes start to brown.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Baked Salmon with Citrus Vinaigrette by Fine Cooking

1 medium shallot, finely chopped
1 1/2 T champagne vinegar or white-wine vinegar
2 t fresh lemon juice
2 t fresh orange juice
1/2 T finely chopped lemon zest
1/2 T finely chopped orange zest
Pinch of salt
Kosher salt
4 5-oz skinless, center-cut salmon fillets
1/4 c extra-virgin olive oil; more for the salmon
Fresh cilantro for garnish (optional)

- Preheat oven to 400 degrees.
- In a small bowl, combine shallot, vinegar, lemon juice, orange juice, lemon zest, orange zest, and a pinch of salt. Let stand 5–10 minutes. Season the salmon with salt, place on an oil rimmed baking sheet and drizzle fish with oil. Bake to your liking, about 6 minutes for medium, 8 minutes for med-well.
- Whisk 1/4 c oil into the shallot mixture and serve over salmon with cilantro.

Salmon Broccoli and Sweet Potato Chowder by Real Simple

1 large onion, chopped (2 cups)
3 T butter
1/4 c all-purpose flour (sub arrowroot powder for paleo)
3 c chicken broth
2 c whole milk
1 large sweet potato, peeled
1 bay leaf
1 t fresh or dried thyme
1 pound skinless salmon fillet or 2 chicken breasts, or 1 pork tenderloin, meat cut into 1/2 inch cubes
1 large broccoli stalk, cut into pieces
1/4 t salt
Freshly ground pepper
Parmesan to serve

- In a large heavy saucepan, over medium heat, cook the onion in the butter until softened, about 5 minutes. Add the flour and stir until smooth. Whisk in the broth and milk, then add the sweet potato, bayleaf, and thyme. Bring to a boil, reduce heat, and simmer, stirring occasionally, 8 minutes. Add the fish or meat and broccoli; simmer 5 minutes for the salmon 7 minutes for the chicken or 10 minutes for the pork. Season with salt and pepper and serve with parmesan cheese.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Grilled Salmon with warm Blueberry-Coconut Vinaigrette by Yes

2 wild Alaskan Salmon fillets
1 t olive oil
Salt and pepper, to taste
1 T coconut oil
1 T white balsamic vinegar (regular works too)
1/4 c fresh or frozen blueberries
1/2 t grated lime zest
1/4 t sugar (optional)
2 cups torn romain, arugula or other salad greens (optional)

- Preheat grill to medium-high. Rub salmon with olive oil and season with salt and pepper. Grill salmon until opaque and flaky, about 5–7 minutes per side. Move to a plate and cover to keep warm. Place coconut oil in a small, microwave-safe bowl; microwave for 10 seconds to melt. Add vinegar and blueberries; microwave 30 seconds or until blueberries are soft. Stir in lime zest. If sauce is too tart, add the sugar. To serve, divide greens between two plates, place salmon on top and spoon the blueberry vinaigrette over the salmon.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Mahi Mahi over Sticky Rice with Mango Salsa by Paleo OMG

For the salsa:

1 mango, peeled and diced
1/4 red onion, finely diced
1/2 red bell pepper, finely diced
1/2 jalapeño, finely diced
1 avocado, peeled and diced
Juice of 1 lime
1/4 t of coarse sea salt

For the rice:

2 T coconut oil
1 head cauliflower, roughly chopped
1/2 cup canned coconut milk or coconut cream
Pinch of salt
1/4 cup unsweetened shredded coconut

For the fish:

2 T butter
1 T olive oil
4 pieces of mahi mahi
1/2 t coarse sea salt

- Mix together salsa ingredients and place in fridge.
- Add chopped cauliflower to a food processor with the shredding attachment to “rice” the cauliflower.
- Place over large pot over medium heat, add coconut oil then add riced cauliflower. Add coconut milk/cream along with a little salt. Mix together to incorporate and let cook for 10–12 minutes or until soft. Once soft, add shredded coconut, mix, then turn down heat to low to keep warm.
- Add a large sauté pan over medium-high heat. Add butter and olive oil. Once very hot, pat mahi mahi dry and salt on both sides, then add to the pan and cook on both sides for 5–7 minutes. Do not crowd pan because that will make the fish steam instead of getting a nice crust on both sides. Cook in batches, if needed.
- Place mahi mahi on top of coconut rice, top with mango salsa and garnish with cilantro and shredded coconut.

PORK ENTREES

Crockpot Pulled Pork

1 (4–6 lb) boneless pork butt or shoulder
1 large Vidalia onion, sliced thin
2 T brown sugar
1 T paprika
2 t kosher salt
1/2 t freshly ground black pepper
3/4 c cider vinegar
4 t Worcestershire sauce
1 1/2 t crushed red pepper flakes
1 1/2 t sugar
1/2 t dry mustard
1/2 t garlic salt
1/4 t cayenne pepper

- Rinse pork roast under cold water and pat dry with paper towels. Place onions in crock-pot. In a small bowl, combine brown sugar, paprika, kosher salt and pepper; mix thoroughly. Rub mixture all over roast and place the roast on top of the onions. In a medium bowl, combine vinegar, Worcestershire, red pepper flakes, sugar, mustard, garlic salt and cayenne pepper; whisk to combine. Drizzle about 1/3 of vinegar mixture over roast. Cover and refrigerate remaining vinegar mixture. Cover crockpot; cook on low for 10–12 hours. Drizzle about 1/3 of reserved vinegar mixture over roast during last 1/2 hour of cooking. Remove meat and onions; drain. Chop or shred meat and onions. Serve with remaining vinegar mixture or your favorite barbeque sauce.
- Great paired with honey-lime coleslaw and/or sweet potato fries.

Chimichurri Pork Tacos by Yes

1/2 c chopped fresh cilantro
1 clove garlic, minced
3 T olive oil, divided use
Salt and pepper
1 lb pork tenderloin
8 corn tortillas
Chimichurri sauce
Cheddar cheese
Avocado slices

- Combine cilantro, garlic and 2 T of olive oil in a small bowl. Rub mixture all over pork and marinate in the refrigerator for at least 30 minutes up to overnight. Preheat grill to medium-high. Grill pork until done, about 7 minutes per side. Move pork to a plate and let rest. Cut pork into bite size pieces. Serve pork on coconut flour tortillas and top with chimichurri sauce, avocado and cheddar cheese. Also good served on top of Honey-Lime Coleslaw.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Paleo Baked Apple and Pork Chops

4 (or more) Pork Chops (preferably from an organic source)
2 (or more) apples, peeled and sliced into thin slices
1/4 c Balsamic Vinegar
Salt and pepper, to taste
Fresh rosemary, to taste
2 T butter

- Preheat oven to 350 degrees.
- Melt butter in glass baking dish and then place pork chops on top.
- Season with salt, pepper, rosemary and any other desired spices and pour balsamic vinegar over all.
- Top with apples (I saute them in butter first to make sure the apples get soft)
- Bake in oven 20–30 minutes until an internal temp of at least 140.
- Alternatively, you could cook pork chops and apples together in large skillet. This only takes about 15 minutes.

Paleo Pork Fried Rice

3 T sesame or coconut oil, divided use
1 white or yellow onion, thinly sliced
1 1/2 lb of meat, raw or cooked; chicken, steak, pork or shrimp, cut into small pieces
4 T tamari or soy sauce, divided use
1 large garlic clove, minced
1 head of cauliflower, grated in food processor or chopped finely
2 eggs, beaten
1 c carrots, diced or shredded
4 scallions, roughly chopped

- Heat wok or large skillet over high heat and add 1 T of coconut oil. Add onion and sauté until it starts to brown, about 2 minutes.
- Add the meat and 1 T of tamari. Sauté 2–3 minutes (or longer for raw meat) then add the remaining sesame oil, garlic, carrots and the cauliflower. Sauté 2–3 minutes.
- Add the eggs and remaining tamari. Stir constantly as the egg cooks, then add chopped scallions. Cook just a minute or two more. Serve immediately.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Omega-3 Salad by The Paleo Diet for Athletes

1 lb fresh spinach
2 T lime juice
Pepper to taste
1/4 c flaxseed oil or olive oil
1 T honey
1 avocado, diced
8 ounces pork loin (cooked, cooled and diced)
2 hard boiled eggs

- To make dressing, mix together lime juice, oil, honey and pepper to taste.
- Toss spinach, dressing, pork, eggs and avocado together in a bowl and serve.

Crockpot Pork Green Chili by Paleo OMG

2 lb pork roast
1 yellow onion, chopped
2 garlic cloves, minced
3 (4 oz) can diced green chiles
2 anaheim chilis, seeds removed and chopped
1 poblano pepper, seeds removed and chopped
1–2 jalapeño peppers, diced
2 c chicken or beef broth
1 (8oz) can of diced tomatoes
1 t oregano
1 t salt
1 t white pepper
1/2 t cumin
1/2 t sage
1/2 t paprika
1/2 t cayenne pepper

- Place your pork roast in the crockpot and place all the veggies around it. Pour your green chiles and tomatoes over the pork. Toss in all the spices on top.
- Pour your broth in the crockpot. Turn your crockpot on low and cook for 6–8 hours.
- Once the time has elapsed, use some tongs to shred your pork and mix all the ingredients together. Top with cheese, avocado and fresh cilantro.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Italian Sausage and Veggie Soup

1 lb Italian sausage links, cooked and diced
15 oz can crushed tomatoes
2–4 c water
2 cans chicken broth
1 c mushroom slices
2 carrots, diced
Oregano to taste
Garlic to taste
Pepper
2–3 zucchinis, sliced and quartered
Parmesan cheese, shredded

- Brown sausage in nonstick pan and move to a stockpot or large pan. Add tomatoes, water, broth, mushrooms, carrots, and seasonings. Simmer for 20 minutes. Add zucchini. Simmer for 10 minutes. Sprinkle parmesan cheese on each serving of soup.

Paleo Pizza by Everyday Paleo

Crust:

2 c almond meal
2 eggs
3 T olive oil
1/4 t baking soda
1 t garlic powder
1 1/2 T fresh or dry basil

Our favorite toppings:

1 lb Spicy Italian Sausage
1 pkg pepperonis
1/2 jar of marinara sauce
2 c mozzarella cheese, optional
1/2 c parmesan cheese, optional

Your choice of toppings: black olives, jalapenos, bell peppers, mushrooms, fresh basil, etc.

- Preheat oven to 350 degrees.
- Using a spoon, mix crust ingredients together until it becomes very thick. Using your hands, form the dough into a ball.
- Lightly grease a pizza pan or a cookie sheet with olive oil. Place the ball of dough in the center of your cookie sheet or pizza pan and using your hands, push and pat the dough into the shape of a circle, making the dough as thin as possible. Your pizza will be about 12 inches across.
- Bake just the crust in your preheated oven for 20 minutes.
- While the crust is cooking, prepare your toppings. Brown the sausage in a large skillet.
- After the crust is done, remove from the oven and evenly spread the marinara sauce over the crust.
- Then add the meats and remaining ingredients that you choose, top with cheese, if using and bake again for an additional 25–30 minutes.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

SAUCES, SALSAS AND DIPS

Mango-Avocado Salsa

1 mango, diced
1 avocado, diced
1/2 jalapeno, diced
Sea salt, to taste
Pepper, to taste
Shallot chopped finely, to taste
1/2 lime juiced
Cilantro, finely chopped

- Combine all ingredients and serve.
- Great with Fish Tacos!

Blueberry Salsa

2 c fresh blueberries, coarsely chopped
1 medium shallot, finely chopped
1 jalapeno, seeded and minced
1 T fresh cilantro, chopped
1 lime, squeezed for juice
1 t fresh ginger, minced
1/4 t salt

- Mix everything together and scoop on top of your favorite protein. This salsa is delicious and will taste amazing on steak, fish, pork, bacon, anything!!

Chimichurri Sauce

1 c fresh italian parsley and cilantro
1/2 c fresh basil
1/4 c chopped onion
1 garlic clove
1/2 t salt
6 T olive oil
2 T rice vinegar

- Chop up parsley, cilantro, basil, onion, garlic.
- In a food processor, mix all herbs, onions and garlic.
- Add olive oil and vinegar while blending.
- Blend to desired consistency.
- Great served with any grilled meat, especially good with Chimichurri Pork Tacos.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Easy Homemade Mayo by Primal Blueprint and Garlic Aioli

For Mayo:

1 fresh egg yolk
1/2 t dijon mustard or mustard powder
1 T red wine vinegar or lemon juice
Pinch salt
1/2 c highest quality olive oil

For Garlic Aioli:

3/4 c Mayo
3 cloves of garlic
2 1/2 T lemon juice
3/4 t salt
1/2 t black pepper

- All ingredients should be brought to as close to room temperature as possible before beginning.
- Place the egg yolk in a sturdy bowl and mix with a whisk for 1 minute.
- Add the mustard, vinegar (or lemon juice), and salt to the bowl, whisk again to incorporate.
- With one hand (or do this with a partner), whisk constantly from the time you begin dropping in the oil until about 2/3 of the way through the oil to be added. Be prepared not to be interrupted for a few minutes.
- At first, drop in the oil drop by drop, gently whisking constantly to form an emulsion. After about 2 TB of oil has been incorporated, change the oil to a thin stream, rather than slow drops.
- Once all the oil is whisked in, your mayonnaise is ready to use. Eat within about 2 days and keep refrigerated at all times until serving.
- To make Garlic Aioli: Mix mayo, garlic, lemon juice, salt and pepper in a blender, blend until smooth. Place in serving bowl and chill for at least 30 minutes before serving.

BREADS AND DESSERTS

Paleo Drop Biscuits

4 eggs
1/4 c coconut oil or butter, melted
1/4 t salt
1/4 t onion powder
1/3 c sifted coconut flour
1/4 t baking powder
1/2 c sharp cheddar cheese, shredded, optional

- Blend together eggs, butter, salt, and onion powder. Combine coconut flour with baking powder and whisk into batter until there are no lumps. Fold in cheese. If using. Drop batter by the spoonful onto a greased cookie sheet. Bake at (400F) for 15 minutes. For a cheesier biscuit increase cheese to $\frac{3}{4}$ cup.

Paleo Banana Bread

3 very ripe bananas (about 1 1/2 cups) mashed
3 eggs
2 t vanilla extract
1 t almond extract (optional, but we love it!)
1 T honey (agave or maple would work too)
1/4 c coconut oil, melted
2 c almond meal
1/2 t salt
1 t baking soda

- Preheat oven to 350 degrees. Grease a loaf pan.
- Add the bananas, eggs, vanilla, honey and coconut oil in a food processor and pulse until the ingredients are combined.
- Add in almond flour, salt and baking soda and pulse a few times.
- Dump batter into a greased loaf pan.
- *Use a 4x8 inch pan. The larger the pan, the flatter the loaf will be, so use a smaller loaf pan to add height to your bread.
- Bake for 55–65 minutes, until a toothpick inserted comes out clean.
- Remove from oven and allow to cool in the pan.
- Remove from the pan, slice and serve.
- Store in an airtight container for up to 4 days.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Chocolate Custards by Primal Blueprint

1 to 2 T unsalted butter or coconut oil to grease custard dish
5 large eggs
1 1/2 cans coconut milk, not light or reduced fat
1/4 c maple syrup (can use less)
1 T vanilla extract
3 T dutch processed cocoa, dissolved in a few tablespoons of hot water to make a smooth paste
1/2 c grated unsweetened coconut (optional)
Freshly grated nutmeg for “dusting” (optional)

- Preheat oven to 325 degrees.
- Put some water on to boil; it will be used to create a bain marie for the baking dish.
- Lightly grease a 1 1/2 quart soufflé dish or casserole or ramekins* with butter or coconut oil.
- In a medium bowl, whisk eggs for 1–2 minutes. Add coconut milk and mix well. Add maple syrup and vanilla and whisk to combine, then add cocoa paste and whisk well. Add grated coconut, if using and stir well (coconut will rise to the top). Pour mixture into greased baking dish and set dish into baking pan in the oven. Sprinkle grated nutmeg over top of custard mixture. Carefully pour boiled water into the baking pan (not the custard dish) until water is halfway up the side of the custard dish. Bake the custard for about 35–40 minutes or until set in the center (sharp knife inserted into custard center will be clean when removed). Remove from oven and cool.

Paleo Honey Cornbread

8×8 pan—greased generously with coconut oil or lined with parchment paper
1/4 c of butter
2 T coconut oil
3 pastured eggs, beaten
1/2 t pure vanilla extract
2 to 2 1/2 T honey (to taste)
1 c Almond Flour
1 t baking powder
1/4 t sea salt

- Preheat oven to 325 degrees. Melt butter and coconut oil in the microwave or over slow heat on stove top. Stir in and combine with eggs, vanilla and honey. In a separate bowl, combine flour, baking powder and sea salt. Add wet ingredients to dry and stir until they are combined well (Don't overdo it!). Pour into your pan and stick it in the oven for 20–25 minutes. Test with a fork or toothpick in the center. When it comes out clean, it is done. Goes great with winter soups and sloppy joe's.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

Coconut Flour Tortillas by Bob's Red Mill

1/4 c plus 2 T Non-Dairy milk

1/4 t lemon juice

1/4 c coconut flour

1/8 t sea salt

8 egg whites

- Combine milk and lemon juice. Set aside. In a medium bowl, sift together coconut flour, baking soda and salt. Add milk mixture and egg whites to dry ingredients and whisk well. Let sit for 10 minutes to thicken.
- Preheat an 8 inch skillet over medium-low heat. Coat the pan with oil, then pour in 1/4 c of batter, quickly swirl the batter to make a thin layer that covers the bottom of the pan. Cook until the center is set, about 1 minute. Loosen the edges with a spatula and gently flip over, cook 1 minute. Remove and repeat with remaining batter, greasing pan in between each tortilla.

CrossFit Kids Nutrition and Lifestyle: Recipes, continued

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PROTECTING CROSSFIT KIDS FROM PREDATION

“The decision to have a child is momentous because it is to decide forever to have your heart go walking around outside your body.”

—Elizabeth Stone

As CrossFit Kids trainers, the gravity of teaching children is fully within our direct influence. We must protect and mitigate risk to kids’ well-being while under our care at the gym, and we further must educate both them and their primary care-givers to help protect throughout the other 23 hours of the day. Through mentorship, education, awareness, and training, we have the opportunity to make a dramatic impact upon our kids’ safety.

CHILD-ABUSE PREVENTION

By: Todd Rakos, CrossFit Kids Magazine, September—October 2009

Most of you who are running a CrossFit Kids program are doing so because you have a genuine interest in helping children; unfortunately that is not true for everyone. I would like to spend a little time to educate you on what to look for in the area of child abuse that will hopefully give you the tools to spot abuse and help limit your liability as a child instructor.

Most states have laws that require certain occupations—like teachers, health-care professionals, social workers, and members of law enforcement—to report suspected child abuse when they encounter it. I feel, however, that is the duty of all adults regardless of their profession to make such a report (Canada already has such a requirement).

There are two basic types of child abuse—sexual and physical—and for both types the abusers can be men or women. About 90 percent of the time the abuser is a family member or relative.

SEXUAL ABUSE INDICATORS

There are several indicators you may see in a child that might indicate sexual abuse; some are more obvious than others. Obviously if a child complains of pain or bleeding in the anal or genital area, you should be concerned, but the child might not verbalize this; you might only notice the child has difficulty walking or sitting. While children seem to have knowledge about sex at an ever-decreasing age, you still should be concerned if a child has an inappropriate knowledge about sex. You should also be concerned if the child tends to have inappropriate play with toys, him- or herself or others, or seems overly affectionate. Sexually abused children often have poor peer relationships. They have been taught that sexual contact is normal, and when they try to transfer that conduct to their peers, they become ostracized. Lastly, you should be wary of a sudden, unexplained change of behavior. Why has your normal student suddenly started acting differently? Maybe the single parent is dating someone new, or a new person has moved into the neighborhood and the abuse has just started.

PHYSICAL ABUSE INDICATORS

Again there are several indicators you might see in a child who is being physically abused. The most obvious are unexplained injuries or explanations of injuries that are inconsistent with the injury. You might also find that the child is frightened of a parent or caretaker and is afraid to go home after class or is wary of all adult contact. As is the case with sexual abuse, a sudden change in behavior or performance might indicate a new dynamic in the child’s life. You

will also find that a victim of physical abuse often has a poor self-image and is subject to behavioral extremes. The child has been told he is no good and is desperately trying different behaviors in an attempt to find the one behavior that will be met with acceptance.

WHAT SHOULD YOU DO

There are several things I recommend you do to help protect the children you teach. First, have a set of safety rules in place and make sure all of your trainers are aware of them and follow them. Require your parents to get out of their cars and walk inside your facility to drop off and pick up their children. When teaching classes, always do it in the open and have a place where parents can sit and watch the class and feel comfortable. Establish safe areas in your facility. Children often come early to class or are sometimes picked up late. Have a designated area where they are to wait during this time. This area should be out in the open where they can be observed by you and your trainers. Have a well-established presence in your facility. Know when someone new walks in and greet him or her promptly. Be aware of what happens in and around your facility. Know if one of your adult clients seems to always be hanging around after class to watch the children's class or is always hanging around in the parking lot. And lastly, if you suspect abuse, report it to your local law enforcement and child protective agencies. These reports can be made anonymously if you are more comfortable that way. Often we as a society tend to suppress our natural ability to know when something does not look right. We rationalize it away and then later say we did not feel right about somebody but were afraid to offend. Remember, it is always better to err on the side of caution when it comes to protecting children.

CHILD INTERNET SAFETY

Next I would like to talk about Internet safety for children and what parents should look for to help keep their children safe. I will talk about signs that your child might be at risk, methods abusers use to get child victims, and tips you can use to protect your child. The Internet has become the newest way for adult abusers to locate potential child victims. Where an adult abuser used to have to venture out in public and risk being noticed, he can now troll the Internet in anonymity.

SIGNS THAT A CHILD MIGHT BE AT RISK

You should be wary if your child spends large amounts of time on the Internet, especially at night. Like most adults, abusers also work during the day, so it is the nighttime that they have free to look for victims. You should also be concerned if you discover large amounts of pornography on your computer. Predators will often send pornography to children as a way of making it seem normal. An at-risk child might also receive phone calls from unknown numbers—sometimes long distance—or will receive gifts or packages from someone the parent doesn't know. You should be concerned if the child suddenly turns off the computer or changes screens when you enter the room or you discover they are using an Internet account that belongs to someone else. It is also important to be aware if the child suddenly becomes withdrawn from the family; remember, the predator wants to be the child's best friend and confidant, and the best way to do this is to get the child less dependent on you as the parent.

GROOMING

"Grooming" is the term used to describe the way predators use to get to their victims. It is simple manipulation of the victim and their way to get from bad intention to sexual exploitation. It often involves flattery, sympathy, or offers of gifts, money, or jobs. Its intent is to make the victim feel loved or comfortable enough to meet in person. Remember, while the predator is enjoying his online time, his ultimate goal is to meet the child in person.

Protecting CrossFit Kids From Predation, continued

The predator will often first meet the victim in a public chat room but will soon ask to go to a private chat area. They will then ask the victims questions to get to know them better. They will ask where the computer is located in the house so they can determine the risk of a parent watching the conversation. Then they will want to know the child's interests or favorite bands, designers, or films. They will often use this information to send the victim gifts. Predators will often offer to help the victims get jobs or money as a way of ingratiating themselves into the child's life. Ultimately, they will ask for the child's phone number as a way to make the contact more personal. If none of these tactics seem to be getting the predator closer to an in-person meeting, they may finally result to threats. They will threaten to tell the child's parents or make public the private conversations the child has been sharing.

PARENT TIPS

So what can parents do to help protect their children? The most important thing is to talk to your children. In an age-appropriate manner, warn them of adult predators and the grooming methods they employ. Set reasonable rules and guidelines for their Internet usage. Know your child's friends. Is there some new friend in your child's life that they are reluctant to talk about? Are the friends your child used to have no longer coming around (remember, the predator is trying to come between the child and everyone else)? And lastly, investigate. Monitor the websites your child goes to; learn how to check the computer's history. Check your child's cell phone and bill for unknown numbers or suspicious or coded text messages. Look in your child's room. Parents often try too hard to be a child's friend instead of a parent. It is your job to protect as best you can, while that may be upsetting to the child now, in the long run he or she will thank you for it.

8 RED FLAGS FOR IDENTIFYING CHILD PREDATORS

By: Yello Dyno, *Protecting Children from Child Predators*, www.yellodyno.com

- 1) If someone enjoys being around your child more than you do.
- 2) A much older child or adult spends excessive amounts time with your child.
- 3) Your child has new toys or gifts you did not buy.
- 4) Your child speaks knowledgeably of places and activities you did not introduce him or her to.
- 5) A person continually offers to care for your child to give you a "breather" or time for yourself. (He or she often does not want payment for watching your child).
- 6) A person comes to your house regularly to spend time with or transport your child to activities.
- 7) A person engages in activities that involve only him/herself and your child; activities that do not require others to be present.
- 8) A person is preoccupied with and/or stares at your child.

QUESTIONS FOR YOUR CHILD'S SCHOOL

By: Gavin de Becker, *Protecting the Gift*, 1999

- Do you have a policy manual or teacher's handbook? May I have a copy or review it here?
- Is the safety of students the first item addressed in the policy or handbook? If not, why not?
- Is the safety of students addressed at all?
- Are there policies addressing violence, weapons, drug use, sexual abuse, child-on-child sexual abuse, unauthorized visitors?
- Are background investigations performed on all staff?

Protecting CrossFit Kids From Predation, continued

- What areas are reviewed during these background inquiries?
- Who gathers the information?
- Who in the administration reviews the information and determines the suitability for employment?
- What are the criteria for disqualifying an applicant?
- Does the screening process apply to all employees (teachers, janitors, lunchroom staff, security personnel, part-time employees, bus drivers, etc.)?
- Is there a nurse on site at all times while children are present (including before and after school)?
- What is the nurse's education or training?
- Can my child call me at any time?
- May I visit my child at any time?
- What is your policy for when to contact parents?
- What are the parent-notification procedures?
- What are the student pickup procedures?
- How is it determined that someone other than I can pick up my child?
- How does the school address special situations (custody disputes, child kidnapping concerns, etc.)?
- Are older children separated from younger children during recess, lunch, rest-room breaks, etc.?
- Are acts of violence or criminality at the school documented? Are statistics maintained?
- May I review the statistics?
- What violence or criminality has occurred at the school during the last three years?
- Is there a regular briefing of teachers and administrators to discuss safety and security issues?
- Are teachers formally notified when a child with a history of serious misconduct is introduced to their class?
- What is the student-to-teacher ratio in class? During recess? During meals?
- How are students supervised during visits to the rest room?
- Will I be informed of teacher misconduct that might have an impact on the safety or well-being of my child?
- Are there security personnel on the premises?
- Are security personnel provided with written policies and guidelines?
- Is student safety the first issue addressed in the security policy and guidelines material? If not, why not?
- Is there a special background investigation conducted on security personnel, and what does it encompass?
- Is there any control over who can enter the grounds?
- If there is an emergency in a classroom, how does the teacher summon help?
- If there is an emergency on the playground, how does the teacher summon help?
- What are the policies and procedures covering emergencies (fire, civil unrest, earthquake, violent intruder, etc.)?
- How often are emergency drills performed?
- What procedures are followed when a child is injured?
- What hospital would my child be transported to in the event of a serious injury?
- Can I designate a different hospital? A specific family doctor?
- What police station responds to the school?
- Who is the school's liaison at the police department?

Protecting CrossFit Kids From Predation, continued

QUESTIONS FOR BABY-SITTERS AND NANNIES

By: Gavin de Becker, *Protecting the Gift*, 1999

- What is your philosophy about discipline?
- Have you ever suspected that a child in your care was being sexually molested by someone?
- What discipline method did your parents use?
- Do you have children of your own?
- Do you have younger siblings?
- Why do you do this work?
- Have you ever been in an emergency situation while baby-sitting?
- Have you ever been in an emergency situation?
- What is your opinion of drugs and alcohol?
- Describe a problem you had in your life where someone else's help was very important to you.
- Who is your best friend and how would you describe your friendship?
- Describe the best child you ever baby-sat.
- Describe the worst child you ever baby-sat.
- Are you willing to provide a copy of your driving record, credit report, and a list of references?

THE TEST OF TWELVE

By: Gavin de Becker, *Protecting the Gift*, 1999

Do your children know...

- 1) How to honor their feelings—if someone makes them uncomfortable, that's an important signal;
- 2) You (the parents) are strong enough to hear about any experience they've had, no matter how unpleasant;
- 3) It's OK to rebuff and defy adults;
- 4) It's OK to be assertive;
- 5) How to ask for assistance or help;
- 6) How to choose who to ask;
- 7) How to describe their peril;
- 8) It's OK to strike, even to injure, someone if they believe they are in danger, and that you'll support any action they take as a result of feeling uncomfortable or afraid;
- 9) It's OK to make noise, to scream, to yell, to run;
- 10) If someone ever tries to force them to go somewhere, what they scream should include, "This is not my father!" (because onlookers seeing a child scream or even struggle are likely to assume the adult is a parent);
- 11) If someone says "Don't yell," the thing to do is yell (and the corollary: If someone says "Don't tell," the thing to do is tell);
- 12) To fully resist ever going anywhere out of public view with someone they don't know, and particularly to resist going anywhere with someone who tries to persuade them.

Protecting CrossFit Kids From Predation, continued

SUGGESTED READING:

[NSOPW.gov](https://www.nsopw.gov/)

[National Sex Offender Registry](https://www.ncsopw.gov/)

[Information and Education](https://www.d2l.org/the-issue/statistics/)

Darkness To Light (<https://www.d2l.org/the-issue/statistics/>)
and (https://www.d2l.org/wp-content/uploads/2017/01/all_statistics_20150619.pdf)

From the CDC
(<https://www.cdc.gov/violenceprevention/childabuseandneglect/index.html>)

Gavin de Becker. 1999. The Gift of Fear and Other Survival Signals that Protect Us From Violence.

Gavin de Becker. 2000. Protecting the Gift.

[Life 360 app](#)

MOVEMENTS

INTRODUCTION

The purpose of this section is to provide an organized, easy-to-reference, uniform method of teaching children's cues for the 10 CrossFit Kids Foundational Movements (the 9 Foundational Movements from the CrossFit Level 1 Certificate Course, plus the thruster). In this document, the term "CrossFit Kids" will reference all children 3–18 years of age. Some cues and teaching methods will vary across the CrossFit Kids age spectrum (Preschool: ages 3–5; Kids: ages 5–12; Teens: ages 12–18) due to proven effectiveness with a particular age group, and the specific class designator will be used in that particular case.

It is imperative when teaching children to be very clear and descriptive (yet simple) in explaining movement and instruction. Four universally successful teaching methods are:

- 1) Give children information where to start, where to go, and where to finish every movement.
- 2) All movements, regardless of age group, begin unloaded (nothing in their hands) before subsequent load (PVC pipe or more) is used.
- 3) Tell children what you want them to do, as opposed to what you do not want them to do; i.e., "Stand all the way up at the top of the squat" instead of "Don't short the top of the squat."
- 4) Try to teach and cue children as a class. Most children do not want to be separated from the group; be very careful with singling them out. Instead, endeavor to give cues and corrections that can be performed with multiple athletes participating.

We have found these four general methods to be very effective. You will most certainly have other methods—just be sure to always make it fun; a child's lifelong outlook of fitness is being forged by a coach's approach to training.

Movements, continued

SQUAT

SQUAT TEACHING POINTS

There are four primary teaching points:

1. Stance
2. Hips Back
3. Bottom Position
4. Finish Position

1. Stance—This is where to start

Adult Cue

Feet shoulder width apart, toes slightly turned out, weight rooted through the heels.

Preschool and Kids Cue

Thumbs on outside of shoulders, match heels to thumbs (and/or tape on ground about 12" apart and match heels to the tape).

Teens Cue

Thumbs on the outside of shoulders, match heels to thumbs (and/or tape on the ground about 18" apart and match heels to the tape).

2. Hips Back

Adult and Teens Cue

Butt back and down.

CrossFit Kids Cue

Hips back.

Have the CrossFit Kid(s) put their hands out and then grab their hips; explain that these are their hips. Then, telling them to keep their chest up and knees straight, have them push their hips back and re-stand, bending only at the hip. Ensure the hips are doing the moving backwards and forwards, not the chest falling and rising.

3. Bottom Position—This is where to go

Adult and Teens Cue

Crease of the hip below the knee.

CrossFit Kids Cue

Pockets below the knees.

Have the kids interlock their thumbs and push their arms straight out in front of their body so the hands make a butterfly (rockets, eagles, block out the sun, etc.) in front of their face. Then repeat the "hips back" drill from above several times, this time with arms raised. Then have them push their hips back and sit down so the pockets are below the knees.

4. Finish Position—This is where to finish

Adult and Teens Cue

Stand all the way up/knees and hips fully open at the top with a neutral spine and body bisected by the frontal plane.

CrossFit Kids Cue

Stand up like a superhero.

Have the CrossFit Kid(s) stand tall and the end of the movement, chest out like a superhero and hands on hips.

Movements, continued

SQUAT POINTS OF PERFORMANCE

	Preschool	Kids	Teens
1	Stance	Stance	Stance
2	Begin movement w/ hips	Begin movement w/ hips	Begin movement w/ hips
3	Stand tall at top	Hips below knees	Chest up and lumbar curve maintained
4		Stand tall at top	Weight in heels
5			Knees in line w/ feet
6			Full range of motion

SQUAT THERAPY—PROBLEMS AND FIXES

Fault	Cause	Fix
Knees cave in on descent and/or ascent.	Weakness, flexibility, or Teens using too heavy a load.	PVC outside of pinky toes perpendicular to the ground. Knees pushing out to and in contact with the PVC throughout the full ROM.
Sliding	Disengagement of the hamstring	Bench in front of the knees.
See-Saw	Disengagement of the hamstring then reengagement in the ROM	Bench in front of the knees
Falling backwards	Flexibility, posterior chain awareness, and/or balance	Position back towards a wall and squat down with butt sliding vertically along the wall.
Hips back at top, but then straight descent	Flexibility, balance, or awareness	Position back towards a wall and squat down with butt sliding vertically along the wall.
Weight shifts forward onto mid-foot	Flexibility, balance, or awareness	Reinforce hips back and down and wiggle toes throughout the squat. If there's still a problem, then slide butt down the wall, pause at the bottom.
Loss of lumbar curve or chest down	Flexibility, balance, or awareness	Wall squat facing the wall (or use trainer shelf). Slowly move the closer to the wall or raise trainer shelf as they improve.
Depth	Perception and/or flexibility	Verbal cue for Preschool. Verbal cue and squat to med-ball/D-ball as skill work for Kids and Teens.

Movements, continued

FRONT SQUAT

FRONT SQUAT TEACHING POINTS

There are two primary teaching points:

1. Air Squat
2. Rack Position

1. Squat

The front squat builds off the mechanics of the squat; nothing discussed in the squat changes. Start the front squat by reviewing the squat, and remind Kids and Teens the front squat is the receiving position for the Olympic clean.

2. Rack Position—This is where to start/finish

Adult Cue

Bar racked on shoulders, hands outside shoulders, loose fingertip grip on barbell, elbows high with upper arm parallel to the ground.

Preschool and Kids Cue

Unloaded or dumbbell only. Hands on shoulders, pretend elbows are lasers, point lasers at targets on the wall.

Teens Cue

Bar racked on shoulders, hands outside shoulders, loose fingertip grip on barbell, elbows high with upper arm parallel to the ground.

Movements, continued

FRONT SQUAT POINTS OF PERFORMANCE

	Preschool	Kids	Teens
1	Stance	Stance	Stance
2	Rack position	Rack position	Rack position
3	Begin movement w/ hips	Begin movement w/ hips	Begin movement w/ hips
4	Stand tall at top	Hips below knees	Bar in contact with torso
5		Stand tall at top	Bar path in frontal plane
6			Chest up and lumbar curve maintained
7			Weight in heels
8			Knees in line w/ feet
9			Full range of motion

FRONT SQUAT THERAPY—PROBLEMS AND FIXES

Fault	Cause	Fix
Chest down and/or elbows down	Flexibility, balance, strength, or awareness	CrossFit Kids trainer shelf and slowly raise the shelf as they improve
Bar not in contact with body	Flexibility, awareness, or laziness	Teens—roll the bar back onto shoulders and push elbows up

Movements, continued

OVERHEAD SQUAT

OVERHEAD SQUAT TEACHING POINTS

There are two primary teaching points:

1. Air Squat
2. Overhead Position

1. Squat

The overhead squat builds off the mechanics of the squat; nothing discussed above changes. Start the overhead squat by reviewing the squat, and remind Kids and Teens the overhead squat is the receiving position for the Olympic snatch.

2. Overhead Position—This is where to start/finish

Adult Cue

Bar is overhead in the frontal plane, active shoulders, armpits forward and elbows locked in extension.

Preschool and Kids Cue

Unloaded and as skill work only; make a “Y” and hold up the sky.

Advanced Kids and Teens Cue

Make a “Y” and hold up the sky, or bar overhead and cover your ears with your shoulders.

Movements, continued

OVERHEAD SQUAT POINTS OF PERFORMANCE

	Preschool	Kids	Teens
1	Stance	Stance	Stance
2	Overhead position	Overhead position	Overhead position
3	Pockets below knees	Pockets below knees	Bar path in frontal plane
4	Stand tall at top	Stand tall at top	Chest up and lumbar curve maintained
5			Bar path in frontal plane
6			Weight in heels
7			Knees in line w/ feet
8			Full range of motion

OVERHEAD SQUAT THERAPY—PROBLEMS AND FIXES

Fault	Cause	Fix
Chest down and/or hands not overhead	Flexibility, balance, strength, or awareness	Preschool and Kids—tap their hands or move them to overhead. Teens—verbal cue “pull the bar back”; if it is still in the improper place, move them to overhead.
Loss of active shoulders	Flexibility, strength, awareness	Preschool and Kids—tell them to hold up the sky; if there’s still a problem, tap their hands and move to overhead. Teens—Verbal cue “active shoulders”; if there’s still a problem then move to the proper position.

Movements, continued

PRESS

PRESS TEACHING POINTS

There are four primary teaching points:

1. Stance
2. Rack Position
3. Overhead Position
4. Bar Path

1. Stance

Adult and Teens Cue

Feet hip width apart.

CrossFit Kids Cue

Have Kids jump up and down several times, and then yell “freeze.”

2. Rack Position—This is where to start/finish

Adult Cue

Hands outside shoulders, elbows down and slightly in front of the bar, tight midsection and closed grip with thumbs around bar.

Preschool and Kids Cue

Fists on thighs with thumbs pointed out. Then put thumbs on shoulders and point elbows at the trainer’s knees.

Teens Cue

Hands outside shoulders, elbows down and slightly in front of the bar, tight midsection and closed grip with thumbs around the bar.

3. Overhead Position—This is where to go

Adult Cue

Active shoulders, elbows fully open, bar overhead and in the frontal plane.

Preschool and Kids Cue

Unloaded and/or dumbbells only, pretend to hold up the sky.

Teens Cue

Bar overhead and cover your ears with your shoulders.

4. Bar Path

Adult Cue

Bar starts in the rack position, drive through heels, keep whole body rigid, bar travels straight up, head moves slightly back to accommodate the bar, press to locked-out arms with active shoulders.

Preschool and Kids Cue

Unloaded and/or dumbbells only, pretend to press up the sky.

Teens Cue

Bar starts in the rack position, drive through heels, keep whole body rigid, bar travels straight up, head moves slightly back to accommodate the bar, press to straight arms with shoulders over your ears.

Movements, continued

PRESS POINTS OF PERFORMANCE

	Preschool	Kids	Teens
1	Stance	Stance	Stance
2	Rack position	Rack position	Rack position
3	Overhead position	Bar path	Bar path
4		Overhead position	Tight midsection
5			Overhead position
6			Active shoulders

PRESS THERAPY—PROBLEMS AND FIXES

Fault	Cause	Fix
Bar forward of frontal plane	Awareness	Preschool and Kids—tap their hands and move them to overhead while cueing “hold up the sky.” Teens—verbal cue “pull the bar back.”
Elbows not open and/or shoulders not active in overhead position	Strength, awareness	Preschool and Kids—tap their hands and move to overhead while cueing “the sky is heavy.” Teens—verbal cue “shoulders in ears and lock out elbows.”
Leaning back	Flexibility, strength	Preschool and Kids—pull hands and body into position and ask for them to put it there for you again. Teens—shoulder stretches and review big breath and locking down the rib cage.
Arcing bar path	Awareness, strength	Preschool and Kids—unloaded and/or dumbbells only, correct the overhead position. Teens—practice moving the head out of the way with light loads while the trainer holds PVC vertically in front of the bar.

Movements, continued

THRUSTER

THRUSTER TEACHING POINTS

There are three primary teaching points:

1. Front Squat
2. Press
3. Linking the Front Squat and the Press

1. Front Squat—This is where to start/finish

The thruster builds off the mechanics of the front squat; nothing discussed in the front squat changes. Start the thruster by reviewing the front squat.

2. Press—This is where to go

After the front squat, the thruster then builds off the mechanics of the press; nothing discussed in the press changes. Once they have reviewed the front squat, continue working on the thruster by reviewing the press.

3. Linking the Front Squat and Press

To link the front squat and press, affix numbers to portions of the movements, thus creating an easily communicated partition to the sequencing of movement to be gone over one piece at a time:

1. Standing in the front squat rack position to bottom of the front squat
2. Bottom of the front squat to the top of the front squat
3. Elbows from front squat to press position, and press to overhead
4. Overhead back to front squat rack position.

Once this sequence is learned it can be simplified:

1. Standing in the front squat rack position to bottom of the front squat
2. Bottom to top of the front squat, elbow transition press position, press to overhead
3. Overhead back to front squat rack position.

Movements, continued

THRUSTER POINTS OF PERFORMANCE

	Preschool	Kids	Teens
1	Stance	Stance	Stance
2	Front squat	Front squat	Front squat with elbows and chest up
3	Press	Press	Drive with an explosive and aggressive turnaround
4			Press
5			Overhead position
6			Active shoulders

THRUSTER THERAPY—PROBLEMS AND FIXES

Fault	Cause	Fix
Not changing from front squat to press position with the elbows	Awareness	Focus on the four-part sequence for the movement, or add another numbered step going from front squat rack to press rack position. The Simon Says drill moving from front squat position to press position also works well.
Crashing	Awareness, rushing the movement, strength	Preschool and Kids—go back to the numbered sequencing to ensure they are stopping at the rack position of the front squat in order to count a repetition. Teens—one warning; if it is still happening, reduce the load.

Movements, continued

PUSH PRESS

PUSH PRESS TEACHING POINTS

There are three primary teaching points:

1. Press
2. Dip Drive
3. Dip Drive and Press

1. Press—This is where to start/finish

The push press builds off the mechanics of the press; nothing discussed above changes. Start the push press by reviewing the press, and remind Teens the push press is a skill-transfer exercise for the push jerk.

2. Dip Drive

Adult and Teens Cue

Shallow dip with your chest vertical and extend the hip rapidly.

CrossFit Kids Cue

Dip-Drive

3. Dip Drive and Press—This is where to go

Adult and Teens Cue

Shallow dip with your chest vertical and extend the hip rapidly, followed by a shoulder press, locking out at top with active shoulders and the bar in the frontal plane.

CrossFit Kids Cue

Dip-Drive-Press

Movements, continued

PUSH PRESS POINTS OF PERFORMANCE

	Preschool	Kids	Teens
1	Stance	Stance	Stance
2	Dip	Dip with vertical torso	Dip with vertical torso
3	Press	Press	Drive with explosive and aggressive turn around
4			Press
5			Overhead position
6			Active shoulders

PUSH PRESS THERAPY—PROBLEMS AND FIXES

Fault	Cause	Fix
Forward inclination and/or muted hips	Awareness	Preschool and Kids -Face wall, elbows up and sliding vertically along wall
Stalling in the dip	Awareness	Dip, stand drill
Pressing out of sequence	Awareness	Break into a biphasic drill of dip, stand, then press; gradually speed up commands until it is one cue

Movements, continued

PUSH JERK

PUSH JERK TEACHING POINTS

There are three primary teaching points for Kids and Teens (it is an advanced move, thus will not be addressed in the Preschool class):

1. Jump from feet in Press position, hands at your sides
2. Jump from feet in Press position, and land in a partial squat, hands at your sides
3. Jump from feet in Press position, and land in a partial squat, hands in Press rack position
4. Jump from feet in Press position, and land in partial squat, hands punch to the sky from the shoulders after the jump and lock out overhead before the land

1. Jump

Advanced Kids, Teens and Adult Cue

All are cued the same: jump is the focus.

2. Jump and Land in a Partial Squat

Advanced Kids, Teens and Adult Cue

All are cued the same: jump and landing in a partial squat is the focus.

3. Jump and Land with arms in Press Position—This is where to start / end

Advanced Kids, Teens and Adult Cue

All are cued the same: jump and land with bent knees in a partial squat, pause, and stand, all while remaining in the press rack position.

4. Jump and Land, arms from Press to Overhead Position—This is where to go

Advanced Kids, Teens and Adult Cue

All are cued the same: jump and land with bent knees in a partial squat, pause, and stand; moving arms from pressing position in the jump to punching the sky and locking out the arms before the land all the way through the stand.

Movements, continued

PUSH JERK POINTS OF PERFORMANCE

	Preschool	Kids	Teens
1	N/A	Stance	Stance
2		Jump and land with bent knees, full extension of the hip in the jump	Jump and land with bent knees, full extension of the hip in the jump
3		Lock out arms in overhead position	Lock out arms in overhead position
4		Stand with arms overhead	Stand with arms overhead

PUSH JERK THERAPY—PROBLEMS AND FIXES

Fault	Cause	Fix
Movement out of sequence	Over-thinking / confusion with the movement	Break the movement back into its base of jump and land with no arms, then progress back to the full movement as appropriate.
Landing too wide	Lack of body awareness and/or trying to get under the bar without bending the hip	Work a foot movement drill walking from hip width to shoulder width, slowly increasing speed of the transition to a trap door jump. Chalking a point on the ground for each position can aid in this process.
Improper finish with lazy lockout and/or bar forward of frontal plane	Flexibility, strength, awareness	Work on the press mechanics, then work on the jump and land movement progression.
Hip not extending in the jump.	Over-thinking / rushing under the bar	Break the movement back into its base of jump and land, and have them intentionally jump higher. Once they are jumping higher work you way back through the movement progression.

Movements, continued

DEADLIFT

DEADLIFT TEACHING POINTS

There are three primary teaching points:

1. Set-Up
2. Lift
3. Reset

1. Set-Up—This is where to start/finish

The sumo deadlift is taught unloaded or with a kettlebell to Preschool and Kids as it is a much more natural movement for them to adapt and use. Teens use both the sumo and standard stance deadlift with barbells.

Adult Cue

Lumbar curve, weight in heels, shoulder over the bar, bar in contact with shins, arms straight, head neutral.

Preschool and Kids Cue

Stand over and line your ankles up with the object. With your knees straight, bend over and grab the object. Get an angry gorilla back.

Teens Cue

Hide the knot in your shoelaces with the bar. With your knees straight bend over and grab the object. Without moving the barbell push your knees forward until you touch the bar with your shins. Get an angry gorilla back. (If lifting an object other than a barbell, then use the same cues as the Kids).

2. Lift—This is where to go

Adult Cue

Drive through the heels and extend legs while hips and shoulders rise at the same rate, once bar passes knees, hips extend.

Preschool and Kids Cue

Keeping an angry gorilla back, stand up with the object.

Teens Cue

Staying weighted through the heels, drag the bar up your shins.

3. Reset

Adult Cue

Hips push back as shoulders move forward slightly, delaying the bending of the knees. Once the bar crosses the knee, the torso angle is set and the knees flex back into the start position.

Preschool and Kids Cue

With an angry gorilla back set the object down.

Teens Cue

Keeping the bar against your legs, push your hips back and lower the bar to your knees. When there, bend your knees and return the bar to the ground.

Movements, continued

DEADLIFT POINTS OF PERFORMANCE

	Preschool	Kids	Teens
1	Set up	Set up	Set up
2	Stand up with back straight	Body directly over load	Body directly over load
3		Load remains close to body	Weight on heels
4		Hips and knees fully open at top	Hips and shoulders rise at same rate until the knees, then the hips push forward to stand up
5		Back straight throughout entire movement	Hips and knees open at the top
6			Neutral spine throughout entire movement

DEADLIFT THERAPY—PROBLEMS AND FIXES

Fault	Cause	Fix
Loss of lumbar curve	Flexibility and/or load too heavy	Practice angry gorilla or reduce load
Weight on toes or forefoot	Awareness	Tell them to sit onto the heels and pull the bar into the shins
Shoulders behind bar	Awareness	Rock forward into hand and practice the set-up until they are able to reproduce that position.
Hips rise first	Awareness, strength	Check the set-up, if set-up is good, cue hips and shoulders at the same time. If this does not work try a verbal cue “lift shoulders first,” or “begin the lift with your shoulders.”
Shoulders rise first, bar pulls around knees	Awareness	Show them that the load moves away from the body when doing that. Verbal cue “the bar and hips move together.”
Bar loses contact with legs	Awareness, strength	Check start position (bar rolling forward when making contact with shins) and initial pull (do hips rise first?). Verbal cue “drag the bar up your legs.”
Improper descent	Awareness, strength	Practice returning the bar to the ground with PVC, and verbal cue “push the bar down your legs.”

Movements, continued

SUMO DEADLIFT HIGH PULL

SUMO DEADLIFT HIGH PULL TEACHING POINTS

There are four primary teaching points:

1. Set-Up
2. Lift and Shrug
3. Pull
4. Reset

1. Set-Up—This is where to start

Adult Cue

Feet wider than shoulder width apart, toes out, weight in heels, lumbar curve, shoulder over bar, arms locked, symmetrical narrow grip inside legs with bar in contact with the shins.

Preschool and Kids Cue

Arch your back like an angry gorilla.

Teens Cue

Feet wider than squat, hide the knot in your shoelaces with the bar, bend down and grab the bar in a narrow grip, angry gorilla back and knees forward until the shins touch the bar.

2. Lift and Shrug

Adult Cue

Sumo deadlift and shrug after opening the hips.

Preschool Cue

Angry gorilla, stand, “I don’t know.”

Kid and Teen Cue

Angry gorilla, stand, shrug.

3. Pull—This is where to go

Adult and Teens Cue

Elbows high and outside, pull the bar to the chin.

CrossFit Kids Cue

Zipper drill (place hands on your coat zipper, zip up the coat).

4. Reset—This is where to finish

Adult Cue

Return the bar in reverse order; that is, extend the elbows, bend the hips, flex the knees to the start position.

CrossFit Kids Cue

Zipper drill (unzip the coat), keeping an angry gorilla back return to the set-up position.

Movements, continued

SUMO DEADLIFT HIGH PULL POINTS OF PERFORMANCE

	Preschool	Kids	Teens
1	Set up	Set up	Set up
2	Zipper drill	Stand, then shrug	Hips and shoulders rise at same rate until the knees, then the hips push forward
3		Zipper drill	Hips open violently before shrug
4			Bar is pulled to the chin
5			Elbows are higher than hands throughout the movement and finish high and outside
6			Bar brought back to waist in descent before hips bend
7			Neutral spine throughout entire movement

SUMO DEADLIFT HIGH PULL THERAPY—PROBLEMS AND FIXES

Fault	Cause	Fix
Hips not open before arm bend—pulling early	Awareness	Review Zipper drill from above knee until correct, then repeat from the ground
No shrug	Awareness	Practice stand, then Zipper drill
Elbows down	Awareness	Hit trainer's hands with elbows
Weight plunging to ground	Awareness, strength	Count rep at waist before returning to ground. In severe cases, return to counting game in ascent and descent to partition the movement.
Segmented movement	Awareness	Start pull from waist until correct, then from just above

Movements, continued

HANG POWER CLEAN

HANG POWER CLEAN TEACHING POINTS

There are three primary teaching points for Kids and Teens (it is an advanced move, and thus will probably not be addressed in the Preschool class):

1. Set-Up
2. Dip Shrug
3. Drop Stand

1. Set Up—This is where to start/finish

Adult Cue

Knees and hips in full extension, shoulders neutral and object in hands at arms' length.

Kids and Teens Cue

Standing tall with the ball in hands with arms hanging straight.

2. Dip Shrug

Adult Cue

Dip and shrug after full opening the hips, arms staying straight the entire time.

Kids Cue

Dip, stand, I don't know.

Teens Cue

Dip shrug, arms staying straight the entire time.

3. Drop Stand—This is where you go

Adult Cue

After the shrug pull yourself under the object, receiving it in a partial squat, elbows high and ball on chest, stand keeping the ball in the front rack position.

Kids and Teens Cue

Drop under the ball and stand with the ball on chest.

Movements, continued

HANG POWER CLEAN POINTS OF PERFORMANCE

	Preschool	Kids	Teens
1		Full extension of the hip	Good set up
2		Shrug	Full extension of hip
3		Partial front squat with elbows up and back straight	Shrug
4			Ball received in partial front squat
5			Stand up at top with ball in front rack position

HANG POWER CLEAN THERAPY—PROBLEMS AND FIXES

Fault	Cause	Fix
Hips not open	Awareness	Go back to dip shrug drill skill work
No shrug	Awareness	Go back to dip shrug drill skill work
Curling the ball	Awareness	Wall drill: face wall with ball between body and wall, work dip shrug drill skill work without moving away from the wall
Tossing or flicking the ball	Awareness	Wall drill
Segmented movement	Awareness	Start pull from waist until correct, then from just above

Movements, continued

PULL-UP, PUSH-UP, AND HANDSTAND PUSH-UP

Listed below are the CrossFit Kids pull-up, push-up, and handstand push-up progressions: simple, safe, and effective steps for teaching and coaching these movements.

Safety is paramount; always place appropriate matting below your children and ensure they are use a bar that allows them to get on and off without assistance.

When teaching, strive to keep the verbiage and progression within the skill set that is appropriate for their physical, social, emotional and cognitive maturity. Be patient: these progressions can and should take years of work for your kids to complete.

THE PULL-UP

The pull-up is foundational and a backbone for solid CrossFit Kids' programming. Though the movement is exactly the same as that used by adults (dead hang, kipping, etc.), we use a different progression with kids to instill the proper shoulder controlled kip (versus leg swinging/initiated).

All of the pull-up progression pieces below can be incorporated into any part of a class for each of the age groups; imagination and ingenuity make this fun regardless of when and where it is placed! In every step, ensure the bar is at an appropriate height (when hanging the child's feet should be no more than three to six inches off of the ground, allowing them to get on the bar without assistance as well as fall with minimal chance for injury).

PROGRESSION

1. Bar Games

First, have kids move in as many different ways hanging from a pull-up bar with the goal to develop their grip strength, as well as the awareness and strength of an active shoulder. The limit of this drill is up to the coach's imagination, some examples are: knees to elbows, toes to bar, shuffle side to side, 180 degree turns, 360 degree turns, one handed leg slap, high-five a partner, etc. In Bar Games, there is no competition. It is just fun movement that teaches children how to safely and effectively hang from a pull-up bar. There is minimal technique needed; the simplest of coaching and cueing are used.

Bar Games are appropriate for all ages.

2. Bar Wars

When appropriate, start adding competition to Bar Games with Bar Wars. Any movement used with Bar Games can easily become a competition for all of your child athletes. For example: maximum bar hang using two hands, maximum bar hang with one hand, 360 degree turn every time the whistle blows until the last athlete is hanging, etc. This can be used any time during your Kids class as you see fit. It has been used with success as a finisher to Bar Games when it is appropriate for the emotional maturity of the class (winning and loosing with dignity is a learned and mature skill).

Movements, continued

3. Self-Assisted Deadhang Pull-up

Use a pull-up bar that is just below the child's chin when standing tall (if you do not have parallel bars or an adjustable child's pull up bar, put a barbell into a squat rack and use bands to lash the bar to the j-cups). Have the child grasp the bar just outside of his/her shoulders (with thumbs around the bar!) and kneel down with their toes curled beneath their feet and directly below the bar. From here, the child can assist their pull-up by pressing through their toes and standing up. The child uses their legs to assist their upper body strength as much or as little as needed (or if the more advanced kids already have dead hang pull-ups have them pick up their feet).

To increase the upper-body demand, adjust the feet so that the laces are laces down, making it more difficult to use the legs and toes to stand. Both variations can be used with success because it is self-scaling. This means the children are completing the same movement at their appropriate capacity without having to feel singled-out for using a different bar height/set-up.

4. Superman/Hollow Drill

This drill teaches kids how to move their bodies while lying on the ground. This is easier than performing the same hanging from a bar. Have the children lay on their stomach, forehead on the ground, arms extended "overhead" with hands shoulder width apart, legs and feet together with toes pointing away from their head. On the "up" command, have them arch up (extend the spine) like Superman flying. The belly is on the ground, with the chest arched off the ground with arms up and extended and legs long with feet together and toes off of the ground. Teach the kids to remember this position and feeling: it is the "forward" position of the kip swing. Next, have them roll them to their backs, arms still overhead and shoulder width apart, and legs long with feet together and toes pointed away from their head. On the "up" command, have them use their abs to pull their body into a "hollow" position. In the hollow, the low back pushes into the ground, trunk flexes with long arms that match the torso angle, legs squeezed together with toes pointed away from their head, and heels six inches off of the ground. Again, teach the kids to remember this position and feeling: it is the "back" position of the kip swing.

5. Self-Assisted Kipping Swing

The self-assisted kipping swing uses the same bar height and set-up that was used for the toes curled under self-assisted dead hang pull-up. At the command of "Superman," the children, pull their body with their hands and push their body with their toes, into the same chest forward Superman position learned on the ground. At the command of "Hollow," have the children push through their trunk and arms and pull with their toes back through to the hollow position learned on the ground. This "Superman/Hollow" becomes the vernacular and action for the "forward/back" of the kip swing. When they are able to attain the proper positions, change to a "Superman-Hollow-Pull," which adds a pull after the Hollow position to get their chin over the bar. This teaches the children how the movement of the kip swing is to feel without the concurrent demand of supporting their bodyweight.

6. Kipping Pull-up

CrossFit Kids recommends a child has the ability to complete at least one deadhang pull-up before working on kipping pull-ups. The shoulder and grip strength required of a deadhang pull-up better protects the athlete from potential shoulder injury, as well as loss of their grip when attempting a kipping pull-up.

Movements, continued

With the capacity of one deadhang pull-up and the proficiency of the previous progression steps, it is time to attempt kipping pull-ups. Trainers must ensure: the bar is the appropriate height, 2) there is matting beneath the working children, and 3) children wrap their thumbs on the bar. While hanging from a bar with a slightly wider than shoulder width grip, have the kids initiate the kip swing with a Superman/hollow and pull immediately after the hollow position...and your kids will have their first kipping pull-up!

THE PUSH-UP

Due to its importance and potential difficulty (especially for children!), CrossFit has created the below progression that successfully trains children in a manner that is both age and skill level appropriate. Like the pull-up progression, all of the push-up progressions are appropriate during any part of class for all of the age groups.

PROGRESSION**1. Plank Position**

For the plank position, the child assumes the “top” of the push-up position. The body is in a hollow position, with the arms extended and toes facing the ground. Holding this position helps develop strength and body awareness there.

2. Plank Games

Like with Bar Games for pull-ups, the different plank positions for this are limited by the imagination of the coach. Some examples are: plank on hands, plank on elbows, right hand to the sky, left hand to the sky, barrel roll, 360 degree turn, plank shuffle, etc. The more movement of the plank position the more fun for kids; change is key!

3. Plank Wars

When appropriate, like with the pull-up Bar Wars, it is beneficial to add competition to the plank position with Plank Wars. In Plank Wars, two athletes face each other in the plank position about a foot apart. Children can then either clasp opposite hands together or touch opposite hands in an open palm grip. On the command of “Go!” each athlete tries to pull (clasped hands) or push (open hands) the other athlete out of the plank position. The winner is the athlete who remains in the plank position.

4. Snake-up

In the snake-up, the children start in a plank position and then lower their body to the ground—keeping the body as straight as possible. Then, the kids get back to the plank position in any manner possible (while a straight plank position is preferred for both up and down, this takes time!). This is a self-scaling movement that allows all children to participate regardless of ability.

We have found that knee push-ups, though a completely legitimate scale, are more limited in their transferability to plank push-ups. Knee push-ups are also faster than plank push-ups, making it potentially undesirable to learn how to perform a plank push-up as their total number performed decreases compared to their knee push-up score (no fun for a child). Finally, children do not do enough push-ups, in terms of total repetitions or speed of movement, to be a legitimate concern to the health of their low spine. High reps and dynamic movement are a Teen skill and ability; they are not fun for Preschool and Kids aged athletes. As an extra precaution, ensure you program low reps for younger children working on the push-up to them safe.

Movements, continued

5. Push-up

As the child matures, they will be able to keep a more rigid plank position through the full push-up range of motion. By being patient with their development using the aforementioned progression steps, your children will be successful in the movement from the first try!

THE HANDSTAND PUSH-UP

Anytime an athlete is on their hands upside down there is risk for potential injury, and a coaching progression and protective gymnastic mats are required to maximize safety. Below is a progression adopted from a coach of the USA Women's Olympic Gymnastic team. This progression is appropriate for children of all ability levels to achieve a handstand push-up, while also minimizing the need for physical spotting of the child by the coach.

PROGRESSION

1. Forward Roll

Before ever trying a handstand, you must first teach them how to safely and effectively bail out of the position. This is taught with a forward roll. Have the athlete kneel down, place their hands slightly wider than shoulder width apart in front of them, and place the top of their head in the middle of their hands and slightly farther from their knees (creating a triangle between their hands and head). Then have the athlete, pushing hard into the ground with their hands, extend their knees and walk their feet toward their face. As they near their face with their toes cue them to look at their belly button and the athlete will roll through ending up in the seated position. Once they have mastered this, increase the difficulty of the roll. Some ideas include: standing forward roll, jumping forward roll, backwards roll, log roll, cart wheel, etc. This is both fantastic for developing a robust vestibular system as well as very effective at teaching a safety skill for any and all activities, be it recovering from a handstand or a bicycle crash. Some type of roll should be incorporated in every single kids class.

2. Stink Bug

The goal is to incrementally place more and more of the athlete's center of mass over their shoulder. This begins with the stink bug on the ground, which is simply a piked-plank position (hips high and feet closer to the hands). Have the athletes lower their head to the ground slightly in front of and in-between their hands (the same hand and head triangle position used for the start of the forward roll) and then press back to the start position. Proximity of the feet to the hands is dependent on the athlete's ability: the closer the feet to the hands the more challenging the movement. We recommend to start farther away than the athletes want (at first) and slowly move the toes closer to the feet after each successful repetition. This is another self-scaling movement as each athlete can change the difficulty to meet their needs. This stink bug position forces the athlete into a hollow trunk when they are pressing, nullifying the problems of overextension of the spine often seen with a full range of motion handstand push-up.

Once ready, we continue to raise the hips by putting the knees, and then the toes, up on a box. Similarly, moving the hands closer to the box increases the difficulty. This drill allows many different levels to be challenged with a single box height. Ensure the box is flush against a wall (so it cannot tip), place a gymnastics mat down on the hands' side of the box, and always have the children put their hands on the ground before putting their knees/toes up on the box. Also ensure that the knees/toes are as close to the edge of the mat side of the box as possible, then adjusting the hands distance from the box for a successful, but challenging, repetition completion. Stink bugs, be it from the ground or a box, are very difficult and require little to no gear; these should be used as a staple to increase overhead strength and body awareness for inverted capacity.

Movements, continued

3. Box Kick-up

This is to teach an athlete the body position for kicking up to a handstand. With a box set up against a wall and a gymnastics mat on the other side of the box (like used for the stink bug, above), have the athlete stand on the mat and face the wall, placing hands on the closest two box corners. Then, the athlete moves their feet back until they form a straight, horizontal body from hip through the hands. The point is to have an ideal overhead position in a horizontal plane. Have the athlete push into the box with an active shoulder, and keeping the body long, kick up a couple of inches with one foot and then the other. As the athlete kicks up, ensure there is no change in the spine; this teaches the athlete how to kick up without breaking about the midline. Once able, add in a toe tap. At the apex of the kick, tap the opposite foot to the kicking foot. With proficiency, continue to lower the box and raise the kick/toe tap until the athlete is able to kick up to near vertical under control and tap their toes together with their hands on the ground.

4. Wall Walk

The wall walk can be done in tandem with the box kick-up. A wall walk begins with the athlete in the bottom of the push-up and both heels touching the wall on top of a gymnastics mat. The athlete initiates the movement with a push-up, and then walks their feet up the wall as they walk their hands towards the wall. Throughout the movement, the athlete must maintain control and rigid throughout their body (especially their midline!). Initially, the top of the wall walk is as far as vertical as they can get while still being able to get back to the starting position under their own control. Eventually, the movement's full expression is a vertical handstand with only the chest and toes touching the wall.

You can also play wall walk games, which is adding different movements while in the top of the wall walk position, i.e.: right hand up, left hand tap your head, shuffle left, touch your leg, etc. To bail, either walk back down the wall the opposite way they went up, complete a forward roll or perform a handstand pirouette.

5. Handstand Kick-ups

With proficiency in both the box kick-up and full range of motion wall walk, it is time to kick up to the wall. With a gymnastics mat against the wall and athlete facing the wall in a standing position and hands overhead use, the same kick-up technique learned in the box kick-up. This should bring the athlete to a handstand position with only the heels touching the wall. Games can be used as when the athletes are facing the wall, i.e. head taps, shuffle, etc. Demand a hollow body, toes pointed, extended elbows and 180 degrees between the torso and arm.

6. Handstand Push-up

With all of the handstand and pressing fundamentals completed, it is time to work lowering the athlete's head to the triangle position slightly in front of and between their hands (reference the triangle position used in the forward roll and stink bug) and pressing back out, ending in a proper handstand position. Be ready to be amazed by your child athletes. Time and focus on this progression will create strong, able athletes in the handstand position!

KID SAFETY

ENVIRONMENTAL AND BOX SAFETY

- Start of each class: ask how they are doing and eyeball the class.
- Teach “Freeze” as soon as possible.
- Advise hydration often, appropriate clothing, jewelry, athletic shoes.
- Use padding where needed, such as on poles and under rings.
- Use a suspended jump rope for max height jumps to avoid fall hazards from tall boxes.
- Sanitize and disinfect bars, weights, pull-up structures often.
- Use of anti-viral, staph, MRSA, bacterial lesion spray (IV 7 Ultimate Germ Defense) as soon as injury detected.

EQUIPMENT

- Keep C2 rower display in upright position to avoid handle crashes into display.
- Warning to avoid putting fingers under rower seat, as well as loose or tied clothing that may be caught beneath the seat.
- Use wooden or plastic rings, no metal or ceramic.
- Do not pick up weights until told to do so; clanging dumbbells together degrades welds.
- Stagger lines when using PVC, hold vertically until told to move.
- Use cones to divide training space and outside to provide traffic barriers where needed.
- Teach Teens how to ditch bars.
- Teach Kids to swing the kettlebell to eye level only.

STAFFING

- Trainer at front and back of group when running outdoors.
- Trainers Child CPR trained

HEALTH ISSUES/MEDICAL INFORMATION

- Upgrade CPR and Defibrillator certifications to include children.
- Create and maintain Emergency Card info on site.
- Be aware: Parents don’t like labels for their children and getting information may be difficult.
- HIPPA/PAR-Q can of worms: liability issues are everywhere. We recommend the following:
 - “What do I/we need to know so that I/we may provide the best care for your child?”
 - Instigate parental communication regarding changes in child’s health status.
- Find out if you need a release to administer medications in your state/province/country.
- Common meds for kids, asthma inhalers, ADHD medication.
- Antibiotic awareness; some antibiotics have side effects specific to what we do.
 - Cipro, Levaquin family = weightlifting and potential tendon rupture.

Kid Safety, continued

SPECIAL POPULATIONS

- Give a trial period to see if it works and evaluate benefit for child vs. class disruption.
- CrossFit Kids has had success with integrating ADHD and children with autism, cerebral palsy, brain injuries and developmental disabilities).
- Parents **MUST** stay during class.
- Staffing may need to be increased to accommodate well.

RHABDO AND KIDS

- From your CF Level 1 Course: “What are the primary symptoms of rhabdo?”
- It can occur in Kids and/or Teens.
- Very rare in kids; the theory is that they naturally stop but can be “pushed.”
- Read Dr. Mike Ray’s article on rhabdo from the CrossFit Journal and Level 1 Training Guide.
- Rhabdo: Myoglobin leaking into the bloodstream potentially reducing or stopping kidney function.
- Kids and Teens do not have the same exposure/symptom profile.
- Common causes of exercise-induced rhabdo:
 - High-rep eccentric movements-such as jumping pull-ups, partner pull-ups, jumping squats, kettlebell swings, GHD sit-ups, downhill running.
- Additional factors contributing to increased risk:
 - Alcohol or drug abuse, use of statins, periods of long-bone growth (adolescence), recent flu, use of Tylenol.
- Common symptoms in adults:
 - Extreme muscle soreness and weakness, swelling/inflammation and dark colored urine (cola color).
- Teens may not present all three symptoms and still have rhabdo (they often show only one or two of the symptoms).
 - Teens are more likely to get rhabdo than Kids because:
- They will push themselves harder for the time/weight, just like adults.
- In teen growth spurts, long bones grow and muscles are stretched taut before having a chance to lengthen and accommodate bone growth; thus, muscles are predisposed to muscular degradation and break down before any activity.

CLASS STRUCTURE

PRESCHOOL

Ages: 3–5

Class Length: 15–20 minutes

Whiteboard (Explain the Workout): up to 3 minutes (OPTIONAL)

- Put the whiteboard on the ground and kneel down with the kids while explaining.
- Make your instructions colorful and fun and use pictures (draw objects and named concepts; i.e., a frog for leapfrog).
- Pick a special leader for the day as a demonstrator for the rest of the class.

Pre-Workout Skill: up to 4 minutes

- Work on specific points of performance (distinct portions of movement).
- Introduce 2 skills for a 4–6 week period.

Examples: Press rack position, deadlift set-up, superman/hollow position

General Warm-Up: up to 5 minutes

- General in nature.

Examples: shuttle run, jump around, freeze tag.

Workout: up to 5 minutes

- As many reps as possible (AMRAP) format works best.
- 3–5 repetitions max for each movement.

Examples:

1. AMRAP in 5–10: Forward roll, balance-beam walk, 3 perfect squats.
2. 5 rounds: 3–5 press to the sky, 1 plank, 3–5 squats.
3. AMRAP in 5–10: skip across the room, 3 press to sky, 1 monkey hang.

Game: up to 6 minutes

- It's a must to get to the game; make it age appropriate and fun.

Examples: duck-duck-goose, follow the leader, ring around the rosie.

Class Structure, continued

KIDS

Ages: 5–12

Class Length: 30–40 minutes

Whiteboard: up to 3 minutes

- Keep it colorful and creative.
- Ensure explanation is clear and concise.
- Draw Points of Performance in movement.
- Draw logistics of Workout layout.

General Warm-Up: up to 10 minutes

- Can be game-like, skill based, or a combination of the two.

Examples:

1. 2 x 9 supermans, 6 squats, 3 forward rolls.
2. 2 x 1:00 each of handstand holds and tarzans.
3. 3:00 of cartwheels and plank holds.

Special Warm-Up: up to 10 minutes

- Technique work for movements or distinct parts of movements.
- Can also cover information such as nutrition (macronutrients game) or “What Is Fitness?” (draw the sickness-wellness-fitness continuum while in the bottom of a squat).
- Introduce 2–3 skills in a 4–6 week period.

Examples: kipping, forward roll, handstands.

Workout: up to 10 minutes

- Mostly AMRAP format.

Examples:

1. AMRAP in 10–12: 3 pull-ups, 5 push-ups, 7 squats.
2. 15-12-9: wall-balls (4–10 lb.), pull-ups.
3. Squats: 18-16-14-12-10-8-6-4-2, pull-ups: 2-4-6-8-10-12-14-16-18.

Game: up to 10 minutes

- Standard Games with a CrossFit Kids twist (dodgeball: if you get hit move to the side and perform 10 squats, then you are back in).

Examples: dodgeball, bulldog, leapfrog races.

Class Structure, continued

TEENS

Ages: 12–18

Class Length: 60 minutes

Workout Brief: up to 2 minutes

- Looks like an adult whiteboard.
- Describe the Workout: demonstrate movements, define range of motion and discuss common problems.

General Warm-Up: 6–12 minutes

- Must be engaging, can include skill work.

Examples: medicine-ball warm-up, kneeling jump work, 2 x 200 m run, 10 box jumps, 5 broad jumps.

Specific Warm-Up: 15–30 minutes

- Instruct and coach 2 skills.
- Generally focused on whole movements.
- This is a great opportunity to work on movements to be used in the Workout.

Examples: handstand to forward roll, slackline work, vertical-jump and broad-jump maxes.

Workout: 2–15 minutes

- Looks a lot like an adult workout but can also have a twist; the novelty in a workout can be a surprise (Rolling Randy, Bar Disappearing Act, etc.).
- Key role of a teen trainer is to design the Workouts so that all athletes can compete.

Examples:

1. 3 Rounds: 7 DB thrusters, 7 push-ups, 15 side-to-side hops, 7 DB thrusters, 7 push-ups, 15 side-to-side hops, prowler push 35 m.
2. Complete as many rounds in 15 minutes as you can of: pistols (5 each leg), 5 pull-ups, 10 push-ups, 15 squats.
3. Complete as many rounds in 15 minutes as you can of: 400 m run followed by 3 rounds: 5 pull-ups, 10 push-ups, 15 squats.

Post-Workout Skill: 5–15 minutes

- Usually, but not always, a different skill that was worked on before performed immediately upon completion of the Workout while heart rate is still up.

Examples: plances to handstands, lever progressions, wall walk.

Cool-Down: up to 7 minutes

- Stretch and mobility work.
- The brain is prepped for the most efficient learning; have them bring in homework and provide information (CrossFit Journal, SAT Prep, etc.) for their use.

Class Structure, continued

TEENS WEIGHTLIFTING

Ages 12–18, by invitation only; athletes must move well with no weight long before putting large loads on the barbell.

60-minute class two days a week.

- One major lift per session, deadlift (both sumo and standard stance) and back squat. An auxiliary lift can be used if time allows, but not at the expense of the deadlift and squat.
- Session starts with PVC pipe working on proper mechanics.
 - If movements are problematic, mobility work may be appropriate.
 - If movements continue to be a problem, then significant load is not appropriate for that day.
- Every lift is supervised by a coach, with one coach per platform.
- Safety is ensured and enforced by unwavering focus on technique and making the smallest jumps in weight possible.
 - 3-5-7 repetition scheme
 - Single repetition max for sport-specific training only

EQUIPMENT LIST**FOR A GROUP OF 10 KIDS, GRADES K-6, OF DIVERSE SIZES, AGES, AND CAPACITIES**

- Carpet squares—5
- Cone marker set —1
- Cones—10
- Dodgeballs—6 multicolored important that they are very, very soft “Nerf” type
- Dry erase pens and eraser
- Dumbbells—2 sets, 3#; 4 sets, 5#; 3 sets, 8#; 1 sets, 10#
- Flag football belts (clip, not Velcro flags)—2 colors, 5 each (great for games)
- Gymnastics rings (wooden, not metal or ceramic)—2 sets
- Hurdles—5
- Jump Ropes—10 Licorice Ropes or Rx jump ropes (rxjumpropes.com)
- Kettlebells—5 @ 4kg, 5 @ 8kg
- Low balance beam—1
- Medicine Balls (Dynamini)—4 at 4#, 3 at 6#, 2 at 8#, 1 at 10#
- Parallettes—2 sets
- Plyo—Jump boxes, cardio steps or water meter vaults—3, 10”–24” heights
- Portable whiteboard —1
- Pull-up or parallel bars
- PVC or dowels—10, 5’ lengths
- Sand bags—5 at 10#, 5 at 15#
- Sidewalk chalk (1 pkg multiple colors)
- Small car tires—5
- Tumbling mats—1

FOR A GROUP OF 10 KIDS, GRADES 7-12, OF DIVERSE SIZES, AGES, AND CAPACITIES

- Ammo cans—5 at 15#, 5 at 25# (filled with sand)
- Bumper/iron plates—2 sets, 5#; 2 sets, 10#; 2 sets, 15#; 2 sets, 25#
- Collars—10 sets
- Cone Marker Set—1
- Cones—10 total
- Dodgeballs—6 multicolored Nerf type
- Dumbbells—2 sets, 10#; 4 sets, 15#; 4 sets, 20#; 2 sets, 25#
- Gymnastics rings (wooden)—2 sets
- Jump Ropes—Licorice Ropes or Rx jump ropes (rxjumpropes.com)
- Kettlebells 2 - 8kg, 4 - 12kg, 4 - 16kg
- Medicine Balls—2 at 8#, 4 at 10#, 4 at 14#, 2 at 20#
- Olympic bars—5 at 45#, 3 at 35#, 2 at 25#
- Plyo Boxes, cardio steps, water meter vaults, car tires—3, 15”–30”
- Portable whiteboard
- Pull-up or parallel bars
- PVC or broomsticks—10, 6’ lengths
- Sand bags—3 at 15#, 4 at 25#, 3 at 35#
- Sidewalk chalk (multiple colors)

Equipment List, continued

LOW-COST SUBSTITUTIONS

- Dumbbells—Quart-size milk containers filled with sand (3#, 5#, 8#)
- Medicine Balls—Pillow cases filled with soft rags packed tightly and knotted (4#–10#)
- Parallettes—Two sturdy boxes set side by side
- Plyo boxes—Sturdy benches, high curbs, large farm tires (10", 15", 20")
- PVC pipe—Broomstick dowels, 6' lengths
- Used tires—automotive repair shops will donate

OPTIMAL BUT NOT NECESSARY

- Balance beam
- Concept 2 Rowing Machine
- Prowler
- Rubber bumper plates
- Vault or barrier

SCALING TO CAPACITY

- Scaling is the responsibility of the trainer, parent, teacher or coach onsite.
- Loading is unnecessary for strength gains in children. (See CFK FAQ)
- Movements may be performed unloaded, with PVC, eventually with dumb bells and barbells as form and capacity dictate,
- appropriate CrossFit Training is strongly suggested.

SUGGESTED WEBSITES

Although we do not endorse any specific companies, below are some suggested websites where equipment may be purchased.

- www.athleticstuff.com
- www.bsnsports.com
- www.dynamax.com
- www.gophersport.com
- www.muscleclamp.com
- www.roguefitness.com
- www.rxjumpropes.com
- www.swww.com

FREQUENTLY ASKED QUESTIONS

Below is a list frequently asked questions grouped in the following categories:

- **General**
- **Insurance**
- **Background Check**
- **Teens/Age-Specific**
- **CrossFit Kids Certificate Course**
- **School/Nonprofit**

GENERAL

- **How do I become a registered CrossFit Kids program?**
 - There are no longer any Registered CrossFit Kids programs; now, all of the barriers to entry for training children have been removed to allow CrossFit Affiliates the ability to take care of and train any age group without further qualifications other than the L1 or higher.
- **Do I have to attend a CrossFit Kids Course?**
 - No. All CrossFit affiliates in good standing, with a CF-L1 trainer or higher, can train children and call it CrossFit Kids.
- **Do I have to be a CrossFit affiliate to offer CrossFit Kids classes?**
 - Yes. Only licensed CrossFit affiliates can coach CrossFit or CrossFit Kids.
- **I want to offer CrossFit Kids classes only. Do I have to train adults as well?**
 - No, there is no requirement for an affiliate to train any specific age group.
- **Does an affiliate need a CrossFit Kids trainer to offer CrossFit Kids classes?**
 - No. All you need to train any age group at a CrossFit affiliate (in good standing) is to be a CF-L1 trainer or higher.
- **Will the affiliate license fee include the rights to offer CrossFit Kids classes?**
 - Yes. There is no additional fee to train CrossFit Kids.
- **Can I have a helper in the CrossFit Kids classes?**
 - In order to do any coaching, one must be a CF-L1 trainer or higher.
- **Can I offer CrossFit Kids classes outside the affiliate?**
 - CrossFit, LLC has a “one brick-and-mortar rule”: An affiliate can offer classes at a park or a church but may do so only on an occasional basis.
- **I would like to offer mobile CrossFit Kids classes. Do I need to be an affiliate?**
 - Yes, you need to affiliate, but you cannot be mobile. CrossFit, LLC has a “one brick-and-mortar rule”: You must have a physical location to be a licensed CrossFit affiliate.

Frequently Asked Questions, continued

- **Can I be the CrossFit Kids trainer for more than one affiliate?**
 - Yes. You can be a CrossFit Kids trainer for multiple affiliates as long as each affiliate is in good standing and you are a CF-L1 trainer or higher.
- **My affiliate does not have the space/time to have CrossFit Kids classes. Can I have a location down the street and still be a part of the affiliate?**
 - No. CrossFit, LLC has a “one brick-and-mortar rule”: You can offer classes outside the building, but they must be on the same property.
- **I am registered to attend the CrossFit Kids Course. Can I promote my business by saying, “CrossFit Kids coming soon?”**
 - Yes.
- **Does the owner of an affiliate need to have attended the CrossFit Kids Course in order to have a CrossFit Kids program at that affiliate?**
 - No. There is no requirement for the affiliate owner to attend the CrossFit Kids Course.
- **Where is the CrossFit Kids website?**
 - Our current site is accessible [here](#).
- **I want to run a CrossFit Kids/Teens competition. Do you have any recommendations?**
 - We recommend you set up extra safety parameters—specifically dress codes and movement standards—that will provide grounds for cessation of the workout if attire or movement is not within these parameters. We also recommend that you do everything in your power to ensure the competition is age appropriate in terms of movements, implements, weights, times, focus and desired end state.
- **What kind of waiver do we need for CrossFit Kids?**
 - The waiver that you use for your adult clients is sufficient, although we do recommend the added photo/video release for children. A sample of the release can be found in your CrossFit Kids training guide. We also recommend that you consult with your legal advisor regarding any local laws and regulations.
- **Do you have flyers we can distribute to schools or a media/marketing kit?**
 - No.

INSURANCE

- **Is there an additional cost on my insurance to cover CrossFit Kids?**
 - It depends on your insurance provider. Many insurance companies already include the coverage in their policy, but it is your responsibility to check.

Frequently Asked Questions, continued

BACKGROUND CHECK

- **Do I need a background check to train CrossFit Kids?**
 - No. It is not a CrossFit requirement. However, we highly recommend consulting your affiliate owner, insurer and/or legal counsel for guidance.

TEENS/AGE-SPECIFIC

- **Can I have teens train in my adult classes without a CrossFit Kids trainer?**
 - Yes, though we highly encourage you to create a class tailored to their specific mental, physical and emotional demands as soon as you are able to do so.
- **Can I offer a CrossFit Teens class that is not a part of the CrossFit Kids class?**
 - Yes, and we highly recommend it. We have found that teens thrive among their peers. Teens and kids have completely different goals and reasons for joining CrossFit, and they will excel when separated into their own cohort.
- **Do I have to attend a CrossFit Kids Course to offer CrossFit Teens classes?**
 - No, it is not required for a trainer to attend a CrossFit Kids Course in order to offer CrossFit Kids or Teens classes.
- **I hold a CrossFit Level 1 Certificate. Is there a minimum age for clients?**
 - You are welcome to train any age as a Level 1 trainer.
- **What are the age groups for CrossFit Kids/Teens classes?**
 - Generally speaking: Preschool/Pre-K—3–5 years, Kids—5–12, Preteens—10–12, and Teens—12–18. However, rather than relying solely on age, we encourage you to let a client's mental, emotional and physical maturity dictate the appropriate class.
- **When should I promote a CrossFit Kids athlete to CrossFit Teens class?**
 - Promotion of children through the different classes should be case by case, but generally speaking promotion should occur when the child begins to demonstrate the mental, emotional and physical traits associated with the next class. It is also important to consider when the client wants to make that jump.

CROSSFIT KIDS CERTIFICATE COURSE

- **Can we offer kids CrossFit classes without attending the course?**
 - Yes, you are welcome to train children at your affiliate.
- **Where do I find a list of upcoming online CrossFit Kids Courses?**
 - Upcoming courses can be found on the [CrossFit Kids page](#) on [CrossFit.com](#).
- **Does the CrossFit Kids certificate expire?**
 - No. Currently there is no expiration date for the CrossFit Kids certificate as long as a current CrossFit trainer credential (i.e. CF-L1 or higher) is maintained.

Frequently Asked Questions, continued

- **Does the online Kids Course include a test?**
 - Currently there is no test as part of the online Kids Course.
- **Do I have to be a Level 1 trainer to take the online CrossFit Kids Course?**
 - No. A person can take the CrossFit Kids Course prior to being a CrossFit Level 1 trainer. If a person takes the CrossFit Kids Course prior to the Level 1 Certificate Course he or she will receive a Certificate of Attendance; once he or she has completed the Level 1 Certificate Course, the Kids certificate will be upgraded to a Certificate of Completion.
- **My Level 1 certificate is expired. Can I still take the CrossFit Kids Course?**
 - Yes. If you take the CrossFit Kids Course with an expired Level 1 Certificate, you will be issued a Certificate of Attendance for the course, and once you renew your Level 1 Certificate your Kids certificate will be upgraded to a Certificate of Completion.
- **I received a Certificate of Attendance for the CrossFit Kids Course and have now passed the Level 1 Certificate Course. How do I get my certificate upgraded to a Certificate of Completion?**
 - Please contact the CrossFit Certificate Department at certificates@crossfit.com to request an upgraded certificate.
- **Can I train CrossFit Kids if I only received a Certificate of Attendance at the CrossFit Kids Course?**
 - No. The minimum requirement to train CrossFit Kids is the CF-L1 credential.
- **I have not received my certificate for the CrossFit Kids Course. What should I do?**
 - Please contact the CrossFit Certificate Department at certificates@crossfit.com to request a replacement certificate.
- **I am a police officer/member of the military/teacher. Do I receive a discount on the cost of the course?**
 - Yes. Please email seminars@crossfit.com for eligibility information prior to registering.
- **I took the CrossFit Kids Course but the credential is not listed under my name in the Trainer Directory. Can you please update the directory?**
 - Use this [form](#) to submit your personal information and any questions regarding your listing. If you have further questions please contact the CrossFit Training Department at seminars@crossfit.com.

Frequently Asked Questions, continued

SCHOOL/NONPROFIT

Please direct all school questions to crossfit.kids@crossfit.com.

- **How do I start a CrossFit affiliate at my school?**
 - Ensure you have a CF-L1 trainer (or higher) and email crossfit.kids@crossfit.com.
- **I want to go to schools and offer CrossFit Kids classes. How do I do that?**
 - In order to call the program CrossFit the school must be a CrossFit affiliate.
- **A school has asked us to run CrossFit Kids classes as an afterschool program. Do I need to be a CrossFit affiliate?**
 - Yes. In order to use the CrossFit or CrossFit Kids names, you must first affiliate with CrossFit.
- **Does our school have to be a CrossFit affiliate to offer CrossFit classes?**
 - Yes. In order to use the CrossFit or CrossFit Kids names, a school needs to affiliate with CrossFit.

BUSINESS ESSENTIAL RESOURCES**BUSINESS PLANNING/PUBLIC RELATIONS**

1. Pursue excellence.
2. Find out about your community and look at your demographics (stay-at-home moms versus commuters, homeschool market, etc.) to determine optimal time slots.
3. You are not in competition with the time slots of other programs and activities; rather you are optimizing time to ensure a lifelong love of fitness.
4. CrossFit Kids does not provide daycare; we are optimizing a lifelong love of fitness.
5. No elements classes for kids; matriculate new athletes directly into classes.
6. Investigate special promotions at your gym (i.e., bring-a-friend day, earn a T-shirt, etc.).
7. Talk with local coaches.
8. Show up to your local sports practices on cut day.

SUGGESTIONS FOR STARTING A CROSSFIT KIDS CLASS

1. Start with the one age group that you are most comfortable with (Preschool, Kids, or Teens).
2. Pick the right trainer for the right age group.
3. Start small, preferably 2–3 kids from current adult members or staff; work with these kids for 4–5 weeks before adding others.
4. Set your box up to be kid friendly.
5. Use the suggested format and time frame as a start point for each different age group.
6. Teach the movements in the order taught during the small-group breakout (squats, presses, and deadlifts first; front squats, thrusters, and sumo deadlift high pulls second; etc.).
7. For Preschool and Kids teach safety immediately, such as “freeze,” “line up,” etc.
8. Build a class culture from the start; i.e., set behavior and contact expectations and stick to them.
9. Set parental expectations (logistics, clothing, water, medication, drop-off and pickup, payment, etc.).
10. Add kids only when you feel comfortable both with your ability to teach and your space/gear allows.
11. Re-evaluate constantly; are they having fun and being challenged?

SUGGESTED PRICING STRATEGIES

1. Price your CrossFit Kids fees in the range of local dance schools, gymnastics classes, martial arts, etc.
2. The first child per family roughly half the price of an adult member, siblings half of the first-child price.
3. Family plan discount.
4. Free week trial sessions for children.

SAMPLE CROSSFIT KIDS PARENT LETTER

09 March, 20XX

Dear CrossFit Kids' Parent,

Thank you for allowing your child to be a part of the CrossFit Kids Class! The commitment to our children's future is a beautiful, arduous, amazingly nuanced path; the coaches are excited you have chosen CrossFit Kids to be a part of that path as CrossFit has changed all of our lives immeasurably for the better. With your child, we are not only able to potentially enhance their lives, but we also have the opportunity to shape their lives and their realities within them. It is with this endeavor I have dedicated my life; your child's safety and opportunity to potentiate their personal lives are my primary focus.

I wanted to take this opportunity, now that the Kids Class is underway, to introduce myself formally and to set some policies and procedures for the safety of your child and the efficacy of their CrossFit class experience.

My name is ...

I started training ...

We will be running three major groups for classes: Preschool (ages 3–5), Kids (ages 5–12), Teens (ages 12–18). Please note that it is not the age of your child that is the deciding factor for what class he or she attends. It is largely based upon individual skill, athleticism, and maturity and is ultimately decided upon by the head coach to ensure your child is getting the most out of the CrossFit experience. Preschool class lasts 20 minutes, Kids class lasts 30 minutes, and the Teens class is broken into a one-hour weightlifting session (by invitation only based on their movement mechanics and desire) and 50-minute classes that look much like an adult class.

As previously stated, your child's safety is paramount to the coaches, and it is with this focus I need your help. Below are some rules that we must enforce as a CrossFit Community to best protect your child; please:

1. Walk your children inside the building for the start of the class, and come inside the building to pick them up.
2. Bring your children to the designated Kid area, where the head coach will meet them and take them onto the gym floor for the day's class.
3. Immediately notify the head coach if you see anyone in the parking lot or in the gym who does not belong there.
4. Unless pre-arranged with the head coach, the children are only allowed to go home with the person who drops them off.
5. Until I get to know all of you and your children by name, please sign your child in and out with the head coach so I can ensure they are going home with the appropriate person.
6. Payment is month to month, and due the first of each month.
7. A waiver, signed by a parent or legal guardian, is required for each child before he or she is allowed to participate in a class.
8. Ensure your child has a bottle of water, or a bottle that can be filled up at the drinking fountain. Don't forget to put your child's name on it!
9. Ensure your children are wearing clothes appropriate for running, jumping, rolling, pulling, swinging, climbing, crawling, throwing, and being upside down.
10. If you choose to stay and watch the class (which I hope you do!), please do not coach your child.
11. Children with disciplinary problems: first warning-free of consequence, second warning-sit out the first two minutes of the game, third warning-go to the parent.
12. Finally, please make the head coach aware of any special needs for your children that may facilitate their individual safety, learning, and growth (i.e., medications, illness, physical/mental limitations, injury, sports, etc.).

I look forward to getting to know all of you personally and training your children to the utmost of my ability. If you have any questions, comments, problems, or concerns, please don't hesitate to get a hold of me at the following:

Signed, _____

Business Essential Resources, continued

CROSSFIT KIDS TEMPLATE FOR EMERGENCY CARD AND PHOTO RELEASE

What information do I/we need to know so that I/we may provide the best care for your child?

Emergency Contact Information: _____

Date: _____ / _____ / _____

Child/Minor Name (and nickname if any): _____

DOB: _____ / _____ / _____

Parent/Guardian: _____

Cell phone with area code: (_____) _____

Email: _____

Home phone with area code: (_____) _____

Work phone with area code: (_____) _____

SPOUSE/PARTNER CONTACT INFO

Cell phone with area code: (_____) _____

Email: _____

Home phone with area code: (_____) _____

Work phone with area code: (_____) _____

The following people have my consent to pick up my child from

Located at: _____

Name/Cell phone with area code: (_____) _____

Name/Cell phone with area code: (_____) _____

Name/Cell phone with area code: (_____) _____

Release to administer medication (Tylenol) and or rescue inhaler

PHOTO RELEASE

I hereby give permission for images of my child, captured during regular and special activities, through video, camera and digital camera, to be used solely for the purposes of CrossFit, CrossFit Kids or Licensed CrossFit affiliate promotional material publications and website and waive any rights of compensation or ownership thereto. Last names of minors will not be given or posted on the internet or website.

Name of Minor: _____

Name of Parent/Guardian: _____

Signature: _____

Date: _____ / _____ / _____

Business Essential Resources, continued

SUGGESTED CROSSFIT INSURANCE

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