

A Practical Approach to Deloading: Recommendations and Considerations for Strength and Physique Sports

Lee Bell,¹ Ian A. J. Darragh,² S. Kyle Travis,^{3,4} David Rogerson,¹ and David Nolan⁵

¹School of Sport and Physical Activity, Sheffield Hallam University, Sheffield, England; ²School of Population Health, RCSI University of Medicine and Health Sciences, Dublin, Ireland; ³Science, Medicine, Innovation & Technology (SMIT) Laboratory, nosisX, Elizabethton, Tennessee; ⁴Department of Allied Health Professions, School of Health Sciences, Liberty University, Lynchburg, Virginia; and ⁵School of Health and Human Performance, Dublin City University, Dublin, Ireland

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ABSTRACT

Deloading is a period of reduced training stress where training demand is intentionally reduced to mitigate physiological and psychological fatigue and promote recovery. A deload is commonly implemented to enhance readiness for subsequent training and occurs between or during training phases. During a deload, training is typically modified by reducing the intensity of effort, training volume, duration, or frequency. Adjustments in exercise selection are based on recovery goals and the specific demands of the athlete's training. Deloads are commonly preplanned and implemented into the training program every 4–8 weeks based on the structure of the training cycle and recovery needs. Alternatively,

deloads are sometimes applied reactively using an autoregulatory approach to accommodate unexpected fatigue or performance decrements. While deloading shares conceptual similarities with tapering and training cessation, it should be differentiated based on its objective, structure, and positionality with the overall training program. The purpose of this article is to describe the current research landscape, propose areas for future research, and to provide broad practical recommendations for implementing deloading within the strength and physique sports training program.

athletes to undertake strategically planned training to augment strength performance (69). These sports are characterized by select strength characteristics such as maximal strength, rate of force development, and impulse (42,64,83). To achieve optimal athletic performance, strength athletes undertake long-term structured (e.g., periodized) training that is generally organized into distinct phases or blocks relative to the competition schedule (78). In this sense, training involves the manipulation of specific training variables (e.g., intensity of effort, training volume, and exercise selection) to enhance strength characteristics over time relative to the competition

INTRODUCTION

In strength sports such as powerlifting, weightlifting, and strongman/woman, it is normal practice for

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Address correspondence to Lee Bell, lee.bell@shu.ac.uk.

schedule (49). Training is planned logically and often organized into sequential or parallel blocks, each with a specific objective (e.g., muscular hypertrophy, maximal strength) based on the requirements of the sport and the individual athlete's needs (66).

While training for strength sports emphasizes performance-driven attributes, physique sports assert training that develops esthetic characteristics, such as muscularity and leanness, while enhancing symmetry and proportionality (24,52). Physique sports athletes do not generally follow traditional periodized training models designed to enhance athletic performance. Instead, they will organize their training into 2 distinct phases: off-season and precompetition (2,31,62). The off-season has the primary goal of increasing muscle mass by adhering to training practices which elicit increases in muscle hypertrophy. The precompetition phase (typically beginning 8–16 weeks before a competition) focuses on reducing body fat while preserving muscle mass; therefore, it usually involves caloric restriction and increased aerobic exercise volume (48). During the final phase of competition preparation, physique athletes may use advanced training techniques (e.g., forced repetitions where a training partner helps the athlete to perform additional repetitions once muscular failure has been achieved, and drop sets where the athlete performs a set to concentric muscular failure, reduces the load by 10–25%, and immediately performs another set to concentric muscular failure) and vary these methods across training sessions (31,48).

While there are inherent differences between strength and physique sports, a fundamental similarity is the frequent resistance training stimulus required to provoke the neural and morphological adaptations necessary to achieve successful competition performance (45). Training must be of sufficient magnitude to stimulate the physiological adaptations required for a meaningful and positive influence on competition performance. To this end, it is common

for both strength and physique athletes to implement intermittent, concentrated loading phases into the training program, designed to elicit the desired physiological adaptations. During these phases, there is often a deliberate and dramatic increase in training volume or intensity of effort, facilitated through additional training sessions (e.g., 4 sessions increased to 6 sessions per week) or increasing total training demand (e.g., all exercises increased by 1 set of 6 repetitions, or there is a 5% increase in relative intensity) (10). However, for the training program to be successful, coaches must also be cognizant of recovery constraints and athlete safety (49).

From a physiological perspective, the need for implementing a deloading strategy is argued to arise from the manifestation of “cumulative fatigue” (40,44,78). Previous commentary has proposed that cumulative fatigue occurs due to additive fatiguing effects elicited by discrete bouts of challenging resistance training (15). Acute fatigue occurs during or immediately after a resistance training bout and is defined by a temporary inability to maintain muscle performance (i.e., force or power output) (80) that may manifest with transient subjective symptoms, for example, a temporary feeling of increased tiredness (3). The mechanisms of acute fatigue in response to resistance training are complex and beyond the scope of this article but collectively depend on a combination of peripheral (e.g., muscle substrate depletion, changes in muscle pH and/or electrolyte balance) (1) and central (e.g., changes in neurotransmitter balance) (3,70) factors. The overall magnitude of acute fatigue in response to resistance training will vary depending on the intensity and volume of the individual training session but may also be influenced by external factors such as nutritional, emotional, or sleep status (44). In essence, cumulative fatigue relates to the continued exposure to subsequent acute training bouts before the complete dissipation of fatigue stimulated

from a previous training bout. Consequently, the magnitude and persistence of subjective and objective symptoms of acute fatigue begin to increase, generating a state of “cumulative fatigue,” which may have greater recovery requirements compared with what is elicited by a single training bout (15). It is notable that the physiological basis of “cumulative fatigue” is considerably less established than that of acute fatigue (60), and there is uncertainty about whether repeated exposure to resistance training truly results in “accumulated fatigue” per se or, instead, that impaired muscle function observed in the days following cumulated training is the result of muscle damage (44).

Nevertheless, periods of reduced training stress (e.g., deloading periods) are traditionally implemented into the strength training program to mitigate the risk of long-term performance decrement that manifests from prolonged exposure to difficult training bouts by temporarily shifting the emphasis of training to the promotion of recovery and restoration (25,26). These phases of reduced training stress also facilitate peak performance by permitting the cumulative effects of consistent training to be realized before competition (60). Importantly, while phases of reduced training stress might assist the athlete in managing the risk associated with prolonged, highly demanding training, extended periods of reduced training stress will eventually result in detraining, resulting in a loss of adaptations and diminished performance. Therefore, successful training in strength and physique sports is a dynamic balance between increased and decreased training demands across the calendar (33,68).

DEFINING DELOADING

Periods of reduced training have been referred to as “light weeks,” “recovery weeks,” “restitution cycles,” and, more recently, “deloading” (19,21,79). Within the last few years, the term deloading has featured more frequently in the literature and has appeared in

research on bodybuilding (40,61), powerlifting (23), mixed martial arts (36), and Brazilian Jiu-Jitsu (54). However, none of these studies have objectively defined what a deload is. Based on the lack of a clear definition in the research, Bell et al. (12) published a Delphi consensus study to enhance understanding by reducing ambiguity surrounding deloading. The study recruited a group of expert strength and physique sports coaches and developed a framework of good practice for sports scientists and coaches to follow when implementing deloading. From this study, the following definition of deloading was proposed:

“A deload is a period of reduced training stress designed to mitigate physiological and psychological fatigue, promote recovery, and enhance preparedness for subsequent training.”

Based on this definition, deloading is characterized by a *reduction* in overall training demand with the primary objective of enhancing readiness by managing training-related fatigue and encouraging restoration. In this sense, the reduction in training stress occurs as a decrease in the sport-specific stimulus (e.g., technical sessions), strength and conditioning (e.g., resistance training), or a combination of both (20). Deloading acts as a preparatory tool to enhance readiness for subsequent training. Importantly, “subsequent training” could mean that the deload is positioned between 2 blocks of training (a common feature of strength and physique training) or positioned more sporadically (i.e., *during* a training block) (22,40). Deloading may be strategically implemented during various phases of an athlete’s schedule to optimize performance and recovery. For example, during the precompetition phase, a deload permits a reduction in fatigue while maintaining training adaptations. During the competition phase or a tournament with condensed competition days, deloading may help manage acute fatigue and prevent maladaptation. In addition, deloading may be beneficial during travel periods, such as between competitions, to mitigate

the physiological stress associated with long-haul transit or disrupted routines (20). However, the deload can occur *at any point* within a training block (e.g., a lighter day), not necessarily between 2 distinct phases of the training program (12).

It is worth noting that some commentators have stated that deloading is an inappropriate term when describing periods of lighter training stress that occur between training blocks. Ide et al. (37) argue that the term “load” relates specifically to imposed mechanical load; therefore, a de-“load” only occurs when there is a reduction in external resistance. Indeed, the term deload has been specifically related to a reduction in absolute or relative training intensity independent of alterations in training volume (58). However, the term “load” has recently received criticism for breaching scientific principles and being misapplied within sports science (e.g., “training load”) (65). To this end, load describes force and, therefore, should be measured in Newtons (N) as per the international system of units (SI). The authors proposed that the term “regeneration period” is a more precise description of how lighter training periods affect athlete preparedness. However, this argument has been countered by Impellizzeri et al. (38), who state that not all exercise-related taxonomy must abide by the SI. Moreover, the argument that the nomenclature used *to describe* exercise should abide by the SI is conceptually flawed, and misuse of terminology only occurs when the term is decontextualized. Importantly, the term deloading has recently been operationally defined through expert consensus (12). Alternative terms such as regeneration period are vague and do not appropriately differentiate deloading from other types of lighter training (e.g., tapering), which might lead to misinterpretation and misapplication in a practical or research context.

THE OBJECTIVE OF DELOADING FOR THE STRENGTH AND PHYSIQUE ATHLETE

Deloading is increasingly recognized as a purposeful intervention in strength

and physique sports. Bell et al. (9) pioneered the exploration of deloading, recruiting 18 experienced coaches (10.9 ± 3.9 years at $\geq$ national level) to share their perspectives. Coaches described deloading as a short-term training cycle designed to adjust training intensity and volume, providing a physical and mental break from challenging training. The aim of this approach was to reduce staleness, mitigate risks associated with monotonous training, and maintain motivation. Rather than enhancing performance directly, deloading was seen as a strategy to offset factors such as injury or illness stemming from prolonged training stress. Coaches colloquially referred to deloading as a “reset” or “refresh,” enabling athletes to “push again” in subsequent training blocks.

Expanding on these findings, Reger et al. (60) surveyed 246 competitive strength and physique athletes from various sports, including powerlifting (63.4%), weightlifting (3.7%), strongman (3.7%), and physique (18.3%). The athletes, experienced in resistance training (8.2 ± 6.2 years) and competition (3.8 ± 3.2 years), overwhelmingly cited reducing fatigue (92.3%), preparing for the next training cycle (64.6%), and enhancing performance (59.8%) as the primary objectives of deloading. These responses reinforced the notion that deloading is a recovery-focused tool to manage training stress.

Building on these perspectives, Bell et al. (12) conducted a Delphi study with a panel of accredited strength and physique coaches to develop consensus on design principles for deloading. Experts selected for their qualifications and coaching experience (e.g., National Strength and Conditioning Association, United Kingdom Strength and Conditioning Association or a university degree in Sport and Exercise Science) emphasized deloading as a strategy to mitigate fatigue, promote recovery, and enhance adherence to training programs. In addition, the panel highlighted its role in reducing the risk of nonfunctional

overreaching (NFOR), overtraining syndrome, training monotony, and musculoskeletal injury. These findings echoed the results of both Bell et al. (9) and Rogerson et al. (60), underscoring the value of the deload in promoting readiness and long-term athlete development.

DELOADING VERSUS TRAINING CESSATION

Training cessation is a temporary interruption of sporting or training activities while continuing everyday activities (56,73). Training cessation might be intentional (e.g., off-season, vacations) (5,44) but also unplanned (e.g., injury or illness) (86). An important factor to consider in understanding deloading is to acknowledge the potential similarities and differences between deloading and training cessation.

Strength and physique practitioners describe deloading specifically as a *reduction in training* stress while emphasizing that some training is *maintained* during the deload, even when the objective is to decrease training stress (9,12). Training cessation, however, is defined as a period of complete rest where all sporting activities cease while continuing everyday activities (14,56,74). Therefore, during periods of training cessation, training stress is *totally reduced* (training is temporarily but completely halted, and training stress is technically “zero,” i.e., a “training break”). If the magnitude of training is zero, an individual cannot, by definition, be in training. Consequently, it is argued that training cessation and deloading are similar, but distinct methods that should be selectively used by practitioners to enhance athlete readiness (79,86).

While considering deloading and training cessation as distinct may be philosophically valid, from a practical standpoint, there is complexity in determining how distinctions between deloading and training cessation might manifest. For example, a “mixed athlete” (those who engage in multiple types of training, e.g., resistance and

aerobic training) might intentionally cease resistance training but maintain aerobic training. Have they engaged in deloading or training cessation? The cumulative magnitude of training stress is *reduced*, but the athlete still trains, implying that the athlete is *deloading*. However, an entire *type* of exercise training has been halted, which concurrently implies that *training cessation* has occurred. The answer is that both might be simultaneously true. This is congruent with other interpretations of deloading, where a reduction in training stress during deloading comes from either sport-specific training or from a reduction in strength and conditioning training (or both) (20). Similarly, some coaches might opt to deload select aspects of a training program (e.g., only deloading some exercises such as accessory movements) (58,75,84,85) while continuing to progressively overload others (e.g., competition lifts) (12). In this case, certain components of the training program are *ceased* while others are continued (either maintained or progressively loaded). These cyclical fluctuations arguably underpin the process of periodization (19).

Evidence directly comparing deloading and training cessation is highly limited. A 6-week study examined the effects of a 1-week deload on select measures of muscle morphology and strength performance following high-volume, whole-body resistance training (consisting of 10 sets per exercise per week in week 1, increasing to 32 sets of 10 repetitions per exercise in week 6 using 60% of the 1 repetition maximum [1RM]) (79). In this study, trained participants implemented either a 1-week period of training cessation or an active recovery period referred to as a deload on completion of the training program (an ~85% reduction in training volume). No differences in barbell back squat velocity or vastus lateralis thickness were observed between the deload or training cessation groups in the post-deload period. Interestingly, a more recent study has observed that participants

who engaged in 1-week of training cessation presented no differences in estimates of body composition (total lean body mass, quadriceps, and soleus thickness) but did demonstrate smaller increases in Smith machine squat 1RM (6% lower) compared with participants who trained through the training cessation period (16). An essential caveat of this study, however, is that the post-intervention measurements were taken 4 weeks after the training cessation period. Therefore, it is not entirely clear whether any differences between the training cessation and continuous training groups were a direct result of the training cessation period per se or the more limited exposure to training experienced by the training cessation.

Short periods of training cessation might augment strength performance due to reduced neuromuscular fatigue (56,81). This might be particularly useful, for example, when athletes are obligated to travel in the days or hours preceding competition (7,75). However, maximal strength might decrease after ≥ 5 days of training abstinence due to neuromuscular factors (27). Indeed, previous research has demonstrated that as few as 5 days of training cessation is sufficient to reduce isometric bench press force without inducing any changes in lean body mass (74). It is worth acknowledging that there is a “skill” component to strength training, and force production can be enhanced through high levels of deliberate and specific practice over time (17,47). Therefore, a theoretical reason why deloading assists in maintaining strength performance compared with training cessation may be due to enabling athletes to mitigate fatigue and enhance training readiness while also offsetting degradations in motor learning that might occur when training is ceased (4,5). Of course, this is likely more beneficial for skill-oriented sports (e.g., weightlifting compared with bodybuilding) (5). The potential to maintain the practice of key movements is likely 1 reason that some coaches maintain competition-specific exercises during deloading

while removing accessory work (9,12). Relatedly, some coaches also use deload periods to introduce new training exercises with reduced loads to enhance athlete readiness while providing the athlete with an opportunity for motor familiarization with novel training exercises (9). Inevitably, a successful deload should consider the specific nature of the preceding training block and the individual recovery needs of the athlete, as well as the athlete's training status. Therefore, it could be argued that the deload does not need to be specific to the strength or physique sport per se, but, instead, specific to the nature of the previous training block (including the athlete's response to that block), as well as the next training phase. In addition, while short-term cessation (e.g., 1–3 days off) may suffice for individuals with low-to-moderate training status, more structured deloading may be necessary for advanced athletes undergoing prolonged or intensive training cycles. This approach ensures recovery strategies are tailored to the athlete's specific requirements, optimizing readiness for subsequent training phases. However, little is known about the value of deloading for athletes at different competitive levels.

There is a valid degree of philosophical argument and empirical evidence to suggest that a deload and a training cessation period are distinct methods with the potential to elicit slightly varied effects. For instance, while a deload may involve reducing training volume or intensity, such as substituting heavy compound lifts with lighter accessory movement or reducing session frequency, training cessation involves complete abstinence from structured training. This distinction is critical because deloading allows athletes to maintain neuromuscular engagement and preserve skill-related adaptations, whereas training cessation might be more appropriate in cases of susceptibility to injury, illness, or during periods of prolonged performance decrement. Despite their distinct purposes, training cessation and deloading

are often conflated in both practice and discussion. However, each serves a unique function. Understanding these nuances is essential for tailoring each approach to an athlete's specific needs and circumstances.

DELOADING VERSUS TAPERING

The primary objective of the taper is to enhance competition performance through mitigating fatigue to have the athlete experience a supercompensation effect (82). By contrast, the deload seeks to enhance recovery in preparation for subsequent training (9,12). Moreover, an integral aspect of the taper is to reduce the risk of detraining (67). However, the deload prioritizes fatigue management and recovery over performance improvement per se (9,12).

Tapering and deloading are both phases of training where training stress is intentionally reduced for a period of days to weeks. Therefore, they share fundamental similarities (60). Indeed, some commentators consider a taper, a form of deload, due to the inherent reduction in training stimulus applied in both approaches (20,58). However, strength and physique coaches do not generally believe that deloading is a form of tapering (9,12). Therefore, it is important to acknowledge the potential similarities and differences between the 2.

The taper is the final period of training before a major competition and is considered a key feature of athlete performance and the event outcome (53). Therefore, the primary objective of a taper is to maintain or peak performance on competition day by mitigating fatigue through the manipulation of training volume and intensity while emphasizing competition-lift specificity (55,75). In strength sports, tapering is a common practice (58,75), with 78% of highland games athletes (84), 87% of strongmen, 99% of hybrid sport athletes (57), and 99% of weightlifters (85), implementing a taper into their training in the final few days before a competition. When an effective taper has been used to enhance muscular

strength, a ~2–8% improvement in performance has been observed (18,28,41,87). Importantly, such improvements are likely the combined result of the training preceding the taper and the taper itself (85).

A reduction in training stress during the taper is achieved using different modes from the classical tapering models (53). These include a linear reduction (gradual reduction in training stress), an exponential taper (characterized by either a fast or slow decay), and a step taper (constant reduction in training load) (59,73). Before 2015, tapering research focused on endurance sports (13). However, recent studies in strength sports suggest that small reductions in training volume (e.g., 30–50% decrease relative to normal training) are used to achieve performance supercompensation, and training intensity is typically increased, decreased, or maintained (73). Training frequency is generally maintained except for short-term training cessation involved in the final 2–4 days before competition.

As a byproduct of reduced training demand, a key concern during tapering in strength sports is the potential muscle loss and diminished neuromuscular excitability. Evidence suggests that a step taper is particularly effective in enhancing muscle cross-sectional area at structural and ultrastructural levels (77). Such improvement may result from the taper coinciding with a return to normal training following a planned overreach (e.g., training work increases to 200%, then reduces to 50% of the overreach level before returning to 100% of normal) (77). Conversely, an exponential taper may be more favorable for enhancing neuromuscular performance, as evidenced by improvements in maximal isometric peak force (IPF) capabilities (77). Importantly, IPF, as assessed at mechanically relevant joint angles corresponding to the sticking points of a given lift, has been shown to correlate with 1RM outcomes in the back squat, bench press, and deadlift (6,8,74). This mechanical specificity is critical, as

generic isometric testing methods such as the isometric midthigh pull have consistently shown poor predictive validity for dynamic strength performance (8,43,71).

Recent findings demonstrate that even simple isometric tests, such as handgrip strength, can serve as practical surrogates for dynamic strength, though specificity remains an important consideration (e.g., seated handgrip strength with a 90° elbow angle more closely reflects 1RM bench press capabilities, whereas standing handgrip strength with an extended elbow better corresponds to deadlift lockout performance) (76). Importantly, different isometric assessments may vary in their sensitivity to fatigue and recovery dynamics, making certain tests potentially more responsive to the effects of longer versus shorter tapering periods. In this context, lift-specific or grip-specific isometric assessments may offer practical utility for monitoring neuromuscular readiness and fatigue during taper periods, particularly when mechanical specificity is considered in the testing approach (6,8,32,39,71,76). Therefore, it could be assumed that by providing a longer recovery period through an exponential taper, enhanced neuromuscular performance might be observed compared with other tapering strategies (7,72,77). It is important to note, however, that improvements in neuromuscular function do not always translate directly into superior competition performance, as athletes in step taper groups, despite shorter recovery periods, can outperform exponential taper groups in competition-specific outcomes. This highlights the nuanced role of tapering strategies in optimizing performance.

Nevertheless, the general recommendation for tapering in strength sports is to begin reducing training volume during the final 2 weeks before competition after a planned overreach while manipulating intensity as per individual needs (73). It is also recommended to implement short-term training cessation of 2–7 days immediately before competition to express

muscular strength potential (73,83,85). However, it should be noted that training cessation is often lift-specific and should be altered around individual recovery needs (e.g., remove deadlift 7–10 days, back squat 4–7 days, bench press 2–4 days). Table 1 summarizes the recommendations for strength athletes wanting to implement a taper into their training program.

While tapering and deloading share some structural similarities (i.e., both involve manipulation of training to elicit a reduction in fatigue), they have distinct primary objectives (Table 2). As mentioned, a taper is typically implemented using a step or progressive (i.e., exponential) approach. However, strength and physique coaches implement a deload using a step approach, with a single, sudden, and nonprogressive decrease in training (relative to the previous training phase) occurring at the beginning of the deload phase (9,12). This is due to the emphasis on fatigue management and promotion of recovery rather than retaining adaptations or achieving performance improvements. Consequently, tapering and deloading are differentiated by how they are applied within the training program (Table 2). Finally, while the taper is the final stage of the competition cycle (75), the deload occurs at any point during the training program. Therefore, the deload might be distinguished from the taper by its position within the overall training program

(i.e., proximity to competition) (Figure 1).

Physique athletes do not implement a taper in the same way that a strength athlete does, most likely due to the emphasis on aesthetics rather than athleticism (24,52). During the final week of the training program (known as “peak week”), physique athletes will maintain resistance training practice and reduce cardiovascular exercise in an attempt to replenish glycogen stores (24). However, some athletes will include additional cardiovascular exercise to increase fat loss and enhance stage condition (24). Subtle changes to the resistance training program might include increasing repetitions in reserve (RIR) and omitting exercises that increase the risk of muscle soreness. In the final few days before competition, it is common for physique athletes to reduce or completely exclude lower body resistance training (35) in the belief that the resulting reduction in muscle damage will enhance stage condition (i.e., reduced edema leading to more pronounced separation of the quadriceps and hamstrings). Athletes may modify training to try and minimize glycogen depletion, as bodybuilders have been reported to anecdotally believe that maximizing muscle glycogen stores before a show enhances the perceptual ‘fullness’ of the muscle (31). In the final days before a competition, physique athletes will modify macronutrient and energy intake and hydration status

Table 1 Recommendations for implementing a taper into strength sport training program (56,73)	
Training parameter	Recommended adjustment during taper
Training volume	A reduction in training volume between 30 and 60%
Intensity	Maintain training intensity ≥85% 1RM when neuromuscular adaptations are prioritized. Alternatively, reduce intensity by ~25–30% if recovery or other individual needs take precedence
Duration	1–2-wk taper followed by 2–7-d training cessation
Approach to the taper	Implement either a progressive or step taper

Table 2
A summary of the main conceptual differences between the taper and deload

	Tapering	Deloading
Positionality	Before competition	At any predetermined point within the training program but also sporadically based on a temporary reduction in training readiness
Objective	To peak performance	To enhance readiness for subsequent training
Approach	Progressive or step	Step

to refine their competition physique. Following a competition, physique athletes normally use a recovery period (training cessation) to restore anabolic function that can be impaired by chronic energy restriction while preparing for competition (50).

PREPLANNED VERSUS AUTOREGULATED DELOADING

In periodized training programs, it is normal practice to implement preplanned deloads. In this sense, having semifrequent deloads built into the program provides the athlete with regular opportunities to dissipate fatigue and mitigate the risk of maladaptation. Preplanned deloading, therefore, offers prophylactic benefits. For example, in summated microcycles, training demand increases each week followed by a lighter training period that is shorter in duration than the loading period (78). However, some commentators have suggested that a deload every few weeks is too frequent and might suppress potential performance improvements by reducing the concentrated loading within a mesocycle. Indeed, the risk of NFOR following prolonged high-volume or high-intensity resistance training without deloading is low (11,29), suggesting that athletes likely do not need to deload frequently. Moreover, high-performance strength coaches feel that the risk of an athlete developing long-term maladaptive disorders (e.g., the overtraining syndrome) due to undertaking challenging training blocks without deloading is minimal, with several coaches believing that strength athletes can work at a higher relative intensity than is typical of their habitual training without deleterious effects

(10). Nevertheless, preplanned deloads provide the coach and athlete with a “checkpoint” within the training program where an informed decision regarding the need for deloading can be assessed, rather than compulsory changes to programming made based only on predetermined time points (9).

Autoregulation is an emergent approach used in strength and muscular hypertrophy training to acutely adjust training volume or intensity based on daily fluctuations in readiness (30,46). In strength training programs, autoregulation can be used within a session (e.g., adjusting the load on the bar, training volume, or RIR) and between sessions (e.g., changes in strength performance, readiness to train) (63). Therefore, autoregulation permits adjustments in training based on an individual athlete’s response to training (i.e., fatigue, readiness, adaptation) (51). Consequently, a more reactive

and flexible approach to deloading might be taken by adopting autoregulation methods within the training program. Indeed, previous research has shown that strength and physique coaches favor a flexible approach to deloading, where the coach and athlete decide to use “lighter days” within a training block based on triangulation of objective (i.e., performance testing data) and subjective (perceived well-being, fatigue, recovery status) measures (12). In this sense, preplanned deloads can be replaced (or combined), with a more adaptable approach where intermittent light days are used within a training block.

Autoregulatory deloading offers a more individualized approach (compared with preplanned) by adjusting recovery periods based on the athlete’s current physiological and psychological state rather than adhering to a predetermined schedule (34,46). In strength and

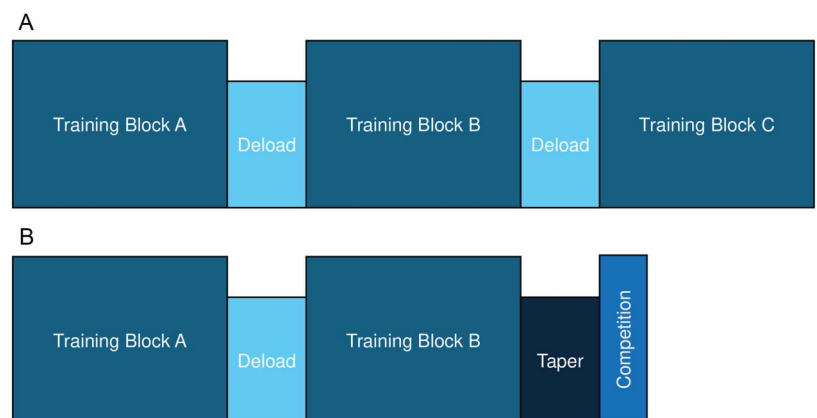


Figure 1. A hypothetical schematic to demonstrate the difference between the deload and taper based on proximity to competition. In example (A), the deload occurs between 2 distinct training blocks. In (B), the taper occurs following a training block but directly before competition.

Table 3
General recommendations for the implementation of deloading into the strength and physique athletes' training program

Training parameter	Recommendation(s)
Approach	A single step reduction in overall training load that occurs at the beginning of the deload
Training volume	• Low recovery needs: Reduced by ≤ 25–45% relative to normal training volume* • Moderate recovery needs: Reduced by 40–60% relative to normal training volume* • High recovery needs: Reduced by 60–90% relative to normal training volume*
	Achieved through a reduction in (a) repetitions per set or by (b) a reduction in the total number of sets per training session (or in some cases, both). Training volume can be decreased in some or all exercises per session or by reducing the number of accessory exercises (see exercise selection)
	* "Normal" training volume refers to the volume undertaken in the previous training block
Training frequency	A reduction in weekly training sessions (relative to normal training) is a viable way of managing training volume. However, training frequency will generally remain unchanged (relative to normal training frequency). In the presence of extreme fatigue, training frequency should be reduced as required
	In the presence of extreme fatigue, athletes should precede the deload with a short-term period of training cessation
Training intensity	A decrease in absolute or relative intensity should be achieved through a decrease in %RM (~10%) while maintaining repetitions
	A decrease in the number of sets or an increase in (RIR) (reduction in repetitions while maintaining absolute load; 1–3 RIR, thus increasing proximity to failure)
	A reduction in intensity should be implemented in isolation or through combined alterations in absolute and relative load
Exercise selection	Increased focus on technique and reduction in accessory exercises
	Some athletes will favor variation in exercise selection to reduce the risk of monotony and burnout
	The deload provides an opportunity to implement alternative resistance training strategies such as body weight training, resistance bands, blood flow restriction training, and isometric training
	Typically, some sport-specific exercises (or derivatives of these exercises) will remain in the training program. Consequently, the physique athlete will have more flexibility in the exercises they select for the deload compared to the strength athlete
Duration	For structured deloads, the typical duration is 5–7 d. However, the duration of the deload must consider the duration and intensity of the previous training block. For longer or more challenging blocks, a longer deload might be required, along with the inclusion of training cessation for 2–5 d
	Reactive deloads may be a single training session in duration
Periodicity	Every 4–8 weeks where deloading is preplanned
	Lighter days should be implemented where required, utilizing an autoregulatory approach

muscular hypertrophy training programs, this method involves continuously monitoring indicators such as performance metrics (e.g., load lifted, barbell velocities), perceived exertion, mood states, and fatigue levels to determine the timing for a deload (12). Autoregulatory deloading recognizes that athletes' responses to training stimuli vary due to genetics, lifestyle stressors, and individual recovery capacities, as well as the unpredictable nature of competition and training decisions (both within and outside of the strength and conditioning environment). Therefore, by responding to real-time feedback, coaches and athletes can tailor training loads to immediate needs, providing greater flexibility and personalization within the training program. Indeed, previous research has shown that strength and physique coaches favor a flexible approach to deloading, where the coach and athlete decide to use lighter days within a training block based on objective and subjective assessment (12). This flexibility is particularly beneficial when unexpected factors—such as illness, travel, or personal commitments—affect the athlete's ability to train effectively. However, the success of autoregulatory deloading relies on accurate assessment methods and honest communication between the athlete and coach. It requires heightened self-awareness and may require monitoring tools or technologies to track readiness and recovery status (30). While implementing deloads presents possible practical challenges, its potential to optimize training outcomes by aligning deloading periods with the athlete's actual needs may make autoregulated deloads a desirable strategy for strength and physique athletes.

PRACTICAL APPLICATIONS FOR THE STRENGTH AND PHYSIQUE ATHLETE: IMPLEMENTING THE DELOAD

The following recommendations (Table 3) have been developed using recommendations from the available strength and physique research (9,12,60).

FUTURE RESEARCH DIRECTIONS

There is a clear absence of high-quality experimental research elucidating the objective benefits of deloading and the optimal organization of training variables to elicit those benefits. According to strength and physique coaches (12), deloading needs to be sufficiently represented in the strength and conditioning literature. Additionally, there is a lack of clear and accurate representation of deloading in strength and conditioning coaching qualifications. Therefore, future research must acknowledge the specific philosophical and structural underpinnings of deloads and investigate their utility accordingly. There is also a lack of appropriate interpretation of deloading in some existing experimental research studies, where the construct of the training phase is misunderstood (e.g., a complete cessation of training rather than a relative reduction in training demand). Future research should explore the effects of deloading on broader measures of strength (e.g., maximal strength, repetition velocity, power measurements), morphology (e.g., muscular hypertrophy), and aspects of technique/skill and psychological measures. Currently, little is known about the specific value of deloading for different competitive groups (e.g., highly trained athletes versus those of a low-to-moderate training status). Therefore, comparisons between different configurations of deloading with a range of athletes across varying durations (e.g., days and weeks) must be undertaken to better understand the efficacy of deloading in strength and physique sports (using the above framework as a decision-making guide when creating deload interventions). Moreover, comparisons between deloads and training cessation should also be made to better understand the unique effects of each approach on strength and physique sports outcomes. Last, sporadic deloading should be investigated, exploring the efficacy of "optional" deloads using an autoregulated approach, where deloads are pre-planned but undertaken only if required.

CONCLUSION

Deloading is a period of reduced training stress designed to enhance recovery and preparedness for subsequent training. A deload is typically pre-planned and implemented within the strength and physique training program every 4–8 weeks. In addition, deloads might be applied flexibly using an autoregulatory approach. When pre-planned, deloads take place either in the final week of the mesocycle (using the same exercises or with a reduction in accessory work) or in the first week of a new mesocycle (using new exercises). In either scenario, a deload is applied through a reduction in training volume and intensity, with alteration in exercise selection also a common method of application. When a flexible, reactive approach is taken, the decision to implement a deload should be agreed on by the coach and athlete and guided by changes in objective (e.g., strength performance) and subjective (e.g., perceived readiness, recovery) measures.

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Lee Bell, PhD is a Senior Lecturer in Sport and Exercise Science for the School of Sport and Physical Activity at Sheffield Hallam University.



Ian A. J. Darragh, PhD is a postdoctoral researcher in Clinical Data Science, he holds a PhD in Exercise Physiology and is a former international

level Olympic Weightlifter.



S. Kyle Travis, PhD is the *Founder and Chief Science Officer for no-sisX as well as a Professor of Exercise & Sport Science at Liberty University.*



David Rogerson, PhD is the *Deputy Head of the School of Sport and Physical Activity at Sheffield Hallam University.*



David Nolan, PhD is an *Assistant Professor of Sport and Exercise Sciences at the School of Health and Human Performance, Dublin City University.*

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