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LONG-TERM CONSEQUENCES OF EATING DISORDERS: A REVIEW OF MEDICAL, PSYCHOLOGICAL, AND SOCIAL OUTCOMES

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ABSTRACT

Eating disorders are complex psychiatric conditions associated with substantial medical morbidity, psychological impairment, and disruption of social functioning. This review examines the long-term consequences of anorexia nervosa, bulimia nervosa, and binge-eating disorder across medical, psychological, and social domains. A structured narrative review of peer-reviewed literature published predominantly between 2000 and August 2026 was conducted, prioritising systematic reviews, meta-analyses, longitudinal cohorts, and long-term follow-up studies. The evidence shows that eating disorders may be followed by persistent skeletal, renal, gastrointestinal, reproductive, cardiovascular, and metabolic complications, while mortality remains elevated, particularly in anorexia nervosa. Depression, anxiety, self-harm, suicidality, relapse, and impaired quality of life may continue after improvement in core eating-disorder symptoms. Social consequences include difficulti aes in relationships, social isolation, disrupted education and employment, stigma, family burden, and substantial economic costs. The findings support a multidimensional concept of recovery that extends beyond weight restoration or behavioural remission. Long-term care should combine medical surveillance, psychiatric treatment, relapse prevention, and support for social, educational, and occupational functioning.

KEYWORDS

Eating Disorders, Anorexia Nervosa, Bulimia Nervosa, Binge-Eating Disorder, Long-Term Outcomes

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1. Introduction

Eating disorders (EDs) are serious psychiatric conditions characterised by persistent disturbances in eating behaviour and related cognitive and emotional processes. The major diagnostic categories include anorexia nervosa (AN), bulimia nervosa (BN), and binge-eating disorder (BED). Although their clinical presentations differ, they commonly involve psychiatric comorbidity, impaired physical health, and disruption of everyday functioning.[1]

Epidemiological evidence indicates that EDs affect women and men across age groups and sociocultural settings, and their recognised prevalence has increased over recent decades.[3] Their burden extends far beyond eating behaviour. AN may cause endocrine, cardiovascular, skeletal, gastrointestinal, renal, and haematological complications; BN can produce electrolyte, renal, dental, gastrointestinal, and cardiac consequences related to recurrent compensatory behaviours; and BED is strongly associated with psychiatric morbidity and cardiometabolic risk.[2]

Long-term outcome is especially important because symptom improvement does not always mean complete recovery. Mortality is elevated in ED populations, particularly in AN, due to both medical complications and suicide.[4] Large population-based data also show increased risks of multiple physical and psychiatric outcomes for years after diagnosis.[9] At the same time, long follow-up studies demonstrate that recovery remains possible even after prolonged illness.[12]

Definitions of recovery vary considerably. Weight restoration, cessation of binge eating or purging, and loss of diagnostic status are clinically important, but they may not capture persistent body-image concerns, anxiety, social withdrawal, impaired quality of life, or fear of relapse. Research on personal recovery therefore supports a broader model that includes psychological well-being, identity, autonomy, relationships, and meaningful participation in life.[11]

The objective of this review is to synthesise evidence on the long-term medical, psychological, and social consequences of EDs, with particular emphasis on AN, BN, and BED. The review also considers relapse and recovery, factors associated with prognosis, and implications for long-term clinical care and public-health policy.

2. Methodology

This study was conducted as a structured narrative review. PubMed was used as the principal source of peer-reviewed literature, and reference lists of major systematic reviews and long-term studies were screened for additional relevant publications. Literature published predominantly from 2000 to August 2026 was prioritised, while earlier landmark studies were retained when necessary to contextualise long-term outcomes.

Search terms combined the concepts “eating disorder”, “anorexia nervosa”, “bulimia nervosa”, and “binge-eating disorder” with “long-term outcome”, “recovery”, “relapse”, “mortality”, “medical complications”, “comorbidity”, “depression”, “anxiety”, “suicide”, “quality of life”, “social functioning”, “education”, “employment”, “stigma”, and “economic burden”. Priority was given to systematic reviews, meta-analyses, longitudinal cohorts, registry-based studies, and long-term follow-up investigations.

Evidence was synthesised qualitatively because study populations, follow-up periods, definitions of remission and recovery, and outcome measures were heterogeneous.[14] Findings were organised into four domains: illness course and mortality, medical consequences, psychological outcomes, and social or functional outcomes. No new patient data were collected.

3. Results

3.1 Long-term course, recovery, relapse, and mortality

The long-term course of EDs is heterogeneous. Some patients achieve sustained recovery after a relatively limited period of illness, whereas others experience recurrent symptoms, diagnostic crossover, partial remission, or a prolonged course. In a 22-year follow-up of AN and BN, approximately two-thirds of participants ultimately met the study criteria for recovery, and a substantial proportion of individuals with AN recovered only after the earlier follow-up period.[12] These findings show that delayed recovery is possible and that short follow-up periods may underestimate favourable outcomes.

Long-term clinical studies nevertheless demonstrate substantial residual morbidity in a subgroup of patients. In AN, improvements in weight and eating-disorder psychopathology may coexist with persistent psychiatric symptoms or functional difficulties.[16] Long-term studies of BN similarly show considerable improvement for many patients while confirming that recurrent or residual symptoms remain clinically relevant.[17]

Relapse is an important problem after apparently successful treatment. A systematic review and meta-analysis estimated relapse in roughly one-third of treated patients with AN, with the highest risk during the first year after treatment and continued vulnerability during the following year.[13] The interpretation of relapse and recovery rates is complicated by major differences in definitions across studies.[15]

Mortality remains the most severe long-term consequence. AN has a markedly elevated mortality rate, with deaths related to medical complications and suicide.[7] Recent linked healthcare-record research additionally shows that patients diagnosed with EDs experience increased risks of multiple adverse physical and mental-health outcomes, particularly in the years after diagnosis, with some excess risks persisting longer term.[9]

3.2 Long-term medical consequences

3.2.1 Cardiovascular consequences

Cardiovascular abnormalities are particularly prominent in restrictive EDs. Severe energy deficiency may lead to sinus bradycardia, hypotension, orthostatic intolerance, reduced cardiac mass, and impaired peripheral circulation. Many of these abnormalities improve substantially with nutritional rehabilitation.[18]

Recurrent purging creates a different pattern of risk. Vomiting, laxative misuse, or diuretic misuse may produce dehydration and electrolyte disturbances, especially hypokalaemia, which can increase arrhythmia risk. Long-term cardiovascular assessment should therefore be guided by illness history, current symptoms, previous electrolyte abnormalities, and other individual risk factors rather than by body weight alone.[6]

3.2.2 Bone health

Reduced bone mineral density is one of the most persistent medical consequences of AN. Low energy availability, hypogonadism, inadequate nutrient intake, and endocrine adaptations to starvation impair bone formation. The problem is particularly important when illness develops during adolescence, when peak bone mass should normally be accumulating.[18]

Nutritional recovery and restoration of endocrine function can improve skeletal health, but full normalisation is not guaranteed. Population-based evidence demonstrates increased fracture risk extending

over decades among individuals with AN.[19] This supports continued attention to bone health after behavioural and weight recovery, particularly in patients with prolonged low weight, amenorrhoea, or previous fractures.

3.2.3 Endocrine and reproductive consequences

Energy deficiency can suppress the hypothalamic-pituitary-gonadal axis, causing menstrual disturbance, amenorrhoea, reduced sex-hormone production, and wider endocrine adaptations. Many abnormalities improve with adequate nutrition, but the timing of recovery varies and is not determined by a single body-weight threshold.[18]

A history of an ED does not imply permanent infertility, but active or partially remitted pathology may complicate reproductive health. Pregnancy and the postpartum period may also reactivate body-image concerns or restrictive behaviours. Reproductive counselling and appropriate nutritional and psychiatric follow-up can therefore remain relevant beyond acute treatment.

3.2.4 Renal, electrolyte, gastrointestinal, and oral consequences

Renal complications may result from dehydration, chronic volume depletion, malnutrition, and recurrent purging. Persistent hypokalaemia can contribute to renal injury, while acute kidney dysfunction may accompany severe dehydration. Contemporary population-level evidence confirms increased renal risk after an ED diagnosis.[9]

Gastrointestinal complaints such as delayed gastric emptying, constipation, early satiety, and abdominal discomfort are common in restrictive illness and often improve with regular nutrition.[6] However, symptoms may temporarily reinforce food avoidance and complicate recovery.

In BN and other purging presentations, recurrent exposure of the teeth to gastric acid can produce irreversible enamel erosion. Dental sensitivity, caries, salivary-gland enlargement, reflux, and oesophageal irritation may persist after purging has stopped.[6] These complications highlight the value of cooperation between mental-health, primary-care, gastroenterology, renal, and dental services.

3.2.5 Metabolic consequences and binge-eating disorder

The long-term medical profile of BED differs from that of restrictive illness. BED commonly co-occurs with higher body weight and cardiometabolic disorders, including type 2 diabetes, dyslipidaemia, and hypertension, although body weight, genetics, medication, physical activity, sleep, and socioeconomic factors also contribute.[20]

Clinical care should avoid equating BED with obesity. Weight-focused interventions that rely on repeated restrictive dieting may conflict with treatment designed to stabilise eating patterns and reduce binge episodes. Metabolic risk should be managed without reinforcing eating-disorder psychopathology or weight stigma.[20]

Haematological abnormalities are another consequence of prolonged malnutrition, particularly in AN. Anaemia, leukopenia, and thrombocytopenia may develop as nutritional deficiency and bone-marrow suppression progress. These abnormalities frequently improve with restoration of adequate energy intake, but their presence can indicate severe systemic compromise and should not be interpreted as an isolated laboratory finding.[18] In patients with prolonged illness, recurrent abnormalities may coexist with micronutrient deficiencies and other organ-system complications, reinforcing the need for integrated rather than organ-specific assessment.

Neurological and cognitive symptoms can also occur during active illness. Patients may report impaired concentration, slowed information processing, irritability, reduced cognitive flexibility, sleep disturbance, or difficulty sustaining attention. In restrictive disorders, some of these features are strongly influenced by starvation and often improve during nutritional rehabilitation.[2] However, persistent perfectionism, attentional bias toward food or body-related information, and rigid thinking can remain after medical stabilisation and may contribute to the subjective experience of incomplete recovery.

The extent to which medical complications are reversible depends on their mechanism, severity, and duration. Functional adaptations to starvation, including bradycardia and some gastrointestinal symptoms, often respond well to nutritional restoration, whereas structural consequences such as dental enamel loss cannot be reversed spontaneously.[6] Bone deficits may improve but remain clinically relevant over the life course, particularly when illness interrupted adolescent bone accrual.[19] This distinction is important for counselling because absence of acute instability does not necessarily mean absence of residual health risk.

Medical burden can also accumulate across diagnostic transitions. A patient who currently presents with BN may previously have experienced prolonged low weight, while a person currently considered recovered from BN may retain dental or renal consequences from years of purging. Similarly, BED may coexist with metabolic disease that requires long-term management even after binge frequency decreases.[20] A lifetime behavioural history is therefore important when planning follow-up.

Recent population-level findings strengthen the argument for continued medical surveillance. The increased incidence of several serious outcomes after an ED diagnosis suggests that the period after formal diagnosis is clinically important even when specialist treatment has begun.[9] At the same time, risk is heterogeneous: not every patient requires the same investigations indefinitely. Follow-up should be proportionate to the type and duration of previous behaviours, documented complications, residual symptoms, age, medication exposure, and general medical risk.

Table 1. Principal long-term consequences of major eating-disorder diagnoses

Domain	Anorexia nervosa	Bulimia nervosa	Binge-eating disorder
Mortality	Markedly increased; medical causes and suicide contribute	Elevated compared with unaffected populations	Long-term mortality evidence is less extensive, but psychiatric and medical burden is substantial
Cardiovascular	Bradycardia, hypotension, effects of malnutrition	Arrhythmia risk related particularly to electrolyte disturbance from purging	Cardiometabolic risk may coexist with other metabolic risk factors
Skeletal	Reduced bone mineral density and increased fracture risk	Possible when restriction or low weight coexist	Less characteristic than in AN
Renal / electrolyte	Dehydration, impaired renal function, electrolyte disturbance	Hypokalaemia and renal consequences of recurrent purging	Influenced by medical and metabolic comorbidity
Gastrointestinal / oral	Motility changes, constipation, early satiety	Reflux, oesophageal irritation, salivary changes, dental erosion	Gastrointestinal symptoms may accompany recurrent binge eating
Psychiatric	Depression, anxiety, obsessive-compulsive symptoms, self-harm and suicide risk	Depression, anxiety, impulsivity, self-harm and substance-related disorders	Depression and anxiety are frequent comorbidities
Social	Isolation, disrupted education/work, impaired relationships	Secrecy, shame, relationship and occupational difficulties	Stigma, social impairment and reduced quality of life

3.3 Psychological and psychiatric outcomes

3.3.1 Depression, anxiety, and psychiatric comorbidity

Depression and anxiety are among the most common psychiatric comorbidities across ED diagnoses.[5] In AN, starvation can intensify low mood, anxiety, irritability, cognitive rigidity, and impaired concentration; some of these changes improve with nutritional rehabilitation. Persistent symptoms after nutritional recovery, however, indicate that psychiatric comorbidity cannot be explained by malnutrition alone.

In BN and BED, negative affect can precede binge episodes, while guilt and shame following binge eating or compensatory behaviours can intensify distress. Long-term treatment should therefore address both eating-disorder pathology and co-occurring psychiatric conditions rather than assuming that one will resolve automatically when the other improves.

3.3.2 Self-harm and suicidality

Self-harm and suicidality are major long-term concerns. A systematic review and meta-analysis found high rates of non-suicidal self-injury, suicidal ideation, and suicide attempts in ED populations.[21] Suicide also contributes substantially to excess mortality, particularly in AN.[8]

Risk is influenced by depression, hopelessness, impulsivity, trauma, substance use, social isolation, and previous self-harm. Importantly, suicide risk can remain clinically significant even when weight or eating behaviour has improved; psychological safety therefore requires separate assessment.

3.3.3 Residual cognitions, illness identity, and relapse vulnerability

Residual overvaluation of weight and shape, rigid food rules, perfectionism, fear of loss of control, and difficulty tolerating distress may continue after overt ED behaviours have declined. These residual features can reduce quality of life and increase relapse vulnerability.

Personal-recovery research describes recovery as a process that may involve rebuilding identity, autonomy, self-acceptance, relationships, and meaningful life roles beyond the illness.[11] This supports relapse-prevention strategies that address not only eating behaviours but also stress, interpersonal triggers, coping skills, social support, and early warning signs.

Psychological outcome is also influenced by the distinction between symptom remission and subjective recovery. Individuals may stop restricting, binge eating, or purging while continuing to experience intrusive thoughts about food, body shape, or weight. The internal effort required to resist these thoughts can remain substantial even when observable behaviour appears normal.[10] This discrepancy may help explain why clinician-rated improvement and patient-rated recovery do not always coincide.

Quality of life is closely linked to psychiatric recovery. Meta-analytic evidence shows that EDs are associated with broad reductions in health-related quality of life.[25] These reductions reflect not only physical symptoms but also shame, anxiety, impaired relationships, loss of spontaneity, and reduced participation in ordinary activities. Consequently, quality-of-life measures may capture clinically meaningful residual burden that is missed by weight or behavioural outcomes alone.

Comorbid psychiatric conditions can prolong the course of illness and complicate treatment planning. Depression may reduce motivation and hope, anxiety can maintain avoidance, obsessive-compulsive features may reinforce ritualised behaviour, and substance-related problems or impulsivity may increase risk in binge-purge presentations.[5] Treatment strategies should therefore be coordinated rather than sequential when clinically appropriate, especially when comorbidity contributes directly to self-harm risk or interferes with nutritional rehabilitation.

The long-term perspective also argues against deterministic use of terms such as “chronic” or “treatment resistant.” Extended follow-up demonstrates that recovery can occur after many years, particularly in AN.[16] At the same time, prolonged illness should not be minimised because cumulative medical, psychological, and social consequences may increase with duration. A balanced approach recognises both the reality of chronic burden and the continuing possibility of meaningful improvement.

3.4 Social and functional outcomes

Eating is closely embedded in family life, friendships, celebrations, education, work, and leisure. Consequently, ED symptoms can directly restrict social participation. Qualitative studies describe social withdrawal, difficulty maintaining friendships, discomfort eating with others, and a sense of disconnection from peers.[22] These difficulties may persist during recovery, particularly when illness has interrupted social development during adolescence or early adulthood.

Family members and partners may become involved in meal supervision, crisis management, healthcare attendance, and financial support. Although families should not be framed as causes of EDs, prolonged illness can change family roles and create substantial caregiver burden. Recovery may therefore require renegotiation of autonomy, trust, communication, and support.

Education and employment can be disrupted by hospitalisation, outpatient treatment, fatigue, anxiety, poor concentration, or persistent preoccupation with food and body image. Missed examinations, delayed graduation, reduced productivity, or recurrent absence may have cumulative effects on later career opportunities and financial independence.[15] Functional outcomes should therefore be assessed alongside clinical symptoms.

Quality of life is consistently reduced across ED diagnoses and includes impairment in emotional well-being, physical health, social functioning, and everyday role performance.[24] Improvement in diagnostic symptoms does not always produce equivalent recovery in quality of life, supporting the inclusion of patient-reported functional outcomes in long-term follow-up.

Stigma can delay help-seeking and complicate social reintegration. Stereotypes that EDs affect only young, underweight women may reduce recognition in men, individuals at higher body weights, older people, and culturally diverse populations. Weight stigma is especially important in BED and atypical restrictive presentations, where repeated weight-loss advice may reinforce disordered eating patterns.

The societal impact extends beyond healthcare expenditure. EDs contribute to productivity losses, educational disruption, informal caregiving, disability, and premature mortality. Economic analyses demonstrate a substantial social and economic burden, reinforcing the public-health value of early detection and sustained treatment.[26]

Social recovery is especially important when illness begins during adolescence or early adulthood. These developmental periods normally involve growing independence, formation of intimate relationships,

expansion of peer networks, and entry into higher education or employment. Repeated hospitalisation or years organised around food rules, exercise, and treatment can interrupt these experiences.[23] Even after symptoms improve, patients may need time to develop confidence in social eating, travel, dating, independent living, or other activities that were avoided during illness.

Employment-related consequences are not limited to absence from work. Cognitive preoccupation, fatigue, anxiety around breaks or shared meals, and the need to conceal symptoms may reduce productivity even when employment is maintained. In some settings, appearance- or weight-focused workplace cultures can intensify vulnerability. Conversely, supportive employers and flexible arrangements for healthcare appointments may facilitate sustained return to work and reduce the conflict between treatment and occupational participation.

Stigma operates at several levels. Public stereotypes can delay recognition, self-stigma can discourage disclosure, and weight stigma within healthcare can lead to inappropriate assumptions about who can have a restrictive ED or how BED should be treated. These barriers may be particularly relevant for patients whose body size, sex, age, or cultural background does not match conventional images of EDs. More inclusive public-health communication may therefore improve both case recognition and social reintegration.

The economic burden of EDs reflects accumulated effects across the healthcare system, labour market, and family environment. Costs include specialist and emergency care, medical treatment of complications, reduced productivity, informal caregiving, disability, and premature mortality.[27] From a policy perspective, these costs support investment in early detection and effective treatment, but also in relapse prevention and functional recovery, because successful return to education and employment may generate benefits beyond the health sector.

3.5 Factors influencing long-term outcome

Long-term prognosis is influenced by illness duration, severity, psychiatric comorbidity, medical complications, treatment access, and the social environment. Duration of untreated illness may be prolonged, particularly when symptoms are hidden, stigmatised, or not recognised by healthcare professionals.[28] Earlier identification is therefore an important service-level objective.

Relapse risk is also affected by transitions such as discharge from intensive treatment, moving to university, beginning employment, pregnancy, or loss of structured support. Stable relationships, access to specialist care, financial resources, educational or workplace flexibility, and continuity between adolescent and adult services can support recovery, whereas social isolation and fragmented care may impede it.

Evidence is less developed for men, gender-diverse people, older adults, ethnic minorities, lower-resource settings, and several less-studied ED diagnoses. This limits the generalisability of existing long-term estimates and highlights the need for more representative longitudinal research.

Access to treatment is itself a prognostic context. Long waiting times, geographic distance from specialist services, financial constraints, and poor continuity between child and adult services can prolong untreated or partially treated illness.[28] These factors may be mistakenly interpreted as individual non-adherence when they partly reflect structural barriers. Long-term outcome research would benefit from more consistent measurement of healthcare access and socioeconomic circumstances.

Protective factors are less often studied than predictors of poor outcome. Stable social support, a collaborative therapeutic relationship, early recognition of relapse signs, meaningful education or employment goals, and opportunities to rebuild identity outside the ED may all support sustained recovery.[11] These factors should be incorporated into future prospective studies rather than treating social functioning as a secondary endpoint.

Table 2. Selected evidence illustrating long-term outcomes

Study	Design / population	Follow-up / scope	Main relevance
Arcelus et al. (2011)	Meta-analysis of mortality studies	Multiple longitudinal cohorts	Markedly elevated mortality in AN and increased mortality across ED populations
Eddy et al. (2017)	Prospective follow-up of AN and BN	22 years	Recovery may continue many years after initial treatment
Fichter et al. (2017)	Clinical longitudinal study of AN	Long-term follow-up	Substantial improvement with persistent heterogeneity
Berends et al. (2018)	Systematic review and meta-analysis	Post-treatment relapse	Relapse is common, especially in the first year
Søeby et al. (2023)	Population-based study of AN	Up to 40 years	Fracture risk can remain elevated for decades
Solmi et al. (2024)	Transdiagnostic systematic review and meta-analysis	Multiple ED outcomes	Outcome estimates vary according to diagnosis and recovery definition
Morgan et al. (2025)	Linked primary-care, hospital, and mortality cohort	Short- and long-term outcomes after diagnosis	Persistent excess physical and psychiatric morbidity

4. Discussion

The evidence reviewed here indicates that EDs should be understood as long-term biopsychosocial conditions rather than disorders defined only by abnormal eating behaviour. Medical, psychological, and social consequences interact over time, and improvement in one domain does not guarantee recovery in the others. Nutritional rehabilitation may correct many acute cardiovascular or gastrointestinal abnormalities, while bone deficits, dental damage, psychiatric symptoms, social isolation, or occupational disruption can persist.[18]

This distinction has direct implications for the definition of recovery. Weight restoration and cessation of binge eating or purging remain essential clinical outcomes, but they are not sufficient measures of overall well-being. Broader models incorporate psychological flexibility, reduced eating-disorder cognitions, quality of life, relationships, autonomy, and meaningful social roles.[10] Long-term research should therefore report medical, psychiatric, and functional outcomes separately rather than relying on a single remission category.

Follow-up should also reflect disorder-specific risk. Patients with a history of AN may require continued attention to bone, endocrine, and cardiovascular health; those with recurrent purging may need renal, electrolyte, gastrointestinal, and dental assessment; and patients with BED may require integrated management of psychiatric symptoms and cardiometabolic risk without reinforcing weight stigma.[5] A lifetime history of behaviours may be more informative than the current diagnostic label because diagnostic crossover is common.

Relapse prevention is especially important after discharge from intensive treatment. The first years after treatment represent a vulnerable period, and transitions in education, employment, relationships, or reproductive life may increase stress.[13] Continuity between specialist services, primary care, mental-health care, and social or occupational support may reduce the gap between symptom remission and durable recovery.

The social dimension deserves greater emphasis. EDs can interrupt education, employment, friendships, family roles, and financial independence, while stigma may delay recognition and access to care.[15] These consequences are particularly relevant to public-health and social-policy approaches because recovery depends partly on whether individuals can access treatment, maintain adequate nutrition, attend appointments, and re-enter meaningful life roles. Structural barriers such as cost, geographic distance, inflexible work, and limited specialist capacity can therefore influence outcome as well as individual clinical factors.

The literature has important limitations. Definitions of remission, relapse, and recovery remain inconsistent; follow-up duration varies widely; and long-term research is disproportionately based on women with AN treated in specialist settings.[14] Evidence is comparatively limited for BED, OSFED, atypical AN, men, gender-diverse people, older adults, ethnic minorities, and populations in lower-resource settings. Future studies should use standardised multidimensional outcomes and include socioeconomic conditions, healthcare access, social participation, and patient-defined recovery.

Overall, the long-term evidence supports two complementary conclusions. First, EDs can produce enduring medical, psychiatric, and social harm and therefore warrant sustained surveillance beyond acute treatment. Second, recovery can occur even after prolonged illness, as demonstrated by long-term follow-up studies.[12] Clinical services should avoid both underestimating chronic risk and adopting deterministic assumptions that meaningful recovery is no longer possible.

5. Conclusions

Eating disorders may have consequences that extend for years or decades after diagnosis and affect physical health, psychiatric well-being, relationships, education, employment, and quality of life. Many acute abnormalities improve with nutritional rehabilitation and cessation of harmful compensatory behaviours, but some complications, including impaired bone health, fracture risk, dental damage, and selected renal consequences, may persist. Depression, anxiety, self-harm risk, residual eating-disorder cognitions, and relapse vulnerability may also remain after visible behavioural improvement. Long-term recovery should therefore be assessed across medical, psychological, and social domains. Healthcare systems should support early recognition, continuity of care, relapse prevention, and functional reintegration rather than focusing only on short-term symptom control. Future research should standardise definitions of recovery, broaden demographic representation, and place greater emphasis on quality of life, education, employment, social participation, and structural determinants of access to care.

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REFERENCES

1. Treasure, J., Duarte, T. A., & Schmidt, U. (2020). Eating disorders. *The Lancet, 395*(10227), 899–911. https://doi.org/10.1016/S0140-6736(20)30059-3
2. Attia, E., & Walsh, B. T. (2025). Eating disorders: A review. *JAMA, 333*(14), 1242–1252. https://doi.org/10.1001/jama.2025.0132
3. Galmiche, M., Déchelotte, P., Lambert, G., & Tavolacci, M. P. (2019). Prevalence of eating disorders over the 2000–2018 period: A systematic literature review. *The American Journal of Clinical Nutrition, 109*(5), 1402–1413. https://doi.org/10.1093/ajcn/nqy342
4. van Eeden, A. E., van Hoeken, D., & Hoek, H. W. (2021). Incidence, prevalence and mortality of anorexia nervosa and bulimia nervosa. *Current Opinion in Psychiatry, 34*(6), 515–524. https://doi.org/10.1097/YCO.0000000000000739
5. Hambleton, A., Pepin, G., Le, A., Maloney, D., National Eating Disorder Research Consortium, Long, R., Tiggemann, M., Wilksch, S., Touyz, S., & Maguire, S. (2022). Psychiatric and medical comorbidities of eating disorders: Findings from a rapid review of the literature. *Journal of Eating Disorders, 10*(1), Article 132. https://doi.org/10.1186/s40337-022-00654-2
6. Westmoreland, P., Krantz, M. J., & Mehler, P. S. (2016). Medical complications of anorexia nervosa and bulimia. *The American Journal of Medicine, 129*(1), 30–37. https://doi.org/10.1016/j.amjmed.2015.06.031
7. 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
8. Fichter, M. M., & Quadflieg, N. (2016). Mortality in eating disorders—results of a large prospective clinical longitudinal study. *International Journal of Eating Disorders, 49*(4), 391–401. https://doi.org/10.1002/eat.22501
9. Morgan, C., Carr, M. J., Chew-Graham, C. A., O'Neill, T. W., Elvins, R., Kapur, N., Webb, R. T., & Ashcroft, D. M. (2025). Adverse outcomes in patients with a diagnosis of an eating disorder: Primary care cohort study with linked secondary care and mortality records. *BMJ Medicine, 4*, e001438. https://doi.org/10.1136/bmjmed-2025-001438
10. Bardone-Cone, A. M., Harney, M. B., Maldonado, C. R., Lawson, M. A., Robinson, D. P., Smith, R., & Tosh, A. (2010). Defining recovery from an eating disorder: Conceptualization, validation, and examination of psychosocial functioning and psychiatric comorbidity. *Behaviour Research and Therapy, 48*(3), 194–202. https://doi.org/10.1016/j.brat.2009.11.001
11. Wetzler, S., Hackmann, C., Peryer, G., Clayman, K., Friedman, D., Saffran, K., Silver, J., Swarbrick, M., Magill, E., van Furth, E. F., & Pike, K. M. (2020). A framework to conceptualize personal recovery from eating disorders: A systematic review and qualitative meta-synthesis of perspectives from individuals with lived experience. *International Journal of Eating Disorders, 53*(8), 1188–1203. https://doi.org/10.1002/eat.23260
12. Eddy, K. T., Tabri, N., Thomas, J. J., Murray, H. B., Keshaviah, A., Hastings, E., Edkins, K., Krishna, M., Herzog, D. B., Keel, P. K., & Franko, D. L. (2017). Recovery from anorexia nervosa and bulimia nervosa at 22-year follow-up. *The Journal of Clinical Psychiatry, 78*(2), 184–189. https://doi.org/10.4088/JCP.15m10393
13. Berends, T., Boonstra, N., & van Elburg, A. A. (2018). Relapse in anorexia nervosa: A systematic review and meta-analysis. *Current Opinion in Psychiatry, 31*(6), 445–455. https://doi.org/10.1097/YCO.0000000000000453
14. Solmi, M., Monaco, F., Højlund, M., Monteleone, A. M., Trott, M., Firth, J., Eaton, M., De Toffol, M., Vergine, M., Meneguzzo, P., Collantoni, E., Gallicchio, D., Stubbs, B., Girardi, A., Busetto, P., Favaro, A., Carvalho, A. F., Steinhausen, H.-C., & Correll, C. U. (2024). Outcomes in people with eating disorders: A transdiagnostic and disorder-specific systematic review, meta-analysis and multivariable meta-regression analysis. *World Psychiatry, 23*(1), 124–138. https://doi.org/10.1002/wps.21182

15. Miskovic-Wheatley, J., Bryant, E., Ong, S. H., Vatter, S., Le, A., National Eating Disorder Research Consortium, Conti, J., Foroughi, N., Hay, P., Mitchison, D., Smith, E., Touyz, S., & Maguire, S. (2023). Eating disorder outcomes: Findings from a rapid review of over a decade of research. *Journal of Eating Disorders, 11*(1), Article 85. https://doi.org/10.1186/s40337-023-00801-3
16. Fichter, M. M., Quadflieg, N., Crosby, R. D., & Koch, S. (2017). Long-term outcome of anorexia nervosa: Results from a large clinical longitudinal study. *International Journal of Eating Disorders, 50*(9), 1018–1030. https://doi.org/10.1002/eat.22736
17. Quadflieg, N., & Fichter, M. M. (2019). Long-term outcome of inpatients with bulimia nervosa—results from the Christina Barz Study. *International Journal of Eating Disorders, 52*(7), 834–845. https://doi.org/10.1002/eat.23084
18. Carlson, J. L., & Lemly, D. C. (2024). Medical considerations and consequences of eating disorders. *Focus, 22*(3), 301–306. https://doi.org/10.1176/appi.focus.20230042
19. Søeby, M., Gribsholt, S. B., Clausen, L., & Richelsen, B. (2023). Fracture risk in patients with anorexia nervosa over a 40-year period. *Journal of Bone and Mineral Research, 38*(11), 1586–1593. https://doi.org/10.1002/jbmr.4901
20. Giel, K. E., Bulik, C. M., Fernandez-Aranda, F., Hay, P., Keski-Rahkonen, A., Schag, K., Schmidt, U., & Zipfel, S. (2022). Binge eating disorder. *Nature Reviews Disease Primers, 8*(1), Article 16. https://doi.org/10.1038/s41572-022-00344-y
21. Amiri, S., & Khan, M. A. (2023). Prevalence of non-suicidal self-injury, suicidal ideation, suicide attempts, suicide mortality in eating disorders: A systematic review and meta-analysis. *Eating Disorders, 31*(5), 487–525. https://doi.org/10.1080/10640266.2023.2196492
22. Patel, K., Tchanturia, K., & Harrison, A. (2016). An exploration of social functioning in young people with eating disorders: A qualitative study. *PLOS ONE, 11*(7), e0159910. https://doi.org/10.1371/journal.pone.0159910
23. Westwood, H., Lawrence, V., Fleming, C., & Tchanturia, K. (2016). Exploration of friendship experiences, before and after illness onset in females with anorexia nervosa: A qualitative study. *PLOS ONE, 11*(9), e0163528. https://doi.org/10.1371/journal.pone.0163528
24. Jenkins, P. E., Hoste, R. R., Meyer, C., & Blissett, J. M. (2011). Eating disorders and quality of life: A review of the literature. *Clinical Psychology Review, 31*(1), 113–121. https://doi.org/10.1016/j.cpr.2010.08.003
25. Winkler, L. A.-D., Christiansen, E., Lichtenstein, M. B., Hansen, N. B., Bilenberg, N., & Støving, R. K. (2014). Quality of life in eating disorders: A meta-analysis. *Psychiatry Research, 219*(1), 1–9. https://doi.org/10.1016/j.psychres.2014.05.002
26. Streatfeild, J., Hickson, J., Austin, S. B., Hutcheson, R., Kandel, J. S., Lampert, J. G., Myers, E. M., Richmond, T. K., Samnaliev, M., Velasquez, K., Weissman, R. S., & Pezzullo, L. (2021). Social and economic cost of eating disorders in the United States: Evidence to inform policy action. *International Journal of Eating Disorders, 54*(5), 851–868. https://doi.org/10.1002/eat.23486
27. van Hoeken, D., & Hoek, H. W. (2020). Review of the burden of eating disorders: Mortality, disability, costs, quality of life, and family burden. *Current Opinion in Psychiatry, 33*(6), 521–527. https://doi.org/10.1097/YCO.0000000000000641
28. Austin, A., Flynn, M., Richards, K., Hodsoll, J., Duarte, T. A., Robinson, P., Kelly, J., & Schmidt, U. (2021). Duration of untreated eating disorder and relationship to outcomes: A systematic review of the literature. *European Eating Disorders Review, 29*(3), 329–345. https://doi.org/10.1002/erv.2745