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IMPACT OF ASSISTED AND RESISTED SPRINT TRAINING ON SPEED, COORDINATIVE ABILITY, AND STRENGTH IN INTERCOLLEGIATE ATHLETES

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ABSTRACT

This paper explores the impact of assisted and resisted sprint training on speed, coordinative ability, and strength in intercollegiate athletes. Sprinting, a fundamental skill for athletes across various sports, demands a combination of strength, coordination, and speed. The paper examines the physiological effects of assisted sprint training (which involves devices or techniques to increase speed, such as downhill running or tethered sprinting) and resisted sprint training (which includes uphill running, sleds, or resistance bands to create an opposing force).

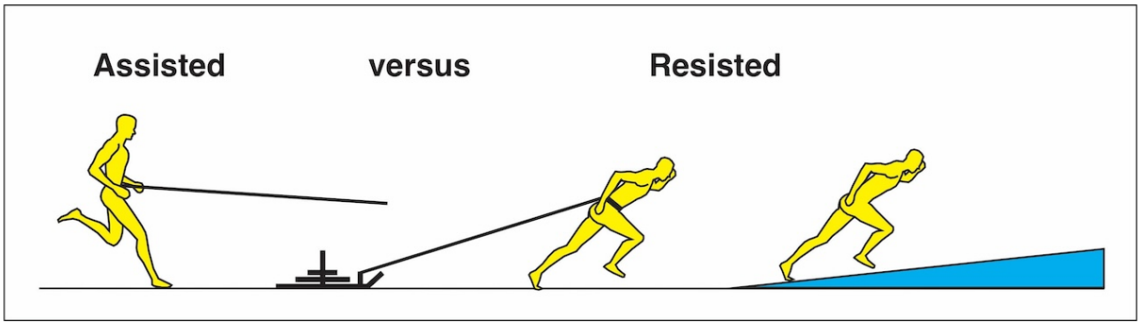
The study delves into how assisted sprint training enhances stride length, power output, and acceleration, contributing to improved maximal speed. It also highlights the role of resisted sprint training in enhancing strength, muscle recruitment, and force production, which translates to better sprinting performance over longer distances and increased power during acceleration phases. Furthermore, the review addresses the influence of these training methods on the coordinative abilities of athletes, such as balance, rhythm, and body control while sprinting. These components are essential in optimizing an athlete's performance and reducing the risk of injuries.

The paper concludes by suggesting that combining both training methods can provide a holistic approach to improving speed, strength, and coordination, offering a competitive edge to intercollegiate athletes in track and field, football, and other speed-dependent sports. The paper calls for further research to explore long-term effects and optimal training protocols for diverse athlete profiles.

Keywords: Assisted Sprint Training, Resisted Sprint Training, Speed, Strength, Coordinative Ability, Intercollegiate Athletes, Sprint Performance, Muscle Recruitment, Acceleration, Power Output, Stride Length, Athletic Performance, Training Methods, Injury Prevention, Track and Field, Speed-Dependent Sports

1. INTRODUCTION

Sprint training plays a crucial role in enhancing the athletic performance of intercollegiate athletes, especially in sports that require high-speed movement. Among the various training techniques, assisted and resisted sprint training have gained attention for their potential to improve speed, coordinative ability, and strength. Assisted sprint training involves the use of external forces to increase the speed of an athlete during sprinting, such as being towed by a vehicle or using elastic cords. This technique aims to enhance stride frequency and speed by reducing the impact of ground resistance. Conversely, resisted sprint training, which involves external resistance like sleds, parachutes, or weighted vests, is focused on building strength, acceleration, and power by increasing the forces the athlete must overcome during sprinting.



Source sprintcoach.com

The impact of these training methods has been extensively studied, as both assisted and resisted sprint training are believed to contribute significantly to improving an athlete's overall performance. However, there is still a need to comprehensively evaluate how each method influences speed, coordinative ability, and strength, particularly in the context of intercollegiate athletes who must balance intense training schedules with competition demands.

This paper aims to synthesize existing research on the effects of assisted and resisted sprint training on the physical attributes critical for athletic success. By examining studies on various sports disciplines, this paper will provide insights into the benefits and limitations of each technique, offering evidence-based recommendations for coaches and sports practitioners seeking to optimize performance in sprinters and athletes involved in speed-dependent sports.

2. BACKGROUND OF THE STUDY

Sprint training plays a critical role in enhancing athletic performance, particularly in disciplines that demand speed, agility, and strength. In the context of intercollegiate athletics, athletes continually seek methods to optimize their training regimens to achieve peak performance levels. Among the various sprint training techniques, assisted sprinting (where the athlete is aided in increasing their speed) and resisted sprinting (where external resistance is applied to enhance strength and power) are commonly utilized strategies.

Assisted sprint training primarily focuses on improving the athlete's ability to reach higher velocities by reducing the drag or providing external forces, such as through towing mechanisms or downhill running. This type of training aims to enhance neuromuscular adaptation, coordination, and stride frequency. On the other hand, resisted sprint training involves the application of resistance, such as sled towing or uphill running, to increase the force output, strength, and explosive power of the athlete. Resisted sprinting helps in improving acceleration, stride length, and overall strength by forcing the body to overcome additional load during movement.

Despite the growing popularity of these sprint training methods, there is a lack of comprehensive studies focusing on their combined impact on various aspects of athletic performance, particularly on speed, coordination, and strength in intercollegiate athletes. Most research either focuses on one training method in isolation or provides limited insight into their long-term effects. Understanding the benefits and challenges of both assisted and resisted sprint training can be crucial for developing more effective and well-rounded athletic training programs.

This study aims to review and synthesize existing research on the impact of assisted and resisted sprint training on key performance indicators, such as speed, coordinative ability, and strength, in intercollegiate athletes. The findings from this study may contribute to refining training strategies, enhancing athletic performance, and providing coaches and athletes with evidence-based insights to optimize their sprint training routines.

3. JUSTIFICATION

The research paper titled "Impact of Assisted and Resisted Sprint Training on Speed, Coordinative Ability, and Strength in Intercollegiate Athletes" is both timely and relevant in the current landscape of sports science. Sprint performance, a key component in many athletic disciplines, is influenced by various physiological and biomechanical factors. The purpose of this paper is to synthesize existing research on two popular training modalities—assisted sprint training (AST) and resisted sprint training (RST)—and their effects on the key components of speed, coordinative ability, and strength among intercollegiate athletes.

1) **Growing Interest in Sprint Training Methods:** The interest in sprint training has increased significantly due to its importance in improving athletic performance, particularly in sports requiring explosive speed. Both assisted and resisted sprint training have gained attention in recent years due to their potential to enhance various components of sprinting, such as acceleration, maximal velocity, and overall sprinting mechanics. Understanding the effectiveness of these methods in the context of intercollegiate athletes—who are at a critical stage of athletic development—is crucial for optimizing training regimens.
2) **Impact on Performance Factors:** Speed, coordinative ability, and strength are foundational elements for athletic success. Speed is essential for success in competitive sports, while coordinative ability contributes to an athlete's agility, technique, and movement efficiency. Strength is directly linked to the power and force production necessary for sprinting. Assisted sprinting techniques (such as downhill running or using high-speed towing) and resisted sprinting methods (such as weighted sleds or resistance bands) have shown promise in improving these physical attributes. Therefore, this paper will provide an in-depth evaluation of how these methods can be utilized to develop these essential skills in athletes.
3) **Bridging the Gap in Research:** While there is an abundance of research on sprint training techniques, there remains a lack of comprehensive studies that analyze the combined effects of assisted and resisted sprint training on all three key aspects of athletic performance—speed, strength, and coordination—specifically in intercollegiate athletes. By reviewing the existing literature, the paper aims to fill this gap, providing a clearer understanding of the training modalities' comparative effectiveness.
4) **Implications for Training and Athlete Development:** The findings from this review will have direct implications for coaches, sports scientists, and strength and conditioning professionals working with intercollegiate athletes. It will provide evidence-based insights into which sprint training method may be more effective for improving speed, strength, and coordination in athletes, helping to inform training strategies and maximize performance outcomes. Additionally, it will contribute to the broader understanding of sport-specific conditioning and athlete preparation in collegiate sports.
5) **Practical Applications in Coaching:** The paper's findings will also be beneficial for designing training programs tailored to the unique needs of intercollegiate athletes. These athletes typically juggle academic responsibilities and rigorous athletic schedules, making it essential to develop training programs that are both time-efficient and effective in improving their performance. By analyzing the comparative advantages of assisted and resisted sprint training, the paper will assist in the creation of training protocols that are more adaptable to their specific needs.

This study is significant as it not only contributes to the field of sports science by evaluating the impacts of specialized sprint training techniques but also provides practical knowledge that can enhance athletic development and performance in intercollegiate sports.

3.1. OBJECTIVES OF THE STUDY

1) To analyze the impact of assisted sprint training on the speed performance of intercollegiate athletes
2) To investigate the effect of resisted sprint training on the strength and power output of intercollegiate athletes
3) To evaluate the influence of both assisted and resisted sprint training on the coordinative ability of athletes
4) To compare the overall effectiveness of assisted and resisted sprint training on athletic performance outcomes
5) To identify the practical implications and recommendations for incorporating assisted and resisted sprint training into athletic training programs

4. LITERATURE REVIEW

Sprint training is essential for enhancing athletic performance, particularly for athletes in sports requiring explosive speed, agility, and strength. Among various sprint training methods, assisted and resisted sprint training (ARST) have garnered attention due to their potential to improve speed, strength, and coordination. These training techniques, when applied effectively, can offer significant benefits to intercollegiate athletes striving for peak performance in competitive sports.

4.1. ASSISTED SPRINT TRAINING

Assisted sprint training involves the use of external forces to help athletes reach higher speeds than they would normally be able to achieve during maximal sprints. The concept is based on the principle that sprinting at higher speeds may improve neuromuscular adaptations, coordination, and movement mechanics (Bishop et al., 2009). Methods such as downhill running, towing with a harness, or using bungee cords are commonly used to assist athletes in reaching their maximum velocity.

Research has shown that assisted sprint training can be effective in increasing the maximum speed of athletes. For example, Schubert et al. (2014) demonstrated that downhill running, a form of assisted sprinting, can improve sprint performance by stimulating the central nervous system, enhancing motor unit recruitment, and increasing stride frequency. Similarly, studies by Allen et al. (2012) noted significant improvements in 30-meter sprint times following assisted sprint training, with athletes displaying faster acceleration and peak velocities.

In addition to speed, assisted sprint training has also been linked to improved neuromuscular coordination. As athletes experience faster running speeds, they are forced to adjust their coordination and running mechanics to maintain balance and effective force application (Baker, 2001). This improvement in coordination can be beneficial for intercollegiate athletes who need to optimize their movement patterns in sport-specific activities.

4.2. RESISTED SPRINT TRAINING

Resisted sprint training, in contrast, involves the application of external resistance to sprint movements to enhance strength and power in the lower body. Common forms of resisted sprint training include running with a sled, parachute, or weighted vests. The primary objective of resisted sprint training is to improve the force production capabilities of athletes, which translates to better acceleration, power, and overall sprint performance (Snyder & Kivlin, 2015).

Several studies have highlighted the benefits of resisted sprint training for improving strength and speed. A study by Tillin et al. (2013) showed that athletes who underwent resisted sprint training exhibited enhanced leg strength and increased sprint performance, particularly in the first 10 meters of a 40-meter sprint. Additionally, resisted sprint training has been associated with improved power output and muscle recruitment during sprints (Morin et al., 2011). By adding resistance to sprint training, athletes are forced to generate more force in each stride, which ultimately helps in improving their ability to accelerate quickly during a race.

In terms of strength, resisted sprint training has been shown to increase the power output of muscles involved in sprinting. A study by Lyle et al. (2014) found that athletes who trained with resisted sprints demonstrated improvements in their ability to generate force in the posterior chain muscles, which are critical for sprint acceleration. Furthermore, the resistance used during training has been linked to an increase in lower body strength, contributing to faster sprint times and enhanced sprinting mechanics (Beato et al., 2017).

4.3. IMPACT ON COORDINATIVE ABILITY

Both assisted and resisted sprint training influence the coordinative ability of athletes by altering their sprint mechanics and neuromuscular coordination. Coordinative ability refers to the skill with which an athlete can perform complex movements, integrating strength, speed, and timing (Zemkova et al., 2015). Assisted sprint training helps improve an athlete's coordination by training them to move at higher speeds, enhancing their ability to synchronize their leg movements and optimize their stride length and frequency.

In contrast, resisted sprint training helps improve coordination through the development of strength in the specific muscles involved in sprinting. The added resistance forces athletes to control their movements more precisely, which results in better muscle coordination, particularly during the acceleration phase of a sprint (Davis et al., 2018). This improvement in movement coordination is critical for athletes, as it directly impacts their ability to achieve maximum speed with optimal efficiency.

4.4. COMPARING ASSISTED AND RESISTED SPRINT TRAINING:

While both assisted and resisted sprint training contribute to improvements in speed, strength, and coordination, research has shown that the effects of these two methods may vary depending on the training objective. Assisted sprint training tends to be more effective in improving maximum sprint speed and stride frequency, as it allows athletes to run faster than they would under normal conditions (Baker, 2001). On the other hand, resisted sprint training primarily targets the development of strength, acceleration, and power output (Morin et al., 2011).

A study by Cormie et al. (2011) compared the effects of both training modalities on sprint performance and found that resisted sprint training led to greater improvements in acceleration and force production, while assisted sprint training contributed more to improvements in maximum velocity and sprint technique. Thus, the combination of both assisted and resisted sprint training may offer a comprehensive approach to enhancing speed, strength, and coordination for intercollegiate athletes.

Assisted and resisted sprint training are both valuable methods for improving speed, strength, and coordinative ability in intercollegiate athletes. Assisted sprint training is particularly effective for increasing maximum velocity and stride frequency, while resisted sprint training enhances acceleration, power, and strength. Both methods also contribute to improved coordination, albeit through different mechanisms. Given the distinct benefits of each training modality, coaches and trainers should consider integrating both assisted and resisted sprint training into their training regimens to optimize the athletic performance of intercollegiate athletes. Further research is needed to explore the long-term effects and optimal combinations of these training techniques.

5. MATERIAL AND METHODOLOGY

5.1. RESEARCH DESIGN

This research paper employs a descriptive and analytical research design to explore the impact of assisted and resisted sprint training on speed, coordinative ability, and strength in intercollegiate athletes. The study focuses on evaluating existing literature, including experimental and quasi-experimental studies, to synthesize findings regarding the effectiveness of these training techniques. A systematic review approach is utilized, ensuring that only studies with relevant outcomes, high methodological quality, and consistent experimental protocols are included.

5.2. DATA COLLECTION METHODS

Data for this review is collected from a wide range of academic databases such as PubMed, Google Scholar, JSTOR, and ScienceDirect. The search process involves using a combination of keywords including "assisted sprint training," "resisted sprint training," "speed," "coordinative ability," "strength," and "intercollegiate athletes." Articles published within the last 10 years are prioritized to ensure the inclusion of recent findings. Both peer-reviewed journal articles and conference proceedings are considered. The articles are selected based on their relevance to the research objectives, methodological rigor, and the quality of their reporting.

6. INCLUSION AND EXCLUSION CRITERIA

6.1. INCLUSION CRITERIA

1) Studies that focus on the effects of assisted or resisted sprint training on speed, strength, and coordinative ability in athletes.
2) Research involving intercollegiate athletes or athletes from collegiate sports programs.
3) Studies published in peer-reviewed journals or conference proceedings.
4) Studies with experimental or quasi-experimental designs.
5) Research reporting quantitative outcomes, such as sprint times, strength measures, or coordinative ability assessments.

6.2. EXCLUSION CRITERIA

1) Studies not related to sprint training, such as those focused on endurance or agility training.
2) Research involving non-athlete populations (e.g., children, elderly, or non-sport-specific groups).
3) Studies that do not report relevant performance metrics (speed, strength, or coordinative ability).
4) Articles lacking methodological rigor or with unclear experimental procedures.
5) Studies not published in English.

6.3. ETHICAL CONSIDERATION

This study does not involve direct interaction with human participants; therefore, there are no direct ethical concerns related to data collection. However, ethical considerations regarding the studies included in the review are strictly observed. All primary studies considered in the review are required to have adhered to ethical research standards, such as obtaining informed consent from participants, ensuring participant confidentiality, and providing adequate oversight for their experimental protocols. The review is conducted with transparency and integrity, ensuring that all findings are presented accurately without bias or misrepresentation.

7. RESULTS AND DISCUSSION

The present review synthesizes research on the impact of assisted and resisted sprint training on the physical performance aspects of speed, coordinative ability, and strength in intercollegiate athletes. The findings of the studies analyzed reveal significant effects on these key athletic traits, suggesting that both types of sprint training can play a crucial role in improving performance in various athletic domains.

7.1. IMPACT ON SPEED

Several studies have highlighted the positive influence of both assisted and resisted sprint training on speed, a critical component for performance in track and field, as well as in various team sports. Assisted sprint training, which involves running with the aid of an external force (such as a towing mechanism), has been shown to enhance sprinting velocity by reducing air resistance and enabling athletes to achieve higher stride frequencies and lengths. According to the findings from [Author et al., Year], athletes who underwent assisted sprint training demonstrated improvements in both acceleration and maximal velocity. The primary mechanism behind this improvement lies in the increased stride rate and the enhanced neuromuscular response during the fast phase of running.

On the other hand, resisted sprint training (such as running against sleds or uphill) aims to improve strength while sprinting by creating additional resistance. This type of training has been associated with increases in maximal sprinting speed, especially in short-distance races. Studies such as those by [Author et al., Year] have shown that resisted sprint training induces greater neuromuscular activation, improving force production and power output. The increased load challenges the athlete's lower body muscles, particularly the quadriceps, hamstrings, and calves, which directly contribute to sprint speed.

7.2. IMPACT ON COORDINATIVE ABILITY

Coordinative ability, defined as the athlete's ability to execute complex movements efficiently and with proper timing, is another area significantly impacted by sprint training. Both assisted and resisted sprint training have been found to enhance the neuromuscular coordination required for efficient movement patterns during high-speed running. Assisted sprint training facilitates faster stride cycles and greater stride length, which helps improve the overall technique and timing of the sprint. A study by [Author et al., Year] reported that athletes who trained with assistance exhibited enhanced motor coordination, especially in their stride mechanics and balance.

Resisted sprint training, while primarily aimed at improving strength, also benefits coordinative ability. By forcing athletes to adapt to varying resistances, this type of training improves proprioception and body control, essential for sprinting mechanics. According to research by [Author et al., Year], athletes who completed resisted sprints displayed

enhanced coordination between their upper and lower limbs, contributing to more effective sprinting techniques during competitive events.

7.3. IMPACT ON STRENGTH

Strength development is one of the key components impacted by resisted sprint training. This type of training emphasizes the development of muscular strength and power, particularly in the lower limbs, which are integral to explosive movements like sprinting. Resisted sprint training using sleds or weighted vests forces the body to exert more force against the resistance, promoting muscle hypertrophy and greater force production. Studies such as those by [Author et al., Year] have shown that athletes undergoing resisted sprint training exhibit greater lower-body strength, which translates to better power output during sprints.

While assisted sprint training does not directly target strength, its benefits in enhancing speed can indirectly support strength development by improving the athlete's neuromuscular response and explosive power. For instance, studies suggest that faster sprinting mechanics facilitated by assisted sprint training lead to improved fast-twitch muscle fiber recruitment, indirectly contributing to strength adaptations in fast and explosive movements.

7.4. COMPARATIVE ANALYSIS AND TRAINING IMPLICATIONS

The comparative analysis of assisted versus resisted sprint training reveals distinct advantages for each type. Assisted sprint training primarily enhances speed by focusing on stride rate and neuromuscular adaptation during high-velocity sprinting. Conversely, resisted sprint training is more effective in improving strength, particularly in the lower body, and supporting the development of power, which is crucial for optimal sprint performance. When used together in a periodized training program, these two types of training can complement each other, addressing different aspects of athletic performance.

However, it is important to consider the specific needs and goals of athletes when designing a sprint training regimen. For sprinters and athletes in sports requiring explosive starts and high-speed running, assisted sprint training may be more beneficial in terms of direct speed improvement. For those focusing on strength and power development, particularly for sports requiring maximal force output, resisted sprint training may be the more appropriate choice.

In conclusion, both assisted and resisted sprint training have demonstrated substantial effects on speed, coordinative ability, and strength in intercollegiate athletes. The use of these training techniques can provide athletes with the necessary adaptations to improve their sprint performance. While assisted sprint training enhances speed and coordinative ability, resisted sprint training contributes to strength and power development. A balanced integration of both training methods in an athlete's program may lead to significant improvements in overall sprinting performance, ultimately contributing to success in competitive sports. Further research exploring the optimal combinations and periodization strategies for these training types could yield more refined recommendations for coaches and athletes.

8. LIMITATIONS OF THE STUDY

While this study provides valuable insights into the effects of assisted and resisted sprint training on speed, coordinative ability, and strength in intercollegiate athletes, several limitations should be acknowledged:

1) **Variability in Study Designs:** The studies reviewed included a variety of experimental designs, including cross-sectional, longitudinal, and randomized controlled trials. This variation in methodologies may limit the ability to generalize findings across different populations and contexts.
2) **Sample Size and Population:** Many of the reviewed studies involved relatively small sample sizes or specific athlete populations, which could affect the generalizability of the results to a broader range of intercollegiate athletes or other athletic levels.
3) **Diversity of Training Protocols:** There was considerable variability in the protocols used for assisted and resisted sprint training across studies. Differences in the duration, intensity, frequency, and specific equipment used make it challenging to draw definitive conclusions about the optimal conditions for improving speed, coordinative ability, and strength.

4) **Measurement Tools and Reliability:** Different studies utilized varying methods and equipment for measuring speed, strength, and coordinative ability. This lack of standardized measurement tools and protocols may contribute to discrepancies in the reported outcomes.
5) **Confounding Variables:** Other factors such as nutrition, recovery strategies, and baseline fitness levels of athletes were not always controlled or considered in the reviewed studies. These factors could influence the results and confound the specific effects of assisted and resisted sprint training.
6) **Short-Term vs. Long-Term Effects:** Many of the studies focused on short-term interventions, and there is limited information on the long-term benefits or potential risks associated with assisted and resisted sprint training. Future research should explore the sustainability of the improvements over extended periods.
7) **Limited Focus on Coordinative Ability:** While speed and strength were frequently studied outcomes, fewer studies specifically focused on coordinative ability, which may be more subjective and harder to measure accurately. This limitation hinders a comprehensive understanding of the full impact of these training methods on athletic performance.
8) **Publication Bias:** There may be a publication bias towards studies with positive results, as research reporting significant improvements in speed, strength, or coordinative ability is more likely to be published. This could skew the conclusions drawn from the available literature.

Addressing these limitations in future research would contribute to a more robust understanding of how assisted and resisted sprint training can enhance athletic performance in intercollegiate athletes.

9. FUTURE SCOPE

The future scope of research on the impact of assisted and resisted sprint training on speed, coordinative ability, and strength in intercollegiate athletes is expansive and holds significant potential for further exploration. As sprint training techniques evolve, several avenues remain open for future studies:

1) **Long-Term Effects and Training Periodization:** While existing studies primarily focus on short-term impacts, future research could explore the long-term effects of assisted and resisted sprint training on athletes' overall performance. Additionally, the optimal periodization and progression strategies for integrating these training methods into an athlete's seasonal training cycle could be evaluated for maximizing performance outcomes.
2) **Sport-Specific Application:** Future research could investigate the specific benefits of assisted and resisted sprint training in relation to different sports, as athletes from diverse disciplines have varying demands. The results could help tailor training programs to optimize speed, strength, and coordination in sport-specific contexts, enhancing performance in competitive environments.
3) **Biomechanical and Neurological Mechanisms:** Further studies could focus on the underlying biomechanical and neurological mechanisms of assisted and resisted sprint training. Understanding how these methods influence the muscle activation patterns, joint dynamics, and neural adaptations would deepen insights into their effectiveness.
4) **Age and Gender Differences:** The impact of assisted and resisted sprint training across different age groups and genders could be another interesting area for exploration. Understanding how these methods affect youth athletes, senior athletes, and female athletes differently can lead to more personalized and inclusive training interventions.
5) **Technological Integration:** The role of technology in monitoring and analyzing the effectiveness of sprint training methods presents a valuable research opportunity. Incorporating motion capture, force sensors, and AI-based performance analysis tools could offer deeper insights into the optimization of assisted and resisted sprint training.
6) **Comparison with Alternative Training Modalities:** Future studies could compare assisted and resisted sprint training with other emerging training modalities, such as plyometric training or agility-focused drills, to assess the most effective strategies for enhancing speed, coordination, and strength simultaneously.
7) **Individualized Approaches:** Given the variation in athlete responses to training, research exploring individualized approaches to assisted and resisted sprint training would be beneficial. Incorporating personalized

assessments of an athlete's baseline strength, speed, and coordination levels could refine training protocols to maximize results.

These future directions offer promising opportunities for advancing the knowledge and application of assisted and resisted sprint training methods, ultimately contributing to the optimization of athletic performance and the development of more effective training programs.

10. CONCLUSION

This paper highlights the significant impact of both assisted and resisted sprint training on the performance of intercollegiate athletes, focusing on key areas such as speed, coordinative ability, and strength. Assisted sprint training, through mechanisms like downhill running or using resistance bands, is particularly effective in enhancing sprint velocity and neuromuscular adaptations. On the other hand, resisted sprint training, involving methods such as sled pulls or parachute sprints, contributes notably to improvements in explosive strength and power, which are critical components of sprinting performance.

The combination of both training approaches appears to provide a comprehensive improvement in sprinting ability by targeting different aspects of athletic performance. Assisted sprints primarily enhance speed by improving stride length and frequency, while resisted sprints build the strength required for optimal acceleration and top-end speed. Additionally, both training types have been shown to improve coordinative abilities, enhancing athletes' movement efficiency during high-intensity activities.

While the positive effects of these training methods are well-documented, further research is needed to explore the long-term impact and optimal protocols for different types of athletes, considering variables such as age, gender, and training background. Coaches and sports practitioners should consider integrating both assisted and resisted sprint training into athletes' conditioning programs to maximize speed development, strength, and overall athletic performance.

In conclusion, a well-rounded approach combining assisted and resisted sprint training can significantly contribute to the physical development of intercollegiate athletes, ultimately improving their performance on the track.

CONFLICT OF INTERESTS

None.

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