



Consensus Statement on Eating Disorders in Climbing

Dr. Rebecca Williams, BSc D.Clin.Psy, Consultant Clinical Psychologist – [Smart Climbing](#), UK

Madeleine Crane, M.Sc., Sport Psychologist – [Climbing Psychology](#), Austria

Mina Markovič, M.Sc., Bio Psychologist, Trainee Sport Psychologist – [Mina Markovič climbing & psychology](#),
Slovenia

Jamie Vardy, M.Sc., Climbing Coach – [Apex Climbing Coaching](#), UK

Dr. Sarah Howard, D.Clin.Psy., Clinical Psychologist – National Health Service ([NHS](#)), UK

Miguel Santolaya, M.Sc., Sport Psychologist, Psycho-Oncologist – [Sputnik Climbing Research team](#),
Department of Evolutionary and Educational Psychology, [University Autónoma Madrid](#), Spain

Andrei Mandzuk, M.Sc., Mental Performance Consultant – [Mzk Performance](#),
Faculty of Science and Technology, Sport Science, [Douglas College](#), Canada

Emma Wood, M.Sc., Trainee Sport Psychologist – [Emma Wood Therapy](#), English Institute of Sport,
University of Derby, UK

Maria Stefania Ionel, Ph.D.(c), Clinical and Sport Psychologist, Researcher – [Department of Psychology](#),
[Babes-Bolyai University](#), [Climbing Psychology](#), Romania

Summary

Eating disorders have the highest mortality rate and long term impact of any mental health difficulty, and must be taken seriously. Difficulties with maintaining healthy attitudes to eating, weight and body image, including eating disorders, are a risk for climbers. Whilst research is in its infancy, epidemiological data suggests that particularly female elite sport climbers are most at risk for developing disordered eating. Climbers, coaches and parents need to be aware of early signs and symptoms, risk factors, and how to seek help in a timely and effective manner. Coaches, the media and others in positions where they may be a role model to younger climbers must take care how they talk about food, eating and weight, in order to change the culture around eating and climbing. This consensus statement is aimed at teams, federations/ associations, and coaches, to highlight the relevant issues. Advice is given on how to ensure a supportive fuelling strategy, and how and when to access support for climbers. It is accompanied by infographics versions aimed at coaches/parents and climbers themselves, and can be widely distributed throughout climbing gyms, handbooks and training events.

1. Introduction

Climbers can be pretty obsessed with numbers. Their thoughts are often occupied with grades, how much weight to add to hangs, how many seconds to hang for, the number of training repetitions, and for some, how much they weigh and their calorie intake. Most climbers are aware of their weight, and sometimes this can motivate an unhealthy, or



even dangerous, relationship with food. Athletes in all sports are vulnerable to eating disorders, disordered eating and eating difficulties, and climbing as a gravitational sport is no exception. Eating disorders in climbing have been a taboo for too long, and even now as this important subject is being discussed more frequently, it is important to ensure access to good quality information for coaches, parents and climbers.

Early intervention is critical for the physical and mental health of the climber, and education plays a key role in early identification. The following consensus statement is written by sport psychologists, clinical psychologists and psychotherapists, who are experts in their field and in climbing, and aims to support coaches, federations, parents and climber-athletes, to help them better understand eating disorders and how to seek the right help at the right time.

2. The mental health continuum; optimal eating, disordered eating and eating disorders

In order to understand the differences between optimal eating, disordered eating and eating disorders, we need to consider the 'mental health continuum' (NZDF, 2015). As with other mental health issues, eating and individuals' attitudes towards food, will be on a broad spectrum, from optimal eating habits and beliefs, all the way through to clinical eating disorders (ED). In between, there are a spectrum of disordered eating patterns (DE) (Reardon et al., 2019). It is vital to be aware of optimal nutrition and attitudes towards eating, clinical eating disorders, and disordered eating, with the understanding that an individual may move between these areas of the spectrum at different times in their climbing life.

DE in climbers sits on a spectrum between optimised nutrition and an ED (Wells et al., 2020). Disordered eating is where individuals attitudes toward food, food choices and eating practices are linked with dissatisfaction with body image, weight-contingent self-esteem and/or fear of gaining weight, changes in body shape or losing control over food, and the presence of fear around food, but not to such a severe, strong or frequent degree as in clinical eating disorders (see later) (Reardon et al., 2019). An individual with DE may regularly engage in behaviours such as skipping meals, compulsive eating, compulsive exercise and/or restrictive eating, but without fully meeting the criteria for an ED (Wells et al., 2020). Restrictive practices may include for example, limiting food intake, cutting out specific food groups, fasting, using special food 'schedules', rituals around cooking and eating, compensatory behaviours, diet supplementation, bingeing, purging, and so on. Whilst some of these practices may be time or culturally appropriate, when they are applied rigidly for extended periods of time, they may point to underlying disordered eating patterns.

DE may involve short-term restrictive diets, which progress to chronic energy or nutrient restriction, binge eating, active and passive dehydration, use of laxatives, diuretics, vomiting, and diet pills, with or without excessive training (Sundgot-Borgen & Torstveit, 2004). Individual athletes can move back and forth along the spectrum of eating behaviour at any point in time over their career and within different stages of a training cycle (e.g. during the



off-season, pre-season, when injured) (Reardon et al., 2019). Athletes are more likely to present with DE than a clinical ED (Sundgot-Borgen et al., 2013), and there is no reason to suggest climbing is any different to other sports in this respect.

Mentally healthy attitudes towards eating therefore consist of a wide range of desirable, optimum eating habits and feelings (Wells et al., 2014), generally characterised by flexibility and lack of anxiety around changes to eating plans or weight. Where the cut-off exists between ‘acceptable’ and unhealthy, is a difficult question, especially in professional and competitive sport, (or even recreational), where many are pushing themselves to their limits (Mountjoy et al., 2014). Tendencies to optimise nutrition to improve training, performance and results is not uncommon, especially in gravitational and weight-related sports (Sundgot-Borgen et al., 2013), such as climbing. It may be difficult to distinguish between sport-optimised nutrition and DE (Wells et al, 2020), and so no guideline should be taken as absolute. Athletes may become adept at ‘hiding’ their habits, thoughts and practices (National Guideline Alliance UK, 2017), or indeed be unaware that what they think of as optimising their nutrition and eating practices, may in fact be a pattern of disordered eating.

Behaviours which may signal a red flag as to the presence of disordered eating include (but are not limited to) obsession over weight or weight control, chronic dieting and/or caloric restriction, feeling anxious and/or out of control around food, compensatory behaviours for food intake (an excessive workout, fasting, use of laxatives or diet pills, purging), hormonal disturbance (menstrual function, thyroid, sleep) and/or a constant sense of ‘trying hard’ to match certain dietary, body weight, shape or composition expectations (Mountjoy et al., 2014).

Drawing a line between disordered eating and a clinical eating disorder is a difficult task (Wells et al., 2020), but utilising the mental health continuum is helpful. As long as the individual does not endanger his/her physical or psychological health and social life, academic engagement, and work and hobbies, (NZDF, 2015); then the climber-athlete may be said to be in the ‘green, yellow or orange’ zone, where no additional medical or psychological interventions are required (Reardon et al., 2019).

For example, a coach may work with perhaps a very thin individual, whose physiological parameters are in the acceptable range (e.g. hormones) (Keay, Francis and Hind, 2018), and the athlete’s attitudes towards food, food choices and body image related self-esteem are positive, and there is no impact on the athlete’s sport, social, school or work tasks, because of their food choices or practices (Mountjoy et al., 2018, Wells et al, 2020). At first glance, the athlete may *appear* to be at risk of an eating disorder, but if there are no negative impacts, then we are on the ‘green-ish’ side of the mental health continuum. On the other hand, a ‘healthy’ weight individual can suffer from severe food and body image related self-esteem issues, rigid or uncomfortable food choices, which impact on his/her mental health, social functioning and/or work or academic life, and in this instance, we should think about medical and psychological or other professional help (Reardon et al., 2019).



3. Symptoms

Eating disorders are characterised by a persistent disturbance of eating or eating-related behaviour, that results in the altered consumption or absorption of food, and that significantly impairs physical health or psychosocial functioning (Diagnostic and statistical manual of mental disorders, 5th edition; DSM-5); however these difficulties can take many forms. Listed below, the main symptoms are provided for anorexia nervosa, bulimia nervosa, binge-eating disorder, and also mentioned are less common types of eating disorder, such as rumination disorder, avoidant/restrictive food intake disorder, and pica. For full diagnostic criteria of each of the above, see DSM-5.

3.1. Anorexia Nervosa

The key symptoms of anorexia nervosa are a severe restriction of energy intake relative to requirements, leading to a significantly low body weight relative to age, sex, developmental stage, and physical health. (Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than that minimally expected). This is coupled with an intense fear of gaining weight or of becoming fat, or persistent behaviour that interferes with weight gain, despite being at a significantly low weight. Additionally present is a disturbance in the way one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of current low body weight.

3.2. Bulimia Nervosa

Bulimia nervosa is characterised by recurrent episodes of binge eating. An episode of binge eating is characterised by both of the following:

- a. Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances. And
- b. A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).
- c. In addition, recurrent inappropriate compensatory behaviours are present which are employed to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.

For a diagnosis of bulimia nervosa, the binge eating and inappropriate compensatory behaviours both occur, on average, at least once a week for 3 months. Self-evaluation is also unduly influenced by body shape and weight.

3.3. Binge-Eating Disorder

Similar to bulimia nervosa but without the compensatory behaviours such as vomiting or purging etc. Binge-eating episodes are associated with three (or more) of the following:

- a. Eating much more rapidly than normal.



- b. Eating until feeling uncomfortably full.
- c. Eating large amounts of food when not feeling physically hungry.
- d. Eating alone because of feeling embarrassed by how much one is eating.
- e. Feeling disgusted with oneself, depressed, or very guilty afterward.

The binge eating is also accompanied by marked distress and occurs, on average, at least once a week for three months.

3.4. Other types of eating disorders

Whilst anorexia, bulimia and binge-eating disorders are better known, other types of eating disorders can occur, such as regurgitation of food (Rumination Disorder), avoidance of foods due to sensory issues or lack of interest (Avoidant/Restrictive Food Intake Disorder; ARFID), or eating non-food items (PICA). These are less common but can also have profound impacts psychologically and at a physiological level, and also require specialist input.

4. Risk factors for ED/DE in climbing

Risk factors for disordered eating in the general population include: adolescence, idealisation of thinness (Keel & Forney, 2013); negative body image, body checking and body avoidance (Walker et al, 2018), restricted eating patterns (Zapf et al, 2001), type 1 diabetes (Peterson et al, 2015), LBGQT+ (Dotan et al, 2021), high self criticism (Zelkowitz & Cole, 2020); perfectionism and perfectionistic concerns (Robinson & Wade, 2021). These are all factors which may be present in recreational climbers as members of the general population.

The way we see ourselves and the demands and expectations associated with our role as climbers can influence how we cope with problems related to our climbing performance. Sport identity (SI) can be defined as the degree to which a person identifies with his role as an athlete, the importance attached to it and the environmental influences to which it is subjected (Brewer, Van Raalte, & Linder, 1993; Cieslak, 2004).

Strong SI has been associated with personality traits such as impulsivity, perfectionism or competitiveness (Díaz, 2012). It is also related with strong self-confidence, low levels of anxiety, better body image and greater commitment to training and achieving sporting goals (Hernández-Mulero & Berengüí, 2016).

Contrary to appearances, high levels of SI can lead to a dependence of their self-esteem on expectations of sport performance, sport achievement and the pressure to achieve (Martin & Horn, 2013; Whipple, 2009). In particular, aesthetic or weight-dependent sports such as climbing (especially with female at an elite/high elite climbing ability level) can be associated with a significant relationship between performance and body weight (Joubert et al., 2020; Strand 2022) and can be related to obsession with thinness, body dissatisfaction and personal alienation



(Hernández-Mulero, & Berengüi, 2016). Additionally, if the identity adopted by the athlete (influenced by internal or external pressure) spills over into other spheres of his life, risky behaviours may appear, such as ED or DE.

In sports athletes, particularly sports considered aesthetic, anti-gravitational or lean sports, desire to be leaner specifically to improve performance, is predictive of increased risk of disordered eating (Krentz & Warschburger, 2013). There is a widely held belief within climbing that it is a weight dependent sport, and articles and anecdotes within media and social media often emphasise weight loss or weight control (Zapf et al, 2001). This emphasises the need to address popular cultural narratives within climbing which advocate weight loss as crucial for improved climbing performance.

For elite female climbers, risk of disordered eating is thought to increase with increased climbing ability/grade, though this does not necessarily hold true for male elite climbers (Joubert et al, 2020).

Table 1. *Suggested Risk Factors for Disordered Eating and Eating Disorders in High Performance Athletes*

Biological risk factors	<ul style="list-style-type: none">● Age● Stages of growth, development or puberty● Genetic risk factors, for example, EDs, addictions in family● Precocious growth or development● Growth or development that is significantly different from the average
Psychological risk factors	<ul style="list-style-type: none">● Body dissatisfaction, body image distortion● Low self-esteem● Personality traits, for example, perfectionism● Obsessive-compulsive tendencies/traits● Neuroticism (depression, anxiety, emotional lability)● Harm avoidance● Heightened stress reactivity● Inflexible, rule-drive, drive for order and symmetry● Risk-taking behaviour
Sociocultural risk factors	<ul style="list-style-type: none">● Eating pressures/modelling● Peer pressure regarding physical appearance or weight● Influence of the media● ‘Thin ideal’, ‘muscularity ideal’ or ‘fit ideal’● Direct or perceived pressure to modify appearance or weight● Weight/appearance-based teasing, bullying● Social Isolation● Experiences of weight stigma, including in healthcare and within sporting environments



Sport-specific risk factors	<ul style="list-style-type: none">● Transition periods<ul style="list-style-type: none">○ Early start of sport-specific training○ Making a senior team at a young age○ Retirement (forced or voluntary)○ Non-selection or de-selection○ Injury, illness, surgery, time away from sport and training● Changes in weight/body shape following injury/illness● Pressures (perceived or real) to change body shape or composition● Weight cycling● Patterns of restriction or disordered behaviours● Coaching behaviour and accepted 'norms' within sport● Individual effort sports (as opposed to team sports)● Rules and regulations in sports● Performance optimisation pressure● Use of supplements, and nutritional and ergogenic aids● Body composition testing, weighing and measuring● Public displays of 'results' in common areas, for example, training environment● Media and social media pressure (perceived or real) to look a certain way
Gender-based factors	<ul style="list-style-type: none">● Media-driven gender stereotypes● Drive for muscularity/leanness/thinness● Anabolic-androgenic steroid use● Gender diversity
Other risk factors	<ul style="list-style-type: none">● Chronic disease related to caloric utilisation, for example, diabetes, thyroid● Co-occurring conditions, for example, coeliac disease, other gastrointestinal conditions● LGBTQI+● History of trauma● History of food insecurity● Major life transitions, for example, moving away from home, moving between schools, moving overseas

Note. Reardon et al. (2019).

It is clear from the table above that climbing may include many of the risks associated with DE/ED, and having a thorough understanding of how to ameliorate these risks will be crucial to coaches, teams, associations and federations wanting to promote athlete wellbeing. Protective factors are thought to include positive, person-centered (rather than performance centered) coaching practices, positive attitudes to food and weight from team members and other social influences, and coaching and parenting practices which emphasise non-weight related contributions to performance. For young female athletes in particular, positive and supportive discussions around changes to body shape through puberty and training can be protective (National Eating Disorders Association; NEDA website).



5. Protective factors for ED/ DE in climbing

At the same time, protective factors can help prevent ED/DE in the first place. Protective factors lessen the likelihood of a risk factor leading to a negative event or occurrence. They should be considered on an individual, family and systems level (National Eating Disorders Collaboration; NEDC website). Further protective factors include body acceptance, which improves self-esteem, self-acceptance, and healthy outlook and behaviours, as well as having a healthy relationship with food and eating (Bulik et al., 2019; National Guideline Alliance UK, 2017; Patton et al., 1999). The latter involves regular eating times, eating a variety of different foods and an appropriate quantity of it, being able to eat alone or with others at equal ease, as well as eating flexibly, spontaneously and for enjoyment. A healthy relationship with food also includes listening to one's body's cues (National Guideline Alliance, UK (2017)). A list of protective factors is shown in the table below.

Table 2. *Overview of relevant Protective Factors against ED/DE*

Individual protective factors	<ul style="list-style-type: none">● High self-esteem● Positive body image● Critical processing of media images (i.e. media literacy)● Emotional well-being● School achievement● Being self-directed and assertive● Good social skills with success at performing multiple social roles● Problem solving and coping skills
Family protective factors	<ul style="list-style-type: none">● Eating regular meals together● Being in a family environment where weight or physical attractiveness is not over-emphasised
Socio-cultural protective factors	<ul style="list-style-type: none">● Living in a culture that accepts a variety of body shapes and sizes● Involvement in sport or industry without emphasis on physical attractiveness or thinness● Peer and/or social support structures and relationships where weight and physical attractiveness are not of high concern
Other protective factors	<ul style="list-style-type: none">● Body acceptance● A healthy relationship with food and eating

Note. Table adapted from the NEDC website (Bulik et al., 2019; National Guideline Alliance, UK, 2017; Patton et al., 1999).

6. Prevalence of DE/ED

It is difficult to estimate the prevalence of disordered eating and eating disorders within recreational climbers, since only studies of elite level climbers exist. A recent study by Joubert et al (2020) found prevalence of 6.3% for male



elite and 16.5% for female elite sport climbers, with this figure thought to be higher for women at the upper end of elite. These figures are lower than that suggested in other aesthetic and gravitational sports (17 – 42% for males, 40-42% of females; Bratland-Sanda & Sundgot-Borgen, 2013), but higher than is typically reported in the general population (ranging from 1% to 2.2% lifetime prevalence depending on type of eating disorder; Qian et al, 2013). Given the proliferation of media articles around diet and climbing, and discussions on popular climbing forums and social media around weight loss for climbing, it would appear appropriate to be concerned regarding increased risk of disordered eating and eating disorders in both recreational and elite climbers, likely at a level above the general population. This makes vigilance within the climbing community and coaches important, due to the severe impacts of DE/ED and the need for early intervention.

7. Physical and psychological consequences: importance of early identification

When addressing the consequences of DE or EDs in climbers, physical health needs should take priority over any performance related concerns. One of the major risks linked to DE is the potential development of relative energy deficiency in sport (RED-S) (Mountjoy et al., 2018). There are also implications for acute and chronic impairments in skeletal, cardiovascular, neurological, endocrine, gastrointestinal, immunological, growth and metabolic systems (Mountjoy et al., 2014). The long term impact on climbers from a physiological standpoint cannot be overstated.

In addition to the direct impairment of DE on physiological functioning, comorbid psychological difficulties can also arise; including low mood, anxiety, substance misuse, low self-esteem, self-harm, and suicidal ideation (Team Physician Consensus Statement, 2018). Performance consequences and interference with competition goals may follow due to increased risk of injury and illness, compromised training ability, reduced coordination, concentration, strength, recovery, and mood (Mountjoy et al., 2014).

DE in climbers can occur at any time; during periods of high stress, or successful performance. DE can occur in any athlete; crossing boundaries of gender, age, body size, culture, socioeconomic background, athletic calibre, and ability (Ackerman et al., 2019). Early identification and appropriate management is therefore paramount.

All coaching personnel have a duty of care to promote climbers' physical and emotional wellbeing. They should therefore be made aware of the risk factors and early warning signs indicative of DE and EDs and they should feel confident in knowing how to access support (Joy et al., 2003).

8. Positive dietary and nutrition practices

The dietary needs of active people, both within professional and leisure branches of sport, require specialised dietary requirements (Bentley et al., 2021). Research continues to show that an optimal balance and intake of carbohydrates, fats and proteins is an essential part of athletic pursuits and in maintaining personal health (Bentley et al., 2021). In a



recent study, dietary intake patterns of competitive rock climbers were assessed, demonstrating that adolescents failed to meet adequate energy needs (Michael et al., 2019). Moreover, additional sport specific data suggests the energy and nutrient intake of the wider climbing population are low when compared to current sporting guidelines, exposing these populations to an increased risk of nutrient deficiency (Krzysztof & Judyza, 2019).

Krzysztof & Judyta (2019) state that there are already issues surrounding eating and diet for many climbers right across the sport (Arthur-Cameselle & Curcio, 2018; Martinsen et al., 2015; Krzysztof & Judyza, 2019). This then brings to the forefront the need for accurate and clear information on optimum dietary fuelling, accessible to parents, climbers and coaches alike. The opportunity to gain a deeper understanding and insight into the cause and function of eating difficulties has been shown to play a significant role in crossing the ‘tipping point’ from disordered eating, to recovery (Moulding, 2016; Dawson et al., 2014). Moreover, there is a need to provide positive and effective diet and nutrition guidelines which are accessible to all climbers and coaches, to provide insights into safe, scientifically evidenced and effective dietary practices, rather than reliance on folklore and ‘common knowledge’ within the sport. Suggested below are key practices which should be adopted across the sport for prevention of under-fuelling and DE/ED.

Practice 1: Education

Educating direct contact coaching staff:

Education of coaching staff has been shown to be a key driver of reducing and preventing the medical and psychological consequences of disordered eating in sport (Martinsen et al., 2015). Additionally, this practice reduces the length and difficulty of any required interventions for the athletes (Martinsen et al., 2015). Education on topics such as fluid and fuel intake before, during and after training/performance, physiology education regarding growth and development, and preventative strategies via a detection and management of eating disorders programme, is a primary intervention tool and should be initiated for coaches working with climbers as early as 9–11 years of age (Sundgot-Borgen, 2013).

These methods (Martinsen et al., 2015; Bentley et al., 2021; Sundgot-Borgen et al., 2013), have produced significant long-term improvements in reducing prevalence and development of eating disorders in sport. This type of "athlete-targeted education" has a strong supporting evidence base, and is considered by many as a key strategy to change the detrimental dietary behaviours of athletes (Bentley et al., 2020).

Educating athletes:

Further success is found when athletes are included in education programmes regarding disordered eating and eating disorders. Relative disordered eating risk has been shown to be reduced by 90% in some female cohorts (Sundgot-Borgen et al., 2013) by doing so. Education that induces personal insight/self-realizations are helpful for



athletes recovering from an ED. Similarly, when an athlete understands and recognises that there is external support available from concerned parties, recovery is further enhanced (Arthur-Cameselle & Curcio, 2018).

Practice 2: Separating out coaching from body composition monitoring

When performed by a qualified and appropriate person(s) (i.e. a medical doctor or registered dietician), a complete body composition assessment prior to any interventions or intentional changes can be helpful. Other measures may include current and/or historical menstrual functions for female athletes, alongside other indicators such as stress fractures and bone mineral densities. ***Weight assessment by coaches is not considered appropriate*** and may even be harmful – this is best left to the medical team. Any weight loss programs should be carried out only under the guidance of a qualified and registered dietician.

It is important that any body composition monitoring is as objective as possible and only includes metrics that are relevant and that can be accurately assessed (Sundgot-Borgen et al., 2013). Changes in body composition should be monitored on a regular basis including a period of at least 2 months after the weight or body fat goal has been reached, to detect any continued or unwarranted losses or weight fluctuations. If a history of DE/ED is present, a more intense and longer follow-up is suggested.

Practice 3: Utilising nutritional intake guidelines

Whilst climbing specific recommendations for optimising nutrition are still limited (Michael et al., 2019), there are a few peer reviewed guidelines available. This is important in a sport where a reduced hydration or fuelling status can significantly impact performance (Michael et al., 2019). Climbers and coaches would be wise to turn to scientific articles or the advice of a qualified and registered dietician rather than relying on anecdote or ‘common industry knowledge’.

In summary, education of coaches, parents and climbers regarding positive dietary and nutrition practices should be a key goal for all climbing organisations, clubs and governing bodies. This will reduce the need for further intervention for disordered eating practices further down the line.

9. Prevention and education – the role of coaches, role models within the sport and the climbing media

The language and images used in description and appraisal of one’s own body, and the bodies of others, can powerfully alter the way in which bodies are perceived. With this in mind, coaches, parents, and the media should be mindful of the impact that their words and pictures can have on an athlete and their body image.

All coaches, parents, support staff, officials, and volunteers should strive to be intentional in creating an environment which is inclusive of all bodies, and does not place (perceived or real) value or worth on an athlete’s



physical characteristics. Individual and collective guidelines should be established around the language and feedback which is provided to athletes of any age or competency, ensuring that reinforcement is focussed on encouraging athletes to respect and care for their body.

Further, the language which the media use when reporting upon climbing should be carefully scrutinised. The psychological and physical safety and wellbeing of athletes should be prioritised over and above anything else by the media when reporting on achievements such as competition placements or outdoor successes.

We have provided a non-exhaustive list of suggested guidelines below:

- 1) Avoid criticism, praise, or comment on an athlete's physical traits when possible. Although it is unrealistic to never make reference to an athlete's physicality, it should be a minority form of feedback.
- 2) Praise should be directed towards athletes for factors largely within their control, such as their skill development, work ethic, mindset, etc.
- 3) Avoid comparison between athletes, and specifically the capacity of their bodies. These comparisons can be harmful for both athletes involved.
- 4) Normalise conversation with athletes about their physical and psychological health and wellbeing.
- 5) Those around the athlete should role model healthy eating behaviours whenever possible.
- 6) Understand referrals and referral pathways for qualified psychology and medical professionals in your area.
- 7) Time should be taken to provide educational materials for athletes and co-workers.
- 8) Social support can be formed through creating a safe space for experiences to be shared.

Parents, coaches, professional or experienced climbers, club leads, commentators and climbers with large followings on social media, whether they realise it or not, are in the position of being role models, particularly to younger climbers. Our sport prides itself on being a small community, and so the impact of those in role model positions can be huge. If this is you, then be mindful of how you speak about your own body, appearance, weight and dietary practices, and how and what you eat in front of others. Be a body positive role model in your words and actions.

It should be noted that there are individual differences between how athletes interpret and perceive the language of others. However, establishing clear guidelines and expectations can be an effective way of promoting inclusivity, respect, and care.

10. Management of eating disorders within climbers

10.1. Accessing support

Despite increased recognition of and support for mental health concerns within sport (NEDC, 2015), barriers still exist regarding the early identification and treatment of DE and EDs in athletes (Reardon et al., 2019). EDs have one



of the highest mortality rates of all mental health difficulties (Arcelus et al., 2011), so it is vital that timely efforts are made to improve prognosis within the climbing community through prevention, early detection, and specialised treatment (Joy et al., 2003).

If you have concerns about yourself as a climber, try to talk to someone you trust such as a coach, parent, friend or mentor for social support, and do not delay in seeking advice from your GP or medic. Your GP or medic will want to ask you more questions about your eating habits and weight, and about your mental health. Though it can be scary seeking help, disordered eating or eating disorders do not tend to resolve on their own and you will be making a courageous step in your recovery to seek help. There is also a list of useful resources at the end of this paper.

If you have concerns about a climber you coach, particularly if they are a minor/under 18 yrs of age, then this is a safeguarding issue and you have a duty of care to share your concerns. Speak to the climber in private about your concerns about their wellbeing, but do not specifically mention weight or weight loss or eating. Encourage them to seek help and provide helpful resources, and if they are a minor, then you must share with their parent/guardian, GP/Medic, or local safeguarding lead. Do not try to support them alone; do encourage them to seek help from a qualified psychologist and registered dietitian.

10.2. Role of Multidisciplinary Team (MDT) in elite climbers

For elite athletes, a core multidisciplinary approach to support climbers with DE and EDs is widely recognised as best practice (Joy et al., 2003). Anyone in the sports system, who has concerns about a climber's wellbeing should seek advice and guidance from any member (doctor, sports dietician, or psychologist) of the Core Multidisciplinary Team (CMT) (Team Physician Consensus Statement, 2017).

The role of the CMT is to coordinate the prevention, assessment, management, and maintenance care of climbers with possible DE and ED concerns. The CMT can offer specialised expertise through assessment, formulation, and intervention models to support climbers with their physical and emotional wellbeing alongside performance support and progress reviews (figure 1) (Wells et al., 2020).

With permission and respect for confidentiality, the CMT can also consult with coaches and other sports-system staff to deliver optimal care. They may also seek further input from relevant stakeholders including other physical and mental health providers and community-based services. The Olympic Movement Medical Code emphasises how the CMT have a duty to prioritise the health and welfare of athletes and that this should prevail over any other competitive, economic, legal, or political considerations (International Olympic Committee - IOC Medical Commission, 2016).



Core multidisciplinary team management of disordered eating/eating disorders

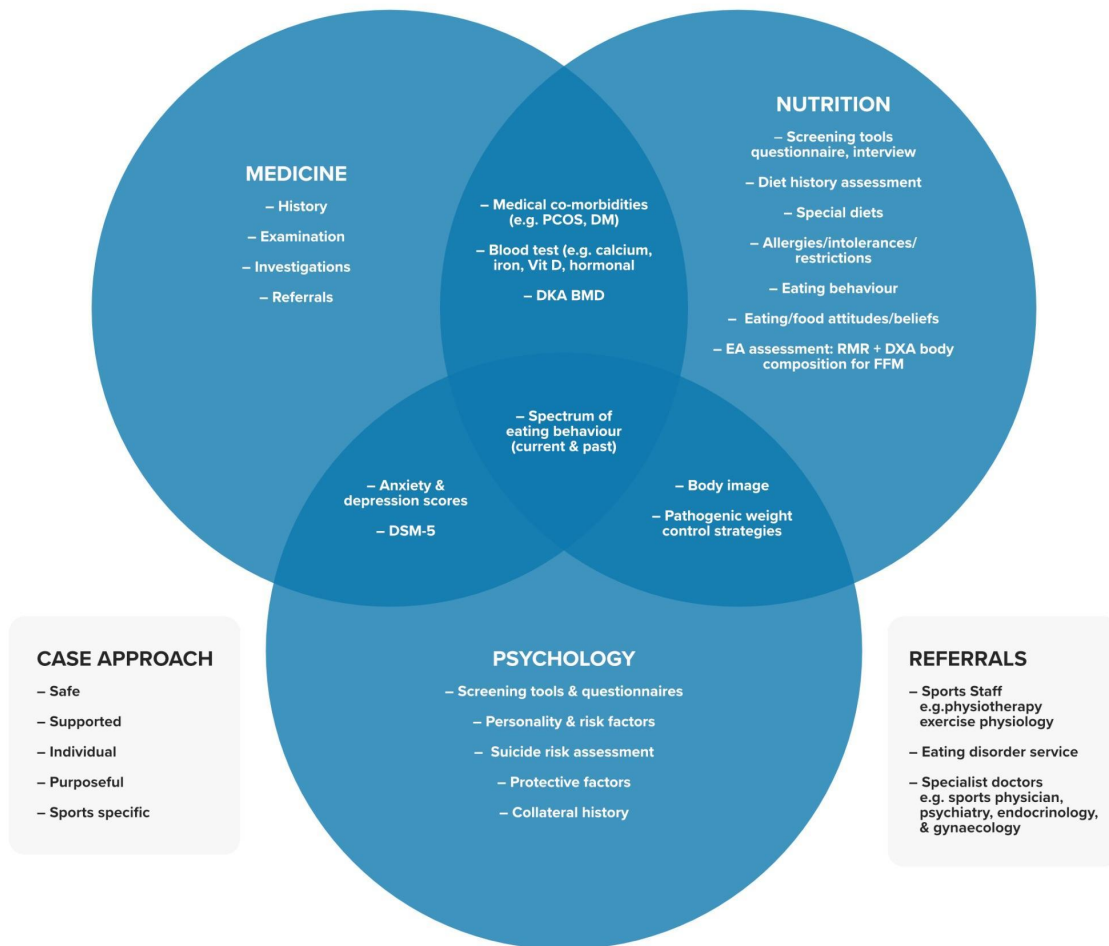


Figure 1. Core multidisciplinary team management by a doctor, sports dietitian and psychologist: the core multidisciplinary team drives the assessment for disordered eating of a climber, which may involve some overlap between disciplines depending on the trigger for recognition of disordered eating and the individual case characteristics. [BMD, bone mineral density; DSM-5, Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition; DXA, dual-energy X-ray absorptiometry]

10.3. Recreational and non-elite climbers without access to specialist support

For recreational climbers and non-elite athletes without access to the MDT, the first port of call will be your GP or medical doctor, who can make the necessary onward referrals to your local specialist team. Services vary



internationally, but you should expect to access a coordinated response addressing the physical and psychological aspects of disordered eating.

10.4. Recovering from an eating disorder – returning to climbing

If a climber has been significantly affected by disordered eating, RED-S, or an eating disorder, then they may need to stop climbing for a while to enable recovery. Returning to climbing can be difficult and will need close collaboration with the medical team, psychologist and coach (if there is one). The focus on any training may need to shift away from numbers and outcome goals, into more wellbeing and process goals during the recovery phase. Coaches and climbers will also need to be mindful of returning to an environment which may have triggered the previous difficulties, since without substantial changes being made, vulnerabilities to relapse may still be present.

Once ED or ED-related problems have been detected, it is advisable to build on the athlete's strengths to reverse false beliefs and acquired behaviours and habits, taking into account the need to rebuild a strong sport identity. To this end, interventions from a qualified psychologist are likely to cover the below, and are grouped according to: (1) the climber's initial needs, (2) those related to training, (3) those of emotional and communication skills. A coach's role would be to align closely with the intervention, and ensure the coaching environment also reflects the following.

1. Improving the relationship with food:

1. Understanding that weight does not predict style or success. Debunking myths and misconceptions about weight, injury risks and sports performance.
2. Coping with triggers. Teaching effective coping mechanisms to reverse food restriction and irrational thoughts.
3. Food as fuel. Relearning the relationship between food and performance.
4. Focus on healthful eating. Promoting healthy eating choices
5. Regaining the pleasure of eating.
6. Avoid talking too much about specific figures related to intake.
7. Refraining from weight-related comments or jokes.

2. Returning to climbing:

1. Coaches must know. Coaches and staff must be provided with educational guidelines regarding prevention and recognition of eating disorders.
2. Treatment over sport. Climbers must allow full supervision of their physical activity.
3. Generate motivation and adherence to treatment by setting realistic and consensual goals between team and climber. Goals should be quantifiable, measurable and focused on recovery specifically rather than performance (e.g. focus on regaining pleasurable climbing sensations, identify situations that represent a current challenge, and not a comparison with past performance).



4. Treatment should not neglect aspects related to training, sport identity and self-esteem.
5. Personalising training according to climber needs and the proposed goals.
6. Autonomy training. Enable climbers to express when a training schedule feels like too much.
7. Perspective – balance the importance of competition and results with welfare.

3. 'Easy talk':

1. Speak openly. Normalising and fostering positive communication environments between coaches and climbers.
2. Maintain a direct line of communication with families and/or relevant social environment.
3. Encourage team members to talk about qualities, values and performance, rather than physical aspects and/or achievements that may relate weight to sporting performance.
4. Learn and practise positive self-talk.
5. Promote recreational activities and not just training activities.
6. Emphasise periods of disconnection from climbing and extra-sporting recreation.

11. Conclusion

For a highly motivated athlete, controlled eating behaviour can be part of a carefully regulated lifestyle for optimal performance (Smith et al., 2015). Instead of policing athlete behaviours, the International Federation of Skiing (FIS) removed the motivation for ski jumpers to pursue extreme weight-loss objectives by penalising athletes when their BMI fell below a specific value (Smith et al., 2015). To minimise the threat to health and performance, many sports have adopted codes of practice for making weight. This is strongly encouraged as one of the most important prevention strategies for minimising the prevalence of and risks associated with ED (Smith et al., 2015).

It is clear that for meaningful long term positive change on this topic to happen, the responsibility must be taken up by the national bodies and international organisations of climbing for both competitive and serious leisure athletes.

In summary, education is needed at all levels and we suggest that climbing federations and governing bodies should have position statements with guidelines related to optimising nutrition and body composition. To reduce the risk of extreme dieting and EDs, mandatory educational programmes for healthcare providers, athletes, coaches/ athletic trainers and other athletics staff members should be implemented on an annual basis (Smith et al., 2015).



REFERENCES

- Ackerman, K. E., Holtzman, B., Cooper, K. M., Flynn, E. F., Bruinvels, G., Tenforde, A. S., Popp, K. L., Simpkin, A. J., & Parziale, A. L. (2019). Low energy availability surrogates correlate with health and performance consequences of Relative Energy Deficiency in Sport. *British journal of sports medicine*, *53*(10), 628–633. <https://doi.org/10.1136/bjsports-2017-098958>
- American Psychiatric Association, D., & American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (Vol. 5, No. 5). Washington, DC: American psychiatric association. <https://doi.org/10.1176/appi.books.9780890425596>
- Arcelus, J., Mitchell, A. J., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders. A meta-analysis of 36 studies. *Archives of general psychiatry*, *68*(7), 724–731. <https://doi.org/10.1001/archgenpsychiatry.2011.74>
- Arthur-Cameselle, J. N., & Curcio, M. (2018) Turning the Corner: A Comparison of Collegiate Athletes' and Non-Athletes' Turning Points in Eating Disorder Recovery. *Journal of Clinical Sport Psychology*, *12*(4), 595–613. <https://journals.humankinetics.com/view/journals/jcsp/12/4/article-p595.xml>
- Bentley, M. R. N., Mitchell, N., & Backhouse, S. H. (2020). Sports nutrition interventions: A systematic review of behavioural strategies used to promote dietary behaviour change in athletes. *Appetite*, *150*, 104645. <https://doi.org/10.1016/j.appet.2020.104645>
- Bratland-Sanda, S., & Sundgot-Borgen, J. (2013). Eating disorders in athletes: overview of prevalence, risk factors and recommendations for prevention and treatment. *European journal of sport science*, *13*(5), 499–508. <https://doi.org/10.1080/17461391.2012.740504>
- Brewer, B. W., & Cornelius, A. E. (2001). Norms and factorial invariance of the Athletic Identity Measurement Scale. *Academic athletic journal*, *15*(2), 103-113.
- Brewer, B. W., Van Raalte, J. L., & Linder, D. E. (1993). Athletic identity: Hercules' muscles or Achilles heel? *International Journal of Sport Psychology*, *24*(2), 237–254.
- Bulik, C. M., Blake, L., & Austin, J. (2019). Genetics of Eating Disorders: What the Clinician Needs to Know. *The Psychiatric clinics of North America*, *42*(1), 59–73. <https://doi.org/10.1016/j.psc.2018.10.007>



- Cieslak, II, T. J. (2004). *Describing and measuring the athletic identity construct: Scale development and validation* [Doctoral dissertation, Ohio State University]. OhioLINK Electronic Theses and Dissertations Center. http://rave.ohiolink.edu/etdc/view?acc_num=osu1091219903
- Dawson, L., Rhodes, P., & Touyz, S. (2014). 'Doing the impossible': The process of recovery from chronic anorexia nervosa. *Qualitative Health Research*, 24(4), 494–505. <https://doi.org/10.1177/1049732314524029>
- Díaz, I. (2012). Detección y prevención de los Trastornos de la Conducta Alimentaria en el deporte. [Detection and prevention of eating disorders in sports]. [Doctoral dissertation, University of Vigo].
- Dotan, A., Bachner-Melman, R., & Dahlenburg, S. C. (2021). Sexual orientation and disordered eating in women: a meta-analysis. *Eating and weight disorders : EWD*, 26(1), 13–25. <https://doi.org/10.1007/s40519-019-00824-3>
- Female Athlete Issues for the Team Physician: A Consensus Statement-2017 Update. (2018). *Medicine and science in sports and exercise*, 50(5), 1113–1122. <https://doi.org/10.1249/MSS.0000000000001603>
- Hernández-Mulero, N., & Berengüí, R. (2016). Identidad deportiva y Trastornos de la Conducta Alimentaria: Estudio preliminar en deportistas de competición. [Sport Identity and Eating Disorders: A preliminary study in competitive athletes]. *Cuadernos de Psicología del deporte*, 16(2), 37-44.
- IOC Medical Commission (2016). *Olympic movement medical code*. Retrieved April 2021, from <https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/IOC/Who-We-Are/Commissions/Medical-and-Scientific-Commission/Olympic-Movement-Medical-Code31-03-2016.pdf>
- Joy, E. A., Wilson, C., & Varechok, S. (2003). The multidisciplinary team approach to the outpatient treatment of disordered eating. *Current sports medicine reports*, 2(6), 331–336. <https://doi.org/10.1249/00149619-200312000-00009>
- Joubert, L. M., Gonzalez, G. B., & Larson, A. J. (2020). Prevalence of Disordered Eating Among International Sport Lead Rock Climbers. *Frontiers in sports and active living*, 2, 86. <https://doi.org/10.3389/fspor.2020.00086>
- Keay, N., Francis, G., & Hind, K. (2018). Low energy availability assessed by a sport-specific questionnaire and clinical interview indicative of bone health, endocrine profile and cycling performance in competitive male cyclists. *BMJ open sport & exercise medicine*, 4(1), e000424. <https://doi.org/10.1136/bmjsem-2018-000424>
- Keel, P. K., & Forney, K. J. (2013). Psychosocial risk factors for eating disorders. *The International journal of eating disorders*, 46(5), 433–439. <https://doi.org/10.1002/eat.22094>



- Krentz, E. M., & Warschburger, P. (2013). A longitudinal investigation of sports-related risk factors for disordered eating in aesthetic sports. *Scandinavian journal of medicine & science in sports*, 23(3), 303–310. <https://doi.org/10.1111/j.1600-0838.2011.01380.x>
- Krzysztof, S.-N., & Judyza, W. (2019). Energy and macronutrient intake of advanced Polish sport climbers. *Journal of Physical Education & Sport*, 19,3, 829–832. <https://doi.org/10.7752/jpes.2019.s3119>
- Martin, E. M., & Horn, T. S. (2013). The role of athletic identity and passion in predicting burnout in adolescent female athletes. *The Sport Psychologist*, 27(4), 338–348. <https://doi.org/10.1123/tsp.27.4.338>
- Martinsen, M., Sherman, R. T., Thompson, R. A., & Sundgot-Borgen, J. (2015). Coaches' knowledge and management of eating disorders: a randomized controlled trial. *Medicine and science in sports and exercise*, 47(5), 1070–1078. <https://doi.org/10.1249/MSS.0000000000000489>
- Michael, M. K., Witard, O. C. & Joubert, L. (2019) Physiological demands and nutritional considerations for Olympic-style competitive rock climbing, *Cogent Medicine*, 6(1). <https://doi.org/10.1080/2331205X.2019.1667199>
- Moulding, N.T. (2016). Gendered intersubjectivities in narratives of recovery from an eating disorder. *Affilia: Journal of Women and Social Work*, 31(1), 70–83. <https://doi.org/10.1177/0886109915576519>
- Mountjoy, M., Sundgot-Borgen, J., Burke, L., Carter, S., Constantini, N., Lebrun, C., Meyer, N., Sherman, R., Steffen, K., Budgett, R., & Ljungqvist, A. (2014). The IOC consensus statement: beyond the Female Athlete Triad--Relative Energy Deficiency in Sport (RED-S). *British journal of sports medicine*, 48(7), 491–497. <https://doi.org/10.1136/bjsports-2014-093502>
- Mountjoy, M., Sundgot-Borgen, J. K., Burke, L. M., Ackerman, K. E., Blauwet, C., Constantini, N., Lebrun, C., Lundy, B., Melin, A. K., Meyer, N. L., Sherman, R. T., Tenforde, A. S., Klungland Torstveit, M., & Budgett, R. (2018). IOC consensus statement on relative energy deficiency in sport (RED-S): 2018 update. *British journal of sports medicine*, 52(11), 687–697. <https://doi.org/10.1136/bjsports-2018-099193>
- National Eating Disorders Collaboration (2015). *Eating disorders: a professional resource for general practitioners*. Retrieved April 4, 2021, from <https://www.nedc.com.au/assets/NEDCResources/NEDC-Resource-GPs.pdf>
- National Eating Disorders Collaboration (2020). *Risk and Protective Factors*. <https://nedc.com.au/eating-disorders/eating-disorders-explained/risk-and-protective-factors/>



- National Guideline Alliance (UK). (2017). *Eating Disorders: Recognition and Treatment*. National Institute for Health and Care Excellence (UK).
- National Institute for Health and Care Excellence (NICE). 2017. *Eating disorders: recognition and treatment*. Full guideline.
- NZMH (2015). Mental health continuum. *New Zealand Defence Force Health Mind*.
<http://health.nzdf.mil.nz/mind/about-mental-health/the-mental-health-continuum/>
- Patton, G. C., Selzer, R., Coffey, C., Carlin, J. B., & Wolfe, R. (1999). Onset of adolescent eating disorders: population based cohort study over 3 years. *BMJ (Clinical research ed.)*, 318(7186), 765–768.
<https://doi.org/10.1136/bmj.318.7186.765>
- Peterson, C. M., Fischer, S., & Young-Hyman, D. (2015). Topical review: a comprehensive risk model for disordered eating in youth with type 1 diabetes. *Journal of pediatric psychology*, 40(4), 385–390.
<https://doi.org/10.1093/jpepsy/jsu106>
- Reardon, C. L., Hainline, B., Aron, C. M., Baron, D., Baum, A. L., Bindra, A., Budgett, R., Campriani, N., Castaldelli-Maia, J. M., Currie, A., Derevensky, J. L., Glick, I. D., Gorczynski, P., Gouttebarga, V., Grandner, M. A., Han, D. H., McDuff, D., Mountjoy, M., Polat, A., Purcell, R., ... Engebretsen, L. (2019). Mental health in elite athletes: International Olympic Committee consensus statement (2019). *British journal of sports medicine*, 53(11), 667–699. <https://doi.org/10.1136/bjsports-2019-100715>
- Robinson, K., & Wade, T. D. (2021). Perfectionism interventions targeting disordered eating: A systematic review and meta-analysis. *The International journal of eating disorders*, 54(4), 473–487.
<https://doi.org/10.1002/eat.23483>
- Smith, E. J., Storey, R., & Ranchordas, M. K. (2017). Nutritional Considerations for Bouldering. *International journal of sport nutrition and exercise metabolism*, 27(4), 314–324. <https://doi.org/10.1123/ijsnem.2017-0043>
- Smith, J. E. W., Holmes, M. E., & McAllister, M. J. (2015). Nutritional Considerations for Performance in Young Athletes. *Journal of Sports Medicine*. <https://doi.org/10.1155/2015/734649>
- Strand, M. (2022). Attitudes towards disordered eating in the rock climbing community: a digital ethnography. *Journal of Eating Disorders*, 10(1), 96. <https://doi.org/10.1186/s40337-022-00619-5>
- Sundgot-Borgen, J., Meyer, N. L., Lohman, T. G., Ackland, T. R., Maughan, R. J., Stewart, A. D., & Müller, W. (2013). How to minimise the health risks to athletes who compete in weight-sensitive sports review and



- position statement on behalf of the Ad Hoc Research Working Group on Body Composition, Health and Performance, under the auspices of the IOC Medical Commission. *British journal of sports medicine*, 47(16), 1012–1022. <https://doi.org/10.1136/bjsports-2013-092966>
- Sundgot-Borgen, J., & Torstveit, M. K. (2004). Prevalence of eating disorders in elite athletes is higher than in the general population. *Clinical journal of sport medicine : official journal of the Canadian Academy of Sport Medicine*, 14(1), 25–32. <https://doi.org/10.1097/00042752-200401000-00005>
- Walker, D. C., White, E. K., & Srinivasan, V. J. (2018). A meta-analysis of the relationships between body checking, body image avoidance, body image dissatisfaction, mood, and disordered eating. *The International journal of eating disorders*, 51(8), 745–770. <https://doi.org/10.1002/eat.22867>
- Wells, K. R., Jeacocke, N. A., Appaneal, R., Smith, H. D., Vlahovich, N., Burke, L. M., & Hughes, D. (2020). The Australian Institute of Sport (AIS) and National Eating Disorders Collaboration (NEDC) position statement on disordered eating in high performance sport. *British journal of sports medicine*, 54(21), 1247–1258. <https://doi.org/10.1136/bjsports-2019-101813>
- Whipple, K. R. (2009). *Athletic identity, identity foreclosure, and career maturity: An investigation of intercollegiate student-athletes*. [Master's thesis, Iowa State University]. <https://doi.org/10.31274/etd-180810-2969>
- Qian, J., Hu, Q., Wan, Y., Li, T., Wu, M., Ren, Z., & Yu, D. (2013). Prevalence of eating disorders in the general population: a systematic review. *Shanghai archives of psychiatry*, 25(4), 212–223. <https://doi.org/10.3969/j.issn.1002-0829.2013.04.003>
- Zapf, J., Fichtl, B., Wielgoss, S., & Schmidt, W.F. (2001). Macronutrient intake and eating habits in elite rock climbers. *Medicine and Science in Sports and Exercise*, 33.
- Zelkowitz, R. L., & Cole, D. A. (2020). Longitudinal relations of self-criticism with disordered eating behaviors and nonsuicidal self-injury. *The International journal of eating disorders*, 53(7), 1097–1107. <https://doi.org/10.1002/eat.23284>



RESOURCES

Articles, booklets and statements

- IOC RED-s – The IOC consensus statement: beyond the Female Athlete Triad-Relative Energy Deficiency in Sport (RED- S); <https://bjsm.bmj.com/content/bjsports/54/21/1247.full.pdf>
- Consensus statement; The Australian Institute of Sport (AIS) and National Eating Disorders Collaboration (NEDC) position statement on disordered eating in high performance sport; <https://bjsm.bmj.com/content/49/21/1354>
- Skate Canada design for coaches & parents: https://skatecanada.ca/wp-content/uploads/2020/09/BodyPositiveGuidelines_EN_Dec2.pdf

Books

- Katie Brown (2022). *Unraveled: A Climber's Journey Through Darkness and Back*. Mountaineers Books. www.mountaineers.org/books/books/unraveled-a-climbers-journey-through-darkness-and-back
- Jennifer Gaudiani. (2018). *Sick enough: A guide to the medical complications of eating disorders*. Routledge. www.sickenough.com

Web – help and awareness

- NEDA - www.nationaleatingdisorders.org
- NEDC - www.nedc.com.au
- BEAT - www.beateatingdisorders.org.uk

Documentary

- Light: A Documentary About Eating Disorders in Rock Climbing. Film by Caroline Treadway. Access: www.youtube.com/watch?v=vc-9huB0CTY

IG

- @gaudianiclinic (Medical Dr. Jennifer L. Gaudiani eating disorder specialist)
- @drmelissarizk (Dr. Melissa Rizk eating disorder specialist)
- @r_mcgregor (Renee McGregor, sport dietitian, specialist for REDs, ED, Female athlete health and performance)
- @train_brave (raise awareness about health and mental health in sport; podcast)
- @nickyfitness (Medical doctor, sport and eating disorder endocrinology specialist); RED-s info

#relativeenergydeficiencyinsport #trainbrave