THE NATIONAL FOOTBALL LEAGUE COMBINE: PERFORMANCE DIFFERENCES BETWEEN DRAFTED AND NONDRAFTED PLAYERS ENTERING THE 2004 AND 2005 DRAFTS

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ABSTRACT

The purpose of this study was to examine performance differences between drafted and nondrafted athletes (N = 321) during the 2004 and 2005 National Football League (NFL) Combines. We categorized players into one of 3 groups: Skill, Big skill, and Linemen. Skill players (SP) consisted of wide receivers, cornerbacks, free safeties, strong safeties, and running backs. Big skill players (BSP) included fullbacks, linebackers, tight ends, and defensive ends. Linemen (LM) consisted of centers, offensive guards, offensive tackles, and defensive tackles. We analyzed player height and mass, as well as performance on the following combine drills: 40-yard dash, 225-lb bench press test, vertical jump, broad jump, pro-agility shuttle, and the 3-cone drill. Student *t*-tests compared performance on each of these measures between drafted and nondrafted players. Statistical significance was found between drafted and nondrafted SP for the 40-yard dash ($P < 0.001$), vertical jump ($P = 0.003$), pro-agility shuttle ($P < 0.001$), and 3-cone drill ($P < 0.001$). Drafted and nondrafted BSP performed differently on the 40-yard dash ($P = 0.002$) and 3-cone drill ($P = 0.005$). Finally, drafted LM performed significantly better than nondrafted LM on the 40-yard dash ($P = 0.016$), 225-lb bench press ($P = 0.003$), and 3-cone drill ($P = 0.005$). Certified strength and conditioning specialists will be able to utilize the significant findings to help better prepare athletes as they ready themselves for the NFL Combine.

KEY WORDS agility, draft, NFL, power, speed

INTRODUCTION

The National Football League (NFL) is the highest level of athletic competition for American football. Competing at this level requires exceptional skill and physical ability. In an attempt to screen professional-bound collegiate players, recruits are invited to the NFL Combine. Players are then subjected to a myriad of physiological and psychological assessments prior to the entry draft for that year. Given the nature of modern-day football, it is not sufficient to simply possess height and mass; physical performance is also necessary regardless of position. The NFL Combine is held at a neutral venue at which physical abilities are not only displayed by recruits, but measured extensively by scouts working for the 32 professional teams (5). Although the testing performed during the Combine may not take into account a player's potential skill level during game play, coaches and scouts have used this platform to assess players' physical abilities as a determinant of their success at the professional level.

Most major collegiate football programs in the United States incorporate position- and player-specific training programs. This is done in order to best prepare their athletes according to their positions assigned on the field. Since some positions share similarities, strength and conditioning specialists are able to target a group of positions with a single training program (9). For example, although offensive and defensive linemen may have position-specific responsibilities, most players in these positions have similar physical statures and abilities. Providing a training program for linemen in general would allow strength and conditioning specialists to better target this positional group and ensure players are performing their training properly (6).

Since many collegiate football programs in the United States may not have enough strength and conditioning specialists on site to administer and supervise training programs for individual positions, their ability to specifically prepare potential NFL prospects to perform at the highest

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level at the NFL Combine is likely not to occur. Given that much emphasis is placed on player performance at the NFL Combine, it seems intuitive that strength and conditioning specialists would design and implement specific training methodologies that best reflect the testing done at the NFL Combine. Surprisingly, this is not always the case. This is especially surprising given anecdotal accounts that superior performance at the NFL Combine may be the likely determinant for a draft-eligible player being selected in the upcoming NFL draft. To date, no studies have investigated performance differences between drafted and nondrafted players. Furthermore, none have investigated these differences across a number of player positions. To the best of our knowledge, we are not aware of any study showing conclusions regarding the results of the NFL Combine test performance and athletes' admittance to the NFL; this is very important for many strength and conditioning specialists responsible for designing, implementing, and supervising training programs for draft-eligible collegiate football players. Therefore, the purpose of this study was to examine performance differences between drafted and nondrafted athletes across three separate positional categories (N = 321) on two anthropometric measures and six performance-based measures during the 2004 and 2005 NFL Combines.

Methods

Experimental Approach to the Problem

This study was designed to examine if a difference in physical attributes and performance on 6 tests completed during the 2004 and 2005 NFL Combines, across 3 separate positional groups, existed between drafted and nondrafted players. This study was retrospective in nature and used archived data available for public access.

Subjects

The sample used for this study was collegiate football players who had declared eligibility for the 2004 or 2005 NFL drafts. After consulting with collegiate Division I head coaches, head and assistant strength and conditioning coaches, and football athletes, the players used in the study were categorized into one of 3 groups based on playing position: skill players (SP), big skill players (BSP), and linemen (LM). The SP consisted of wide receivers, cornerbacks, free safeties, strong safeties, and running backs. The BSP included fullbacks, linebackers, tight ends, and defensive ends. Finally, the LM consisted of centers, offensive guards, offensive tackles, and defensive tackles. The players' physical performance test results at the NFL Combine were retrieved from a public-accessible web site (Universal Resource Locator (URL): http://www.nfldraftscout.com) and analyzed for the purpose of this study. Players were included if information pertaining to height, mass, and the six performance tests (see next section), were available. Since wide receivers often do not perform the 225-lb bench press test, missing data for this test only did not result in exclusion of these players from our analyses. Quarterbacks, punters, and place kickers were not included in our sample as they often undergo separate individual evaluations not consistent with the rigors of the NFL Combine.

Outcome Measures

Physical Attributes. Player height in inches and weight in pounds were measured using a Physician Beam Scale. In order to present the data in SI Units, these measurements were converted to height (in centimeters) and mass (in kilograms) prior to analysis. Although we acknowledge these measurements do not reflect measures of performance, they often dictate success at a given position and, therefore, were included in our research model.

Physical Performance Measures. First, players' completion time (in seconds) on the 40-yard dash was evaluated in this study. This test begins with the athlete in a "sprinter" start position on the goal line. The athlete is then expected to sprint to the 40-yard line as fast as possible. Second, results from the 225-lb bench press repetition test were analyzed. The player is expected to perform as many complete bench press repetitions possible without breaking proper form, and completing each repetition through the full range of motion. A certified strength and conditioning specialist is typically on hand to determine whether a repetition should be deemed acceptable or not. Third, we also evaluated vertical jump performance, a test that begins with both the athlete's feet flat on the ground while they reach as high as possible with their dominant hand. Once the standing "reach" height has been established, the athlete then jumps as high as he can. Maximal vertical jump reach height is measured directly from moveable plastic "vanes" on the apparatus, typically a Vertec (Sports Imports, Columbus, Ohio); vertical jump height is measured as a function of the difference between jump reach height and standing reach height. Fourth, the broad jump was performed as the athlete jumps forward as far as possible from a standing position. Fifth, the pro-agility shuttle test was performed by the players at the Combine. Athletes begin by straddling the 5-yard line (midline) in a three-point stance. They then sprint towards the right, touching the goal line with their right hand. They immediately turn around and sprint to the 10-yard line; they touch this line with their left hand. Again, they turn around and sprint through the finish line (the midline located at the 5-yard line). This test is illustrated in Figure 1.

Finally, performance measures on the 3-cone drill were retained for the purposes of our analyses. Three cones are placed in an L-shape such that the first and second cones are 5 yards apart, and the second and third cones are also positioned 5 yards apart. The beginning portion of this drill is performed as a shuttle run; the athlete begins at the first cone, sprints to the second cone, and returns to the first after touching the line with their right hand. They then sprint to the second cone again, this time turning around the cone in a clockwise fashion keeping the cone on their right side, and continue onto the third cone. They circle counter-clockwise around cone 3 and immediately sprint directly around the

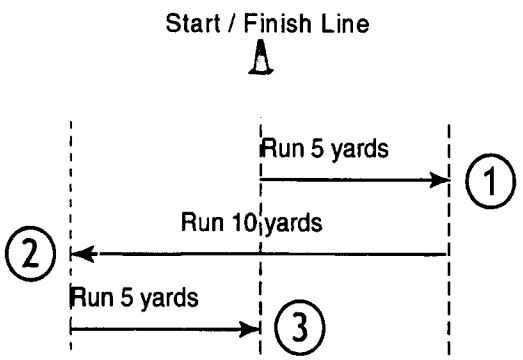

Figure 1. Pro-agility shuttle test. Performance is measured in seconds.

second cone before finishing through the first cone. The 3-cone drill is depicted in Figure 2.

Procedures

Physical performance test results for the 2004 and 2005 NFL Combines were obtained from a public-accessible web site (URL: http://www.nfldraftscout.com). In an attempt to verify the integrity of the data, we directly contacted the head strength and conditioning coaches at 5 National Collegiate Athletic Association Division I football programs. Many of these strength and conditioning specialists perform similar testing with their athletes and were able to corroborate the performance of their athletes at the NFL Combines.

Data was categorized into one of 2 status groups, dependent on whether the player was ultimately drafted into the NFL or not. As mentioned earlier in the subjects section of the methods, player data were also categorized based on one of three positional groups: SP, BSP, and LM. At this time, measures of vertical jump height, and broad jump distance, were converted from imperial units (as they are recorded by the Combine) into SI Units.

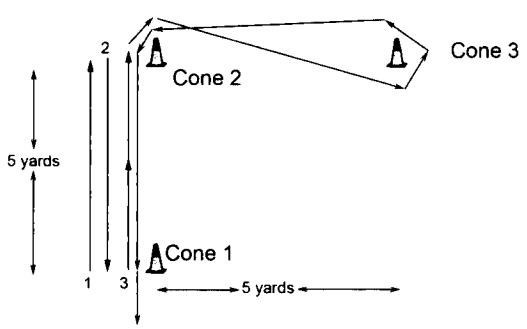

Figure 2. 3-cone drill. Performance is measured in seconds.

Statistical Analyses

All data were collected and entered into an electronic database within using SPSS Version 13.0 for Windows (SPSS, Inc.; Chicago, IL). Descriptive statistics were computed in the form of means and standard deviations; these are presented in Table 1. Although each physical performance measure assessed a domain of performance that should be independent of the others, we divided our a priori alpha level of 0.05 by 3 (alpha level used for analyses $P \leq 0.0167$) in order to minimize the risk of Type I errors by performing multiple comparisons across the three positional groups. Independent t-tests were performed comparing the mean scores of the drafted and nondrafted players for each of the following dependent variables: player height, player mass, time in seconds to complete 40-yard dash, number of repetitions during the 225-lb bench press repetition test, vertical jump height in centimeters, broad jump distance in meters, seconds to complete the pro-agility shuttle, and seconds to complete 3-cone drill.

Results

The purpose of this study was to determine if football players drafted by an NFL team differed significantly in height, mass, and 6 physical performance measures, than nondrafted football players, for each of 3 positional categories. Means and standard deviations for height, mass, and the 6 performance measures, for each of the drafted and nondrafted position groups used in the study are displayed in Table 1.

The results of the independent t-tests suggested drafted SP performed better than nondrafted SP in the 40-yard dash ($t_{124} = -5.773$; $P < 0.001$), vertical jump height ($t_{124} = 2.980$; $P = 0.003$), pro-agility shuttle ($t_{124} = -5.155$; $P < 0.001$), and 3-cone drill ($t_{124} = -5.242$; $P < 0.001$). No significant differences were observed for height, mass, 225-lb bench press repetition test, or broad jump.

For the BSP, significant differences were observed on the 40-yard dash ($t_{94} = -3.191$; $P = 0.002$) and 3-cone drill ($t_{94} = -2.859$; $P = 0.005$) between drafted and nondrafted players; drafted players performed significantly better than nondrafted BSP in these two performance tests. No significant differences were observed for height, mass, pro-agility shuttle, broad jump, 225-lb bench press repetition test, and vertical jump height.

The results of the independent t-tests performed to compare the drafted to the nondrafted LM indicated significant differences between groups on the 40-yard dash ($t_{97} = -2.441$; $P = 0.016$), the 225-lb bench press repetition test ($t_{97} = 3.018$; $P = 0.003$), and the 3-cone drill ($t_{97} = -2.863$, $P = 0.005$). A marginal, but not statistically significant difference was observed between groups for the pro-agility shuttle ($P = 0.022$). No significant differences were observed for height, mass, vertical jump height, and broad jump distance.

Discussion

The NFL Combine is considered by many experts to be the premier event in which potential NFL recruits are able to

Table 1. Means (±*SD*) of height, mass, and six performance measures for drafted and nondrafted players by position group.

	Skill players		Big skill players		Linemen	
	Drafted	Nondrafted	Drafted	Nondrafted	Drafted	Nondrafted
Height (cm)	181.92 (5.71)	182.34 (5.09)	190.05 (4.24)	190.30 (4.34)	194.32 (4.15)	193.38 (4.26)
Mass (kg)	91.67 (7.77)	92.61 (6.91)	114.94 (7.31)	116.34 (9.03)	142.41 (6.84)	140.00 (5.33)
40-yard dash (s)	4.490 (0.093)*	4.594 (0.109)	4.742 (0.137)*	4.831 (0.130)	5.205 (0.184)*	5.309 (0.217)
225-lb bench press repetition test	16.53 (4.18)	17.07 (4.74)	23.49 (4.80)	22.18 (5.23)	26.46 (5.40)*	23.10 (4.31)
Vertical jump (cm)	93.48 (7.48)*	89.51 (7.19)	86.96 (6.54)	84.18 (11.23)	75.06 (7.38)	73.79 (8.38)
Broad jump (m)	3.05 (0.15)	3.01 (0.14)	2.94 (0.14)	2.88 (0.20)	2.62 (0.16)	2.62 (0.20)
Pro-agility shuttle (s)	4.080 (0.141)*	4.214 (0.147)	4.244 (0.178)	4.314 (0.182)	4.614 (0.174)	4.708 (0.205)
3-cone drill (s)	7.015 (0.220)*	7.217 (0.203)	7.264 (0.272)*	7.423 (0.261)	7.779 (0.219)*	7.931 (0.292)

Note: an asterisk (*) denotes drafted players performed significantly better than nondrafted players ($P \leq 0.0167$).

display much of their physical prowess for the coaching staffs of the 32 NFL teams. The tests employed during the Combine are specifically chosen as sport-specific assessments that are meant to mimic the needs of the athlete during competition on the field. These tests are intended to be a measure of whether or not an athlete possesses the unique physical attributes considered necessary to be successful in the NFL. It would be logical then to think that the athletes who are able to perform better during the Combine would be the athletes that are being drafted by the NFL coaches. However, this has remained anecdotal at best and never quantifiably shown to be true. Therefore, the purpose of this study was to determine if football players who were drafted by an NFL team are significantly different on height and mass, and six different physical performance variables than football players not drafted by an NFL team, for each of 3 player position categories.

Due to the specific fitness characteristics required for all the players included in the SP group, the significant difference in the 40-yard dash, vertical jump, pro-agility shuttle, and 3-cone drill assessments between the drafted SP and the nondrafted SP observed in this study were expected. The positions of Wide Receiver (WR), Defensive Back (DB), and Running Back (RB) all require a tremendous amount of speed and agility during play. An example of this speed can be seen between the WR and DB after their initial contact during a play. Once this occurs, the WR will attempt to create separation from the DB; whereas, the DB will attempt to pursue the WR down field. Both of these positions may be required to run at an all-out pace on any given play during a game, and possibly multiple times in the same game. Similarly, a RB will also run the same type of routes as a WR would; because of this, the RBs are also required to be able to produce speed and change in direction as quickly as possible. In a study by McGee and Burkett (5), using a similar methodology to our study, where the researchers categorized football players into groups according to their physical performance characteristics of position on the field, differences in the Combine test results between high drafted players versus lower drafted players were observed. Even though McGee and Burkett's study did not look at drafted and nondrafted players, an observed difference in test results and draft position suggested a better draft position may be attained based on the Combine test results. The results of our study and the study conducted by McGee and Burkett should be interpreted with care by strength and conditioning specialists; being drafted may not be the end goal but, in most cases, the order in which a player is drafted may represent the potential difference between millions of dollars in draft bonuses.

When comparing the results of this study to results of previous studies involving football player's performance, the emphasis on speed, agility, and in some cases, the ability to jump higher becomes even more evident. Previous work studying football players and their associated physical attributes have demonstrated these performance variables are a necessity for the success of a player in any of the skill positions (2,3,8). Therefore, the results of the present study suggests that players in the skill group should prepare themselves as much as possible to perform considerably greater during the 40-yard dash, vertical jump, pro-agility shuttle, and 3-cone drill assessments throughout the NFL Combine in an effort to increase the chances of being drafted.

Since BSP (Linebackers, Fullbacks, and Tight ends) require speed in order to dutifully perform their respective positions, we expected drafted players in this group would be faster than undrafted players. Our data support this hypothesis, as the drafted players were significantly faster than the undrafted BSP in our sample on the 40-yard dash ($P = 0.002$). The reason for the significant result presented

by this study during the speed assessment for the BSP may be attributed to the short distances within which these athletes are used to performing. Linebackers, Fullbacks, and Tight ends are players that produce a tremendous amount of speed within the first 5 to 10 yards from the line of scrimmage. Previous research has shown a strong correlation ($r > 0.95$) between the 10-, 20-, and 40-yard dash times of athletes tested during the Combine (5). Therefore, the decision of choosing the 40-yard dash as the only mean to evaluate the speed of the BSP was proven to be a valid and important parameter for our study.

Since players clustered into the BSP group also require a great deal of agility, the significant difference observed for the 3-cone drill between groups was also expected. Since the test itself requires the athletes to move explosively in short, agile movements, it would make sense that drafted BSP would perform better in this test. The short, explosive motions of these players as they converge on the line of scrimmage become apparent in virtually every play during a game.

Surprisingly, the results of the BSP group analyses did not present significant differences in the vertical jump and 225-lb bench press repetition test assessments between the drafted BSP and the nondrafted BSP players. Based on our study, the hypotheses that drafted players in this group would be stronger and more powerful than undrafted players were proven not to be true for this group of players drafted in 2004 and 2005. Given the physical characteristics of this positional group, strength and explosive power were expected to play a pivotal role in the performance of these athletes.

With respect to the vertical jump, previous research suggests that many coaches use the vertical jump as a measure of lower body explosive power due to the close correlation between the two (1). This idea inspires 2 possible explanations for the lack of a significant difference in vertical jump height between drafted and nondrafted players in the BSP group. First, due to the anecdotal importance of this test, athletes may have allotted a significant amount of time to vertical jump training resulting in all athletes, regardless of draft status, performing at equal levels. Furthermore, given many coaches also consider the 40-yd dash as a test of explosive power, coaches may place a greater reliance on this test; this likely would result in less time spent on vertical jump training. The same two arguments could be made for the results of the 225-lb bench press repetition test for the BSP. The nonsignificant difference between drafted and undrafted players on measures of vertical jump height performance and the 225-lb bench press repetition test are somewhat in disagreement with McGee & Burkett (5). The difference in results between the current study and the McGee and Burkett study may be attributed to the different sample recruitment protocols. In the present study, all players included as part of the sample had to be tested for all of the performance variables included in the analyses, while in the McGee and Burkett study that was not the case. In the McGee and Burkett study, players who had missing data from the Combine assessments were included in the analyses, which could have potentially altered the results of the analyses.

Even though no significant differences were found in the vertical jump and the 225-lb bench press repetition test parameters between drafted and nondrafted BSP, these parameters should not be viewed of secondary importance, since players in this group are required to possess explosive power and strength. The results of this study simply imply that between these groups of players, it seems that the differences that may exist in power and strength between drafted and nondrafted players are not large enough to impact draft status. According to the results of the current study for the BSP, speed and agility seemed to be the most important parameters to take into consideration by coaches willing to increase their player's chances to be drafted by a NFL team.

Based on our own experiences and following extensive discussions with certified strength and conditioning specialists as well as current collegiate football players, we hypothesized 2 of the assessments (225-lb bench press repetition test and pro-agility test) utilized during the NFL Combines would be best suited to differentiate between drafted and undrafted LM. The results of our analyses for this hypothesis also displayed mixed and interesting outcomes. The significant difference found between groups for the 225-lb bench press repetition test was expected. This is due to the relative increased upper body demands of LM during position-specific drills and game play. Much of the power and strength for these players comes from the lower body; however, the transfer of this strength and power occurs through the upper extremities and is typically imparted to the opponent through the arms. According to Mayhew et al., the 225-lb bench press to fatigue test is considered a valid predictor of one-rep max (1-RM); however, the researchers noted a decrease in the predictive abilities of this test once the repetitions exceed 10 (4). Our data would suggest that although the mean number of repetitions on this test for both drafted and nondrafted players exceeded 10 repetitions, there is still some predictive value to improve performance on this assessment. The endurance nature associated with strength of each play, are necessary characteristics for a player in the LM group to succeed in the sport. Therefore, the possibility of a prediction error of 1-RM, presented by Mayhew et al. (4) as a limitation of the 225-lb bench press repetition test, should be viewed with caution in this case.

The non-significant difference observed between the drafted and nondrafted players for the pro-agility shuttle was quite surprising. Since this test is quite similar to the 3-cone drill that presented significant differences between drafted and nondrafted LM in this study, it seemed reasonable that drafted LM would also perform better at this task than nondrafted LM. However, a marginal, but not statistically significant difference between groups for the pro-agility shuttle ($P = 0.022$) was observed. Although surprising, published literature suggests this finding to be somewhat typical. Davis et al. found a positive correlation between body

weight and the pro-agility shuttle ($P < 0.001$), suggesting an increase in body weight would result in an increase in shuttle time (2). Since the 3-cone drill assessment lasts slightly longer than the pro-agility shuttle, it is conceivable that the pro-agility shuttle assessment may have been too short of a test to exhibit significant differences for this position group. Notwithstanding, our results would suggest, at best, that the pro-agility shuttle be further investigated for its merit in differentiating between performance levels of drafted and nondrafted LM.

Overall, there are a number of other possible explanations as to why the drafted players' scores were significantly greater than those of the nondrafted LM in many different performance variables. It may be as simple as better preparation on the part of the drafted players or as complex as a discussion of genetic predispositions dictating that the drafted players were "designed" to perform at a higher level. Due to the nature of the metabolic demands required for players in this sport, it is not surprising the most genetically gifted and trained athletes are able to generate more force and speed (7), which allow for better NFL Combine performances and potentially a more stellar NFL career.

Our discussion would not be complete without acknowledging the limitations of our study. We focused solely on the physiological characteristics of the NFL Combine, without regard to other potentially confounding factors involved in the draft process such as the athletes' football playing ability, the athletes' collegiate career, how the athletes reacted to the team interviews, the position-specific drills, the athletes' overall attitude and personality, and possibly the school or conference to which the athlete belonged, to name a few. However, by using the physical performance measures we were able to objectively and quantifiably answer our research questions. We also omitted the Wonderlic test, a psychological profile test administered to each player, and part of the NFL Combine battery of tests. The potential confounders should be included as part of any future research in this area. Another limitation was a relatively small sample size. As future studies will have access to larger datasets, we will be able to further explore these questions on each of the individual positions rather than grouping a number of positions into three positional groups. Another limitation of the present study was that our data were gathered from a commercial website. We were unable to acquire the data from the consulting firms responsible for the collection and storage of the results of the NFL Combine. Even though a number of the athletes' results included in the study were confirmed by NCAA certified strength and conditioning specialists through personal communications, all possible efforts should be put forth to guarantee acquisition of the original NFL Combine data for the purpose of future research. The exclusion of the Quarterback, Punter, and Kicker positions also limit the present study. We omitted these positions since their draft status is most typically associated with on-field performance rather than NFL Combine performance. The authors do acknowledge, however, that the Quarterback position does include some performance characteristics that are tested during the NFL Combine. Consequently, inclusion of this position would be justified in future studies as long as the subject pool for this position is large enough to yield statistically powerful findings, with the a priori recognition that many Quarterbacks do not complete all the NFL Combine testing. Lastly, our study included only athletes that had completed eight measurements of the NFL Combine we were interested in. As a result, we excluded a small subset of both drafted and nondrafted athletes invited to the 2004 and 2005 Combines. Since many of the highly sought-after athletes are instructed not to participate in the Combine testing, the results of these arguably better athletes have been omitted from this study; this may have been a factor that influenced the results of the study.

Practical Applications

The authors of this study acknowledge the importance of preparing an athlete for all of the Combine's tests, including those not examined by this study; however, an emphasis on the assessments in which drafted players performed significantly better than their counterparts should be viewed as possible variables of major attention when designing a training program for these athletes. According to the results of our study, the 40-yard dash, vertical jump, pro-agility shuttle, and the 3-cone drill were the variables in which major differences between drafted and nondrafted players included in the skill players (SP) group–wide receivers, cornerbacks, free safeties, strong safeties, and running backs–were observed. As predicted, speed and agility continue to be the major characteristics of players in the SP group; therefore, emphasis on these types of drills should continue in order to better prepare athletes in this group. Additionally, speed and agility can only be attained with a cohesive strength training program aimed at strength and power development. The ability to generate strength with maximal speed (i.e., explosiveness) is of fundamental importance in the preparation of athletes seeking draft status in the NFL as a skill player. A training program designed for the development of strength and power along with specific exercises focused on improving vertical jumping ability should be considered by the strength and conditioning team. For players included in the big skill players (BSP) group–fullbacks, linebackers, tight ends, and defensive ends–significant differences between drafted and nondrafted players were observed in the 40-yard dash and the 3-cone drill. When preparing for the NFL combine, the results of our study suggest strength and conditioning specialists and their athletes with characteristics of a big skill player should focus on improving forward acceleration and agility. Lastly, for players included in the linemen (LM) group–centers, offensive guards, offensive tackles, and defensive tackles–significant differences were observed on the 40-yard dash, 225-lbs bench press test, and 3-cone drill. According to the results of our study, the strength necessary to perform the

tasks for players assigned to this LM group, associated with the ability to produce greater forward speed, may increase the likelihood of being drafted. As expected, players in this group would differ in strength and the ability to move laterally between drafted and nondrafted players. Besides focusing more exclusively on strength development, forward acceleration and overall speed should not be neglected when preparing a LM for the NFL Combine.

Professional football coaches within the NFL may also find these results to be of interest. The initial instincts of a coach suggesting that a player will be successful in the NFL may be further confirmed by the athletes' performance during the Combine. If the athletes' scores during the Combine are similar to the results shown by this study, the coaches' impulse to draft that athlete may be scientifically supported. This may be a determining factor of whether a player is given the opportunity to move to the professional level of football.

This study has not controlled for all possible reasons an athlete would be drafted; however, it has introduced an interesting perspective on how to scientifically evaluate a players physical attributes and facilitate the necessary training, which may possibly assist that player to become a successful professional football player. Using these results as a starting point during an initial evaluation of a player's strengths and weaknesses could be the key to increasing their ability to perform at the highest possible level during the tests of the Combine.

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