Safe Exercise At Every Stage: Athlete SEES-A

A guideline for managing exercise and return to sport in athletes with eating disorders

Short Form

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The Safe Exercise at Every Stage-Athlete Guideline

Instructions for use

The Safe Exercise at Every Stage - Athlete (SEES-A) guideline was developed to better facilitate clinical decision-making related to safe return to exercise, training, and sport for athletes with ED symptomatology. This step-up/-down model involves three key components:

1. Risk assessment: Reviews key markers of psychological and physical health requiring assessment to facilitate safe exercise prescription.

2. Exercise recommendations: Describes exercise prescription (prior to return to training in Component 3) related to the level of risk identified in Component 1.

3. Return to competition: Once Component 1 markers are cleared, clinicians will assess psychological, performance and environmental factors to inform the level of the athlete's training and competition. Clinicians may also find it useful to refer to RED-S CAT during this stage.

This guideline does not replace clinical judgment, but rather augments the ethical and clinical decision-making process. Clinicians must regularly review clients' medical and psychological progress as recommended in the guideline (i.e. weekly in Level A, decreasing in relation to risk). Additionally, psychological intervention should occur concurrently to exercise and nutrition interventions to best support clients.

Importance of Safe Exercise at Every Stage – Athlete

Graded exercise can be safely undertaken during ED treatment to achieve positive outcomes such as improved eating disorder symptomatology, general psychological well-being, musculoskeletal health and cardiac functioning as well as increased meal plan and treatment adherence. However, the exact exercise recommendation for each client will differ depending on their level of physical and mental health risk in relation to exercise.

Using the SEES-A guideline

This guideline was developed to support clinicians in making safe, evidence-based decisions when recommending exercise and return to sport for athletes with EDs. Exercise and training sessions must be supervised initially with increasing autonomy permitted as treatment and recovery progress. Please note that it is not a requirement, nor always possible, for treatment or coaching team member to supervise these sessions. In these circumstances, we recommend that a trusted friend or partner with knowledge of the athlete's individualised exercise plan and limitations be present. Regular medical reviews are required to decide whether the current exercise is maintained, progressed, or regressed, depending on client symptomatology and physiological results.

Part A – Safe Engagement in Exercise

1. Assessment: Use psychological and physiological results (as per page 28) to determine your client's level of risk for engaging in exercise. Always begin the assessment using the markers from the highest-risk category, Level A. If no Level A risk factors are present, progress to Level B, and so on. Note the risk category your client falls within.

2. Recommendations: Once the level of exercise risk has been identified (e.g. Level A-D), match this with the corresponding exercise recommendation on page 39. Please note that regardless of which risk level an individual is assessed at initially, clinicians are still encouraged to continue education interventions from prior levels. This continues to apply at Level D (lowest risk), whereby interventions from Level A, B and C should continue to be implemented.

3. Step up/step down: Individuals may step up (into the lower risk categories) and down (higher risk) in their risk level throughout treatment and recovery. Consequently, regularly reviewing (e.g. weekly, monthly) the athlete's risk level is vital. Stepping up requires not only clearing all risk markers up to and including their current level, but also adhering to treatment recommendations, achieving adequate nutritional intake, and exhibiting improvements in health status, where necessary. Conversely, an individual will step down to previous level/s if they exhibit any of the higher risk markers. Individuals must also step down a level in the case of treatment/meal plan non-compliance, return to exercise compulsions, or a worsening of ED behaviours.

Intensity, Duration and Type of Exercise

The SEES-A guideline provides recommendations regarding the intensity, duration and type of exercise, however, deliberately does not specify the frequency of exercise sessions per week. Clinicians and athletes are to determine this collaboratively to prioritise safety, minimise harm, and optimise treatment outcomes. The frequency of training in Part B below will also require consideration of periodization (i.e. strategic implementation of training phases often used in athletics; Bompa & Buzzichelli, 2018), with training phases based upon increasing or decreasing the intensity and volume of exercise within a program.

Exercise is a positively indicated treatment component but is not compulsory and boundaries are important to prevent engaging in dysfunctional exercise. Clinicians should work with clients to help them listen to their body signals prior to, during and after exercise sessions. This knowledge can then be incorporated into learning to match exercise type, intensity, and amount to their energy levels, creating exercise autonomy. Supervising professionals must be aware of each individual's limitations and any changes in energy and/or symptomatology to adjust exercise accordingly; this includes incidental physical activity (such as walking to appointments/work, cleaning/gardening, carrying groceries), which the clinician must discuss with their client and consider in addition to recommended exercise to better characterise an individual's total daily energy expenditure in relation to energy intake.

Part B – Return to Sport

1. Assessment: Use psychological, environmental and performance markers (pp. 30) as well as sport specific recommendations (pp.32-36) to determine your client's level of risk when returning to sport. Always begin the assessment using the markers from the highest-risk category. If no risk factors from Stage 1 are identified, assess the measures in Stage 2, and so on.

2. Recommendations: Once the level of participation risk has been identified (e.g. Stage 1-4), match with the corresponding participation recommendation on the top of the recommendations table (pp.31). Please note that even once an individual positively progresses past Stage 1, clinicians are still recommended to continue interventions from this level as they include important education regardless of health status. This continues to apply at Stage 4, whereby interventions from Stage 1 through 3 should continue to be implemented.

3. Step up/step down: Individuals may step up and down on the SEES-A guideline throughout treatment as often we find that recovery is not linear. The assessment (pp.30) and recommendation (pp.31) tables are meant to represent a continuum and if criteria are not met, the individual can step down from the SEES-A guideline (pp.30-31) back to the SEES tables (pp.28-29). Specific reviews (e.g. weekly, monthly) are recommended in each level for this reason. Stepping up requires not only the clearance of all risk markers up to and including their current level, but individuals must also be adhering to treatment, increasing nutritional consumption, and exhibiting improvements in health status. Conversely, an individual will step down to previous level/s if they exhibit any of the higher risk markers. Individuals must also step down a level with treatment/meal plan non-compliance, return to exercise compulsions, or a worsening of ED behaviours.

Limitations

This guideline does not replace clinical judgement by the treatment team. It has been developed for the use of trained medical, exercise, and sporting professionals with expert knowledge in the physiology of eating disorders when working with an adult athlete population (aged 18 years and over). Some special populations will need further support and must be assessed by a medical team and, where accessible, an accredited exercise professional (see glossary 74) before recommending an appropriate supervised exercise plan. Please note, this does not preclude these special populations from engaging in exercise; however, we encourage that adaptations to the SEES guideline for these populations must be done under the supervision of medical advice specific to their individual requirements. These populations may include (but are not limited to): children/adolescents and individuals with diabetes, osteopenia/osteoporosis, or other existing cardiovascular/respiratory, metabolic, neurological, psychological or musculoskeletal complications. Finally, whilst purging as a behaviour has not been included as a contraindication to exercise, we encourage practitioners to ensure a thorough and frequent assessment for individuals engaged in vomiting, laxative, or diuretic use and exercise due to the compromising nature of these behaviours (see *Purging, Purposeful Dehydration, and Hypovolemia,* pp.70).

Increasing progression with nutritional plan

Level A Review weekly	Level B Review fortnightly	Level C Review monthly	Level D Review as required
Cardiovascular profile: Resting HR <44bpm or >120bpm Postural tachycardia >20bpm Orthostatic hypotension >20mmHg systole (independent of symptoms) Systolic BP <90mmHg Prolonged QT/c interval >450msec Arrhythmias Valve ventricular disproportion **Biochemical profile:** Hypokalemia <3.0mmol/L Hypophosphatemia <0.8mmol/L Hypomagnesemia <0.7mmol/L Hypercarbia>32mmol/L Hyponatremia <130mmol/L Hypoglycaemia <4mmol/L Hypoalbuminaemia <3.6g/ml hypovolemia **Psychological profile:** EDAS score > 2 for three or more subscales **Other:** Temperature <35°C	*Individual has cleared all prior risk markers and is also adhering to:* **Individuals with AN:** Positive weight gain trajectory in line with treatment goals **Weight-restored individuals:** Weight stabilisation/mobilisation in line with treatment goals **Recommended to assess BMD if:** (i) underweight for > 6mths (ii) amenorrhea for > 6mths (iii) low testosterone in males (iv) history of stress or fragility fractures **Extra note:** Individuals with iron deficiency anaemia should consider a reduction in weight-bearing/ jogging/running/jumping on hard surfaces	*Individual has cleared all prior risk markers and is also adhering to:* Weight stabilisation or gain if still required Level A markers related to ED are completely normalised as per medical recommendation Managing ED behaviours (e.g. self-induced vomiting, restriction/ bingeing, fear of becoming fat, & laxative use) Normalised sex hormones without exogenous replacement (return to menses & normalized oestrogen for females; testosterone for males) **Psychological profile:** Improvement in EDAS scores ***SEES-A: Once above is met progress to SEES-A Stage 1 non-contact/low-impact sport or Level D for contact/high-impact sport***	*Individual has cleared all prior risk markers and is also adhering to:* Weight progression >90% of IBW (considering individual weight history & family characteristics) ***SEES-A: Once above is met, progress to SEES-A Stage 1 for contact/ high-impact sport***

Symptom regression, treatment/meal plan noncompliance, return to exercise compulsion

Exercise Components:	SEES Recommendations: Level A	Level B	Level C	Level D
Intensity	Max Talk Test level: 2 METS: <3	Max Talk Test level: 5 METS: 3-5	Max Talk Test level: 8 METS: 6-8	Individualised
Duration	30min max	30min max	60min max (30min max cardio; 30min max resistance)	Individualised
Stretching	Static (without orthostatic compromise)	Dynamic warm up; static cool down		
Cardiovascular/ respiratory exercise	Nil	Low impact; social/games focus (excluding return to sport) (e.g. gentle Yoga and Pilates, table tennis, walking, swimming)	Moderate impact (excluding return to sport) (e.g. cardio classes, jogging)	High impact; return to sport (e.g. rugby, football, martial arts, basketball, hockey); individualised; or may return to previously dysfunctional cardio exercise
Resistance exercise	Nil	Social, functional body weight (e.g. circuit)	All resistance exercise (e.g. weight lifting, weights classes)	All resistance exercise; may return to previously dysfunctional resistance exercises
Setting	Indoor or outdoor			
Supervision	Medical supervision required	Medical OR friend/family	Flexible (social partner encouraged)	Flexible, progressing to unsupervised
Education	Identify unhealthy exercise beliefs Nutritional rehabilitation and counselling Ambulation assessment & injury prevention in daily living tasks (e.g. correct bending technique) Breathing & body awareness tasks Introduction to body awareness Assessment of exercise habits prior to treatment & long-term exercise goals Physiological education	Continue relevant/outstanding interventions and: Further challenge unhealthy exercise beliefs Continue exploring & practicing intuitive movement	Continue relevant/outstanding interventions and: Increase exercise intensity in conjunction with body awareness Set future exercise goals	Continue relevant/outstanding interventions and: Address remaining unhealthy aspects of exercise relationship, renormalising & increasing autonomy Develop future exercise plan in accordance with treatment plan & activity goals including focus on relapse prevention

Stage 1	Stage 2	Stage 3	Stage 4
Athlete has cleared all prior risk markers (including SEES Level C if non-contact/low-impact sport or D if contact/high-impact sport) and demonstrates competency in:	*Athlete has cleared all prior risk markers (including Stage 1 and SEES Level D) and demonstrates competency in:*	*Athlete has cleared all prior risk markers (including Stage 2) and demonstrates competency in:*	*Athlete has cleared all prior risk markers (including Stage 3) and demonstrates competency in:*
Physical Adequate nutrition and hydration for training load No presence of overtraining syndrome No ECG abnormalities Resolution of stress fractures, no new fractures At least 6 menses over last 12 months for females Absence of recurrent upper respiratory tract infections during Level C or D	**Physical** Passes team fitness/performance test without experiencing adverse **physical** outcomes prior to, during, or after testing	**Physical:** Engaging in competition without symptom regression Maintenance or improvements in musculoskeletal, cardiorespiratory/vascular, neurological and metabolic fitness testing as per team expectation	**Physical** Maintenance of Stage 3.
Psychological Includes regular rest days from any exercise Maintenance or improvement in EDEA score Adherence to individual exercise plan from Level C & D Abstinence from fasting and purging Demonstrated maintenance of minimum 95% IBW Engaged in valued actions outside of sport (e.g. education, non-sporting hobbies, social activities)	**Psychological** Passes fitness/performance test without experiencing adverse **psychological** outcomes prior to, during, or after testing		**Psychological** Maintenance of Stage 3.
Training-related Ability to tolerate and adapt to unexpected change in exercise or training Engaged in a variety of exercise/training types Process-oriented professionalism/decision making (e.g. following injury protocols; accept unplanned rest day or meal plan changes if fatigued) Demonstrated ability to alter planned exercise		**Training-related** Compliance with pre- and post-competition changes to meal plan, hydration, and training	

Increasing progression with nutritional plan

Stage 1	Stage 2	Stage 3	Stage 4
Return to sport intervention: Individual training/practice (tailored to Level C restrictions i.e. 30 minutes, functional body weight, etc.)	**Return to sport intervention:** Return to team training/practice (if applicable)	**Return to sport intervention:** Intermittent* competition	**Return to sport intervention:** Normal competition and periodization of training
Supervision: Sporting or treatment team personnel during sport related activity	**Supervision:** Sporting and/or treatment team personnel during sport related activity	**Supervision:** As per Stage 2	**Supervision:** As per Stage 2
Education interventions: • Identify and address dysfunctional beliefs associated with exercise, training, nutrition, rest, and competition • Identify and address barriers in return to sport (e.g. competition pressures, team environment) • Practice awareness of physical cues before, during, and after training (i.e. in real-time/during training with the strength and conditioning coach or when training alone) • Evaluate short- and long-term sport, wellbeing, relationship, career, and other life goals • Develop sense of self and identity outside of sport • Nutrition/behaviour/training log	**Education intervention:** • Continue relevant/outstanding interventions • Identify and address any increases in performance or appearance comparisons • Complete exposure tasks related to competition aspects (e.g. competition attire, public weigh ins) **Preparations for returning an athlete to competition:** • Identify sport-specific demands (e.g. eligibility, competition weight, training requirements) • Consider sports' governing body requirements (e.g. whether adaptations to any sporting protocols may be acceptable)	**Education intervention:** • Relapse prevention • Continue outstanding interventions *Frequency will be collaboratively determined by the athlete, treatment team and sporting team (considering sport-and season-specific factors)	**Education intervention:** • As per Stage 3

Symptom regression, decreased fitness/performance markers, treatment/meal/hydration plan noncompliance, return to exercise compulsion, or repeated deviation from training plan