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# PREVALENCE OF ORTHOREXIA NERVOSA IN A SAMPLE OF ROCK AND SPORT CLIMBERS

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**Abstract** Orthorexia nervosa (ON) is a disorder characterized by obsessive behavior towards healthy eating. Some groups present a higher prevalence of ON and athletes seem to be a population at risk. The aim of this study was to determine the prevalence of ON in the rock and sport climbing community. Düsseldorf Orthorexia Scale (PL-DOS) was used to assess ON. The study involved 236 climbers (including 159 men and 77 women, 67.4 and 32.6%, respectively), with an average age of 34.7 ±9.2 years. The group was divided into groups according to criteria such as the preferred type and style of climbing, participation in climbing competitions or the volume of training undertaken. Orthorexia was diagnosed in 12.7% (n = 30) of climbers, with a mean score of PL-DOS of 32.8 ±2.4 with a 95% confidence interval ranging from 31.9 to 33.7. Another 25% of the respondents were diagnosed with ON risk (mean ±SD 26.8 ±1.5, 95% CI 36.4–27.2). It was not found that the adopted stratification variables significantly differentiated the groups distinguished on their basis. The only exceptions were age and weekly training frequency. However, the effect sizes were small in both cases.

**Key words:** orthorexia nervosa, climbing, prevalence

## Introduction

Climbing is an umbrella term covering a broad spectrum of activities going in for different geographical environments (from indoor gyms to high mountains), various surfaces (rock, ice, artificial holding, etc.), formations of varying heights (from several-meter boulders to walls of several hundred meters long) or various fitness requirements for those practising them (strength and power in bouldering, long-term aerobic endurance in big wall climbing etc.). Although the common denominator of all forms of climbing is movement in the third dimension, figuratively referred to as 'fighting gravity', this is particularly true in rock climbing and sport climbing, which have been the most popular forms of climbing for many years (Michael et al., 2019; Gibson-Smith et al., 2020). The antigravitational nature of the climbing activity means that a low body mass, leanness, and a high strength/power-to-mass ratio are important determinants of success, especially at an advanced level (Joubert et al., 2022).

In the pursuit of high strength-to-weight values, rock and sport climbers, almost from the dawn of the sport, have resorted to low-calorie, often restrictive diets, carrying with them the risk of eating disorders such as anorexia and bulimia.

Although issues related to the extent of these problems in the climbing community for a long time did not go beyond anecdotal reports circulating in the climbing community and the pages of the trade press recognizing their seriousness, the IFSC (International Federation of Sport Climbing) in 2006 introduced a Body Mass Index (BMI) screening program at sport climbing competitions, at first sporadically and from 2021 regularly. However, this does not change the fact that the data available in the scientific literature are scarce. One of the few studies was conducted by Joubert et al. (2020), who, based on the results of the Eating Attitudes Test-26, diagnosed eating disorders in 6.3% of male climbers and 16.5% of female climbers. However, this tool was developed to capture individuals at high risk of anorexia in the population, so it is questionable to what extent it can diagnose other eating disorders, the diagnosis of which requires other tools (Jeacocke et al., 2018). The latter is important because eating disorders can take many forms. Anorexia and bulimia are among the most well-known to the broader public and most commonly discussed in the climbers' community. Both of the above-mentioned disorders fall into the category of so-called "specific" eating disorders, the diagnostic criteria for which are included in the DSM-5. In recent years, however, eating disorders with atypical symptoms have been recognised, for which the term non-specific eating disorders has been adopted, and the ICD-11 classification of diseases places them in the category of "other" eating disorders (Haman et al., 2015). One of them is orthorexia nervosa (ON) defined as: a "pathological focus on healthy eating with the features of rigorous attention to food quality and preparation and nutrition standards" (Turner & Lefevre, 2017). According to Varga et al. (2000), ON can be treated as a psychiatric disorder because the affected person loses objectivity with regard to a healthy lifestyle and diet, and although the choices made are socially recognised as healthy, they are exaggerated and radical (Varga et al., 2014). The affected person feels a sense of control over his or her life by maintaining a strict diet, which despite being centered on the quality of meals and searching for better foods, can result in nutrient deficiencies (Dittfeld et al., 2013; Brytek-Matera, 2019).

The estimated prevalence of ON in the general population is 1–7% (depending on the adopted measurement method) (de Souza & Rodrigues, 2014; Barthels et al., 2015; Koven & Abry, 2015; Rudolph et al., 2017; Dunn et al., 2017; Chard et al., 2018; Niedzielski & Kaźmierczak-Wojtaś, 2021), and in particular risk groups (athletes, yogis, appearance-conscious people) the risk can increase to 60% and even 90% (Michalska et al., 2016; McComb & Mills, 2019). Although unlike people affected by specific eating disorders, such as anorexia, orthorexics do not obsessively want to maintain a slim figure – with climbers, at least not for the sake of it – any deviation from a "healthy diet" results in an unfounded health fear (Dell'Osso et al., 2016). Since the studies of eating disorders in the climbing community undertaken to date, have not diagnosed the problem of ON, the study aimed to identify the extent of this phenomenon in climbers, considering the different variations of this activity. It also attempted to find an answer to whether the phenomenon of orthorexia in the climbing community depends on gender and whether the level of climbing impacts the occurrence of this disorder.

## Material and methods

### Participants

A total of 236 climbers (including 159 men and 77 women, 67.4 and 32.6%, respectively), with an average age of 34.7 ±9.2 years agreed to participate in the survey. For a more detailed description of the participants, see Table 1. Due to the highly dispersed nature of the climbing community only marginally concentrated in the formal structures of sports clubs, convenience sampling was used as the method for selecting the subjects. Climbers were recruited via the most popular climbing social media, where an invitation to participate in the study was posted. The study was designed in accordance with the deontological standards recognised by the Declaration of Helsinki. Study participants were assured that no personal information would be collected and identified. Before starting the process of answering the questionnaire, respondents were informed about the purpose of the study, the method of data collection and how the data would be used in the analyses.

**Table 1.** Characteristics of participants of the study (n = 236)

| Variable | n | % |
|---|---|---|
| **Gender** | | |
| Female | 159 | 67.4 |
| Male | 77 | 32.6 |
| **Preferred kind of climbing** | | |
| Bouldering | 58 | 24.6 |
| Lead | 174 | 73.7 |
| Speed climbing | 4 | 1.7 |
| **Competitive climbing** | | |
| No | 162 | 68.6 |
| Yes | 74 | 31.4 |
| **Preferred terrain** | | |
| Gym climbing | 65 | 27.5 |
| Rock climbing | 62 | 26.3 |
| Gym and rock (season dependent) | 109 | 46.2 |
| **Preferred climbing style** | | |
| Flash | 24 | 10.2 |
| OS | 85 | 25.8 |
| RP | 156 | 30.1 |
| None | 236 | 33.9 |
| **Training experience (yrs)** | | |
| 0–1 | 21 | 8.9 |
| 1–2 | 95 | 13.1 |
| 3–4 | 64 | 18.2 |
| 5–6 | 35 | 14.8 |
| Over 6 | 201 | 44.9 |

### Measures

The 10-item Polish version of Dusseldorf Orthorexia Scale (PL-DOS) (Brytek-Matera, 2020) was used for this study. The scale consists of 10 questions scored on a Likert scale from “this does not apply to me” (1 point) to “this applies to me” (4 points). The higher the result, the higher risk of orthorexic behaviour, and the cut-off points are 30+

pts for ON and 25–29 pts for risk of ON. The scale's reliability as assessed by the Cronbach's alpha formula was 0.82, indicating good internal consistency.

### Statistical analysis

Descriptive statistics (means and standard deviations, numbers and percentage rates) were used to describe the data. To assess the significance of differences between variables Pearson's $\chi 2$ or $\chi 2$ with the Yates correction was used. The latter, if at least one of the expected frequencies was less than 5. The effect size of the Chi-square test was determined by calculating Cramer's V for contingency tables larger than 2 x 2. It was assumed that value under 0.30 means small effect size (weak association between variables), between 0.30 and 0.50 medium effect size (moderate association), and above 0.50 large effect size (strong association) (Speed & Andersen 2000). Data analysis was performed using Statistica 13.3 software (TIBCO Software, Inc.).

## Results

### Climbing preferences of the sample

Almost a third of the climbers (31.4%) surveyed take part in direct competition at climbing events, while the rest limit their activities to collecting lists of passages, being only a form of indirect or symbolic competition. Considering the preference of climbing competitions with which the study was most strongly identified, leading was dominant, followed by bouldering in second place (73.7 vs. 24.6%). Only a few people declared a focus on speed, which reflects the relatively low popularity of this kind of event in the climbing community. The average climbing experience of the study group was 5.1 ±1.2 years. The most frequently declared frequency of training was three to four times a week (n = 129, 54.7%), roughly a third trained 1–2 times a week (n = 90, 38.1%), a dozen people declared over five days a week (n = 17, 7.2%), training for an average of 2.3 ±0.7 hours at a time, with the shortest workouts completed by the least frequent climbers (2.1 ±0.7 hours) and the longest by those training most frequently (3.0 ±1.2 hours).

### Evaluation of orthorexia in climbers

According to the classifications recommended for the DOS ON was diagnosed in 12.7% (n = 30) of climbers, with a mean score of PL-DOS scale of 32.8 ±2.4 with a 95% confidence interval ranging from 31.9 to 33.7. The ON risk was observed among 25.0% of the total sample (mean ±SD 26.8 ±1.5, 95% CI 36.4–27.2). Despite the relatively higher proportion of women in the orthorexia risk group, the difference between the both genders was not statistically significant. Similarly, there were no statistically significant differences with respect to the other variables. The only variables that were significantly associated with PL-DOS scores were training frequency ($\chi^2 = 13.35$, $p = 0.038$) and age ($F_{(1,234)} = 4.05$, $p = 0{,}045$). With regard to the former variable, the percentage of people with ON increased as the frequency of undertaking training increased. Age correlated negatively with PL-DOS scores ($\beta = -0.13$, $b = -0.02$), suggesting that the disorder is more likely to be present in younger climbers, although given the low value of the coefficient of determination the relationship is weak ($R^2 = 0.02$). Detailed data in Table 2.

**Table 2.** Prevalence of orthorexia in the climbing population

| | ON | ON Risk | No ON | |
|---|---|---|---|---|
| **Total sample** | 30 (12.7%) | 59 (25.0%) | 147 (62.3%) | |
| **Gender** | | | | |
| Male | 21 (13.2%) | 34 (21.4%) | 104 (65.4%) | $\chi^2 = 3.41$, p = 0.182, Cramer's V = 0.12 |
| Female | 9 (11.7%) | 25 (32.5%) | 43 (55.8%) | |
| **Event** | | | | |
| Bouldering | 5 (8.6%) | 14 (24.1%) | 39 (67.2%) | $\chi^2 = 2.69$, p = 0.715*, Cramer's V = 0.07 |
| Lead | 25 (14.4%) | 44 (74.6%) | 105 (71.4%) | |
| Speed | 0 (0.0%) | 1 (25.0%) | 3 (75.0%) | |
| **Competiton** | | | | |
| No | 17 (10.5%) | 43 (26.5%) | 102 (63.0%) | $\chi^2 = 2.53$, p = 0.282, Cramer's V = 0.10 |
| Yes | 13 (17.6%) | 16 (21.6%) | 45 (60.8%) | |
| **Terrain** | | | | |
| Gyms | 6 (20.0%) | 14 (23.7%) | 45 (30.6%) | |
| Rocks | 9 (30.0%) | 16 (27.1%) | 37 (26.2%) | $\chi^2 = 2.01$, p = 0.734, Cramer's V = 0.07 |
| Gyms and rocks | 15 (50.0%) | 29 (49.2%) | 65 (44.2%) | |
| **Frequency** | | | | |
| 1–2/wk | 7 (7.8%) | 25 (27.8%) | 58 (64.4%) | |
| 3–4/wk | 16 (12.4%) | 32 (24.8%) | 81 (62.8%) | $\chi^2 = 13.35$, p = 0.038*, Cramer's V = 0.19 |
| 5–6/wk | 4 (33.3%) | 2 (16.7%) | 6 (50.0%) | |
| Everyday | 3 (60.0%) | 0 (0.0%) | 2 (40.0%) | |

* because of the small expected frequencies in several table cells, $chi^2$ with Yates correction was used

## Discussion

The study aimed to diagnose the prevalence of ON in the climbing community, taking into account potential variation in the risk of this disorder due to demographic variables, preferred types and styles of climbing and frequency of training. Despite many studies on the extent of ON in different populations (Håman et al., 2015, Niedzielski & Kazimierczak-Wojtas, 2021), including those undertaking different forms of physical activity and different sports (Segura-Garzia et al., 2012, Paludo et al. 2022, Hafstad et al., 2023), it has not been recognized among climbers to date. Therefore, to the best of our knowledge, this study was the first to address ON among climbers. Because of the importance of low body weight, the sport has traditionally been considered a risk factor for developing eating disorders, such as anorexia and bulimia. The emergence and development of bouldering as one of the climbing competitions, as well as the shift with much of the climbing activity from vertical walls to overhanging walls, has increased the importance of such motor skills as strength, power, power endurance, reducing the importance of low body weight per se. What has not changed, however, is the interest of climbers in diet and nutrition as a way to optimise the effects of their training. However, by following the principles of healthy eating, it is possible to cross the line beyond which they become morbid.

In the study sample of climbers, the proposed DOS cut-off points gave an incidence rate of 6.9% ON and 25% for ON risk. This rate is much lower than that found by Hafstad et al. (2023), who, based on a review of 24 studies of athletes representing a variety of individual and team sports, estimated the extent of orthorexia in these settings at 55.3%. It should be noted, however, that data on the prevalence of ON vary widely, ranging from a few per cent to, as reported by Hyrnik et al. (2021), as high as nearly 90% among yogis. The variability in the prevalence of various eating disorders in different populations is not unusual, as it is influenced by factors such as values shared in

specific communities, different worldview assumptions, different lifestyle awareness etc. However, prevalence estimates of ON are also influenced by factors related to diagnostic tools. In a study of Spanish students, Parra-Fernández et al. (2019) estimated the ON prevalence at 10.5% or 25.2%, depending on whether the diagnostic tool was the DOS or ORTO=11, respectively. With regard to the latter tool – the ORTO-15 version – estimates of ON prevalence depend on the cut-off level adopted, as found by Paludo et al. (2022). The prevalence of ON in the general population, assessed with the DOS, was usually a few per cent (Greetfeld et al., 2020; Brytek-Matera, 2021). Estimates of the extent of ON in exercise populations were also within these limits. For example, Rudolph (2018) diagnosed ON (DOS score of 30+) in 3.4% of fitness club exercisers.

The risk factors in our study were only two variables – age and frequency of training per week, but in the former case, this factor explained only 2% of the variation in the orthorexia scale score. So while the results suggest that younger climbers may be more prone to ON, the relationship between age and the behaviours in question is unlikely to be of practical significance. As for the second relationship mentioned above, one can see increasing percentages of climbers diagnosed with ON in groups with increasing training frequency per week. The latter reflects a commitment to climbing; and is related not only to training volume and intensity but also to other behaviours, especially dietary. The moderate effect size shows that the relationship between the variables is discernible. However, given the small number of people in the groups who train almost daily or every day, caution should be taken in drawing more definitive conclusions. It is an essential question for further research, as training involvement is most visible to the social environment (coaches, wall managers, fellow climbers, training partners) and thus show those who may be at higher risk of ON.

To the best of our knowledge, this study is the first to evaluate climbers in terms of ON. However, it has several limitations that should be mentioned. First, the convenient sample does not allow generalizing the results to the entire population of climbers. However, it should be emphasized that it is difficult to determine such representativeness because it is difficult to determine the size of the climbers' population and its characteristics, because most of these people are not associated in formal sports associations and clubs. Another area for improvement is the division we have adopted into preferred forms or types of climbing. Respondents declared which is their exclusive or primary form to which they devote themselves, which, on the one hand, is not always clearly definable and, on the other hand, carries the typical risks of self-description. In future research, it would be worthwhile to carry out separate diagnoses for climbers specialising in particular competition events (lead, speed, bouldering) and separate diagnoses for climbers pursuing their goals in rock climbing, divided into recreational and high-performance levels. Also, ON is a relatively new disorder with an incompletely clarified status regarding uniform and operationalized diagnostic criteria and reliable assessment tools. The measurement scales developed to date are characterized by different psychometric properties, which makes it difficult to assess the ON phenomenon, both to compare the results of different studies and in terms of precisely defining the boundary between a far-fetched interest in healthy eating and a disorder that can lead to actual disruptions in functioning. Some studies confirm that ON is associated with weight control motives, compulsive exercise and negative food motivations (Mavrandrea & Gonidakis et al., 2022; Foyster et al., 2023). However, even if the boundaries between the two spheres are blurred, it is crucial to monitor the situation, especially in communities that appear to be at risk of crossing these boundaries. Climbing practitioners are among such communities, so further research involving larger study samples is needed. Climbers should be made aware of the importance of a balanced diet and the dangers of not only extreme dietary restrictions, but also excessive indulgence in 'healthy eating'. Climbing coaches and climbing section leaders should educate

their mentees that while the pursuit of a healthy diet is generally positive and will help to achieve training goals, an extreme focus on cleanliness and food quality can have negative health consequences and, in retrospect, limit one's potential to develop as a climber.

## Conclusion

Overall, these findings highlight the need for awareness of ON and its potential consequences in the climbing community. Education on healthy nutrition practices tailored to this population may help prevent disordered eating from developing. Further research is warranted to explore potential risk factors and effective prevention and intervention strategies tailored specifically to climbers.

## References


Barthels, F., Meyer, F. & Pietrowsky, R. (2015). Orthorexic eating behavior. A new type of disordered eating. *Ernaehrungsumschau*, *62*(10), 156–161. doi: 10.4455/eu.2015.029

Brytek-Matera, A. (2020). The Polish version of the Düsseldorf Orthorexia Scale (PL-DOS) and its comparison with the English version of the DOS (E-DOS). *Eating and Weight Disorders – Studies on Anorexia, Bulimia and Obesity*, *26*(4), 1223–1232. https://doi.org/10.1007/s40519-020-01025-z

Chard, C. A., Hilzendegen, C., Barthels, F., & Stroebele-Benschop, N. (2019). Psychometric evaluation of the English version of the Düsseldorf Orthorexie Scale (DOS) and the prevalence of orthorexia nervosa among a U.S. student sample. *Eating and Weight Disorders*, *24*(2), 275–281. https://doi.org/10.1007/s40519-018-0570-6d

de Souza, Q. J. O. V. & Rodrigues, A. M. (2014). Risk behavior for orthorexia nervosa in nutrition students. *Jornal Brasileiro de Psiquiatria*, *63*(3), 200–204. https://doi.org/10.1590/0047-2085000000026

Dell'Osso, L., Abelli, M., Carpita, B., Pini, S., Castellini, G., Carmassi, C., & Ricca, V. (2016). Historical evolution of the concept of anorexia nervosa and relationships with orthorexia nervosa, autism, and obsessive-compulsive spectrum. *Neuropsychiatric Disease and Treatment*, *12*, 1651–1660. https://doi.org/10.2147/NDT.S108912

Dittfeld, A., Koszowska, A., Fizia, K., & Ziora, K. (2013). Ortoreksja – nowe zaburzenie odżywiania. *Annales Academiae Medicae Silesiensis*, *67*(6), 393–399.

Dunn, T. M., Gibbs, J., Whitney, N., & Starosta, A. (2017). Prevalence of orthorexia nervosa is less than 1 %: data from a US sample. *Eating and Weight Disorders: EWD*, *22*(1), 185–192. https://doi.org/10.1007/s40519-016-0258-8

Foyster, M., Sultan, N., Tonkovic, M., Govus, A., Burton-Murray, H., Tuck, C. J., & Biesiekierski, J. R. (2023). Assessing the presence and motivations of orthorexia nervosa among athletes and adults with eating disorders: a cross-sectional study. *Eating and Weight Disorders: EWD*, *28*(1), 101. https://doi.org/10.1007/s40519-023-01631-7

Gibson-Smith, E., Storey, R., & Ranchordas, M. (2020). Dietary intake, body composition and iron status in experienced and elite climbers. *Frontiers in Nutrition*, *7,* 122, https://doi.org/10.3389/fnut.2020.00122

Greetfeld, M., Heßler, J. B., Brandl, B., Skurk, T., Holzapfel, C., Quadflieg, N., Schlegl, S., Hauner, H., & Voderholzer, U. (2020). Orthorexic tendencies in the general population: association with demographic data, psychiatric symptoms, and utilization of mental health services. *Eating and Weight Disorders – Studies on Anorexia, Bulimia and Obesity*, *26*(5), 1511–1519. https://doi.org/10.1007/s40519-020-00961-0

Hafstad, S. M., Bauer, J., Harris, A., & Pallesen, S. (2023). The prevalence of orthorexia in exercising populations: a systematic review and meta-analysis. *Journal of Eating Disorders*, *11*(1). https://doi.org/10.1186/s40337-023-00739-6

Håman, L., Barker-Ruchti, N., Patriksson, G., & Lindgren, E. (2015). Orthorexia nervosa: An integrative literature review of a lifestyle syndrome. *International Journal of Qualitative Studies on Health and Well-being*, *10*(1), 26799. https://doi.org/10.3402/qhw.v10.26799

Hyrnik, J., Zasada, I., Wilczyński, K. M., Jelonek, I., & Janas-Kozik, M. (2021). Orthorexia – current approach. A review. *Psychiatria polska*, *55*(2), 405–420. https://doi.org/10.12740/PP/115149

Jeacocke, N., Beals, K., & Sutherland, F. (2018). Eating disorders and disordered eating in athletes. In L. Burke, V. Deakin & M. Minehan (Eds.), *Clinical Sports Nutrition, 5e* (pp. 213–233). McGraw Hill.

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

Joubert, L., Warme, A., Larson, A., Grønhaug, G., Michael, M., Schöffl, V., Burtscher, E., & Meyer, N. (2022). Prevalence of amenorrhea in elite female competitive climbers. *Frontiers in Sports and Active Living*, *4*, 895588. https://doi.org/10.3389/fspor.2022.895588

Koven, N. S. & Abry, A. W. (2015). The clinical basis of orthorexia nervosa: emerging perspectives. *Neuropsychiatric Disease and Treatment*, *11*, 385–394. https://doi.org/10.2147/NDT.S61665

Mavrandrea, P., & Gonidakis, F. (2022). Exercise dependence and orthorexia nervosa in Crossfit: exploring the role of perfectionism. *Current Psychology*, 42, 1–9. Advance online publication. https://doi.org/10.1007/s12144-022-03585-y

McComb, S. E., & Mills, J. S. (2019). Orthorexia nervosa: A review of psychosocial risk factors. *Appetite*, *140*, 50–75. https://doi.org/10.1016/j.appet.2019.05.005

Michael, M. K., Joubert, L., & Witard, O. C. (2019). Assessment of dietary intake and eating attitudes in recreational and competitive adolescent rock climbers: a pilot study. *Frontiers in Nutrition*, *6,* 64. https://doi.org/10.3389/fnut.2019.00064

Michael, M. K., Witard, O. C., & Joubert, L. (2019). Physiological demands and nutritional considerations for Olympic-style competitive rock climbing. *Cogent Medicine*, *6*(1), 1667199. https://doi.org/10.1080/2331205x.2019.1667199

Michalska, A., Szejko, N., Jakubczyk, A. & Wojnar, M. (2016). Niespecyficzne zaburzenia odżywiania się – subiektywny przegląd. *Psychiatria Polska*, 50(3), 497–507, https://doi.org/10.12740/PP/59217

Niedzielski, A., & Kaźmierczak-Wojtaś, N. (2021). Prevalence of Orthorexia Nervosa and Its Diagnostic Tools-A Literature Review. *International Journal of Environmental Research and Public Health*, *18*(10), 5488. https://doi.org/10.3390/ijerph18105488

Paludo, A. C., Magatão, M., Martins, H. R. F., Martins, M. V. S., & Kumstát, M. (2022). Prevalence of Risk for Orthorexia in Athletes Using the ORTO-15 Questionnaire: A Systematic Mini-Review. *Frontiers in Psychology*, *13*, 856185. https://doi.org/10.3389/fpsyg.2022.856185

Parra-Fernández, M. L., Onieva-Zafra, M. D., Fernández-Martínez, E., Abreu-Sánchez, A., & Fernández-Muñóz, J. J. (2019). Assessing the prevalence of orthorexia nervosa in a sample of university students using two different Self-Report measures. *International Journal of Environmental Research and Public Health*, *16*(14), 2459. https://doi.org/10.3390/ijerph16142459

Peoples, G. E., Parker, S., Anthony, R., & Craddock, J. (2021). Rock climbers' self-reported dietary practices and supplement use in the context of supporting climbing performance. *The Journal of Sport and Exercise Science*, *5*(2). https://doi.org/10.36905/jses.2021.02.06.

Rudolph S. (2018). The connection between exercise addiction and orthorexia nervosa in German fitness sports. *Eating and Weight Disorders – Studies on Anorexia, Bulimia and Obesity*, *23*(5), 581–586. https://doi.org/10.1007/s40519-017-0437-2

Segura-García, C., Papaianni, M. C., Caglioti, F., Procopio, L., Nisticò, C. G., Bombardiere, L., Ammendolia, A., Rizza, P., De Fazio, P., & Capranica, L. (2012). Orthorexia nervosa: a frequent eating disordered behavior in athletes. *Eating and Weight Disorders*, *17*(4), e226–e233. https://doi.org/10.3275/8272

Speed, H., & Andersen, M. B. (2000). What exercise and sport scientists don't understand. *Journal of Science and Medicine in Sport*, *3*(1), 84–92. https://doi.org/10.1016/s1440-2440(00)80051-1

Turner, P. G., & Lefevre, C. E. (2017). Instagram use is linked to increased symptoms of orthorexia nervosa. *Eating and Weight Disorders: EWD*, *22*(2), 277–284. https://doi.org/10.1007/s40519-017-0364-2

Varga, M., Thege, B. K., Dukay-Szabó, S., Túry, F., & van Furth, E. F. (2014). When eating healthy is not healthy: orthorexia nervosa and its measurement with the ORTO-15 in Hungary. *BMC Psychiatry*, *14*, 59. https://doi.org/10.1186/1471-244X-14-59

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