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Increasing Collegiate Strength and Conditioning Coaches' Communication of Training Performance and Process Goals With Athlete

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Abstract (99/100 words)

The purpose of this paper is to present information about goal setting and how strength and conditioning coaches (SCCs) can incorporate goal setting strategies in their training of athletes. This paper presents an overview of outcome, performance, and process goals, and the SMAART framework. Strategies a SCC can utilize are presented to illustrate how to increase the effectiveness of the performance and process goals that informed the program periodization and feedback provided by the SCC. This paper aims to start bridging the gap between SCCs familiarity with goal setting and incorporation of this mental strategy into their communication with athletes about training.

Keywords: Mental strategies, Performance, Collegiate, Long term Athlete Development

Increasing Collegiate Strength and Conditioning Coaches' Communication of Training Performance and Process Goals with Athletes

Strength and conditioning coaches (SCCs) play a central role in the development of student-athletes (17) because SCCs work with athletes throughout the entire year. As SCCs do not make scholarship or starting position decisions, SCCs have the unique opportunity to regularly interact with athletes without the athletes' feeling pressured that their playing time or scholarship is necessarily on the line. This could be beneficial in building relationships and rapport with athletes that establishes trust and fosters athletes' motivation and performance during training sessions (4, 9, 11, 20). In addition to teaching athletes exercise techniques, expert SCCs utilize different mental strategies within their training sessions to increase athletes' motivation (i.e., effort and engagement), confidence, and eventual performance (4, 5, 9). While many mental strategies fit naturally and seamlessly with strength and conditioning training (15), the majority of SCCs report being less than moderately trained or educated in utilizing sport psychology generally (e.g., motivation, feedback, relaxation, stress management) or mental strategies specifically (e.g., goal setting, imagery, self-talk) (9, 14). A lack of training could limit SCCs integration of these mental strategies into their athletes' training sessions, either as part of preparation, during training, or recovery practices. Based on a survey of SCCs within NCAA Athletic Departments in the USA, SCCs seem to value the integration of particular mental strategies in their daily activities with athletes (10). For example, SCCs reported utilizing goal setting most frequently, at a rate of "often" to "all of the time" (14,15). Furthermore, the frequency that SCC's use specific mental strategies was only weakly related to their familiarity with the strategies, as well as their confidence to effectively demonstrate them (14). Importantly, SCCs reported that the more training they had on mental strategies, the more familiar they were

with those mental strategies (14), which suggests that the training they had received on mental skills training was being retained. Perhaps what is necessary to bridge the gap from familiarity to use is having more strength and conditioning specific examples of how to use mental strategies within athlete training sessions. Therefore, to move toward an increase in SCCs use of a mental strategy they are already using in programming, the purpose of this article is to focus on how goal setting concepts can be incorporated into strength and conditioning. First, background knowledge and general research-based education about goal setting is presented, followed by examples of how goal setting strategies can be incorporated into collegiate strength and conditioning training sessions.

Goal Setting

Background Knowledge. There are three general categories of goals: outcome, performance, and process. Outcome goals focus on the outcomes of competition, such as coming in first in a race, lifting more than teammates (e.g., performance boards), or winning an event/match (1, 2). These goals are often focused on direct comparison to others, and therefore not completely under the athletes' control. Performance goals focus on meeting specific performance markers such as squatting 1.5 times one's bodyweight (e.g., soccer, football), having over a 20-inch VJ (e.g., basketball, volleyball), or running a mile under five minutes (e.g., endurance track athletes). These performance goals are focused on individual improvement on a task and are more effective than outcome goals during training and competition as the achievement of performance goals is under the athletes' control (3). It often helps athletes to break a large performance goal down into multiple sub-performance goals to make incremental achievements towards the long-term goal (22). Both outcome and performance goals can include long-term goals (1-4 years), as well as short (day or week) or moderate (one or more months) term goals. Process goals focus on

the strategies that help accomplish performance and/or outcome goals such as giving 100% effort during training, getting through the sticking point on each bench press repetition by using a focusing cue, maintaining steady splits during mile time trials, or focusing on one's breathing rhythm when running a mile (3, 23). These goals are also within athletes' control. SCCs often instruct athletes with technique cues, which can be used as process goals; however, SCCs do not necessarily call these technique cues process goals or necessarily explain to the athletes how focusing on the technique cues can help them achieve their performance goals. See Figure 1 for examples of sport goals aligned with performance and process goals.

Outcome goals are inherently dependent upon the performance of the athletes in comparison to others (e.g., opponents, teammates) (5, 23), which means success is not completely under the athletes' control. For example, track athletes can run their fastest time (i.e., personal best) and still not win the race or qualify for the subsequent race. Although, it is not uncommon for athletes to have outcome goals such as lifting the most weight (e.g., Performance Board Rankings), such outcome goals (such as the Performance Board Rankings) may not be realistic. Even if realistic, focusing solely on the outcome has been shown to increase athletes' anxiety and diminish their performance because their attention is on the consequences of either successfully achieving that outcome or failing to do so (3). When athletes focus on performance and process goals (i.e., goals under their control), however, their anxiety is diminished and they are able to have better performances (3, 23). By having process goals, athletes' attention stays on the immediate activity (e.g., the process of performing the task) rather than on the implications of the activity (e.g., wining a competition or becoming a starter). While outcome goals can be motivating, performance and process goals should be the focus during the task, both at training and competition. By focusing on performance and process goals, athletes give themselves the

best chance to achieve their outcome goals. This is why it is important to assist athletes in learning to focus on performance and process goals.

Goal setting is integrated right into designing periodized programs (8, 18, 21). The SCCs design periodized programs to address the performance needs of the athletes based upon their sport and to minimize their injury risk. There can be multiple sources for these performance needs including the sport coaches, the athletes' performance on the assessment battery of the SCC, and from athlete feedback. Then, SCCs typically use the overarching sport goals (e.g., increased blocking and spiking success in volleyball, increased speed for starts and finishes of endurance runners) to inform the team and individual performance goals that SCCs develop when designing athletes' training programs. For example, increased VJ goals could be one performance goal that informs training for the volleyball team to achieve the sport goal of increased blocking and spiking success. While there may be a team goal for this increase, there will also be goals for the individual athletes based upon their position, current VJ performance, and training history. In a different case, endurance runners may need additional lower body power training to increase their sprinting speed to attain their sport goal of improved race starts and finishes. The athletes' performance results and even their feedback could inform the goals the SCC is addressing with the program design. However, the athlete does not know the ultimate goals the SCC focused on in the programming process *(See figure 1)*. Nor does the athlete know how their sport goals connect to the relevant performance and process goals that informed the training program's design. Therefore, the following section focuses on how to increase SCC's communication with athletes to improve athletes' use of performance and process goals. By building this valuable mental strategy in the weight room, SCCs should be able to help increase their athletes' strength and conditioning training performance.

With greater understanding about the goals and expectations that informed the training program and how it connects to their sport performance, athletes' ownership over their training, competence, and intrinsic motivation are likely to increase (12, 13, 16). In addition, it is also important to help athletes focus on goals that are self-referenced, because these are goals they have the greatest control over. Athletes may have specific training goals related to improvements in certain assessments or aspects of performance. SCCs can help educate their athletes to understand when specific improvements are timed to occur within the program design and why. How these improvements are measured can also help athletes understand how their training exercises affect their performance on assessments, as well as in their sport. An acronym that has been shown in research to be associated with effective goal setting is SMAART: Specific, Measurable, Aggressive yet Achievable, Relevant, and Time-Bound (22, See Table 1). Thus, using this validated framework may help SCCs when explaining to athletes the purpose behind the training program, and the SCCs' estimated short and long-term goals based on the design of the training program.

Without receiving this education from their SCCs, athletes may set goals without the SCCs knowledge, which might lead to setting inappropriate goals. This could include having the wrong timeframe (1 month rather than 3 months) to achieve a goal. Thus, the goal is too challenging and unrealistic for the training goal timeframe. For example, a freshman baseball athlete whose squat maximum was 220 pounds may want to have a squat maximum of 300 pounds by the end of one month. Even if this maximum is achievable, and some athletes may be able to accomplish it within one month, others may take two, three, or more months. For some athletes, the maximum of 300 pounds may not be achievable. Educating athletes about what is achievable for them and realistic is an important part of the job as SCCs. For example, SCCs

know to expect no more than a 10% increase in athletes' strength on a weekly basis (6); however, this is not common knowledge to non-SCCs. Sharing such basic knowledge with athletes can help them have more achievable and realistic goals such as a percentage increase, or the equivalent pounds/kilograms, for their squat by the end of a training cycle. Athletes may also have a goal that is achievable for them, but not relevant given their overall sport goals. For example, they could achieve the goal of curling 60 pounds, but it is not currently relevant for them to do so because it does not help them achieve their overarching goal of maximum triathlon performance. Incorporating time boundaries with goals is also important. This is how athletes can have long term goals that are supported by shorter term, sub-goals. Again, when SCCs explain the basics regarding training adaptation and what is emphasized during different phases of training, this too can help athletes align their goals and expectations.

Finally, it is important that the goals be meaningful to the athletes. By talking with athletes and explaining how different exercises affect sport performance, SCCs can help athletes understand the process and performance goals in the weight room that will help them achieve their goals. Educating and connecting athletes' strength and conditioning training to their sport performance goals is likely to increase athletes' buy-in or ownership of the strength and conditioning process and performance goals (11, 12).

Strategies for Incorporating Goal Setting into the Athletes' Training

Next, strategies for how SCCs may incorporate goal setting concepts into training with athletes are presented. These strategies provide different ways for SCCs to educate their athletes about strength and conditioning goals, as well as provide athletes with self-assessment practice during training. Part of this athlete education can be connecting the overarching sport goals of their team to the activities they are doing during training with the SCC. Training time is already a

precious commodity, so each strategy below can take minimal time for SCCs to implement. First, two strategies for incorporating performance goals to motivate athletes are presented. Second, two strategies for incorporating process goals are presented.

Performance Goals in Training

Strategy 1 for Incorporating Performance Goals. First, SSCs would share with athletes the performance goals that informed the program design for their current training phase. This can include both the general focus, such as strength, power, or agility, as well as exercise specific performance goals for the team and for individuals. For example, the SCC can share that the general training goal is to increase power, and the specific power goal for the volleyball team is to increase the team's average VJ by an inch per month for the next three months. In addition, the SCC can use this specific goal to clearly connect the general power goal and exercise specific goals (e.g., VJ testing increase, power clean increases, squat increases) to the team's sport performance and outcomes goals. Overall, the team may need to increase their VJ to improve their combined percentage of serving aces and blocked spikes of the opponent. As part of a team talk, the SCC can help athletes connect one of these important performance markers to specific training exercises (e.g., Olympic-style, plyometric, or strength training). Understanding the reason behind an exercise and its connection to sport performance can also help motivate the athletes when doing their exercises. Communicating these specific connections to athletes will help make achieving the strength and conditioning performance goals more meaningful, which can increase athletes' engagement and ownership of their strength and conditioning training (12).

Although increasing the team's average VJ by an inch each month is appropriate and relevant that does not mean increasing an inch each month is an appropriate or relevant goal for each individual (3). It is also important to provide individual athletes with their personal goals

within the team goal. Some of the athletes may be trying to increase their VJ by more than an inch, while others are near their maximal VJ capability. The individual goal could be provided on the athletes' regular training log along with their training exercises and intensities. The exercises most related to the goals of that training phase could be bolded for the athlete to remind them of this connection or included in a statement at the top or bottom of their training page. By doing it this way, the athletes have both a collective goal and an individual goal to achieve for the same performance marker (24).

Strategy 2 for Incorporating Performance Goals. SSCs can assist athletes in developing their own performance goals for different aspects of training (e.g., training days, training session components such as flexibility, strength, power). These can be short-term performance goals that fit within micro- or mesocycles to assist the athletes in attaining long-term performance goals. Educating athletes about what are reasonable weekly gains will enable them to develop specific, measurable weekly performance improvement goals, rather than the general goal of improving every week. SCCs already estimate these weekly performance goals through the periodization process used for developing training programs (8, 18, 21). Initially, this may take a little time by the SCC to communicate the performance goals that informed the program periodization. The result of this process can be more involved athletes with training knowledge, which may lead to many positive benefits including increased engagement, effort, and motivation (11, 12, 16). An example of a short-term performance goal for a hockey player is increasing front squat weight by five pounds each week in order to increase front squat three repetition maximum by 25% at the end of summer training. This short-term performance goal enables the athletes to see how they are progressing each week on front squat performance. These weekly performance goals can be kept where athletes will see them regularly, such as their

locker, training bag, or on their training record sheet. Having athletes write down their goals and look at them regularly, especially before or during training sessions, will keep these shorter-term goals on their mind, which can help target their training effort (22). If an athlete is not achieving these shorter-term, achievable performance goals, then a conversation with the athlete may help reveal reasons why (e.g., reduced sleep because of exams, being sick the last two weeks) or identify athletes at risk of overtraining or burnout. Then, the SCC can modify or adapt the goals taking this additional information about the athlete into consideration.

Process Goals in Training

Strategy 1 for Incorporating Process Goals. Process goals can focus athletes' attention on the aspects of training that will help them accomplish their performance goals. As with other goals, it is important to try to make process goals measurable or quantifiable so athletes can track their success at achieving these goals (22). Although process goals may seem small, they are the important steps that will help the athlete achieve those larger performance goals. SCCs regularly give technique feedback, which involves communicating with athletes a specific technical process to improve or safely perform an exercise. *For example, when performing the hang clean, the SCC may initially stress the importance of getting triple extension by extending at the hips. This technique feedback (e.g., triple extension, extend through the hips) is a great starting point to identify process goals the athlete should remember when doing the exercise and during the following sessions.* After giving this feedback, the SCC could also remind the athlete to write down the feedback as his/her process goal(s) on their training record for future training sessions. This strategy keeps process goals visible to the athletes during training. Furthermore, to quantify and track the athletes' success at incorporating the process goal into their exercise execution, the athlete can also rate how many of their repetitions successfully incorporated their process goal.

As the athlete masters this process goal, another technical aspect may become the new process goal, such as dropping into a half-squat for the catch phase of the hang clean. By having the athletes write the process goals down, the SCC can also check the athletes are focusing on the appropriate cues as process goals. For example, if the above athlete's written process goal for the hang clean is still triple extension when it should be dropping into a half-squat for the catch, then the SCC gains insight into a disconnect between the SCC's most recent form feedback and the athlete's understanding and use of that feedback. The SCC can then use the athlete's process goal to reinforce that the athlete is successfully achieving triple extension and now needs to focus on squatting for the catch phase to properly and safely complete the hang clean exercise. *Thus, athletes' writing down technical feedback as process goals on their training form reminds the athletes what to focus on and can help SCCs confirm that athletes identified the correct process goal to use during the exercise.*

Strategy 2 for Incorporating Process Goals. In addition to exercise technique, process goals can also focus on other areas such as personal effort, attentional focus (i.e., enhancing athletes' focus to reduce distracted or wasted time), or teamwork (e.g., encouraging teammates during training, or partnering with someone to help them attain their goal, such as effort or focus level). These process goals may be accomplished by using one or more different mental strategies including positive self-talk, focus cues, deep breathing, or breathing rhythm control. For some athletes, it is moving through their workouts efficiently that is difficult, so they can develop process goals around enhancing focus in order to reduce moments of inattention or distraction. To illustrate these types of process goals, a detailed example has been provided in the next paragraph. In these cases, the process goal may actually be two-fold. One, is maintaining or improving one's attentional focus during training. Two, routinely completing the mental strategy

that assists the athlete in maintaining or regaining their attentional focus during training. This type of process goal is synonymous with athletes who have a pre-shot routine in competition that can assist them in having their attention focused on completing the skill at hand (i.e., free-throw) and not on other aspects (e.g., heavy, tired legs; consequence of making the shot; consequence of missing the shot; previous free-throw miss) that are distractions that could negatively affect their performance.

As an example, SCCs may designate 60 second rest periods (e.g., as part of water breaks at the end of multiple super sets) during the workout for the athletes to do their attentional check-in and re-focusing activities. The specific process goals for this example could include taking a deep breath and asking "where I am right now?" at the beginning and end of the 60 second rest period. This can serve as a cue for athletes to "check in" on where their attention is (e.g., past, present, future) and connect themselves to the present. By maintaining attention on the present, athletes reduce distractions (e.g., from the past, events that may occur in the future, or how their performance in training affects other aspects, such as playing time) that can negatively affect their performance (19). Athletes then identify and focus on one thing that will help them perform the next set successfully. At the end of the 60 seconds rest period, athletes take another deep breath and again ask themselves "where am I right now?" This allows them to redirect their focus on where their focus is while following the rest period prescribed. This is realistic to accomplish within a 60 second time period that may even have been included in the session as a water break. Now, the water break has an increased structure to promote the athletes maintaining their attentional focus throughout the training session.

Athletes can also measure the extent to which they stuck to their 60 second rest period plan by logging if they took a deep breath and asked themselves "where am I right now?" at the

start and end of the rest period. They could also record on their training log how well they had maintained their training attention since the last rest period, for example, on a scale from 1 (not at all) to 5 (very well). This approach to assessing, maintaining, or improving attentional focus is challenging yet achievable for collegiate athletes during training sessions. The self-assessment protocol is also an efficient use of athletes' time between multiple exercises or sets and benefits the athletes by assisting them in using their necessary recovery time to stay focused throughout their training session. These ratings can then be used by both the SCC and the athlete to assess how well the athlete is doing at maintaining attention, when attention seems to lag, and then intra-individual assessment of how the athletes' attentional focus is improving (e.g., averaging a 4 out of 5 during training compared to a 2.5 out of 5 the previous semester). Lastly, this goal focuses on the process and is desirable because it is within the athletes' control.

To reinforce athletes' ownership of their goals, SCCs can encourage their athletes to track their process goals. One way of doing this is by including a box on their training sheet designated for recording their process goal measures. For example, in this box on their training log, athletes can record how many times they stuck to the 60 second rest period plan and then, if needed, have a specific strategy to improve sticking to the plan. Rather than maintaining attentional focus, some athletes may need to develop process goals around maintaining motivation when it comes to certain exercises. They can have process goals to that help quantify their goals for these exercises, or that track their effort level on the "least exciting" exercises, such as sit-ups, stability, or stretching. Prior to starting those exercises, they may need to focus on why these exercises are important for their sport or use self-talk to increase their effort level. Tracking how well they maintained effort can help them determine the most effective way to give high effort on their least preferred or exciting exercises. Recording their performance on process goals can

keep these daily goals on the athletes' mind during training. This recording also gives the SCC an opportunity to notice if an athlete needs help attaining important process goals.

Conclusion

SCCs have reported that they use mental skills and strategies in their daily work with athletes (16). What distinguishes novice from expert SCCs is continuing education that supplements SCCs' exercise physiology knowledge with psychological strategies related to motivation, leadership, and pedagogical strategies (4, 7, 11). This article was one attempt to provide SCCs with strength and conditioning specific examples of how the mental strategy of goal setting can be integrated into training and emphasized with minimal additional time and effort by the SCC. Specifically, the importance of focusing athletes on process and performance goals was introduced. The two strategies for how to incorporate performance goals into athletes' training experience were to share the performance goals that the SCC used in program design development and to assist athletes in developing their own performance goals that are informed by the phase and purpose of the current training cycle. In addition, strategies for how to incorporate process goals into athletes' training experience were described. One of these strategies was to have the athlete write down their technique cues for an exercise and rate how well they executed that technique. The second strategy highlighted how SCCs may utilize short training breaks to keep process goals (e.g., effort, focus, supportive teammate) a focus throughout athletes' training. This included how process goal recording can be incorporated to track athletes' performance on those process goals. SCCs' efficacy toward and use of these strategies will hopefully increase by continuing to provide strength and conditioning specific strategies for how to effectively incorporate these and other mental strategies into SCCs training programs. As SCCs' integrate the use of mental strategies more intentionally with the traditional

strength and conditioning activities, both athletes and SCCs will likely benefit.

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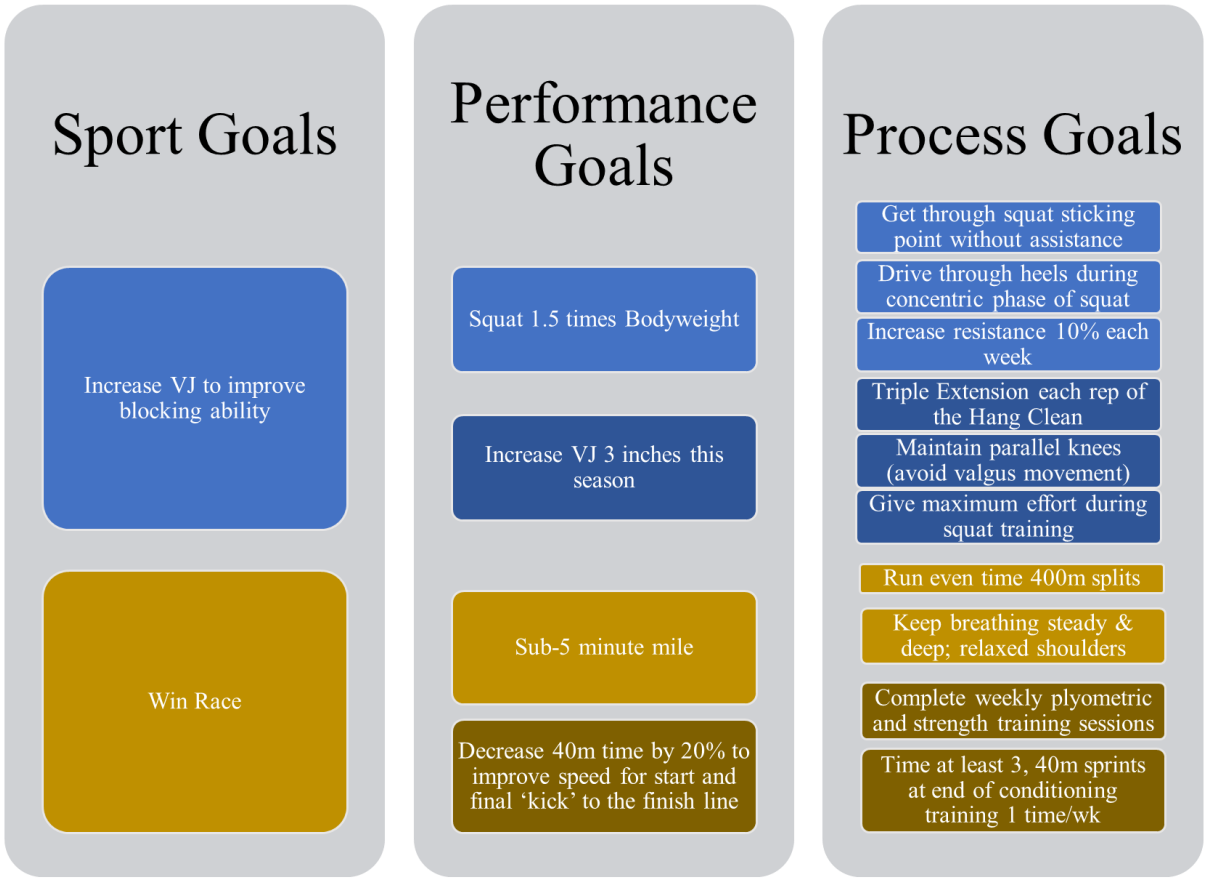
Figure 1. Examples of how Sport Goals and Training Performance & Process Goals Relate



Note. Goals are color-coded horizontally to illustrate process goals to assist with achieving performance goals that align with example sport goals.

Table 1. One Year Barbell Back Squat Outcome, Performance, & Process Goals: Are they SMARTS?

	Specific	Measurable	Achievable	Realistic	Time-Bound	Self-Referenced
Outcome: Be #1 on Wt Rm Squat Lifting Chart by start of next year's pre-season	Yes	Yes, it can be measured relative to others. However, as a result, the target is always changing	PERHAPS: **Good time for SCC to give advice**	PERHAPS: **Good time for SCC to give advice**	Yes	No
Performance: Squat 1.5 times bodyweight by end of this year	Yes	Yes	Yes	PERHAPS: **Good time for SCC to give advice**	Yes	Yes
Process: Get through sticking point without spotter assistance by end of season	Yes	Yes, can record # of reps spotter assisted	Yes	Yes	Yes	Yes
Process: Drive through heels during concentric phase by end of season	Yes	Yes, can record # of reps did this	Yes	Yes	Yes	Yes

Note. The outcome goal listed representative of outcome goals athletes may develop that may not be achievable or realistic, and as a result may not be motivating either. Although, being first or not is measurable, the weight an athlete needs to lift to become #1 will often change with each testing session. Therefore, achieving this goal is relative to others' performance, which is not under the athlete's control. Educating athletes can help reduce their focus on outcome goals, and can open the conversation for the SCC and athlete to discuss individual goals in more depth. By providing athletes with short-term target goals for lifting the SCC is also educating the athlete, so that amounts relative to an individual's bodyweight can also be discussed regards to being achievable and realistic. As an athlete increases muscle mass to increase strength, the amount necessary to squat 1.5 times his/her bodyweight also increases.

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